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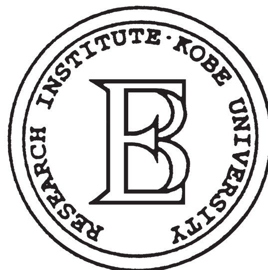

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The Business Combination Accounting and Probabilistic Purchase Methods

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Abstract

In the US and International Accounting Standards, the purchase method is being universally required to be used. But no mentions are made for mergers of (nearly) equal firms where the acquiring and the acquired firms are difficult to determine. For these cases, I propose as an object for further research a new accounting method, a "probabilistic purchase method" which has the advantage of consistency and comparability between pre- and post combination periods. Upon further analyses, two kinds of probabilistic purchase method can be constructed. They are the equally weighted probabilistic purchase method and the (net asset-) size-proportional purchase method. Their meanings and significances are discussed.

JEL Classification: M41
Keywords: the purchase method, mergers of equals, the probabilistic purchase method, the business combination accounting

INTRODUCTION

In the US accounting standard no.141 (FASB 2001) as well as in the International Accounting Standard no.3 (2006), the pooling of interests accounting is explicitly prohibited for any business combinations, and only the purchase method is dictated for use in almost all cases. As to the rare but actually occurring mergers of equals, both those standards seem to

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be endorsing the fresh start method. But this point is not explicitly codified. In more detail, if one reads the FASB related documents (1998, 83; 2001, 45), the so-called 'true mergers' are claimed to be so rare as not to justify a separate combination accounting method. But the IFRB (the International Financial Reporting Board 2006) has taken a slightly different position, stating that it should not, in the first phase of its project, rule out the possibility of a business combination occurring in which one of the combining entities does not obtain control of the other combining entity or entities (often referred to as a 'true merger' or 'mergers of equals').

I suspect this absence of any rules to adequately account for this kind of mergers is possibly deterring real occurrences of these combinations and thereby might be preventing optimal corporate and economic development.

So, it will be in order to firstly consider the practical significance of considering about this kind of combinations.

HOW RARE ARE THE MERGERS OF EQUALS?

How rare (or how often) is this kind of combination? In the USA, the cases of business combinations where the purchase method and the pooling of interests method were adopted respectively from 1997 through 2005 are reported in Table 1 (Kigyoukaikeikijun Iinkai 2007).[1]

From Table 1, in about 10% of the US cases the pooling of interests method was applied before 2001 when it was not forbidden by the rule. In interpreting this table, I admit there were possibly some cases where the pooling method was inappropriately used so as to exploit its business income inflating effect in cases of rising prices. But the number of such cases cannot be determined and further I do not believe all cases of the pooling accounting were inappropriate.

From this, the inference seems appropriate that at least in the US the prohibiting of the

Table 1
The application of the pooling of interests method and the purchase method in the USA

	2005	2004	2003	2002	2001	2000	1999	1998	1997
Pooling method	—	—	—	—	16	35	54	27	38
Purchase method	316	301	265	314	309	326	343	278	278

Note 1: In and before 2000 the number of the 'cases' each method was applied and in and after 2001 the 'number' of the firms which applied each are shown respectively.
Note 2: On and after July 1, 2001, the pooling method was banned so its effect is probably reflected in this data.

1 Table 1 is said to have been compiled by this committee based on data in 'Accounting Trends and Techniques' by the AICPA.

pooling method might have been giving some restraint on the firms where the managements properly wanted to perform the true merger. And this might have incurred not a small social loss(Nurnberg and Sweeney 2007). Considering such a possibility, I will propose a "probabilistic purchase method" after some recapitulation is made on the pros and cons of the currently available business combination accounting methods.[2]

ALLEGED ADVANTAGES AND DISADVANTAGES OF THE TRADITIONAL M & R ACCOUNTING METHODS

In the current FASB Standard no.41, "Business Combination" (2001), and in the International Financial Reporting Standard 3, "Business Combinations" (2006), the exclusive using of the purchase method is supported for the following reasons, in contrast to the past statements allowing firms' selective use from both the pooling of interests method and the purchase method.

1. General adoption of a single accounting method will ensure the comparability of the financial statements.
2. All assets or liabilities can be considered as acquired or incurred at the fair values of the transaction date. So, in measuring the net assets of the acquired corporation at the fair values of the combination date, the purchase method is really consistent with the acquisition cost basis, and thus will provide comparable information with other accounting information based on the historical cost basis.
3. Supporters of the pooling method assert that in the combination of nearly equal corporations A and B there exists continuity of the equities of both companies. But against this view, the quality of the equity of the combined company is claimed here to have been changed from that of either of A or B to a mixture of both A and B companies.

Then, how about the case Companies A and B are completely or nearly equal and no one can decide which is the dominating firm? It is suspected that the purchase method is not applicable here. On this problem, however, FASB (2001) argues that there are no combinations of actually equal companies in reality and further that if a specific accounting standard should be provided for in this case, as was done by the APB opinion 16 (1970), an abuse of more favorable accounting treatment will be made. In addition, it is said that a clear

2 Nurnberg and Sweeney (2007) report there existed the opinion that if some accounting is available for mergers of equals (such as the pooling method) this might encourage economically undesirable combinations because of its favorable effect on earnings. But anyway, the accounting should be neutral and should not hinder any particular business practice.

border-line between combinations of truly equal companies and those of not equal ones is impossible to draw without arbitrariness. Moreover, even if those two cases can be differentiated in practice, it does not naturally follow that the appropriate accounting procedure here is to carry forward the book values of the combining corporations (i.e., the pooling of interests method). The most important conclusion of FASB is that "this committee believes that if this case should be accounted for by a method other than the purchase method, a better one will be the fresh-start method (2001 B42)".

The reason for FASB preferring the fresh-start method is not clear. But it could be inferred that both accountability and decision-usefulness is believed to be better served by this method because fair values reported here is more desirable for charging managers responsible for the investment made in the combination and the future cash-flows are insisted to be better reflected by the fair values of the assets acquired and of the assumed liabilities than by the old book values.

Even if all these points are accepted, temporal consistency and comparability between the pre-and post- combination firms must be admitted as broken because the valuation bases are changed from old book values to the fair values at the combination date. This will prevent the managers' performances of the merger strategy from being disclosed as an increase (or decrease) in annual earnings and from the positive additional income, if any, from being partly paid out as managerial compensation. Management could not, it seems, be denounced if they should resist to such an accounting method.

Similar to the US standards, the International Standard had, in IAS 22 (1983), provided that the pooling of interests method be applied to some restricted conditions, which, however, has been changed to the rule of demanding the purchase method to almost all business combinations in IFRS no.3, "Business Combinations" (2006). In this standard, no profound explanations are given about the exclusive use of the purchase method in situations where the pooling method also is logically possible. Rather, the committee's consideration seems to be limited to the case where the acquiring and the acquired corporations can be identified. In this situation, then, the logic here follows the US pattern that the purchase method is better than the pooling method from the view-points of faithful value reflection and comparability. In this standard, its orientation is very evident to make an international harmonization with and convergence to the US accounting standards.

Put it another way, IASB is not negating the possibility of mergers of equal corporations. In such cases, IASB is asserting to prefer the fresh-start method to the pooling method, where, however, it is not offering any new ideas to fortify its claim. Rather, such a practical reason as the international convergence is strongly emphasized. That is, the committee states that while the fresh-start method is better for combinations of equal companies no applications have been made of this method in any countries or states, and that further investigation be made to see if there are any M & A which are amenable to the fresh-start method (2006).

A PROPOSAL ON THE PROBABILISTIC PURCHASE METHOD (1) —THE EQUALLY WEIGHTED AVERAGE METHOD

I consider the case where two (or more) combining corporations are nearly equal in size or economic power, and no one can identify which is the acquiring company. My idea is that this is the case where for the two combining corporations A and B the probability of A being the acquirer is 50% and the probability of B being the acquirer being also 50%. It may be assumed that underlying this model the premise is posited that after the combination the managements of A and B will struggle to gain the control of the new corporation and each group's probability of success is equal. I assume this is the case. In this situation, the representational faithfulness will be best achieved by modeling my probabilistic purchase method (1) as the equal probability weighted average of the accounts A and B when firstly the purchase method is applied for Company A buying B and then for the case of B acquiring A.

See Table 2. This is a simplified example of this new method. With respect to all balance sheet items, the book values are denoted as R and fair values at the combination date as F.

Under the purchase method, the assets and liabilities of the acquiring corporation A are to be measured at their book values R and those of the acquired one B to be valued at their current fair values F. In Table 2, this addition is shown simply as

$$R+F \text{ or } F+R$$

for each account and the amounts are calculated by this rule.

Table 2
The probabilistic purchase method (1)—Equally-weighted-average method

	Company A (1)	Company B (2)	Purchase method if A is acquirer (3)	Purchase method if B is acquirer (4)	Probabilistic purchase method (5)
Current assets	R =5 F =5	R =4 F =4	$R+F$ =9	$F+R$ =9	{(3)+(4)}/2= 9
Fixed assets	R =10 F =15	R =8 F =12	$R+F$ =22	$F+R$ =23	22.5
Goodwill	F =11	F =10	$F(B)$ =10	$F(A)$ =11	10.5
Liabilities	R =4 F =11	R =7 F =8	$R+F$ =12	$F+R$ =18	15
Net assets	R =11 F =20	R =5 F =18	$R+F$ =29	$F+R$ =25	27

* $F(B)$ means the fair value of the Corporation B's goodwill.

All entries in Table 2 are obvious and will need no explanations.

As for my probabilistic purchase method (5) in Table 2, the usefulness of this accounting method for investors or other stakeholders will have to be tested empirically. At this stage, however, note that each amount under this method is that value which will minimize its mean square error from the correct amount which would be attained when Company A or B were the acquiring corporation a posteriori.

(Proof)

E_i : the mean square error to be minimized for account i

X_A : the purchase method amount if A is acquiring B,

X_B : the purchase method amount if B is acquiring A,

T : the amount which will minimize the mean square error,

P_A : the probability of A being the acquirer,

P_B : the probability of B being the acquirer.

$$P_A + P_B = 1.$$

Then,

$$E_i = P_A(X_A - T)^2 + P_B(X_B - T)^2$$

Differentiating this equation with respect to T and setting it to zero,

$$(2P_A + 2P_B)T = 2P_A X_A + 2P_B X_B$$

Hence

$$T = P_A X_A + P_B X_B. \tag{1}$$

What I am considering here is the case where both probabilities P_A and P_B are 0.5. So, my proposition that the probabilistic purchase method minimizes the mean square error is proven. Though this statistical advantage does not assure any sort of its economic or social desirableness, it will, I hope, justify further researches in this new business combination accounting method.[3]

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3 Shyam Sunder has applied minimization of the mean square error as a desirable criterion in considering the propriety of introducing fair values in financial statements. (Shyam Sunder, Econometrics of Fair Values, Accounting Horizons, Vol.22 No.1, March 2008).

THE PROBABILISTIC PURCHASE METHOD (2) —A SIZE-PROPORTIONAL PROBABILISTIC PURCHASE METHOD

Shyam Sunder has suggested to me about the possibility of developing a new version of my probabilistic purchase method. His point is that an extension might be possible by assuming the probability of each firm being the acquirer as being proportional to the size (i.e., the net asset) of the company. Some problems surrounding this assumption will be explored after an example of this new method is shown in Table 3.

In this table, the probability of Company A being the acquirer is 20/(20+18), that is, the fair value of the net asset of A over the sum of their fair value totals of both companies A and B. The probability of Company B being the acquirer is 18/38.

First, some quantitative analysis seems in order. Assume the producers' goods prices are in the rise. Suppose additionally that there exists a significant difference in the net asset sizes (the fair values) of both corporations, which is posited to correspond to a difference in their dominating powers. Furthermore, assume that the valuation gain of each firm's net asset from the rise of the fair value till the combination date is proportionate with its fair value on the same date, so that the gain of the dominating firm is greater than that of the dominated company. Then,

1. The conventional purchase method and the probabilistic purchase methods include the sum of the pre-combination book values of the net assets and a part of the total valuation gains of the firms. So, the net asset (fair) value of any of these purchase methods is smaller than that by the fresh-start method but greater than that by the pooling method which excludes the gain.
2. One will see from the simple proof below that both the probabilistic purchase meth-

Table 3
The probabilistic purchase method (2)—A size-proportional probabilistic purchase method

	Company A (1)	Company B (2)	Purchase method if A is acquirer (3)	Purchase method if B is acquirer (4)	Size-prop. probabilistic purchase method (5)
Current assets	R =5 F =5	R =4 F =4	$R+F$ =9	$F+R$ =9	{(20/38)×9+ (18/38)×9}=9
Fixed assets	R =10 F =15	R =8 F =12	$R+F$ =22	$F+R$ =23	22.47
Goodwill	F =11	F =10	$F(B)$ =10	$F(A)$ =11	10.47
Liabilities	R =4 F =11	R =7 F =8	$R+F$ =12	$F+R$ =18	14.84
Net assets	R =11 F =20	R =5 F =18	$R+F$ =29	$F+R$ =25	27.10

ods will provide the net asset (fair value) of the combined firm which is greater than that by the traditional purchase method.

(Proof of proposition 2)
Let
P_A : the probability of firm A being the acquirer,
P_B : the probability of firm B being the acquirer,
BV_A : the book value of the acquiring firm A's net asset,
BV_B : the book value of the firm B's net asset,
VG_A : the valuation gain accruing to the firm A's net asset,
VG_B : the valuation gain accruing to the firm B's net asset,
FV_A : the fair value of the firm A's net asset at the merger date,
FV_B : the fair value of the firm B's net asset at the merger date,
Sc_p : the net asset of the combined firm by the conventional purchase method,
Sc_{pp} : the net asset of the combined firm by the size-proportional purchase method.

Then,

$$\begin{aligned} Sc_p &= BV_A + FV_B \\ &= BV_A + BV_B + VG_B \end{aligned} \quad (2)$$

$$\begin{aligned} Sc_{pp} &= [FV_A/(FV_A+FV_B)]\cdot(BV_A+FV_B) \\ &\quad +[FV_B/(FV_A+FV_B)]\cdot(FV_A+BV_B) \\ &= [FV_A/(FV_A+FV_B)]\cdot(BV_A+BV_B+VG_B) \\ &\quad +[FV_B/(FV_A+FV_B)]\cdot(BV_A+VG_A+BV_B) \\ &= BV_A+BV_B+[FV_A/(FV_A+FV_B)]\cdot VG_B \\ &\quad +[FV_B/(FV_A+FV_B)]\cdot VG_A \end{aligned} \quad (3)$$

Comparing (2) and (3) to calculate their difference,

$$\begin{aligned} Sc_p - Sc_{pp} &= [(FV_A+FV_B-FV_A)/(FV_A+FV_B)]\cdot VG_B \\ &\quad -[FV_B/(FV_A+FV_B)]\cdot VG_A \\ &= [FV_B/(FV_A+FV_B)]\cdot(VG_B-VG_A) \\ &< 0 \end{aligned} \quad (4)$$

(Q.E.D.)

From (4), under the assumptions stated above, it is proven that the net asset under the conventional purchase method is generally smaller than that by the size-proportional probabilistic purchase method.[4]

In conclusion, the order of the net asset of the combined firm is generally:

that of the fresh-start method > the size-proportional (and equal weighted) probabilistic purchase method > the standard purchase method > the pooling of interests method.

Hence, the size-proportional probabilistic purchase method will, by adding to the combined net asset amount, increase the future asset amount and decrease both future annual incomes and future rates of returns on total assets and on the stockholders' equity by adding to future depreciation expenses, if the fair values of the liabilities do not move in any offsetting direction. In this sense, one can conclude the asset and income effect of the size-proportional purchase method lies in between the pooling of interests method (where the income and the income rates are generally maximal) and the fresh start method (where they are generally minimal) quantitatively.[5] Of course, the real situation is so varying that not all quantitative possibilities can be described here.

Further, if one compares the two kinds of probabilistic purchase methods in case both companies are equal in size, one easily sees that the two sorts of the value sets (one firm's original recorded cost and the other's current fair value) are aggregated with equal 50% weights, so the asset (and liability) amounts are equal between both methods. So will be the effects on future income and rate of return series.

Then, formally considered, the size-proportional method may be said to be a natural extension of my probabilistic purchase method to all possible M & R cases. That is, that can be applied to all business combinations. But note that this entails incurring an additional cost of introducing a different type of purchase method from the conventional purchase method for the case two combining firms are significantly different in size.

Finally, some qualitative analyses will be attempted. First, note that from the equation (1) above, the size-proportional probabilistic purchase method is consistent with this equation if the weight (the probability) given to the case of Company A being the acquirer is set to the ratio of this firm's net asset (fair) value over the sum of the total net assets of both firms and the weight on Company B is estimated to be the B's net asset over the total. That is, this size-proportional weighted purchase method has the property of minimizing the mean square error around the true account value if the probability of A acquiring B is defined as

4 The probabilistic purchase method (1) is intended for use only when the net assets of both firms are nearly equal. In this case, this method and the size-proportional purchase method (which is applicable in all cases) naturally produce the same post-combination balance sheet. So, any general comparison between both is not meaningful.

5 My example in Tables 2 and 3 includes the liabilities whose fair values do not rise proportionately with the assets' price rises, so the order of the amounts of the net assets do not follow this pattern.

A's relative size and vice versa for the other probability, and the trueness of an account value is defined as its amount under the conventional purchase method if the dominating firm a posteriori is the one with a greater net asset.

Secondly, if two (or more) firms of nearly equal sizes are going to be combined, the probabilistic purchase method may be said to be potentially superior to the fresh start method in maintaining the consistency over time so that it will provide post-combination accounting information more consistent and more comparable with the information of the combining firms in pre-combination periods than the information by the fresh-start method. As for a comparison with the pooling of interests method, this cannot reflect the real situation that no stockholders can retain control of their original asset content of their pre-combination companies but of a mixture of both firms' contents.

In case two firms' fair values differ in size significantly, the conventional purchase method and the size-proportional probabilistic purchase methods must be compared. Assume the management of the smaller-sized company also has some possibility of gaining control of the combined firm in the near future, say, by some maneuvers such as access to other stockholders for cooperation etc. And further suppose such a possibility should increase nearly proportionately with the size of each combining firm. Then, the conventional purchase method is depicting an excessively simple picture about the control powers of the combining corporations. The representational faithfulness will be increased by reflecting the possibly increased chance of control by the smaller-sized firm through, say, probable cooperation of larger firms and by depicting this through mixing in of some of the fair values of the greater sized corporations to get the combined account.

Hence, if such a possibility is banned and no chance exists for the smaller firm to control, then the size-proportional method should be abandoned and the conventional purchase method used. In this case, it is believed that an appropriate disclosure should be published to reveal the impossibility of the managers from the smaller combining firm to gain the control.

Lastly, if the probabilistic purchase method (1) should be allowed in addition to the conventional purchase method, then the borderline must be determined concerning the relative size of a firm where the former method should be used. This determination is destined to introduce arbitrariness. On the other hand, the size-proportional method can be consistently used in all M & A cases. This will help reduce arbitrary accounting choice and may be considered as an advantage over the equally weighted probabilistic method.

All these analyses are on the semantic level and social or individual usefulness of the accounting information is not yet determined. This is left to future researches.

CONCLUSION

The global convergence in business combination accounting is moving toward the

universal application of the purchase method for all M & A cases. But obviously this accounting standard is implicitly forcing firms not to perform mergers of (nearly) equal corporations. I suspect this might possibly be misleading the economy to deviate from an optimal economic development.

I have proposed two kinds of probabilistic purchase methods. One is the equally weighted probabilistic purchase method. I intend this to be used along with the conventional purchase method. Only for mergers of equals, this kind of probabilistic method is to be applied. Otherwise, the conventional purchase method should be applied.

The other methodology is the size-proportional probabilistic purchase method. This is capable to be applied to all kinds of business combinations.

The social and economic usefulness of these methods are yet to be determined. This is a potentially useful research area for accounting empiricists and experimenters.

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Railroad Regulation in the United States in the Nineteenth Century: A Lesson in International Accounting

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Abstract

In this paper we analyze the relation between the railroad regulations emerged in the nineteenth century in the Unites States and the establishment of accounting disclosure system in modern society. Through this analysis, we would like to provide a framework for exploring the social foundations of accounting disclosure carried by large enterprises in modern democratic societies. The main result is that there emerged accounting disclosure system because of having a remedying power over behaviors taken by large businesses in modern democratic societies.

JEL Classification: M41

Keywords: Information Disclosure, Railroad Regulation, Granger Movement, Democracy

1. Preface

This paper was written to analyze the relation between the railroad regulations enacted in the nineteenth century in the Unites States and the emergence of information disclosure in modern accounting. Through this analysis, we hope to provide a framework for exploring the social foundations of information disclosure in modern accounting by large enterprises in democratic societies. We describe two divergent trends in the railroad regulations enacted by the various American states: some states recognized and adopted accounting disclosure practices, while others rejected these practices and began regulating the railroad businesses directly. Differences in the social and economic structures of the states are cited as underlying causes behind this divergence in the railroad regulations they imposed.

The appearance of the railroad in the 1830s was a catalyst for the social and economic development of the United States in the nineteenth century. Communication and transportation

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systems were developed in parallel with the railroads, and the issuance of abundant securities by the railroad corporations led to the establishment of modern securities markets. As R. W. Fogel pointed out,[1] the development of the U.S. steel industry might have followed a different course if the railroads had no demand for steel rails. The same can be said of the agricultural sectors treated in section 2. With the establishment of railroads to the Pacific Coast, the farmers in inland areas could ship their wheat and other agricultural products to the Western ports and export them to Europe. As the agricultural frontier advanced westward along with the railroads, the states of the Midwest were ultimately to become the granary of Europe as well as the United States.

The American railroad corporations of the nineteenth century adopted several types of business strategies to accumulate capital under these socioeconomic conditions. Yet some of the strategies selected by these relatively large entities had considerable influence on the livelihoods of farmers, merchants, and medium and small producers. It was this influence that prompted the need for railroad regulations,[2] and in some states the disclosure of accounting information under certain conditions. This practice of accounting disclosure became an important policy, but only in some of the states of the earlier period.

Sections 2 and 3 to follow present two case studies. The first, in Section 2, describes the emergence of two regulatory trends: the adoption of accounting disclosure regulations as a means of regulating railroad corporations in failure, and, as an alternative, the direct regulation of railroad businesses by states. The second, in Section 3, analyzes a case in which accounting disclosure was used as a valid means to regulate the railroads. The former study covers events in Illinois and several other Midwestern states; the latter, Massachusetts and several other Eastern states. Section 4 points out some of the socioeconomic foundations underlying the emergence of accounting disclosure.

2. Railroad Regulation in Illinois and the Granger Movement

2-1. Introduction[3]

The United States of the nineteenth century was a granary for Europe, the center of the

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1 Economic historians such as W.W. Rostow and R.W. Fogel reached different conclusions in their evaluations of the effects brought about by the development of the U.S. railroad industry.

2 Syoujirou Ishii, *Amerika Tetsudou Ron,* Cyuoukeizai-sya, 1974, p.67

3 References for this subsection: A. Fishlow, *American Railroad and the Transportation of the Ante-Bellum Economy,* Massachusetts, Harvard University Press, 1965. P.H. Cootner, " The Role of the Railroads in United States Economic Growth," *The Journal of Economic History,* Vol.23, No.4, 1963. Suzuki, Keisuke and kouji Nakanishi, "Amerika Shihonsyugi no Hatten to Tetsudougyou — Nanbokusensou Izennojiki wo Cyuusinni —, (1)(2)(3)" *Syakaikagaku Kenkyu,* Vol.22, No.4 (March 1971), Vol.22, No.5/6 (March 1971), Vol.23, No.2 (November 1971)

world economy at that time. A physical precondition for the inclusion of American agriculture in the world economy was the establishment of a transportation system linking agricultural producers in inland areas to the shipping ports of the East Coast and beyond to Europe. The development of the transportation system within America was prompted by the demand for the distribution of inland grains to the East Coast.

Steamboats running on rivers were the first means of inland transportation. The Americans built canals as links between rivers, and the rivers connected to the Great Lakes. The most famous of the canals was the Erie Canal constructed in 1825. This was a main artery connecting the inlands of the Midwest to the East Coast. In the South, active transport along the Mississippi River brought prosperity to New Orleans.

After a while, railroad transportation came to substitute river transportation for the shipment of grains. The railroads originally served as a supplementary network for the more established system of river and lake transportation. If the Great Lakes froze over in winter, for example, the railroads could be used as an alternative. In time, however, trains came to substitute steam boats as a faster method of travel. This was how railroads first came to be used in agriculture.

Though trains were eventually to serve an invaluable function for the farmers of the Midwest, it was the capitalists and merchants of the East Coast who put up the capital to construct the railroads. By laying railroads to connect to the canals that called on their cities, the merchants of the East Coast hoped to profit from increased trade with the Midwest. From the latter half of the nineteenth century onwards, however, the railroad construction was largely sustained by direct and indirect aid from the farmers. Before long, the railroads serving the Midwest brought in industrial products and daily necessities produced in the East, and shipped out grains harvested locally. Within the American domestic economy, the extension of the railroads to the Western states corresponded to a penetration to the farmers sparsely populating some of the frontiers of the capitalistic production system.

While the farmers of the Midwest generally relied on the railroads for their livelihood, they did not have a cooperative relationship with the railroad corporations. The relationship between the farmers and railroads during the latter half of the nineteenth century could even be described as one of conflict. The railroad corporations needed to accumulate capital in order to prevail in the capitalistic competition with each other. As a consequence, they decided to adopt management strategies that pressured the weaker and less efficiently organized farmers, small producers, and merchants. The farmers organized themselves over broader geographic areas in reaction to the immoderate management of the railroad corporations, and from the 1870s they began to develop an anti-railroad movement. The remainder of Section II is mainly devoted to an analysis of the living and economic conditions of the Midwestern farmers and the relation of these farmers with the railroad corporations. This analysis will help identify the social and economic changes among farmers, local governments, and railroad

corporations at that time. We also hope to use this analysis to facilitate a broader comparative analysis of the case on the East Coast and the socioeconomic foundations underlying the emergence modern accounting disclosure in the United States in middle and latter half of the nineteenth century.

2-2. Conditions in the Midwestern States

The broadest and most important incentive for the farmers in organizing was to oppose the pressure of the large railroad corporations. To provide background, this sub-section describes the living conditions of the farmers that partly resulted from these pressures. Much of our material on the discontents of the farmers is drawn from a paper published by E.W. Bemis[4] at the end of the nineteenth century.

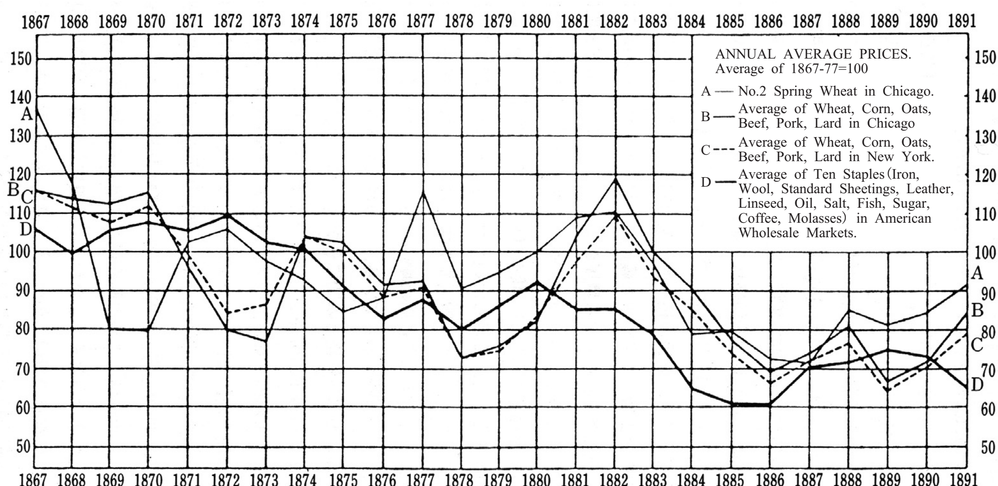
The farmers were unsatisfied with the low prices paid for agricultural products for two reasons: firstly, they claimed to be negatively impacted by seasonal fluctuations in the prices; secondly, they claimed that the prices for grains were decreasing in the long run. The data in the following tables will help us judge whether their discontent was well grounded in this context. Table I[5] shows the fluctuation in the price of spring wheat at the Chicago Grain Exchange. While the years covered do not correspond exactly with the period in question, the

Table I Monthly Price Movement of No.2 Spring Wheat
No.2 Spring Wheat (cents per bushel)

	1885	1886	1887	1888	1889	1890	1891	1892
January	78.6	81.7	79.4	78.0	99.8	77.0	90.6	87.3
February	77.6	80.8	75.1	75.7	100.1	75.1	94.8	88.0
March	75.9	80.8	73.6	74.4	96.8	78.8	97.6	84.1
April	81.4	75.9	80.3	76.1	92.9	82.9	100.5	81.3
May	89.8	89.8	84.1	84.8	82.1	92.8	106.8	82.9
June	86.4	86.4	81.1	83.4	78.8	89.0	98.5	84.9
July	88.1	88.1	69.7	80.5	79.6	86.7	90.6	78.3
August	84.6	85.1	68.4	84.4	77.6	96.4	97.1	77.0
September	80.0	79.8	68.5	95.3	77.3	100.2	96.8	73.6
October	87.3	87.2	70.2	108.0	81.9	98.4	95.6	71.9
November	87.8	87.9	73.2	116.4	79.7	95.4	93.8	71.6
December	84.2	84.1	76.6	106.1	78.1	91.9	90.9	71.3

4 E.W. Bemis, “The Discontent of the Farmer”, *The Journal of Political Economy,* Vol.1, (March, 1983)
5 *Ibid.*, p.202

Figure I Annual Average Price Movement of Agricultural and Non-Agricultural Products



data may indicate the price tendency. Figure I[6] provides data indicating a clear trend of decreasing prices for farm products. (The long-term average prices of ten staples in American wholesale markets are added as a reference).

The data in Table I clearly indicate that the seasonal prices of grain remained quite stable. This was also the case for corn and oats in the same period. Bemis concluded that the dissatisfaction of the farmers during this period might be groundless:

> The figures tell their own story. They not only show that there is no fall in prices at harvest when we should most expect it, but they reveal a remarkable evenness of prices between all the months over a series of years.[7]

As Bemis himself concludes, we cannot prove that the pressures of speculation forced the farmers to fix their prices at unreasonably low levels during the harvest season.

Figure I shows a clear trend of long-term decreases in the prices of agricultural products. This drew little sympathy from Bemis, however, as the long-term average prices of industrially produced goods (iron, wool, oil, salt, etc.) were also falling. Bemis observed that there was actually no relative change in the economic conditions facing farmers.

When relying exclusively on the data from Bemis, the changes in the relative and absolute prices of agricultural products were not always unfavorable for the farmers. If this is accurate, the dissatisfaction of the Midwestern farmers might have been based on partially illusory conditions. It may be relevant that Bemis collected the prices used in his paper from the Chicago Exchange. Though we cannot present concrete data contradicting his, we should note that the prices shown in Table I and Figure I were not prices at which the farmers sold

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6 T.B. Veblen, "Price of Wheat Since 1867", *The Journal of Political Economy,* Vol.1, (December 1892)

7 E.W. Bemis, *op. cit.*, p.204

their harvested grains to brokers, nor the prices which the farmers entirely accepted. This tells us two things. First, the prices at which the farmers sold their grains to the brokers were not the same as the prices at which the farmers sold the grains at the Exchange. Second, the prices at the Exchange must have been linked to the railroad and warehouse fees. In Table II[8] below, we see that the railroads charged somewhat lower fees along the routes from the farms of the South and Midwest into Chicago than they did on the East Coast. The relatively elevated transportation fees in the Midwest were probably attributable not to physical conditions, but the economically unstable positions of the Midwestern railroad corporations and warehouse lenders. The railroads apparently charged higher fees to the insufficiently organized farmers as a matter of policy,[9] driving up the cost of shipping their grains to the large exchanges of the big cities to unreasonable levels. Meanwhile, the farmers found another

Table II Railroad Rate per Ton-Mile

Year	East of Chicago				Chicago to Missouri River					West of Missouri				Southern			
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1860	2.16	1.96	1.67	6.41	2.04												
1861	2.09	1.93	1.71	5.82	1.91												
1862	1.99	1.93	1.80	7.17	1.86												
1863	1.63	1.55	1.43	7.01	1.39	1.91											
1864	1.53	1.35	1.29	……	1.36	1.39											
1865	1.65	1.54	1.39	……	1.76	1.99	2.29	2.38	1.79								
1866	1.75	1.64	1.42	4.66	2.25	2.40	2.45	2.78	2.61	……	……	……	……	3.55			
1867	1.75	1.50	1.40	3.75	2.09	2.19	2.41	2.83	2.15	……	……	……	……	3.45	3.01		
1868	1.66	1.32	1.21	3.18	1.75	2.39	2.58	2.53	2.27	……	……	……	……	3.30	2.95		
1869	1.27	1.23	1.20	3.75	1.84	2.20	2.69	2.30	1.99	……	……	……	……	3.11	2.45	4.42	
1870	1.27	1.27	1.23	4.10	1.95	2.32	2.61	2.38	2.03	……	3.60	……	……	4.34	2.51	4.53	
1871	1.24	1.21	1.28	4.45	2.08	2.37	2.57	2.29	1.87	……	2.42	……	……	4.85	2.30	4.86	
1872	1.23	1.30	1.26	3.64	1.92	2.23	2.33	2.18	1.74	……	2.39	……	……	3.78	2.05	4.43	
1873	1.16	1.26	1.22	1.91	1.92	2.00	2.05	2.17	1.61	……	2.15	……	……	2.59	1.93	4.21	7.67
1874	1.07	1.16	1.13	1.35	1.88	2.87	1.99	2.14	1.66	……	1.95	2.75	……	3.24	1.94	3.62	5.37
1875	0.89	0.99	0.97	1.30	1.96	2.69	1.71	1.83	1.66	……	2.16	2.12	4.51	2.53	1.69	3.06	4.67
1876	0.72	0.84	0.83	1.06	1.59	2.69	1.58	1.80	1.39	……	2.21	2.42	3.15	2.62	1.64	3.06	3.95
1877	0.81	0.95	1.02	1.04	1.72	2.56	1.60	1.95	1.32	4.80	2.14	2.40	3.15	2.16	1.38	2.75	3.69
1878	0.72	0.91	0.87	0.99	1.62	2.54	1.58	1.76	1.21	4.38	2.24	2.09	3.21	2.32	1.64	2.83	4.39
1879	0.64	0.82	0.75	0.86	1.52	2.43	1.56	1.70	1.11	3.74	1.99	2.51	3.12	2.25	1.53	2.43	4.07
1880	0.75	0.92	……	0.87	1.54	2.21	1.49	1.75	1.08	3.15	……	2.38	3.09	2.47	1.59	2.16	3.11

a: Lake Shore and Michigan Southern b: Pennsylvania c: Pittsburg, Fort Wayne and Chicago d: Chesapeake and Ohio e: Illinois Central f: Chicago, Rock Island and Pacific g: Chicago and Northwestern. h: Chicago, Milwaukee and St.Paul i: Chicago. Burlington and Quincy (east of Missouri River) j: Chicago, Burlington and Quincy (west of Missouri River) k: Union Pacific l: Atchison Topeka and Santa Fe m: Texas and Pacific n: Georgia o: Louisville and Xashrille p: Southern q: Galveston Houston and Henderson.

8 F.A. Schannon, *The Farmer's Last Frontiers,* New York, Holt Rinehart and Winston, 1961, p.296-297

9 The railroads could easily manipulate their prices and readily adopted an arbitrary and oppressive rate-setting policy.They charged unreasonably high rates to the weaker and less influential farmers while paying rebates to major grain companies and issuing free passes to influential politicians and attorneys. They also charged higher rates in non-competitive areas than in competitive areas, even along the same railroad lines. W.Z. Ripley, ↗

source of discontent. Using the profits reaped from their inequitable rate system, the railroad managers and warehouse lenders began rapidly accumulating properties. Even though the prices of industrial products were falling along with agricultural prices in the long term, the combined influences of these inequitable rate policies and the declining grain prices must have aggravated the discontent of the Midwestern and Southern farmers.

Another cause for discontent among the farmers was the poor social capital in the rural areas compared with the cities. In particular, the scarcity of completed schools delayed the spread and improvement of agricultural technologies for increasing productivity. This was an especially important problem in the South.[10]

Further causes for discontent were the relatively high interest at which the farmers borrowed[11] and the unreasonably high taxes they were forced to pay. The city dwellers could far more easily conceal their security holdings from tax assessors than the farmers could hide their cattle.[12] The farmers also endured more serious damages from accidents compared to city dwellers due to both geographic reasons and their relative lack of savings.[13]

Earlier surveys on the discontentment among the farmers clearly shows a common characteristic among the underlying factors fueling their discontent. As it turned out, most or all of the factors were related to urbanization and the shift towards a more capitalistic society. Farmers of the day felt that the new capitalistic production systems only benefited the people of the cities. They also felt exploited by the banks and railroads, both of which managed their operations centrally from headquarters in the cities, the centers of the capitalistic and commercialized economy. Surprisingly, the farmers even looked with envy at the labor class, which had begun to develop labor movements and hinder the capitalistic production system with their demands. The capitalists and laborers had formed organizations to pursue their respective interests within the cities, while the farmers of the countryside had yet to join forces effectively or form a strong base.[14]

Goaded by their dissatisfactions, the farmers began organizing the American farmers' movements from the 1870s onward. Their objectives were of course to remedy the conditions that displeased them. Organizations were formed to promote the spread of agricultural education in order to improve productivity, to directly purchase daily necessities and farming equipment in order to avoid exploitation by urban merchants, and to promote the regulatory control of railroads in local governments. The discontents that impelled them to action gave birth to the

↘ *Railroads: Rates and Regulation,* New York, Longmans, Green, and Co., 1913, Chapter VI, "Personal Discrimination," Chapter VII, "Local Discrimination,". Kenji Ozawa, "19 Seiki Kouhan no Amerikani Okeru Noumin Undou no Tenkai (2)," *Nougyou Sougou Kenkyu,* Vol.29, No.3 (July 1975), p.65

10 E.W. Bemis, *op. cit*., p.195-198

11 *Ibid*., p.193-194

12 *Ibid*., p.199

13 *Ibid*., p.198-199

14 *Ibid*., p.199-200

Granger Movement. The living conditions and farmers' movements of the Midwest prompted the development of railroad regulations which now help us explain the emergence and validity of the accounting disclosure practices adopted in modern democratic society.

2-3. Analysis of Railroad Regulation in Illinois[15]

While the Granger Movement has generally been considered the first large-scale farmers' movement in American history, it was not the first farmers' movement. The earliest farmers' organization was established after the War of Independence, and others followed at both the state and federal levels in the years to come. In the early years, influential farmers convened to discuss ways to improve their agricultural technologies for raising productivity. Eventually, by 1862, these endeavors led to the establishment of the Federal Bureau of Agriculture.

None of the earlier farmers' organizations were organized voluntarily or by the individual farmers at the lower echelons. The first voluntary organization was not to emerge until the 1830s, when a group of farmers, mechanics, and workingmen formed an organization to defend their economic interests within the economic climate of their day. They called themselves the New England Association of Farmers, Mechanics, and Other Workingmen. According to J.R. Commons,[16]

> This association, though at first rather an industrial than a political organization, eventually advocated a mechanics' lien law, reform in the militia system, simplification of the laws, extension of the suffrage, reform in the land tenure laws, in the system of taxation, and in banks and other incorporated monopolies, abolition of imprisonment for debt, protection of labour instead of capital, factory legislation, especially in the interest of women and children, a better system of education, in particular, provision for the education of children in factory districts, and shorter hours of labour.

The high ideals of the organization attests to the enlightened consciousness of its members, but this enlightenment may have been more prevalent among the mechanics and other workingmen than among the farmers per se. The workingmen made up the main constituent of this organization, and they took advantage of the farmers, who were less active members.[17][18] The

15 References for this subsection: C.C. Taylor, *The Farmers' Movement, 1620-1920,* New York, American Book Company, 1953. F.A. Schannon, *The Farmer's Last Frontier,* 1961. S.J. Buck, *The Granger Movement,* Lincoln, University of Nebraska Press, Originally published in 1913. G.H. Miller, *Railroad and the Granger Laws,* The University of Wisconsin Press, Madison, 1971. Kenji Ozawa, "19 Seiki Kouhan no Amerikani okeru Noumin Undou no Tenkai (1)(2)(3)(4)," *Nougyou Sougou Kenkyu,* Vol.28, No.2 (April 1974), Vol.29, No.3 (July 1975), Vol.30, No.4 (October 1976), Vol.32, No.3 (October 1978)

16 C.C. Taylor, *op. cit*., p.78

17 *Ibid*., p.79

18 *Ibid*., p.79

serious criticisms asserted within this organization clearly reveal the darkness propagated by the capitalistic production system, but this organization itself was not a pioneer of the farmer organizations.

The true pioneers of the farmer organizations must have been the small farmers' societies and clubs independently emerging throughout New York, Vermont, Oregon, Washington, California, and at least sixteen other states through the 1850s to the 1860s. Most of these organizations sought to influence the Federal Congress or state lobbies, but none directly addressed the issue of railroad regulation. This was an agenda to arise later during the Civil War, when the railroads expanded every which way but nonetheless continued to press farmers to accept unreasonable rates.

In 1867, a Minnesotan named Oliver H. Kelly and six friends established a farmers' organization in the hopes of improving what they recognized to be the low living conditions of farmers in their area. They called their organization the Order of the Patron of Husbandry and divided it into sub-organizations known as the Granges. Grange membership was only available to men and women above the ages of 18 and 16, respectively, and engaged in agriculture. Each Grange within the Order of the Patron had to compose at least nine men and four women. According to Kelley, the organization was originally founded to better the living conditions of the farmers and promote social and cultural progress in their lives. These were objectives similar to those of most of the other farmer societies and clubs of that time.[19] The Granges also sought to spread and propagate progressive agricultural technology.[20] Kelly's own words well characterize the Granger Movement in its earlier stages:[21]

> Among the objects in view may be mentioned a cordial and social fraternity of the farmers all over the country. Encourage them to read and think; to plant fruit and flowers, ——— beautify their homes; evaluate them; make them progressive.

These purposes were petit-bourgeois and consequently suggested only a closed and self-sufficient orientation among farmers. While this largely appealed to farmers all over the country, the farmers did not yet seem, at this early stage, to take much notice of general economic conditions or other social classes and organizations.

The earlier Granger Movement did not pretend to revolutionize the social structure behind the discontent of the farmers. The farmers were unhappy to have been differentiated and ignored by the other social classes, but they did not appear to base their grievances on any basic socioeconomic foundations. The means of improvement suggested in the earlier Movement was mutual aid: farmers joining with farmers to calm each other's feelings. This was to be an ongoing peculiarity of these movements, even when the movements became

19 Kenji Ozawa (2), *op. cit.*, p.49

20 *Ibid.*, p.49-50

21 C.C. Taylor, *op. cit.*, p.117

more aggressive after the 1870s.[22]

In time, the farmers found fault with their movement and revised its policies and principles. It was then that the Granges turned their attention to other social classes. They began to rapidly collect and exchange information on the prices, supply and demand volumes, market conditions, and transportation of grains, and also to settle facilities and extend cooperative purchasing. The farmers thus began to take advantage of the information produced through the interactions of the other social classes, and thereby extend their own connections and involvement with these classes.

As these new principles advanced, the Granges coined the watch words "cooperation" and "down with monopolies" to characterize their purposes. Subsequently, the movement aligned its development with the new principle authorized in 1871 at a general meeting. The rapid increases in the Grange membership rosters over the next years attests to the power of this principle to capture the hearts of farmers (Tables III, IV, and V). The Grange membership peaked in the first half of the 1870s, and this can thus be construed as their most active and vigorous period. The movement extended from Minnesota, Iowa, Illinois and Indiana through Missouri and Ohio to New York, Tennessee, Massachusetts, Kansas, Kentucky, Vermont, Georgia, and South Carolina.[23]

Next we should analyze some of the concrete effects brought about by the Granger

Table III Change in the Numbers of Grange Members in the Midwest

States	May 1873	Sept 1874	Jan 1875	July 1876
Ohio	47	1,014	1,102	1,214
Indiana	142	1,987	2,000	1,145
Illinois	431	1,503	1,533	646
Michigan	24	496	551	593
Wisconsin	140	504	505	294
Minnesota	219	538	506	295
Iowa	1,507	1,999	1,891	1,018
Missouri	245	1,976	2,009	974
Dakota	8	56	56	26
Nebraska	100	596	592	361
Kansas	128	1,350	1,332	874

22 The conservative and petit-bourgeois nature of the farmers does not seem to be directly reflected in the Granger Movement. Yet these characteristics are probably closely related to their failure to actively reshape the social structure and to prevent themselves from being subsumed by the capitalistic production system at the turn of the century in spite of their vigorous and ongoing efforts in the Granger Movement, the Greenback Movement, the Populist Movement, etc.

23 The numerical data from the next three tables are taken from different sources and therefore have slight discrepancies. In any case, they provide a rough, but reliable overview of the number of Grange members. Tables III and IV were originally compiled by Kenji Ozawa, *op. cit*., (2), pp.51-52. Table V was calculated by the author based on data from C.C. Taylor, *op. cit*., p.135-137

Table IV Change in the Number of Granges

Year	Number of GrangeMembers
1874	268,000
75	858,000
76	728,000
77	411,000
78	325,000
79	246,000
80	124,000
85	118,000

Table V Change in Number of Granges in Four Representative States

	1868	1869	1870	1871	1872	1873	1874	1875	1876
Iowa	1	2	11	102	652	ca. 1,200	1,999	—	—
Illinois	—	2	3	8	—	431	670	1,533	—
Indiana	—	2	3	8	46	467	1,502	2,000	—
Minnesota	—	—	—	—	—	219	538	506	295

Movement. First we will look at the Granger legislation in some of the states. Strictly speaking, the Grange itself was only a mutual aid organization, and the bylaws of the movement prohibited it from engaging in political activities. Notwithstanding, it clearly played a significant role as a base for the political and legislative activities of the farmers. In the process of the movement, farmers pressed their local governments to legislate laws to protect their interests. This was "the Granger Legislation." Some of the railroad corporations and states challenged the Granger Legislation in the courts in what came to be known as the "Granger Cases." Most of the highly publicized Granger Cases took place in Illinois, but they spread over several states, particularly in the Midwest.

In 1870,[24] the combined influences of the Granger Movement and farmers' associations forced the Illinois state government to amend the railroad and warehouse regulations in the Illinois State Constitution.[25] A great many proposed laws regulating the railroads had been presented to the Illinois state assembly from about the beginning of the 1860s, ultimately leading to the ratification of the Act concerning Railroad Rates in 1869. The new Act prohibited rate setting based on the notorious pro rate principle, but its failure to provide a concrete alternative ultimately rendered this prohibition invalid on a legal basis. Practically

24 The following discussion is based on four references: S.J. Buck, *The Granger Movement,* Chapters IV, V, VI. R.M.; Sutton, *The Illinois Central Railroad in Peace and War,* 1981 (originally published in 1948); H.G. Brownson, *History of the Illinois Central Railroad to 1870,* Illinois, University of Illinois, (reprinted in 1967); J. Cornelius, *A History of Constitution Making in Illinois,* Illinois, University of Illinois, 1969

25 The Granges and the Illinois State Farmers' Association organized farmers' movements in Illinois at the same time. C.C. Taylor, o*p. cit*., p.103

speaking, however, the Act did spur a stronger demand for railroad regulation among farmer societies and clubs. The public demand for railroad regulation rose to a head during the adjournment of the fourth constitutional convention held at Springfield, Illinois in December 1869. The farmer H.C. Wheeler called for a convention of dissenting farmers in an informal article published in the Prairie Farmer, a popular gazette among Illinois farmers of the day:

> …… the farmers of the great North-west concentrate their efforts, power, and means, as the great transportation companies have done theirs.... And, to this end, I suggest a convention of those opposed to the present tendency to monopoly and extortionate charges by our transportation companies, to meet at Bloomington, Illinois on the 20th day of April next. ….Farmers, now is the time for action.[26]

With the support of the newspapers, the trend was extended to farmers throughout the North and Midwest of the country.

In spite of the aggressive stance of the farmers, however, the Illinois representatives opposed railroad regulation at the beginning of their conventional session, particularly the regulation of railroad rates. A statement by the representative R.P. Hanna typified the prevailing sentiment in the state assembly:[27]

> Build competing lines, hold out liberal inducements for capitalists to come from every portion of the country and invest their capital and compete with them. When you have done this, the problem is solved and the true and only relief furnished.

The representatives seemed distressed by the unreasonable railroad rates, but they probably considered it impracticable for a state government to attempt regulation. As it happened, however, the consensus among the farmers and the momentum behind their movements proved strong enough to induce R. Benjamin, Bloomington representative and famous Constitutional scholar, to proclaim that the state government did have the right to regulate the railroad rates. Benjamin asserted that the railroad corporations were under the jurisdiction of the Legislature as entities established for the public good and invested with the power of public domain:[28]

> …there are and can be no vested rights of governmental power in any individual or corporation, except those conferred by the constitution…

A majority of fellow Legislatures spontaneously agreed to add six new sections on railroad rate regulations to the new Constitution (Section 9 to Section 15). Two sections are cited here as reference:[29]

> Section 12. Railways…are hereby declared public highways, and shall be free to all persons for the transportation of their persons and property thereon, under such

26 S.J. Buck, *op. cit*., p.128

27 J. Cornelius, *op. cit*., p.58

28 *Ibid*., p.59

29 S.J. Buck, *op. cit*., p.129-130

> regulations as may be prescribed by law. And the General Assembly shall, from time to time, pass laws establishing reasonable maximum rates of charges for the transportation of passengers and freight on the different railroads in this state.
>
> Section 15. The general Assembly shall pass laws to correct abuses and to prevent unjust discrimination and extortion in the rates of freight and passenger tariffs on the different railroads in this state, and enforce such laws by adequate penalties, to the extent, if necessary for that purpose, of forfeiture of their property and franchises.

The amendment to the Constitution in 1870 was decided by a direct vote of the electorate. In total, 134,227 voters supported the amended Constitution and 35,443 opposed it. Separate votes were held on the proposed railroad regulations and warehouse regulations, which passed by majority votes of 144,750 and 143,532 (versus 23,525 and 22,702 opposing votes), respectively.

Table VI[30] shows the demographic breakdown by occupation in Illinois at that time. Industrial output and modernization were by far the highest and most advanced in Cook County, home to Chicago. With its established railroad industry, Cook County was the only county in Illinois with a production structure not mainly characterized by agriculture. In 1870, the industrial output of the county stood at $92 million, more than tenfold higher than the $8 million output of Peoria County, the second most industrialized area. These polarizations in occupational and production structure surely contributed to the passage of the new Constitution in Illinois.[31]

In 1871, a year later, representatives elected to the state assembly by Grange Farmers pushed through several new laws regulating railroads and warehouses based on the new Constitution. The Board of Railroad and Warehouse Commissioners was established as a result. In the next pages we will analyze the content and development of the railroad regulations in Illinois by referring to some of the earlier annual reports issued by the Board.[32]

One of the laws passed in 1871 was the Act Establishing a Reasonable Maximum of

Table VI Population by Occupation in Illinois (1870)

All Occupations	Agriculture	Professional and Personal Service	Trade and Transportation	Manufacturing, Mechanical and Mining Industries
742,015	376,441	151,931	80,422	133,221
100%	51%	20%	11%	18%

30 The author prepared this table using data from the 9th Census of the United States.

31 J. Cornelius, *op. cit*., p.43

32 The content of the railroad regulation in Illinois is described in detail in the First Annual Report of the Railroad and Warehouse Commission of the State of Illinois, 1872

Charge for the Transportation of Passengers. The law obliged railroad corporations to file annual reports disclosing their annual revenues with the Board each year. The Board adopted the policy to recommend maximum rates for railroads categorized into four ranks (A, B, C and D), based on their revenue information. This system for the filing of annual reports was the main instrument for enforcing the Illinois railroad regulations in the earliest years. A passage from the Board's first annual report clearly illustrates the extent to which the Board expected its new regulatory system to succeed:[33]

> If this Board should succeed in nothing else than in furnishing the public with accurate and reliable information as to the operation of the large moneyed power embodied in the railroad interests, so as to indicate reasonable means of protection against its encroachments, it will have performed a very important and useful function of a considerate government.

In spite of the simple format used for the annual reports, the first round of reports filed with the Board on August 1, 1871 were incomplete and had to be modified. The railroad corporations adopted different accounting systems from one another, and they had consistently failed to record any information on the original subscribers of their stock, the original contributors of their capital, and the amounts of cash contributed due to the numerous time transmutations that had taken place over the years.

The biggest impediment in implementing the filing system was a lack of accounting information on the income earned within Illinois, a crucial piece of information for determining the rate ranking for the railroads. The railroads usually conducted business with an interstate charter and thus had no systems in place to collect this type of information. Nonetheless, the Board was confident that it could collect the information it needed by continuously educating the railroads and offering its suggestions. As more accounting information was filed, the Board soon realized that the railroad corporations in Illinois had almost invariably charged unreasonably high rates to passengers and continuously adopted differentiating rates. Here we should note that the Board disclosed the information it gathered and the rate rankings it assigned in the newspapers. Based on this information, private individuals unhappy with the rates charged could sue the railroads for refunds — at least in the case of freight customers. This was the system surrounding railroad regulation in Illinois in the early years.

As you have already recognized, a major issue arose in the 1871 law. According to the law,

> ……the action to enforce penalties for its violation is given to the party aggrieved, exclusively, and this Board does not seem to possess any authority to institute actions to recover penalties for the violation of that law nor has it any control over actions instituted by private individuals.[34]

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33 *Ibid.*, p.4

34 *Ibid.*, p.5

The Board thus explicitly confined its definition of the "party aggrieved" to a private individual. Individuals of course wielded far less power than the railroad corporations and could not reasonably expect to succeed in litigation against them to recover penalties. Accordingly, the early filing system was a practical failure in establishing a maximum fair rate.

Having learned from this initial failure, the Board went on to pass a newer and stricter law for railroad regulation in 1873. Under the new law, the Board invested itself with the right to fix rates and to become an aggrieved itself. When the Board published its fourth annual report the next year, in 1874,[35] several cases had already passed through the courts. The original filing system was still applied, but the new law went further by empowering the Board to control the railroad businesses directly.

Soon thereafter, railroad regulation in Illinois entered a new stage. The changes began when the railroad and warehouse companies legally challenged the constitutionality of the railroad and warehouse regulations in the federal courts in the Granger Cases. In Munn vs. Illinois in 1876,[36] a typical example, Munn & Scott challenged the constitutional validity of the law of 1873. The Supreme Court ruled in favor of Illinois, upholding the constitutionality of the law.[37]

It would be very difficult for us to decide whether the strict railroad regulation in Illinois was successful. An historian deemed its success limited, while an another historian took the opposite view. In either case, we can assert that the railroad regulation was well underway in Illinois by the 1880s.[38]

In our analysis of the business conditions of the railroad corporations in Illinois, we will focus most closely on the Illinois Central Railroad. Why did this railroad reject indirect regulation through the filing system and the system for information disclosure? Later, as a consequence of this rejection, why did it ultimately allow the state to directly control its business?

The Illinois Central Railroad was chartered in 1850 and grew to become the largest railroad corporation in Illinois through the acquisition of donated lands from the government. In many respects, the corporation was more like a real estate company than a railroad. The corporation was financed not by stocks issues, but bonds backed by mortgaged land endowments. Total outstanding shares, valued at $300,000, were reportedly available only to premium bondholders, and a considerable portion were issued in the British capital market. In

35 The 4th Annual Report of the Railroad and Warehouse Commission of the State of Illinois, 1874

36 Details of this case appear in *Genten Amerikasi,* Yuwanami Syoten, 1979, Vol.4, *Munn vs. Illinois,* 1876. (translated and edited by Amerika Gakkai)

37 *Ibid*., p.152

38 R.P. Howard, *Illinois: a History of the Prairie State,* Michigan, William B. Eerdmans Publishing Company, 1972, p.364. The 10th Annual Report of the Railroad and Warehouse Commission of Illinois, 1881, p.20-21. Frederick C. Clark, "State Railroad Commissions, How They May Be Made Effective," *Publications of the American Economic Association,* Vol.VI, American Economic Association, 1891

sharp contrast, the bond issues were valued at $9 million.

The sound development of the Illinois Central Railroad as a corporation was disrupted by economic depression, poor harvests, and the Civil War from 1857 to 1870. The management was also consistently frustrated by foreign intervention. With much of the stock issued in Britain, the managers were forced to adopt more conservative management policies than they would have had the capital been provided by the Americans living along their actual railroad lines. This ultimately created problems, as the more active management strategies adopted by the other railroads often cost the Illinois Central Railroad passengers and freight customers. The early successes of the corporation thus turned out to be temporary, and its fortunes eventually turned.[39] Worse still, the corporation could not afford to accept the requirements of the public, particularly the farmers of the state.

We have analyzed the socioeconomic conditions at the end of the 1860s and in the first half of the 1870s when the railroad regulations appeared in Illinois, as well as the changes in the methods of regulation and the management conditions of the railroad corporations. Illinois was a uniquely divided state, with polarizations in both its population structure and bases for industrial production. This polarization was a crucial factor behind the temporary emergence of the aggressive farmer movements and the public outcry for anti-railroad and anti-monopolistic policies. The discontent of the farmers led to the direct control of the railroads and regime of rate regulation by the government. The indirect method for regulating the disclosure of accounting information proved ineffective since foreign intervention and competitive pressure forced the railroads to disregard the farmers' demands and adopt unstable and profit-oriented management policies. A similar trend of railroad expanded into Iowa, Wisconsin, Minnesota and the other states of the Midwest.

Here we will turn our attention to the development of the direct rate-fixing policy adopted by the state government in Wisconsin. In 1874, the Wisconsin state assembly passed the Potter Law, what at the time was thought to be one of the strongest laws in Granger legislation. An analysis of the development of railroad regulation in Wisconsin will be helpful as a supplementary analysis to the developments heretofore described in Illinois.

According to the first annual report of the Railroad Commissioners of the State of Wisconsin,[40] the producers of the state promoted the establishment of the rate-setting regulations under the Potter Law when they awoke to the unfair practices of the railroads and the unreasonable rates the railroads had long imposed. The new law gave the Legislature the right to establish reasonable rates by setting ceilings on total incomes, earnings, and investment amounts in new railroad lines. The railroads were unduly burdened by these regulations, and the rigidity with which the regulations were imposed produced additional adverse effects. The

39 H.G. Brownson, *op. cit.*, p.73

40 The1st Annual Report of the Railroad Commissioner of the State of Wisconsin, 1874

annual report of the Commissioners in 1874 had already suggested decreases in the mileage of new rails laid due declining investment in new lines.[41] As the tensions from this trend escalated, the Wisconsin railroads were eventually forced to stop paying dividends altogether. Worse still, the staunch railroad regulation instituted under the Potter Law precipitated declines in investment in every sector of the economy, leading to economic depression throughout the entire state. According to the Eighth Annual Report of the Commission of Wisconsin issued in 1881, only five railroad corporations among at least thirty reported dividends that year.[42] Table VII shows the changes in the mileage of new railroad tracks laid in Wisconsin, as reported in the Fifth Annual Report of the Commission of Wisconsin issued in 1878.[43]

In this section we analyze railroad regulation in the Midwest, particularly that instigated by the Granger Movement in Illinois. The methods used to regulate the disclosure of accounting information proved ineffective as the regulations were developed, prompting some states to set the railroad rates within reasonable ranges via the direct control of the railroad businesses themselves. This type of regulation partially succeeded in Illinois, but it failed in many other Midwestern states just as it did in Wisconsin.[44] Many states abolished the Granger legislations and some relaxed their railroad regulations. Wisconsin switched its regulatory strategy from the direct control of business to indirect regulation using accounting disclosure.[45]

The Granger Movement itself lost momentum from the latter half of the 1870s, having already succeeded in invoking legislation in many states in the first half of the decade. The

Table VII Change in Miles of New Railroad Investment

Year	Mile
1870	175.20
1871	417.77
1872	287.10
1873	406.13
1874	90.18
1875	55.87
1876	127.50
1877	50.60
1878	91.76

41 *Ibid*., p.94

42 The 8th Annual Report of the Railroad Commissioner of the State of Wisconsin, 1881, p.24

43 The 5th Annual Report of the Railroad Commissioner of the State of Wisconsin, 1878, p.4. Here we should not that the whole of the United States passed through an economic depression from 1873 to 1878. The extent of the decrease in new railroad construction in Wisconsin nonetheless remained disproportionate to the average decrease in the rest of the country (the mileage of newly laid tracks decreased by 80 to 90% in Wisconsin).

44 A.T. Hadley, *Railroad Transportation, Its History and Its Laws,* New York, G.P. Putnam's Sons, 1903, p.135-136

45 *Ibid*., p.135

changing demands and discontents of the farmers can be traced in the emergence of the Granger, Greenback and Populist Movements.[46] Finally, we should add that the Grangers themselves continued to facilitate mutual aid among farmers.

3. Railroad Regulation in Massachusetts

3-1. Introduction

The railroad regulations emerging in the latter half of the nineteenth century in the United States seemed to fall into two categories. The regulations were uniquely imposed in the states with established railroad commissions or boards of railroad commissioners. Table VIII[47] lists the dates in which the railroad commissions were established in the various states. Though the dates varied, all of the states listed were eventually to have their own commissions.

Again, we can classify the methods of railroad regulations into two categories. One was the direct control of business through the establishment of fixed rates, a type we have already described. The ratio of indirect to direct regulation can also be calculated from the data in Table VIII. We selected Illinois as a typical example of the former and Massachusetts as typical example of the latter. Previous studies have not evaluated these two types of railroad

Table VIII Classification of States by Regulation
(Number indicates the year when the commission was established)

States with No Direct Control over Railroad Rates	Massachusetts (1869) Connecticut (1853) Vermont (1855) Maine ((1858) New York (1882) Ohio (1867) Rhode Island (1872) Michigan (1873) Wisconsin (1874) Virginia (1877) Kentucky (1882) Arizona (1891) Colorado (1885)
State with Direct Control over Railroad Rates	Illinois (1871) Iowa (1878) Minnesota (1874) Kansas (1883) Missouri (1875) California (1876) Alabama (1881) Georgia (1879) Oregon (1887) Mississippi (1884) South Carolina (1881) New Hampshire (1884) North Dakota (1885) South Dakota (1885) Texas (1891) Nebraska (1885) North Carolina (1891)

46 A. Rochester, *The Populist Movement in the United States*

47 F.C. Clark, *State Railroad Commissions, and how they may be made effective,* Appendix, Table I. Though many states followed the same regulatory pattern as Massachusetts, we do not assert that these states shared the same social and economic structure. I treat the case of Massachusetts purely as a prototype. This will also be the case for the state of Illinois.

regulation equally. Many historians have attached greater importance to the direct control of business than to information disclosure. Earlier accounts trace the evolution of railroad regulation in several stages: Initially, the states imposed the farmer-driven legislation via the direct control of business; later, this was succeeded by the Interstate Commerce Commission and progressively strengthened by the Sherman Antitrust Act and Hepburn Antitrust Act. In other words, the direct control of business continued to predominate in the area of corporate regulation in general. H.U. Faulkner offers a typical account of this understanding:[48]

> …(commissions of experts) were of two kinds: the strong commission, as in Illinois, with power to regulate rates and enforce the law; and the weaker commission, as in Massachusetts, with powers merely advisory and the duty to make reports to the legislature.

Faulkner treats the function of information disclosure lightly in spite of his use of phrases such as, "it may be said that the latter type in the long run often proved to be the most successful."[49] The difference between the regulation by the Interstate Commerce Commission and that by the Securities Exchange Commission recognized by J. Auerbach and S.L. Hayes III may also constitute part of the general understanding. They assert that the SEC regulation was the first regulation ever to rely solely on the disclosure of accounting information in U.S. history, while the ICC regulation was closer to a court decision. Though their statement implies that no regulations before the SEC regulation had ever relied solely on accounting disclosure,[50] we would like to point out several regulations that actually had long before. By doing so we hope to properly re-evaluate the regulatory function of information disclosure in a mass democratic society and thereby examine the issue of accounting disclosure from a new socioeconomic viewpoint. This, in turn, will help us recognize how the regulatory agencies of local and federal governments used accounting disclosure methodologies alongside methods of direct control in their regulation of large organizations from the latter half of the nineteenth century to the beginning of the twentieth century. The ultimate purpose of this chapter is to clarify the socioeconomic foundations of modern accounting disclosure by studying concrete reasons why two different types of regulation appeared in different states with dissimilar social and industrial structures. In this section we try to analyze the socioeconomic conditions and the development of railroad regulation in the state of Massachusetts in contrast to those in Illinois. Before proceeding to this analysis, subsection (3-2.) on the next few pages will survey the development of the railroads and related interests in Massachusetts.

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48 H.U. Faulkner, *American Economic History,* Harper and Brothers Publishers, New York, 1924, p.463

49 *Ibid*., p.463

50 J. Auerbach and S.L. Hayes, III, *Investment Banking and Diligence,* Harvard Business School Press, Boston, 1986

3-2. Conditions of the State of Massachusetts[51]

First of all, we must evaluate the significance of railroad construction in Massachusetts of the nineteenth century in light of the development of railroads in the United States. The early period of railroad construction in the U.S. can be roughly divided into four stages. In the first stage, short railroad lines were constructed as supplementary routes linking the main transport routes along the rivers of the East Coast. This stage took place from about 1827, with the charter of the Baltimore and Ohio Railroad, up to the 1830s, just before the railroad construction began in Massachusetts. The second stage extended from the 1840s to the 1850s, when the construction of the four trunk line railroads was completed and the railroad industry was established as the center of the economy. A large amount of capital also began to flow from England during this period.[52] The third stage extended from the 1860s to the first half of the 1870s, when the railroad corporations wove a mesh of railroad lines all over the states. The fourth stage began from the latter half of the 1870s, when investment bankers stepped into the railroad industry to reorganize stagnant railroad corporations. The fourth stage marked the beginning of a monopolization that was to rapidly expand and ultimately impact all U.S. industries at the turn of the century.

During the first stage, the railroads served as links to the main steamboat lines and were built and financed either by merchants and bankers of the large cities on the East Coast or by local governments seeking to join their municipalities with the trunk canals. The ultimate purpose of some of the railroads, such as the Mohauk and Hudson Railroad and several railroads in Massachusetts, was to complete links with the Midwestern granaries. The competition between the Mohauk and Hudson Railroad and the railroad in Troy[53] well attested to the eagerness of some of the railroads to gain leading and central positions in the railroad networks.

The second stage marked the completion of trunk lines extending from the East Coast through the Appalachians to Lake Erie, that is, to the Midwest. The New York Central Railroad, established in 1854 by merger, was essentially the first trunk line, and its twelve antecedents converged into a second major trunk line by linking up with each other. The Erie Railroad, Baltimore and Ohio Railroad, and Pennsylvania Railroad completed trunk lines in

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51 The discussion developed below was based on the following books and papers: J. Moody, *The Railroad Builders,* New Haven, Yale University Press, 1920. A.F. Harlow, *The Road of the Century,* New York, Creative Age Press, Inc., 1947. A.D. Chandler, Jr., "The Railroads: Pioneers in Modern Corporate Management," *Business History Review*, (Spring 1965). Suzuki, Keisuke and Kouji Nakanishi, "Amerika Shihonsyugi no Hatten to Tetsudougyou Nanbokusensou Izennojiki wo Cyuusinni —, (1)(2)(3)" *op. cit.*

52 Jirou Ozawa, "Amerika no Tetsudou Kensetsu to Igirisu Shihon," *Syakai Keizai Shigaku,* Vol.38, No.5 (January 1973)

53 Takashi Mori, "New York Central Railroad Kaisya no Seiritsu," *Keizaigaku Kenkyu,* Vol.29, No.3 (August 1979), Section IV

succession during the same decade. The Pennsylvania Railroad and others relied heavily on foreign capital from England to expand their lines.[54]

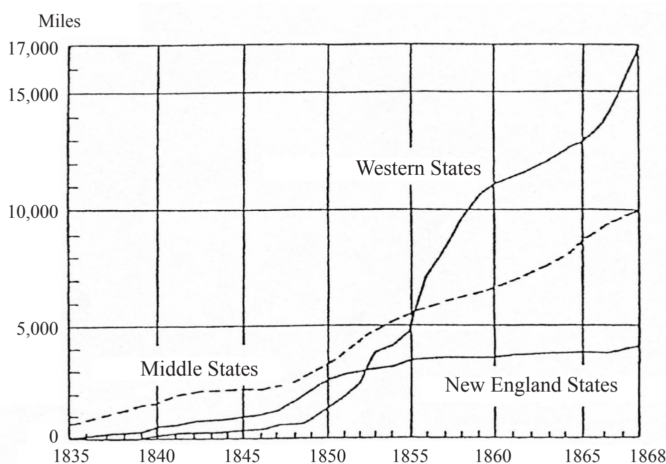
During the third stage in the 1860s, famous railroad tycoons launched another boom in railroad construction. These were the years when C. Vanderbilt of New York Central and J. Gould of the Erie staked their claims in the annals of American business history. The public actually would have been well-justified in chastising these robber barons, who hoarded their properties in common by manipulating the stocks of their corporations. Yet the managements and promoters during the 1860s, a decade still known as the "Gilded Age," behaved in much the same way. The farmers were understandably displeased by the behavior of the railroad managements.

The management style and competition during the third stage of railroad construction were relatively short lived. In the fourth stage, investment bankers such as J.P. Morgan showed off their financial clout by reorganizing the railroad corporations that had gone bankrupt during the depression of the 1870s. They were later to play an important role in the merger movement at the turn of the century, leveraging themselves with the wealth and influence they had accumulated during the railroad reorganizations.

The first three stages of railroad construction fall into the scope of our analysis on railroad development in Massachusetts. Data on the railroad miles constructed in the northern states may prove helpful here (see Figure II[55]).

Judging from Figure II, the miles of railroad in New England leveled off from about 1855 onward, effectively marking the end of heavy railroad construction in that part of the

Figure II Miles of Railroad in Northern States



54 Takashi Mori, "Pennsylvania Railroad niokeru Shihon Chikuseki no Tenkai," *Hokkaidou daigaku Keizaigaku Kenkyu,* Vol.17, No.4 (December 1967)

55 Suzuki Keisuke and Kouji Nakanishi, *op. cit*., (2), p.54

country. The New England states include Main, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

From here we will turn our attention to the interest groups surrounding the railroad industry in Massachusetts.[56] These groups had a leading position within the original thirteen states of the country after independence. The population of the U.S. increased by about 150 percent between the years of 1790, when the first U.S. Census statistics were collected, and 1820. The population of Massachusetts increased by only 30 percent during the same period. Apparently the states to the west of the original thirteen of the East Coast (Kentucky, Tennessee, Ohio, Louisiana, Indiana, Missouri, Illinois, Alabama, and so on) developed rapidly while Massachusetts grew at a slow but steady pace.

Boston, the most populous city in Massachusetts, prospered as a center of domestic and international trade during the 18th century and the former half of 19th century. Products from New England, India, China, and the islands to the east and west of India flowed into the city and were shipped back out not only to American markets, but remote markets in Europe as well. Other cities in Massachusetts also grew as active hubs of trade, accumulating their own capital with which to later fund the industrial revolution and economic development of the area.

This prosperity of some Massachusetts cities in international trade has been credited to their geographic advantages. Entering the nineteenth century, New York became a menace to Boston. The former was better positioned as a link between domestic and international trade not only by virtue of its geographic position along the Hudson River, but also the completion of the Erie Canal connecting the Pacific Ocean and Lake Erie. In considering the economic affairs in and around Massachusetts, we can easily imagine that the social and economic interest groups in the area recognized the importance of improving interstate transportation and expanding it to the West.[57]

Turning to economic and industrial conditions in Massachusetts, merchants in the state began to lose investment opportunities due to stiffening competition from their rivals in New York. The surplus capital they had accrued, however, enabled them to foster a thriving cotton industry in their area. The Boston M. Company established in eastern Massachusetts in 1813 quickly prospered, recording a 17 percent dividend by as early as 1817. The rise of the cotton industry brought new prosperity to the city of Boston.

Agriculture in other parts of Massachusetts also prospered during these years. The Worcester Agricultural Society was organized in 1825, paving the way for a thriving cotton industry in rural Massachusetts from the 1830s.

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56 The discussion developed below was based on the following books: S. Salsbury, *The State, the Investor, and the Railroad; The Boston & Albany, 1825-1867,* Massachusetts, Harvard University Press, 1967. Tadakatsu Inoue, Amerika Keieishi, *The Research Institute for Economics and Business Administration*, 1961, p.57-98

57 S. Salsbury, *op. cit*., Chapter I.

The coexistence of the cotton industry, agriculture, and the demand for farming equipment occasioned the birth of the steel industry in Massachusetts. As a reference we cite data from the McLane report on the cotton and steel industries in Massachusetts at this time in Table IX.[58]

Massachusetts was at last re-established as one of the major industrial centers in the United States when it changed from a hub of international trade to one of production. To this day, many researchers study Massachusetts as one of the foremost states in the American Industrial Revolution. Some have placed more importance on the cotton industry,[59] others on the steel industry.[60] In either case, we can never neglect the strong agricultural base in Massachusetts or the considerable economic power still in the hands of the merchants and bankers of Boston. The distribution of industry by region, shown in Table X, should also be considered. Another important point to note is the position of Massachusetts as the first U.S. state to adopt modern industries and socioeconomic structure typical of a highly developed capitalistic economic society. There emerged many organized interest groups composed not only of traditional farmers and merchants, but also professionals accrued from the capitalistic production systems. The regional conflict had already been recognized from the 1830s on-

Table IX Cotton Industry and Iron Industry in Massachusetts (source from McLane Report)

	Cotton Industry			Iron Industry		
	Employee	Factory	Capital	Employee	Factory	Capital
Berkshire	638	18	341,100	(100)	(1)	(11,000)
Bristol	2,404	46	1,499,700	261	3	156,000
Essex	355	2	270,000	28	4	4,030
Franklin	15	1	4,500	—	3	1,550
Hampden	1,329	5	1,014,000	—	—	—
Hampshire	391	4	537,200	—	—	—
Middlesex	3,577	12	4,070,699	—	11	86,825
Norfolk	649	19	585,900	77	7	77,350
Plymouth	388	13	193,390	567	14	709,684
				(12)	(3)	(8,200)
Boston (Suffolk)	—	—	—	341	4	744,800
Worcester	2,839	45	1,938,250	86	16	53,370

58 The data was reproduced based on the original data in: Toshirou Kusui, *Amerika Shihonsyugi to Sangyou Kakumei, Koubundou,* 1970, p.463-497.

59 *Ibid.*

60 Keisuke Nagata, *Amerika Tekkougyou Hattatsushi Josetsu,* Nippon Hyouronsya, 1979.

Table X Operating Results of Two Railroad Corporations

Year	Gross Receipt	Gross Expense (Without Interest)	Profit	Dividend(%) Each 6months	Gross Receipt	Gross Expense (Without Interest)	Profit	Dividend(%) Each 6months
1834-1835	$161,806.95	$ 85,533.28	$ 76,273.67	2				
1836	181,189.03	103,674.69	179,514.34	4				
1837	209,261.31	119,062.49	90,198.82	5-3				
1838	212,325.03	93,492.97	118,823.06	3-3				
1839	231,807.18	126,384.83	105,422.35	3-31/2	$ 17,609.15	$ 14,380.64	$ 3,228.51	
1840	267,547.41	140,441.00	127,106.41	3-3	112,347.39	62,071.72	50,275.67	
1841	310,807.87	162,998.58	147,809.29	3-3	182,308.99	132,501.45	49,807.54	
1842	349,206.67	168,509.51	180,697.16	4-4	512,688.28	266,619.30	246,068.98	
1843	383,367.10	206,641.42	176,725.68	3-3	573,882.51	303,973.06	269,909.45	
1844	428,437.34	233,273.92	195,163.42	3-31/2	753,752.72	314,074.20	435,678.52	
1845	487,455.53	249,729.50	237,726.03	4-4	813,480.15	370,621.25	442,858.90	3-3
1846	554,712.46	283,876.11	270,836.35	4-4	878,417.89	412,679.80	465,738.09	2-3
1847	722,170.32	381,985.63	340,184.69	4-5	1,325,336.06	676,689.75	648,646.31	3-4
1848	716,284.11	381,917.42	334,366.69	5-41/2	1,332,068.29	652,357.11	679,711.18	4-4
1849	703,361.15	405,551.05	297,810.10	4-3	1,343,810.57	588,323.58	755,486.99	4-4
1850	757,946.79	377,041.08	380,905.71	3-3	1,366,252.47	607,549.36	758,703.11	4-4
1851	743,922.60	393,687.03	350,235.57	31/2-31/2	1,353,894.63	597,756.20	756,138.43	4-4
1852	758,819.47	409,740.26	349,079.21	31/2-31/2	1,339,373.09	656,687.17	682,685.92	4-31/2
1853	887,219.87	455,528.01	431,691.86	31/2-31/2	1,525,223.02	778,487.92	746,735.10	3-31/2
1854	952,895.28	594,528.56	358,366.72	31/2-31/2	1,763,944.26	1,045,241.19	718,703.07	31/2-31/2
1855	1,008,004.90	603,542.89	404,462.01	3-3	1,858,861.75	1,236,659.74	622,202.01	31/2-31/2
1856	1,108,781.90	671,719.87	437,062.03	31/2-3	2,115,820.05	1,228,219.46	887,600.59	31/2-31/2
1857	1,019,148.70	612,686.42	406,462.28	4-3	1,910,342.48	1,084,118.55	826,223.93	4-4
1858	923,223.63	570,929.36	352,294.27	3-3	1,700,293.60	890,930.40	809,363.20	4-4
1859	1,067,070.73	565,434,51	501,636.42	3-3	1,767,068.13	936,920.12	830,148.01	4-4
1860	1,045,683.01	606,398.88	439,284.13	4-4	1,881,350.72	993,096.30	888,254.42	4-4
1861	928,932.79	520,338.40	408,594.39	4-4	1,894,567.96	1,081,571.17	812,996.79	4-4
1862	1,006,129.82	515,825.72	490,304.10	4-4	2,095,922.50	1,111,358.20	984,564.30	4-4
1863	1,202,654.05	714,296.29	488,357.76	4-4	2,435,712.14	1,207,006.90	1,228,705.24	4-4
1864	1,471,985.08	984,520.45	487,464.63	5-5	2,994,998.74	1,818,141.71	1,176,857.03	5-5
1865	1,679,164.10	1,160,100.47	537,063.63	5-41/2	3,431,584.10	2,204,925.58	1,226,658.52	5-4
1866	1,914,729.54	1,424,528.21	490,201.33	51/2-5	3,932,017.29	2,525,226.58	1,406,790.71	6-5
1867	—	—	—	5-5	4,086,707.63	2,837,411.77	1,249,295.86	5-5

wards. Thus, we conclude that Massachusetts had already shaped itself into a prototype of the modernized socioeconomic structure later to become dominant through the industrial monopolizations throughout the whole of the country at the turn of the century — a structure in which the managements of relatively large corporations actively adopted management policies in consideration of their accounts and in reaction to the demands and requirements of many different organized interest groups.

3-3. Analysis of Railroad Regulation in Massachusetts

This subsection analyzes the development of railroad regulation in the state of Massachusetts. The railroad construction from Boston to Albany, New York from the 1820s

was closely watched and studied in Massachusetts. The main question at issue in railroad construction was whether to fund the construction with money from the state or private sector. If the state government was to finance the railroad construction, the taxpayers would have to bear the brunt of the burden. This prospect provoked heated discussion on the actual need for the railroads among interest groups involved with the railroads in town meetings, a long-standing democratic tradition of Massachusetts.[61] As a result, the Boston and Worcester Railroad was chartered to lay a line from Boston to Albany, and onward from Albany to Worcester.[62] Yet the state government in Massachusetts refused to fund this and other the railroad constructions,[63] even though other state governments in the U.S. generally financed their large social infrastructures during this period. The general public in Massachusetts apparently had not yet appraised the railroads as useful for their state.[64] In spite of this refusal to finance railroad construction, the state government had the right to charter the railroads based on the charter system established in Massachusetts.[65] The most pressing question, in drawing up the charter, was the type of powers to grant the corporations that were to undertake the railroad construction. The wording of the charter saved face for the regulators and anti-monopolists who feared the monopolization of railroads, but the substance gave the private investors, that is, the stockholders, nearly everything they wanted.[66] In the words of S. Salsbury:

> The legislature, however, insisted that the railroad should keep no secrets. To this end the directors were to report annually to the General Court the company's receipts, expenditures, and operations. As if this were not enough, the charter added that the corporation's books "shall at all times be open to the inspection of any Communities of the Legislature." Stiff penalties would result from failure to so comply.[67]

Massachusetts already faced the important task of balancing out differences in railroad-related interests among interest groups in the banking, real estate, wholesale, retail, merchandising, investing, manufacturing, and other sectors.[68] Here we can again cite the words of S.

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61 S. Salsbury, *op. cit*., Chapters I, II

62 A public campaign headed by editor N. Hale in his journal the *Daily Advertiser* considerably influenced the establishment of the railroads. C.J. Kennedy, "The Early Business History of Four Massachusetts Railroads," *Bulletin of the Business Historical Society*, Vol.25, No.1 (March, 1951).

63 The Boston and Lowell Railroad and the Boston and Providence Railroad were also included.

64 S. Salsbury, *op. cit*., p.80-81

65 Kazuhiko Tamamura, "Amerikani okeru Tetsudou Kensetsu no Keizaiteki Haikei," *Doushisya Syougaku*, Vol.20 No.3/4 (February, 1969)

66 S. Salsbury, *op. cit*., p.81. The railroads at that time were generally understood to be treated in much the same way as highways. But managers of railroad companies were different from managers of train and car running companies.

67 *Ibid*., p.89

68 *Ibid*., Chapter V

Salsbury:

> (The history of the railroads in Massachusetts during this period was a…) history of how these powerful groups exerted pressures to force the railway managements to serve particular interests,[69]

as well as a history of adjustments of conflicting interests. Ultimately, however, the Boston and Worcester Railroad was warmly welcomed at its opening in April 1834. Well aware of the success of the nearby Baltimore and Ohio Railroad,[70] the public applauded the introduction of a railroad of their own in Massachusetts.

The remainder of this section focuses on the conflicting interests of the railroads in Massachusetts and the process used to adjust them.

As the management of a corporation backed by strong local interests, the board of directors of the Boston and Worcester Railroad discussed the rate-setting policy exhaustively. In the 1830s, directors D. Denny and D. Henshow insisted that low rates were beneficial both for the public and the railroad itself in the long run.[71] N. Hale, a director backed by bank interests, favored higher rates. This conflict between these two camps ended in a temporary policy of raising rates, but the rates were returned to their former levels when the railroad earnings rose in 1839.[72] The interests of local special-interest groups were apparently closely considered in the management of the Boston and Worcester Railroad.

Incidentally, the Western Railroad was also chartered to extend its lines to Albany in March of 1833, shortly after the charter of the Boston and Worcester Railroad. The financing of this new railroad holds relevance for our discussion. The directors of the Western Railroad very badly needed financial support from the state government. Directors G. Bliss, Jr. and J. Willard attempted to establish the State Bank of Massachusetts by a charter assuring the purchase of the stock of the Western Railroad by the bank. The charter was opposed by the democrats, however. Over the coming years, the railroad garnered public support and ultimately succeeded in winning the backing of two counties, Franklin and Hampshire, with endorsements from two journals, The Courier and The Mercury. The democrats subsequently revoked the plan to establish the state bank, but the railroad was still successful in winning financial support from the state via the latter's purchase of one-third of the stock issued by the Western Railroad.[73] Accordingly, the railroad included the state among its stockholders.

Another conflict arose among landholders when real estate prices began to fluctuate in

69 *Ibid*., p.92. The parenthesized sentence was inserted by the author.

70 *Ibid*., p.132

71 Hiroshi Morikawa, *Genkasyoukyaku Ron,* Moriyamasyoten, 1978, p.76-77

72 S. Salsbury, *op. cit*., p.125. The rate between Boston and Worcester from 1836 to 1839 was 4.51 cents per mile. From 1839 to 1840 the railroad charged a lower rate of 3.38 cents. C.J. Kennedy, "The Early Business History of Four Massachusetts Railroads IV," *Bulletin of the Business Historical Society*, Vol.25, No.4 (December 1951), p.211

73 S. Salsbury, *op. cit*., p.143

accordance with their proximity to railroad stations. The town of Worcester held mass meetings to convey local demands to the Western Railroad, mainly in protest of the railroad's one-sided decisions in selecting new station locations.[74] At about the same time, the Western Railroad issued a bulletin entitled "Address to the People" to appease the public.[75] This appeared to be a kind of disclosure policy voluntarily taken by the corporation.

Next we discuss another dispute on the rate-setting policy among the directors of the Western Railroad in the 1840s. In proposing that the railroad could be managed on the same low-rate basis as the steamboats, E.H. Derby wanted to wield actual control over the corporation by winning the public support. W. Jackson naturally opposed the Derby's proposal, dismissing it as impossible. The interesting point was the means by which Derby gradually garnered the support of the public. Derby published articles and gave public addresses, some with statistical simulations proving that the railroad could operate on the same low-rate basis as the Erie Canal. His statistical data included the net income calculated from the total revenue and expenditures of labor costs, maintenance costs, etc., accrued on the condition that the transportation facilities of the Western Railroad were fully and completely operated.[76] Ultimately he succeeded in pushing through a compromise under which the low-rate policy was adopted for passenger travel and a high rate was maintained for freight.[77] The discussion on the rate-setting explicitly illustrates the monopolization of the railroad industry in Massachusetts according to a railroad fee theory.[78]

As the public came to watch the policies and actions of the railroads and the issue of information disclosure came to the fore, the State Assembly was pressed to pass laws regulating the accounting procedures of the railroad corporations in 1846, more than two decades before the establishment of the Board of Railroad Commissioners. This law seems to have influenced the subsequent accounting disclosure practices of the Massachusetts railroads.[79]

In this section we have recounted details from the histories of the Western Railroad and

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74 *Ibid*., p.166

75 *Ibid*., p.146. The annual reports disclosed in detail information on the Western Railroad. Or Hiroshi Morikawa, *op. cit*., p.83-87

76 S. Salsbury, *op. cit*., p.213-214. C.J. Kennedy, *op. cit*., (IV), p.222-224

77 Yasuo Ikuta, *Amerika Kokuminkeizai no Seisei to Tetsudou Kensetsu — Amerika Tetsudou Keizai no Seiritsu —*, Senbundou, 1980, p.250

78 *Ibid*., p.252

79 Hiroshi Morikawa, *op. cit*., p.93-102.

The regulations to keep rates within reasonable limits were surely one of the most severe social problems involving the U.S. railroads in the nineteenth century. This is not to say they were the only problem caused by the railroads, however. A more critical problem may have been the physical and economic injury of many people living along the lines due to railroad accidents. In fact, the earlier commissions temporarily established in Massachusetts before 1869 were mainly expected to monitor whether railroad corporations had taken countermeasures against accidents. In his younger days, Abraham Lincoln litigated a series of lawsuits against railroads for ruining grain cargoes due to accidental sparking from funnels.

Boston and Worcester Railroad in an attempt to describe the circumstances surrounding the railroads and the behavior of railroad management in the first half of the nineteenth century in Massachusetts. Through this analysis, we have sought to clarify that the railroads were pressed to consider the interests of several opposing interests among the public as a whole in managing their operations. Information disclosure was one of the tactics used by the railroad corporation to appease and persuade the public. The corporations apparently began to acquire monopolistic powers and were thus afforded a margin to adopt a modernized democratic management policy. We can supplement this assertion by showing the stable and increasing propensity of dividends for the two railroad corporations (see Table X[80]). The Massachusetts public only criticized and watched the railroads after they had fundamentally accepted the railroads. The public's conservative opposition to the railroads was reflected in the gradual pace at which the number of passengers increased. From the profit data of Table X, we can also estimate the increase in the number of passengers who used the two railroads. Thus, the situation in Massachusetts contrasted remarkably with that in Illinois.

From 1850s to 1870s, the railroads extended more lines through a gradual process of monopolization.[81] Spurred by competition from the New York Central Railroad,[82] the Boston and Worcester Railroad merged with the Western Railroad to form the Boston and Albany Railroad in 1867. Soon thereafter, in 1869, Massachusetts established the Board of Railroad Commissioners, a body which promptly introduced the information disclosure requirement.[83] Excerpts from the First Annual Report issued by the Board[84] can assist us in analyzing the substance of this new requirement.

The most important function of the Board was to inspect the conditions and practices of railroad management, to confirm that the railroads complied with their own charters and the laws of Massachusetts, and to inspect the annual reports filed by the railroads to evaluate the performance of the railroads in public safety and convenience. Among the duties and rights of the Board set forth in Section 3 of Chapter 408 of the law passed in 1869, the Board was entitled to visit the railroads for on-site inspections. According to the law:[85]

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80 S. Salsbury, *op. cit*., p.213-214. The Data were rearranged and partly calculated by the author based on original data.

81 From the end of the 1840s to the 1850s, there emerged a new breed of railroad managers who placed priority on maximizing profits while adopting information disclosure as a management policy. G. Bliss, Jr. of the Western Railroad was a prime example. We do not insist that all managements took a strong interest in the public good. On the contrary, we would assert that G. Bliss, Jr. was a kind of modern manager.

82 S. Salsbury, *op. cit*., Chapter 13.

83 The following book and paper provide useful information on the background leading to the establishment of the Board in Massachusetts: C.F. Adams, Jr., "The Railroad System," contained in, C.F. Adams, Jr., and H. Adams, *Chapters of Erie,* New York, Augustus M. Kelly, 1967, originally published in 1871.

84 The 1st Annual Report of the Board of Railroad Commissioners, Massachusetts, 1870.

85 1869. 408 Section 3.

Commissioners shall inform such railroad corporation of the improvements and charges which they adjudge to be proper and a report of the proceedings shall be included in the annual report of the commissioners to the legislature.

In other words, the Board was invested only with the duty and right to counsel improvements and to report them to the Legislature when railroads violated their charters or laws. It was not the Board, but the Legislature, that ultimately disclosed the facts publicly. The Board was of course initially bewildered by its limited powers in its first years. In 1870, for example, the Board found itself powerless to file litigation against the Boston and Lowell Railroad for refusing service to a passenger. The Board lamented the incident in its First Annual Report.[86]

We thus come to the question of whether the regulations enforced by the Massachusetts Board or Railroad Commissioners were successful. Lacking direct control over the railroads, the Board was generally viewed as an instrument to ensure the public disclosure of the railroad's policies and actions. The Board found considerable cause for annoyance in the light treatment thus accorded to it. As we have already pointed out, some historians attached little significance to the Board and its regulatory power. The descriptions by A.T. Hadley and F.C. Clark[87] help us assess the success of the Board from another viewpoint. Both insisted that the Board was indeed successful. Hadley provides data on the falling passenger rates in Illinois and Massachusetts to support his argument — an argument with which we agree (Table XI[88]).

We can enumerate several reasons for asserting that the system of railroad regulation via

Table XI Average Railroad Rate per Passenger-Mile

Year	Massachusetts	Illinois
1873	2.32	3.42
74	2.30	3.30
75	2.42	3.19
76	2.40	3.10
77	2.40	3.07
78	2.40	3.18
79	2.12	3.14
80	2.24	2.88

86 The 1st Annual Report of the Board of Railroad Commissioners, Massachusetts, 1870.

87 The following book and paper provide good foundations on which to rate the success of the Massachusetts railroad regulations: A.T. Hadley, Railroad Transportation, Its History and Its Laws, op. cit. F.C. Clark, "State Railroad Commissions, How They May Be Made Effective," *op. cit.*

88 The 6th Annual Report of the Railroad and Warehouse Commission of the State of Illinois, 1876, p.446-447. The Seventh Annual Report, Appendix, p.70-71. The Eighth Annual Report, Appendix, p.84-85. The 10th Annual Report, p.17. The 11th Annual Report of the Board of Railroad Commissioners of the State of Massachusetts, 1880, p.12.

accounting disclosure was at least a partial success. The same reasons may also have helped shape the socioeconomic foundations of the accounting disclosure practices typically seen in modern capitalistic economies.

Firstly, the Massachusetts railroads were sensitive to public opinion. Property rights themselves were relatively new and unprotected by long-term conventions. The persons who held property rights, including the managers managing them and those with stock equity, had to protect their interests by closely monitoring the current views among the public. The large railroad corporations were particularly vulnerable to public criticism and adopted management policies to keep the public in good humor. The public, in turn, kept a close watch on the corporations with apprehensions about the high railroad profits. The Board of Railroad Commissioners was quite adept in anticipating the tendencies of the railroads and publicized information to encourage the public to voluntarily demand improvements from the railroads. Through this indirect means, the Board successfully pressured the railroads not only to set reasonable rates, but also to install safety devices and run their trains on routes and schedules beneficial to local industries. Functions of this type seem to be inherent in information disclosure systems. The Board's publicity proved very effective in eliciting both respect and obedience from the railroads.[89]

The second argument in favor of the Board's success has to do with the agreement ultimately reached between the public and railroad interests. If the management of large railroad corporations had intended only to make their dividends as large as possible, they could have done so simply by oppressing the local transportation companies. Had they done so, however, the loss of connections with the local transportation services would have forced them to invest huge funds into local services of their own. Clearly they preferred to keep harmony with the local transportation companies to avoid such a dangerous policy. The Board, in turn, could prevent the railroads from acting against the public good in pursuit of maximum short-term profits by forcing the railroads to disclose their management and accounting information. Immoderate management could only be prevented by publicly disclosing the management policies of the large railroad corporations and the monopolization of the railroad industry as a whole. The Massachusetts Board of Railroad Commissioners successfully used this strategy of information disclosure, but it did not appear to be sufficiently credited for its efforts.[90]

The third reason behind the Board's success was the stable business conditions ultimately attained over the long history of the railroad industry in Massachusetts. We have repeatedly mentioned the absence of active competition and aggressive management behavior.[91] Just as

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89 A.T. Hadley, *op. cit*., p.137. F.C. Clark, "State Railroad Commissions, How They May Be Made Effective," Section I.

90 *Ibid*., p.138.

91 *Ibid*., p.138-139.

free competition was a valid pretext for rapidly expanding the railroad mesh at the expense of the public good, so the monopolization of railroad industry was prerequisite for the establishment of a high-quality transportation system and its stable management. Monopolization or oligopolization seems to be an economic precondition for the foundation of a social structure in which the public can inspect the management behavior of big businesses using management and accounting disclosure, and in which big businesses can take moderate policies in responding to the public's opinions and demands for improvement. This type of social structure was first realized on a small scale in Massachusetts years in advance of its establishment through the whole of the United States at the turn of the century. We cannot also ignore the coexistence of several organized interest groups, that is, the organized public as a whole.

Our fourth reason for crediting the board with success was the democratic ideal and institutional tradition typically reflected in the town (or mass) meetings in Boston. This tradition actively influenced the public's watchdog function to keep the big corporations in check.

For these four reasons, we argue that the Massachusetts successfully regulated the railroads by requiring them to disclose accounting information. This, in turn, brought about two derivative effects. Firstly, the Board of Railroad Commissioners ceased to support the nationalization of the railroads. Secondly, several other states adopted railroad regulation by information disclosure together with improvements in accounting techniques and rules, especially after the effect end of the Granger Movement in about 1878.[92] These states gradually developed modern socioeconomic structures like that in Massachusetts. The actual case in Wisconsin has already been described in the previous section. Before long, the Interstate Commerce Commission was to adopt accounting disclosure as an apparatus for regulating big business at the Federal Government level.

4. Conclusion

— Commission System and Accounting Disclosure —

In this chapter we have analyzed the development of railroad regulations in both Midwestern and Eastern states in order to trace the socioeconomic foundations of the accounting disclosure practices typically conducted by modern big businesses. In summarizing our analysis, we must point out the limited conclusiveness of our results due to the small number of sample states covered. Section III described a somewhat earlier period in history than that described in Section II. Conditions unique to Massachusetts led to the development of a

92 *Ibid*., p.137.

modernized socioeconomic structure in which a number of organized interest groups were induced to watch the railroads, and the railroads, in turn, were induced to adopt moderate management policies to appease them. The people of Massachusetts initially saw no need for the railroads, but they did not actually begin criticizing the railroads until the railroads were largely accepted. Democratic traditions held firm in Massachusetts, and the socioeconomic structure enabled the Board of the Railroad Commissioners established in 1869 to regulate the railroads solely by requiring the disclosure of accounting information. We note, however, that the accounting disclosures never had the prospect to fully resolve the economic problems accrued during this period through the gradual penetration of the capitalistic production system across the country. The accounting disclosures offered only a temporary resolution of economic problems while the capitalistic production system, that is, the monopolization, was spreading.

The polarization of the economic interest groups ultimately gave the state legislatures in the Midwest strong and direct control over the businesses of the railroad corporations. A polarized conflict emerged between the farmers and railroads under this condition, requiring strong regulation over the railroads. Overall, however, the farmers seemed essentially conservative, and the strong regulatory trend lost steam after it was found to prevent sound economic development in some states. Interest groups gradually formed within individual states of the Midwest ultimately extended beyond state boundaries and throughout the nation. This was the case even for the farmers. All the interest groups, including the farmers, were incorporated into a system that propagated big business enterprises.

We venture to assert that the socioeconomic structure established in Massachusetts in the middle of the nineteenth century was formed in similitude throughout the whole of the U.S. later at the turn of the century due to the emergence of modern big business or the system of industrial monopolization. New big businesses outside of the railroad industry, such as U.S. Steel, also began to disclose their accounting information at about the turn of the century to reconcile the active anti-monopolistic movements of the day. We can also identify real instances of emerging democratic ideologies in the Progressive Movement, as exemplified by the tradition of town meetings in Massachusetts.

While on this topic, we may also ask about the functions of accounting disclosure and the commission system accompanying it in a modern democratic society. How can we characterize the function of accounting disclosure in a modern society more simply than we have in earlier sections? To begin with, we should comment on the commission system that appeared in relation to the earlier state control over the railroad corporations. The commissions have usually been described as assemblies of eminent persons formed within communities to propose their opinions on given economic problems. In retrospect, this does not seem to be the actual function of the commissions. Their real function in U.S. history was to forestall rash and highly polarized resolutions to economic problems by appeasing interested

parties through accounting disclosures. The public disclosure of information on big organizations enables opposing interests to embrace moderate policies. The availability of the commission system, however, was to be assured only by the foundation of a modern democratic society.

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