LESSONS FOR THE DESIGN OF INTERCONNECTION PRICING POLICY
IN THE TELECOMMUNICATIONS INDUSTRY:
A POLICY LEARNING APPROACH

DISSERTATION

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By

Hyon Kun Kwak, B.A., M.P.A.

* * * * *

The Ohio State University

1996

Dissertation Committee:

A. Desai
R. W. Backoff
D. N. Jones
R. W. Lawton

Approved by

Advisor
School of Public Policy and Management
Dedicated to my parents
I express sincere appreciation to Dr. Anand Desai for his support, encouragement, and guidance throughout the research. Thanks also go to the other members of my advisory committee, Drs. Robert Backoff, Douglas Jones and Ray Lawton for their thoughtful insight and recommendations. Special appreciation goes to my parents for their endless support and encouragement. To my wife, Moonsun, I offer sincere thanks for your patience, understanding, encouragement and support.
VITA

May 24, 1962
Born - Daejeon, South Korea

1985
B.A., Department of Public Administration, Yonsei University, South Korea

1987
M.P.A., School of Public Administration, The Ohio State University, Columbus, Ohio

1988 - 1992
Graduate research associate, School of Public Policy and Management, The Ohio State University, Columbus, Ohio

1991 - present
Doctoral candidate, School of Public Policy and Management, The Ohio State University, Columbus, Ohio

FIELDS OF STUDY

Major Field: Public Policy and Management
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CHAPTER I

INTRODUCTION

Administrative economic regulation of industry, as implemented in the United States (U.S.), is a hybrid form of industrial structure that combines private ownership and direct public control (Miller, 1994, p. 225). It has been considered a means to restrain private economic power especially in public utility industries. Since the beginning of utility regulation, two disparate economic traditions have vied for dominance in popular thought as well as specific regulatory policy contents and direction. These two traditions are institutional and neoclassical economics. Over several decades, these two approaches have been sharply divided over the role and content of regulation and the underlying market structure in the U.S. The institutionalists who played a bigger role than neoclassical economists in formalizing the nature and content of public interest regulation, have favored economic regulation, and have put more emphasis on reforms consistent with the evolving structure of the public utility industries and demonstrated the adverse effects of deregulation (Trebing, 1994). Since the 1960s, when the U.S. economy started to falter due to adverse changes in economic conditions, much more attention has been paid to the neoclassical economists who believe that unfettered markets provide a
superior option for promoting efficiency. From their point of view, the government's role should be minimized to the extent that would complement rather than displace market forces. In this vein, economic deregulation in utility industries is asserted to be the better option compared to "ineffective" public interest regulation.

In the U.S., public interest economic regulation has been also closely related to the antitrust policy. While administrative regulation involves continuously monitoring and specifying performance variables such as prices and profits, antitrust puts more emphasis on the improvement of performance through modifying the structure of markets and the behavior of participants in markets (Petersen, 1989). As the public utility industry has been characterized by deregulatory movement, the importance of antitrust policy has been increasing in the U.S. In terms of antitrust policy, we can identify another important economic tradition, which has been vying for dominance in constructing the nature of competition policy with the orthodox neoclassical economics for decades. This is the structuralist tradition.

The purpose of this dissertation is to compare and contrast these institutional, structuralist, and neoclassical economics perspectives in public utility regulation, and develop a framework within which they can be discussed. This dissertation will use interconnection pricing in the telecommunications industry as a practical context for discussing these three views. Interconnection pricing or access charge as a kind of price control by government can be considered to be a policy tool which is used to achieve procompetitive and other social goals. Therefore, as a tool, it should contain theories and assumptions through which it is related to the behavior of local or long-distance service
providers and consumers. By incorporating three economic perspectives, a more thorough analysis seems to be possible to provide the underlying structural logic and assumptions in the real and potential interconnection pricing options.

The discussion of interconnection pricing policy from the three economic perspectives will be carried out within a "lesson-drawing" framework. Richard Rose (1991, 1993) argues that policy makers concerned with practical solutions to immediate problems search for lessons across time and space. For those instrumental policy-makers who seek to learn from the experience of other nations about how to design programs that can be applied effectively in their own country, a lesson is "an action oriented conclusion about a program or programs in operation elsewhere" (Rose, 1991, p. 7). Rose provides four analytically distinct stages for lesson-drawing to show "how such feasibility might be most systematically achieved," as well as to draw attention to "questions involving the feasibility of policy-making" (Allen, 1994). These are anchoring, modeling, creating a lesson and prospective evaluation. In this dissertation, these four steps will be operationalized to achieve the broad purpose of lesson-drawing.

Most recently, the regulatory costing and pricing issues have been discussed at length within the neoclassical economic framework in most countries. What has been often ignored are the practical lessons that can be learned from the study of the practice and experience in countries such as the U.S.'s. In this context, the lesson-drawing framework is particularly promising for drawing attention to the practical and theoretical strengths and weaknesses of such practice. In this dissertation, therefore, I will implement "lesson-drawing" as a strategy for policy analysts and policy makers to learn
about interconnection pricing from theoretical discussions and experimental findings offered by the "natural laboratory" of the U.S. telecommunications industry, and link their learning to policy recommendations.

This lesson-drawing exercise leads us to focus on the institutional and structural traditions reflected in the U.S. system. It leads us to appreciate "non-orthodox" economics traditions from the U.S. experience. In that sense, lesson-drawing can be considered a strategy for shedding light on multiple approaches to discussing costing and pricing issues. In another sense, lesson-drawing in my dissertation is a strategy to explore the practical and normative limitations of proposed approaches. Lessons drawn from another country's experience should be based on the empirical investigation of what the government decision makers actually have done. Therefore, if the actual regulatory decision-making by the government has been quite different from prescriptions of a particular economic tradition, it should be investigated to ascertain why it has been so. In this context, the lesson-drawing exercise in this dissertation will partially answer why some ideas from a particular economic tradition have not been fully reflected and sometimes rejected in actual government regulatory decision making. Overall, the lesson-drawing exercise in my dissertation can be understood as a strategy to evaluate strengths and weaknesses of past and current telecommunication pricing and costing, in general, and interconnection pricing, in particular, and critically discuss the three influential economics' perspectives in terms of real policy problem setting.

The focus of lesson-drawing framework is not only on determining the nature and the range of potential solutions, but also on developing a basis for policy design in other
countries. In this vein, the lessons drawn from the established model can be applied and evaluated in another country's context. As a specific application, this dissertation will discuss how South Korea can apply lessons drawn from the U.S. context to its own telecommunications industry. More specifically I will diagnose the current condition and direction of regulatory policy in South Korea, and draw various types of lessons from the U.S. model for general telecommunications policy as well as the interconnection pricing policy in South Korea.

The subsequent chapters are organized as follows. Chapter II will discuss the general framework and specific research methods of the dissertation. Chapter III will review the historical context of emergence of three economic traditions, and summarize their perceptions of market behavior, and their normative propositions of economic regulation. The information established in Chapter III will serve as a reference point to discuss many subjects in the following chapters. Chapter IV is to introduce and discuss theoretically the structural policies related to network interconnection policy in the telecommunications industry. This chapter will provide a general understanding of industrial organizational context to discuss interconnection pricing in the Chapter V. Chapter V deals with interconnection pricing issues by not only exploring the evolutionary process of the U.S. practice, but also analyzing policy proposals from the three economic traditions. In Chapter VI, lessons will be drawn for South Korea by referring to the information established in previous chapters, particularly in Chapter V. Chapter VII concludes the dissertation with the summaries of contribution of this dissertation and future research direction.
A. Lesson-Drawing Framework

1. Lesson-Drawing as Policy Learning

The purpose of this chapter is to introduce an overall research framework and specific research methods employed in this dissertation. In this context, the Section A will discuss the nature and content of Richard Rose's lesson-drawing as the primary framework of this dissertation. As the focus of lesson-drawing approach is needed to be expanded for the meaningful discussion of the U.S. experience in the South Korean context, in addition, the rationale for the expansion and operationalization of the approach will be provided in Section A. The Section B of this chapter provides information about specific methods to implement lesson-drawing approach. The information covers two kinds of policy design approaches and knowledge base construction to build the U.S. model, post-hoc rationale of information treatment process and literature selection criteria, lesson-drawing criteria and case study for South Korea.

The conventional view of public policy presupposes a relatively passive government role whose actions were driven by social forces and conflicts (Nordlinger,
1981). Notions of "policy learning" have emerged to challenge this view (Bennett and Howlett, 1992). Sabatier defines "policy-oriented learning" as "relatively enduring alternations of thought or behavioral intentions that result from experience and that are concerned with the attainment or revisions of the precepts of one's belief system" (Sabatier, 1987, p. 672). On the other hand, Hall defines policy learning as "a deliberate attempt to adjust the goals or techniques of policy in the light of the consequences of past policy and new information so as to better attain the ultimate object of governance" (Hall, 1988, p. 6). Influenced by Lindbloom and other organizational learning theorists, Lloyd Etheredge (1981) coined the phrase "government learning" to explain governmental efforts to increase their intelligence and sophistication so as to improve effectiveness of their actions. In spite of their somewhat different focuses and emphases (Howlett and Ramesh, 1993; Bennett and Howlett, 1992), these conceptions of policy learning have in common holding that "states can learn from their experience and that they can modify their present action on the basis of their interpretation of how previous actions have fared in the past" (Bennett and Howlett, 1992, p. 276).

Policy learning is understood to be a process to increase the intelligence and capability of policy-makers to solve policy problems and bring about policy change or innovation. Thus, fostering policy learning is a desirable goal for policy analysis and debate. An important aspect of any form of policy learning is the experience from which lessons can be drawn (May, 1992). For those who support a systematic, rational basis for drawing lessons, for example, evaluation of and feedback about policy impact becomes important for policy design and implementation. In order to provide a basis for learning,
however, observations of policy experience need not be direct. The experiential basis for policy learning can include other policy domains, other states or countries, or different points in time. In this vein, several scholars have called attention to lessons drawn from indirect policy experience (Rose, 1991; Schneider and Ingram, 1988).

The indirect learning process has three dimensions - intertemporal, inter-sectoral and cross-national (Howlett and Ramesh, 1993; Rose, 1991, 1993). Taking the inter-temporal dimension into account, for instance, past experience with policy instruments enables the decision-makers to form a rational assessment of which instrument works best under what circumstances. Learning can also be expected to occur on an inter-sectoral basis. For example, the experience of deregulation in the airline industry in the U.S. has served as an example and provided a lesson for deregulation in other industries. Finally, policy learning also can occur across space, on a transnational or international level, whereby governments learn from other countries' use of instruments in dealing with policy problems, such as privatizations or pollution control.

Recognizing the significance of indirect policy learning, Rose developed a concept of "lesson-drawing" to provide guidelines as well as to describe the process by which programs and policies developed in one country are emulated by others and diffused throughout the world (Rose, 1991, 1993). Rose (1991) defines a "lesson" as "an action oriented conclusion about a program or programs in operation elsewhere; the setting can be another city, another state, another nation or an organizations's own past." (p. 7). Lesson-drawing, according to Rose, is a particular type of learning in which policy-makers learn from both the positive and negative experience of others; "confronted
with common problems, policy-makers in cities, regional governments, and nations can learn from how their counterparts elsewhere respond. More than that, it raises the possibility that policy-makers can draw lessons that will help them deal better with their own problems" (Rose, 1991, p. 4). As a result, "a lesson is more than learning for its own sake; it relates actions elsewhere to substantive problems in a government agency" (Rose, 1991, p. 7).

Rose explains how lesson-drawing is differentiated from other approaches to public policy (1991, pp. 7-8; 1993, pp. 21-27). Evaluation and lesson-drawing are related in that a lesson includes a judgment about a program in effect elsewhere. While post hoc evaluation research often concludes with a positive or negative judgment about what was done in the past, on the other hand, lesson-drawing raises questions about whether a program that is successful in one setting can be transferred to another. In this sense, a lesson is "more than an evaluation of a program in its own context; it also implies a judgment about doing the same elsewhere" (Rose, 1991, p 7). In addition, lesson-drawing is not the reasoning from first principles as practiced in physics and neoclassical economics. The latter often results in "pure speculation, being based upon logical analysis devoid of empirical evidence" (Rose, 1991, p. 8). Lesson-drawing is also different from the analysis of institutions which is "purely descriptive of procedures without regard to the programs that are their outputs" (Rose, 1993, p. 26). Much writing about institutions, holding that government actors can act independently of interest group pressure, stresses the importance of governmental institutional structure, regulators, and their relationship with legislators, and the like (Teske, 1990). On the other hand, lesson-
drawing is primarily concerned with programs. Rose states, "lesson-drawing and institutional analysis become one only when proponents of political change argue that institutions in effect elsewhere....should be adopted here" (Rose, 1993, p. 26). By focusing primarily on interconnection pricing policy, less emphasis is placed on such institutional issues as regulatory structure (e.g., public utility commission), federalism, and the like.

In order to draw a valid lesson, policymakers should take systematic care and understand the principles and practice of lesson-drawing, which they often take for granted. Concerned with guidelines for drawing better lessons in public policy, Rose provides four steps to carry out lesson-drawing. First of all, lesson-drawing typically takes the form of scanning programs existing elsewhere. As the purpose of this search is to find an initial anchor or starting point from which thoughts about a policy or program can be changed (Siovic, 1986; Schneider and Ingram, 1988), I will name the first stage "anchoring," a term originally used by Kahneman, Slovic and Tversky (1982). As the lesson-drawing does not focus on descriptive detail, but on conclusions that can be transferred because they are both generic and applicable, the second step is to analytically produce a conceptual model which shows "how a programme works, spelling out the cause and effect relationships between its parts, and identifies outputs" (Rose, 1991, p. 20). A model, specifying the mechanics of a program in generic and potentially transferable way, "guards against selective perception, with policymakers emulating the easy parts of a programme, and omitting the hard parts needed to make it effective" (Rose, 1991, p. 20). The third step for lesson-drawing is to create a lesson, by comparing
the established model with the problems of the existing program or policy which has caused dissatisfaction. Finally, the fourth step involves devising programs or policy recommendations and making a prospective evaluation of their likely success. These steps will serve to "self-conscious" lesson-drawing.

While the above steps can be used to describe the policy learning process, this dissertation will focus primarily on their prescriptive aspect and use them as a guideline to draw lessons from the U.S. experience. The utility of lesson-drawing will be expanded in this way since it allows us to evaluate different kinds of lesson-drawing. Rather than using them as a descriptive standard for determining whether policy-makers actually learn from other countries' experience, it will provide not only substantial insight into solutions related to a particular policy problem, but also evaluative standards for whether lesson-drawing, if it already exists, is just copying or mimicking of another country's policy without substantial understanding. Viewing Rose's lesson drawing as a prescriptive approach, it provides us with a tool to avoid "superstitious learning" (Levitt and March, 1988).

2. Lesson-Drawing as Comparative Public Policy Research

Lesson-drawing is different from other typical comparative studies of public policy. The latter often examine systems in parallel, presupposing their independence, and arraying countries separately for examination of similarities and differences (Rose, 1993). From this perspective, what happens in each country is considered to be independent of what happens elsewhere. Even the same course of action in different
states is explained as a consequence of common internal characteristics. On the other hand, lesson-drawing emphasizes "interaction" between parallel agencies in different countries (Rose, 1993). As social and economic development tends to generate similar problems everywhere, and makes the experience of one nation in dealing with a problem relevant for other nations, the cross-national dimension of lesson-drawing becomes ever more salient (Bennett, 1991; Castles, 1994). The potential for lesson-drawing always exists when common problems create common interests, and one country is attracted by a policy effective in another.

In addition, the problem-orientation and emphasis on applicability distinguishes lesson-drawing from other comparative researches. Unlike the conventional comparative study's concern with intellectual explanation of what has already happened, lesson-drawing focuses on national policy-makers who are instrumental, seeking to learn from the experience of other nations on how to design programs that can be applied effectively in their own context. Rose (1991) explains this difference as follows:

"Lesson-drawing differs fundamentally from conventional social science comparisons, which concentrate almost exclusively upon after the fact explanation. Almost invariably, social scientists are concerned with testing theories against past events or current evidence. By avoiding the logical trap of generalizing from a single case study, such studies can explain why a program that worked in country X did not work in country Y. But it is unusual for conventional social scientists to take the next logical step: to predict whether a programme now in effect in country X would be effective if transferred to country Y. Drawing such a lesson is the instrumental concern of policymakers in country Y" (p. 8).

Therefore, the dynamic question for lesson-drawing is whether a policy currently in effect in one country could work in another in future. In this sense, lesson-drawing is "not to
establish the universality of relationship, ... but to enhance the credibility of specific predictions about specific cases" and thus "to get useful rather than general knowledge in the short run" (Teune, 1978, p. 54). In short, Rose's "lesson-drawing" is to expand the arena of the comparative public policy, over simple "academic specialism," to the "practical concern for professional policy-makers" (Castles. 1994).

The possibility of gaining specific policy payoffs from the study of analogous programs in other countries can be limited by cultural differences and the tendency to generalize from limited data. However, with these caveats in mind, the possible insights to be gained from pertinent experience in other countries should not be ignored (Cyr and deLeon, 1975). Lesson-drawing, in one sense, can be viewed as a relatively inexpensive learning from the quasi-experimental possibilities offered by the natural laboratory (Lisle, 1987).

3. Operationalization of Four Analytic Stages of Lesson Drawing

a. Anchoring

The initial selection of a country's program as a prototype requires an explanation of its rationale since the whole lesson-drawing process depends on the anchored program. The selection of the U.S. experience as a prototype is based on a general belief that in spite of some current criticism, the American regulatory system has worked best by comparison to any other nations (Vietor, 1994; Heald, 1985). In addition, recently, the South Korean government has initiated privatization of public telecommunications operator and introduced competition in the industry. Under the circumstance of no
explicit and systematic regulatory mechanism previously existed, in this context, the long
and rich experience of economic regulation of privately owned telephone service
providers in the U.S. seems to provide a good reference point for the newly required
regulatory framework in South Korea. Furthermore, the U.S. experience as a pioneer of
access charge policy provides a massive information which draws analytic attention from
other countries.

As the discussion of the privatization and liberalization movement of South
Korean telecommunications policy will be discussed in Chapter VI as a general context to
understand interconnection pricing in South Korea, the more substantial anchoring
rationale will be presented in that chapter.

b. Modeling

The second step of lesson-drawing is creating a conceptual model which shows
how a program works. While Rose specifically proposed as the purpose of model-
building to spell out the cause and effect relationships between its parts, and to identify
outputs, the focus of model building might not have to be restricted to the causal
relationships of the given policy or program. Rather the model can also serve to provide
substantial knowledge which can help to simply bring out better "judgments about
whether a given course of action or a given policy tool is still preferred relative to the
alternatives currently being promoted" (May, 1992, p. 333). As the purpose of this
dissertation is not only to draw lessons from the practice, but also to illuminate different
regulatory perspectives of three economic traditions, it is meaningful to incorporate the
proposals from the three economic perspectives as alternatives "currently being promoted" in the model building exercise.

Furthermore, the importance of understanding how the problem is defined or perceived by regulators as well as other participants in the policy process cannot be overestimated. In this context, by identifying the perspective of a particular economic tradition as surrogate for the regulators' frame of reference to affect the construction of practice, we may better explain the nature of problem and solution, and understand the cause and effect relationship enclosed in the given program. In short, the three economic perspectives can serve as important sources of information to construct the model which not only explains the causal relationship of the practice but also provides policy alternatives in the ongoing policy debate.

This operationalization of model building can be distinguished from Rose's original focus of model building. When he refers to a problem and a program as solution to the problem, he seems to presume objective problem and solution, and does not consider the origin of the problem definition and solution. But problem definition "is not merely a label for a set of facts and perceptions,...[but] a package of ideas that includes at least implicitly an account of the causes and consequences of some circumstances that are deemed undesirable, and a theory about how a problem may be alleviated" (Weiss, 1989, p. 97). "By [a] frame imposed on circumstances," in this vein, a particular problem defined in the program can be understood as "highlight[ing] some of aspects of the situation, throwing other aspects into shadow" (Ibid). What distinguishes my model building exercise from Rose's is that by connecting the three economic perspectives to the
practice as well as the policy alternatives proposed in the ongoing policy debate, the model is to illuminate the more dynamic and normative aspect of problem definition or representation and program development. Therefore, the model presented in this dissertation presumes that the mechanics of a program can be more substantially understood by explicitly exploring frames and value premises involved in it.

By expanding the focus of model building, we can also enlarge the scope of lessons (i.e., what can be learned). By presuming the problem as given, the role of Rose's model is limited to serving as a knowledge basis to draw instrumental lessons. On the other hand, we may entail knowledge about the different goals or the policy scope if we explicitly consider the problem structuring process involved with the given program. Even if a particular perspective is identified as the most influential for the construction of the current practice, for example, it is possible to compare and contrast its value premise with those of other economic approaches, and thereby build a broader domain of values which can be incorporated in the policy design process. Overall, the purpose of model building in this dissertation is more amenable to the definition of Hall's policy learning which encompasses the learning about policy goals as well as instruments (Hall, 1988; May, 1992). While the Rose's basic framework will be used to draw some lessons, the object of policy learning is broader than Rose's by expanding it to the goals of policy or fundamental ideas and beliefs held by policy-makers.

The specific methods to build model and draw lessons will be discussed separately below. The particular model related to the U.S. interconnection pricing will be presented in Chapter V. Prior to discussing the model of interconnection pricing, the
industrial organization context will be established in Chapter IV as a background to understand the pricing issues discussed in the model.

c. Comparing Conceptual Model with Domestic Program and Prospective Evaluation

The U.S. model will be discussed in the context of South Korean telecommunications industry to draw some lessons in Chapter VI. For that purpose, first of all, the liberalization and privatization movement of South Korean telecommunications policy will be introduced as a general context to discuss interconnection pricing in Korea. This discussion also provides some justification for the selection of the U.S. program as a prototype and its relevance to the South Korean context. Then the past and current interconnection pricing policies in South Korea will be introduced. Then specific lessons will be drawn by referring to the model built in Chapter V.

A complicated aspect involves the application of exact format of Rose's last two steps to the South Korean situation. First of all, the South Korean program was introduced as the part of efforts to make fundamental changes in the overall costing and pricing structure of telecommunications industry in South Korea. In a sense, this program can be said to borrow some basic conceptual ideas from the U.S. program. Except for the general necessity to introduce interconnection prices under the newly introduced competitive market condition, however, the theories and assumptions of the U.S. program were not directly relevant to the Korean program. For example, the former emerged as a response to a particular problem under fully grown regulatory system. On the other hand,
the South Korean program had its meaning only as the first application of newly adopted cost accounting system rather than as a solution to a particular impending problem. While an authoritative policy goal is prerequisite for Rose's lesson-drawing to use knowledge from other places to improve current program, it was not directly important in the South Korean case.

The discussion of the U.S. experience seems to become more meaningful if we take the current Korean program as an evolving one which is being constructed by responding to the newly developing market and regulation conditions. As we expand the scope of model building to the process of problem construction involved with the U.S. program as well as the alternative solutions, rather than presuming a problem now, we can use the U.S. program as an vehicle to understand not only particular problems related to interconnection pricing, but also more general problems expected in the maturing process of regulatory system and the development of industrial condition in South Korea. In short, the U.S. model will serve as a benchmark to learn "ideas" as well as instruments (Hall, 1988; Bennett and Howlett, 1993; May 1992).

As the existing program is an adapted form of the U.S. model, another program will not be created in this dissertation. By presenting the process of how it was developed, instead, the nature of the program will be illustrated. As a product of a new, systematic effort to capture the content and nature of the U.S. experience, the model constructed in this dissertation may provide other information than the current program contains. In this context, some added knowledge to the instrumental aspect of the South Korean program can be created by referring to the model. In addition, lessons will be
drawn from the U.S. model to provide possible policy problems, or goals which South
Korean regulators may take into consideration in the design of interconnection pricing.
As most lessons drawn in this dissertation are more likely to take the prospective form,
the separate prospective evaluation will not be implemented. The particular lessons I will
draw from the U.S. experience are well captured by Peter J. May's three learning
concepts: instrumental learning, social policy learning, and political learning. I will
briefly introduce these three concepts in methods section. The lesson-drawing exercise
will be presented in Chapter VI.

B. Methods

1. Method of Model Building

a. Policy Design as Product: Structural Logic Analysis

   In general, "access service"\(^1\) or "interconnection service" represents telephone
network services purchased by long-distance carriers to connect to the telephone
customers of the local exchange companies (LECs). Therefore, "access charges" or
"interconnection prices" are payments made by interexchange carriers (IXCs) to LECs for
the use of LEC facilities in originating and terminating toll calls. Access charges as a
product of price control by government are a policy tool to achieve competitive and other

\(^1\) In general, access service is a service that enables an individual user (either an
individual subscriber or an interexchange carrier) to connect to the switching system of a
local exchange carrier. From a customer's perspective, however, access is the ability to
communicate with the outside the world. From an interexchange carrier's perspective,
access is the ability to reach all telephones in a geographic area. The main focus of this
paper is the latter.
social goals, and contain theories or assumptions related to the behavior of local or long-distance service carriers and consumers.

Having selected the U.S. experience as prototype for lesson-drawing, the next step is to create a conceptual model of the U.S. program. In the U.S., access charges were introduced as a form of traditional regulatory policy taken by the formulation of antitrust policy in the presence of barriers to entry. In the U.S., a concern existed that absent a fair and neutral interconnection policy, consumers, LECs and IXCs could be harmed in various ways. This perspective raised antitrust concerns on the basis of the "essential facility doctrine." The doctrine is based on the idea that a firm possessing a lawful monopoly over an unique resource can violate the antitrust law if it exploits that resource in ways that exclude or disadvantage its competitors.

In the context of telecommunications industry, local exchange facilities represent essential facilities for the development of long-distance transmission competition. Much of the investment in local exchange plant represented substantial sunk costs that are effective barriers to entry to both the market for local exchange services and, more importantly, to the market for interexchange transmissions services. Without access to such local exchange facilities, interexchange carriers can neither originate nor terminate long distance services, unless alternative bypass facilities are generally available. As a result, the terms and conditions of access to interconnection facilities or resources became one of the most controversial and important topics when the U.S. initiated competition policy in the long-distance service market. In particular, local exchange "access charges"
were considered as one of the most crucial factors which regulators had to handle for the further growth and development of competition in the long-distance transmission market.

Access charges represent an adapted form of the traditional regulatory costing and pricing practice of telephone industry. The first thing to be noticed in the U.S. program was that it was not built on abstract deductive models based on the assumption of a perfectly competitive market or a contestable market which has been the referent point from which neoclassical economists have drawn their access charge theories as well as other price theories. Rather, the specific nature of access charges in the U.S. emerged from the adaptive process of a particular costing and pricing method responding to the changing industrial structure.

The deviation of actual practice from that which would be preferred under the rational neoclassical economic model requires a framework to objectively assess it. Furthermore, seeing access charges in terms of the evolution of the regulatory price control structure requires an approach which can incorporate the dynamic process of access charge policy development within the given regulatory pricing and costing practice. In this context, the policy design approach seems to serve as an important conceptual tool to construct the U.S. model while embodying the evolutionary aspect of access charge policy development.

From the design perspective, the U.S. program can be analyzed by viewing its design as a product of a protracted series of problem solving efforts. Seeing policy design as a product, design can be defined as "the resulting array of elements in the structural framework and logic through which effects on target populations will occur" (Schnedier
and Ingarn, 1990, p. 79). The approach of using policy design as product to understand a policy development is more complex than one that assumes that policies are simple manifestations of the rational pursuit of given goals. It posits no particular direction to policy development, but "addresses the actual behavior of many decision makers over experienced periods" (Chisholm, 1995, p. 35). When a policy is explored from the perspective of seeing design as a product, it is important to focus on all of the characteristics of the product since these characteristics are a part of its "design" regardless of whether they were intentional, logical, rational, or not (Schneider and Ingram, 1990, pp. 79-80). As already noted, the access charge program in the U.S. evolved from the previous costing and pricing institutions which had been constructed by individual decisions of many officials at different points in time. Then, the model building exercise (through policy design approach) is not only to establish the structure of the problem, but also to illuminate that represented structure as a solution which evolved from an earlier structure via changes since that time and previous efforts to solve the problem (Chisholm, 1995).

This model building exercise will be carried out in Chapter V. For a more systematic analysis of theories and assumptions in the U.S. program, in particular, I will employ Schneider and Ingram's structural logic framework which consists of "a set of common elements that are woven together into an intricate pattern through which policy means are directed at policy goals" (1990, pp. 80-81). These elements include goals or desired outcomes, agents, and targets, and linkages among these three elements (Schneider and Ingram, 1988, 1990). Goals may be explicitly stated in written
documents, learned through interviews, inferred from analysis of the policy experiments or legislative history, or inferred from means/ends reasoning. Target populations are the groups or individuals whose decisions and behavior are related to policy goals directly or indirectly. Agents are the officials assigned responsibilities by policy documents as well as others who may have assumed responsibilities in relation to the policy.

Linkages include policy tools (i.e., means to influence behavior), rules (specifications about procedures, timing, etc), and assumptions or theories regarding why or how the tools will produce the desired results. The elements are linked to one another through behavioral, technical, and normative assumptions. Behavioral assumptions are assumptions relating a policy tool to behavior or relating one behavior to another. Technical assumptions are assumptions connecting particular decisions or behavior of target populations to policy impacts. Normative assumptions connect the behavior of the target with value judgements about social welfare. These assumptions represent interdependent theories which offer an account of the problem that policymakers are attempting to address, the outcomes they seek to produce, and the means of intervention they intend to employ (Weiss, 1995). Access charges as a product of government intervention should have its own behavioral, technical, and normative assumptions. In this context, the main focus of the model building exercise in this dissertation is to explain those assumptions or theories explicitly. For that purpose, in particular, I will

\[\text{\textsuperscript{2}}\] In this dissertation, technical assumptions will not be separately presented as the information about behavioral and normative assumptions of the U.S. program is enough to encompass important aspects of technical assumptions of the program.
incorporate the knowledge utilization perspective in the analysis (See next section for more details).

Understanding access charges in terms of the evolution of regulatory control structure through the policy design perspective provides an insight into how the governance mechanism has been designed and redesigned. Furthermore, explicit exploration of behavioral, technical, and normative assumptions of development of access charge policy makes it possible to understand the valuation process involved in the past and current regulatory pricing and costing decisions in the U.S., in general, and the role and nature of price control as a government tool in that process, in particular.

The valuation process is often explained by taking certain outcomes of previous problem solving efforts as given and working backward to unveil the sequence of causally significant events or decisions that led to those results, "implicitly assigning a linear character to historical process" (Chisholm, 1995, p. 30). As "real-world outcomes not have to turn out a particular way," however, "understanding the processes that led up to a given outcome whose character we know, requires that we include those courses - whether problem representations or alternative solutions - that were considered but not chosen" (Chisholm, 1995, p. 30). In short, a retrospective assessment of the outcome of a particular policy requires a judgment about improvement in certain socially desired values over that which would have occurred without the policy, or under some other actions. For the purpose of addressing this issue in Chapter V, I will take into consideration "the roads not travelled" as much as possible when discussing the institutional choice in the U.S.
When the neoclassical economic solution is assessed within the design perspective, its origins as well as the value it serves become important. This is because the design approach is not premised on the belief that market-oriented behavior by free agents can serve as the normative guideline for defining the role of government. Instead, the design approach asks whether the particular problem situation can be converted into a desired outcome by the neoclassical economic solution. Selection of the neoclassical solution is a matter of choice among competing values that can serve as a medium to connect the particular problematic situation to a desired outcome. In contrast to the neoclassical economic approach, the design approach is more likely to show the role of coordination of economic activities by government through hierarchical controls and state-sanctioned coordination mechanisms linking regulated firms to competitors and customers.

Before proceeding to deal with the U.S. access charge policy directly, this dissertation will briefly introduce the role of antitrust concern in the creation of access charge policy in the U.S. Taking this understanding of antitrust issues involved with the particular industrial organization of telephone industry as background, I will analyze the access charge plan proposed by the Federal Communications Commission in 1982 in terms of its structural logic.

**b. Incorporation of Knowledge Utilization Perspective in Structural Analysis**

In order to carry out a structural analysis of the access charge policy in the U.S., I will assume that the policy and general economic regulation have been developed as a
process of knowledge (i.e., theories) utilization from various economic science communities. The focus on knowledge utilization may require more substantial information about the context (i.e., situational or institutional factors) of adopting or incorporating the knowledge from those communities. By just assuming the utilization of ideas and theories from those communities as given, however, the model building exercise in my dissertation shifts its focus from seeing how a particular bit of knowledge is utilized, to understanding what particular aspect of an economic tradition is related to the current policy, or what kind of theory may explain the current practice better.

Even though it is not the main concern of this model building exercise to explore the specific utilization process, it seems to be meaningful to provide some warrant for the plausibility of my assumption that knowledge from those economic communities has been incorporated in practice. In this vein, I will trace the origins of those different economic thoughts and place them in the historical context of economic regulation in the U.S. More specifically, I will track the history of theoretical development in antitrust and regulatory economics, identify three important scientific communities, and explain their market views and contributions to regulatory practice. This exercise will be carried out in Chapter III and will show the origins of those three economic traditions, their perceptions of the market, their preferred policy instruments to address the market power problem, and their interpretations of public interest.

After placing the related economic thoughts in the historical context of the U.S., exploring their views of market behavior, and comparing their propositions of normative assumptions of economic regulation, I will carry out a structural logic analysis of the FCC
access charge policy, and illuminate its specific behavioral and normative assumptions by referring to the identified economic traditions' normative views and specific positive theories. In short, Chapter III will serve as a knowledge base to which I can refer to explain some implicit theories and assumptions in the practice.

c. Policy Design as Process: Problem Structuring Analysis

While the previous structural logic analysis focuses on the "resulting array of elements in the structural framework and logic," policy design can be also viewed as a dynamic, changing process to fashion and manipulate the elements in an effort to address policy problems (Schneider and Ingram, 1990). Seeing design as a process, one important focal point for policy design scholars is the critical assessment of the normative stance taken by an approach or a frame of reference, and its impact on the formulation of problem and action alternatives (Linder and Peters, 1988, 1992; Bobrow and Dryzek, 1987).

This view can be contrasted with the most typical policy analysis of policy alternatives. Assuming a well-structured problem, in the latter, an analytic technique such as cost-benefit analysis is selected and applied to evaluate the existing policy alternatives (e.g., fully distributed cost pricing vs. marginal cost pricing). The conclusions of such an analysis depend on the policy alternatives chosen for analysis. However, the technique itself does not consider the origins of such alternatives. Therefore, when the primary concern to be incorporated in the analysis is the source of values, the uncritical selection of an analytical method becomes less defensible (Dryzek,
1993). This point is especially important because of the specific values implicit in the method itself. For example, the Kaldor-Hicks compensation rule in the cost-benefit analysis always justifies economic efficiency as an overriding value. As values are invoked in defining problems, this implies that the benefit-cost analyst may choose the best alternative, given one array of solutions, without necessarily considering alternatives that fall outside of a given definition of "the" problem (Dery, 1994).

On the other hand, concerned with the generation of goals, phases, and instrument (Dunn, 1988) or the intentional crafting and manipulation of elements (Schneider and Ingram, 1990) in the presence of "messy" problems, a policy design perspective puts priority on problem structuring over problem solving. Here problem structuring differs from problem solving "by virtue of its attention to all of the cognitive activities that take place prior to the acts of selecting from among alternative solutions" (Chisholm, 1995, p.22, emphasis in original). As "first-order methods" such as cost-benefit analysis are ineffective for the purpose of problem structuring, the policy design perspective recognizes the importance of the second-order methods, for instance, boundary analysis, classification analysis, hierarchical analysis, synectics, brainstorming, assumptional analysis and argumentation mapping (Dunn, 1994, pp. 161-182; Dunn, 1988, pp. 726-733).

The focus of policy design research on problem structuring as a basis for understanding normative stances of different approaches is related to the constructionist view of policy problem (Linder and Peters, 1992). In the constructionist view, problems are not objective entities in their own right, "out there" to be grasped by someone. No
problem can be said to be objective, in the sense of existing independently and prior to the conceptualization of those defining it. Stakeholders bring competing sets of assumptions about external events, which John Dewey called a "problem situation." and construct competing representations of the same problem situation (Dunn, 1988). Therefore, policy problems "are products of thought acting on environments; they are elements of problem situations that are abstracted from these situations by analysis. What we experience, therefore, are problem situations, not problems which, like atoms and cells, are conceptual constructs" (Ackoff, 1974, p. 21). These conceptually constructed problems are involved with value judgments, and represented by unrealized needs, values, or "opportunities for improvement"(Dery, 1984) over a given problem situation.

This policy design perspective will be incorporated within the structural logic framework as ongoing problem structuring process in the U.S. telephone industry. Whether to improve the practice, or to anticipate new circumstances, the three economic traditions I will review in Chapter III have their own frames of reference that can be used to structure problems related to interconnection pricing. While economists often offer particular theories as solutions, they rarely reveal the underlying frames of reference to construct those problems and solutions (Dunn, 1994). In this context, one of the methods to explore these frames of reference is "assumptional analysis," which begins with recommended solutions for problems rather than frames of references themselves. More specifically, "by starting with recommended solutions, the method builds on what is most familiar to stakeholders but then goes on to use familiar solutions as a point of reference for forcing an explicit consideration of underlying assumptions" (Dunn, 1994, pp. 179-
180). Once having established the three economic traditions’ positive and normative views of market behavior, we may not need such a formal analysis. Once we identify specific theories with their respective economic tradition, we can easily characterize the nature of unexplained elements in the theories by referring to the knowledge base established in Chapter III.

d. Post-hoc Rationale for Information Treatment Process and Literature Selection

Criteria

A core aspect of the model building exercise in this dissertation is a comprehensive review of economic ideas and existing research findings to explain access charge policy development in the U.S. and to draw some further policy implications from them. The decision about which of economic ideas to be included and how to incorporate them in my model building exercise, have been made in a rather heuristic way, and therefore as there were multiple anchoring points for the review. For example, during my initial study of access charge program in the U.S., I also had some opportunity to become acquainted with some journal articles (Trebing, 1984; Rowe, 1984; Hovnenkamp, 1989) on the history of economic regulation in the U.S. They led me to realize that there have been three important economic traditions in terms of the U.S. regulatory institutions and policies: institutional, structural, and neoclassical economics.

Two source of literature were important to reach this point. First of all, the contribution of institutional economics to administrative regulation was identified mostly by the articles published in the Journal of Economic Issues, which shows the evolutionary
aspect of administrative regulation in the U.S. Through the antitrust history articles collected from the law journals, I found that the structuralism was the first economic tradition to link economic ideas to antitrust policy in the U.S. Contrary to those two economic traditions which were relatively new to me, with my previous familiarity with massive neoclassical economic literature, I easily recognized the broad scope of the neoclassical economic interest and its influence in the U.S. economic regulatory policy (e.g., deregulatory movement in both antitrust and regulation).

Once having recognized the importance of those three economic traditions in the U.S. economic regulatory history, I gauged the possibility of explaining the U.S. access charge program in light of those economic traditions. I initially diagnosed that some of neglected aspect of the practice might be explained by the nonorthodox economic tradition such as institutional economics. Furthermore, some reading of the institutionalist literature led me to judge that the tradition has a good analytical framework (i.e., instrumental valuation theory) to see evolutionary process of access charge program in the U.S. The initial thought was to create the model of practice by explicitly taking the institutionalist perspective as the main intellectual force to construct the practice. But some further investigation of the U.S. access charge program as well as institutionalist literature led me to realize that aside from the evolutionary process, the particular nature of the actual access charge program was far from the institutionalist idea.

By that time, I was also becoming familiar with policy design literature with an aid of one of my dissertation committee members. I also had chance to get acquainted with some knowledge utilization literature. Once I could distinguish two design
approaches, i.e., structural logic analysis (design as product) and problem structuring analysis (design as process) through review of the policy design literature, I saw the possibility that the practice can be dealt with in terms of more general economic ideas (i.e., normative points of view) from the three economic traditions, separately from their more narrowly focused relevant theories. Furthermore, it is important to note that the design perspective, developed separately from the institutional economics, shares a pragmatic idea with the latter whose instrumental valuation theory is largely indebted to John Dewey. Coming to the issue of relative strength between those two perspectives, however, the design perspective provides conceptually and analytically a more organized and systematic way to analyze a policy or program from pragmatic or evolutionary point of view. By taking structural logic analysis as the main method to analyze the practice, in this dissertation, I could avoid repetitively using institutionalist ideas to explain the evolutionary process of the program, and treat the institutional economic ideas at a more specific level without compromising the latter's concern with valuation process.

The important decision made at this point was how to connect three economic ideas to the program. By that time I knew some discrete theories and ideas from those economic traditions could be directly connected to some aspects of practice (e.g., institutionalist support for fully-distributed costing). But I simply thought that by establishing a more broad source of information (i.e., knowledge base) as a reference point, the later job to analyze the practice would be easier and more efficient, and could encompass unexpected results. The decision to create a knowledge base raised another question: how to organize it? In this respect, I got the clue from the terms used in

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structural logic analysis such as "behavioral assumptions" and "normative assumptions."

It would seem to be more systematic, efficient, and relevant to the later analysis, to organize the knowledge base by processing the information from each economic tradition based on the criteria such as their market behavior perception and normative proposition of economic regulation. I also decided to place each economic tradition in the historical context of the U.S. economic regulation to support my assumption that the practice has been developed as a process of knowledge utilization from those economic traditions.

Once those criteria were decided, I went back to the previous literature I was familiar with, and expanded them as needed. The nature of this new literature selection process is characterized by those three criteria (i.e., market behavior, normative proposition, and historical background). In general, the literature chosen in this process tended to deal with general regulatory topics, comparative issues between economic traditions, broad theoretical and empirical research characteristics of each economic tradition, history of economics, and regulatory history. This literature search process followed a typical way of literature review. The several studies in each economic tradition I was aware of, for example, provided bibliographies and footnotes which cited related researches. I could examine these citations and judge them for their relevance to the study. In addition, my personal acquaintance of Journal of Economic Issues as the main journal of institutional economics made it easy to select some articles by directly checking titles of the whole series of the journal in the library. For structuralist tradition and neoclassical economic tradition, much of the information about the related articles were gathered by means of specialized on-line computer search such as Econ-Lit, which
covers professional economic journals, and Info Trac, which provides access to database for law journal articles.

The structualist literature were selected from various law journals and scholarly books particularly on the basis of author names I was familiar with in the tradition. As it turned out to be that many legal scholars share the structuralist point of view of antitrust policy in different ground, I also gathered those authors' articles from various legal journals. Since the literature of the neoclassical economic discussion of economic regulation is so massive and broad, instead of covering all of them, I decided to present antitrust economic theories from the Chicago school as the representative understanding of market behavior by neoclassical economists. The decision was made on the basis of observation that it has been cited in both institutionalist and structuralist literature, as well as general regulatory literature, as the most influential economic school in current deregulatory movement in the U.S. The distinguishing characteristic of article selection in terms of the structuralism and the Chicago school is that they were mostly drawn from the law journals rather than pure academic journals. For the purpose of creating a knowledge base which covers rather broad market perception by each school, the use of law journal articles seemed to be more efficient in that they provide more easy access to the general ideas of those schools than narrowly focused, specialized academic journal articles. Furthermore, the law journal articles tended to more explicitly deal with the normative issues which often do not show up in academic journals.

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3 I also briefly presented some different topics to which neoclassical economists have contributed, prior to discussing the market perception from the Chicago school perspective.
Once having some related literature, first of all, with previously chosen three criteria in mind, I tried to be familiar with key words and some shared general themes under each economic tradition. These themes and key words include technology, power, and instrumental values for the institutionalists, barriers to market entry, market structure, conduct and performance, competitive process for structuralists, and price theory, potential competition, and wealth maximization for neoclassical economics. Table 1 of this dissertation represent the array of such key words and themes. Chapter III is mainly written by reorganizing collected information from various sources around those key words and themes.

During this process, I had to return several times to seek further sources concerning insufficient understanding of key words and themes. In addition, as my sophistication and ability to evaluate the importance of what I had read increased, I tried to modify the previous writings to incorporate new understanding. Rather than simply describing the characteristics of each economic tradition, I also tried to shed light on the differences between those economic traditions in terms of particular issues. In addition, I kept abreast of the very recent literature to enrich my discussion. As I saw much redundancy of further information gathering, and reached to the point of very abstract ethical discussion in terms of normative aspect of economic regulation, which I judged unnecessary for the purpose of this dissertation, I stopped seeking further literature for Chapter III.

Literature gathering and information process for Chapter IV is relatively straightforward. I used a computer search (e.g., Info Trac) to get legal literature related to
interconnection policy by using key words such as "essential facility doctrine." Using vertical integration and related issues as key topics, further economic literature were gathered from the economic journals and books. The theoretical information was restructured to show the two models of telephone industrial organization in the U.S. Further information of antitrust history in the telecommunications industry was incorporated to set the stage for discussing interconnection pricing policy.

The literature gathering process in terms of structural logic analysis in Chapter V was supported by my previous acquaintance with much telecommunication's literature in different areas and early effort of gathering access-charge related literature. The literature for the structural logic analysis of Chapter V can be classified into three categories: historical literature, theoretical literature, and empirical findings. Historical literature involves those which show the historical development of access charge program in the U.S. and deal with costing and pricing issues from more practical point of view. I found those literature available at the Program on Information Resources Policy at Harvard University by using First Search, a computer search program. I collected them through interlibrary loan service available at the Ohio State University. Theoretical literature, which were used in various contexts of the analysis, were collected as the discussion of each component in structural logic analysis progressed. For example, in terms of tools as a linkage component in the structural logic analysis, journal articles and scholarly books which deal with costing and pricing were gathered from both institutional and neoclassical economic traditions. In addition, articles related to telecommunications pricing issues were collected from the rather specialized journals such as
The important aspect of selecting literature related to empirical findings is the choice of uneconomic bypass and universal service as the main issues of the FCC plan. That decision was made after I examined the goals of the plan, which can be summarized by the concern with those issues. Some of the empirical studies related to uneconomic bypass such as the 1984 FCC study, and the Bell Operations Research study were collected by interlibrary loan service. In addition, publications from Division of Research at Michigan State University and from National Regulatory Research Institute at the Ohio State University were employed to show empirical studies of uneconomic bypass. Universal service literature were gathered from various sources such as *Telecommunications Policy* and *Journal of Communication*.

Much of the work to construct the structural logic of the FCC access charge plan was involved with reorganizing the vast amount of information based on the criteria provided by the framework. More specifically, the elements and linkages of structural logic analysis provided important criteria to process the information gathered from various sources. The primary focus of information treatment was directed to making the process of access charge development look more dynamic by identifying relevant economic perspectives and explicitly placing them in the various contexts of the process.

The information from the newly acquired literature for structural logic analysis were sometimes combined with the information established in Chapter III (e.g., separations policy and institutionalist thought). In particular, the important role of
information established in Chapter III can be found in the normative assumptions of access charge plan. By identifying the most plausible explanation of the public interest related to the cost-setting and price-setting judgments from the knowledge base, I could make the analysis of normative assumptions of the practice more explicit and complete, and show dynamic nature of valuation process.

2. Method of Lesson-Drawing

a. Lesson-Drawing Criteria

While Rose primarily focuses on the instrumental policy lessons, by incorporating the policy design perspective, I can extend lesson drawing to include a larger set of lessons. In this context, Peter J. May (1992) provides three important learning concepts. According to him, learning can occur not only over policy tools or interventions but also policy problems or objectives. The latter concerns "the social construction of policy problems or objectives." In addition, learning can entail new understanding about "the political feasibility of a given idea or prospects for advancing a given problem." May (1992) names these three different types of learning as "instrumental policy learning," "social policy learning," and "political learning," respectively. May's description of each concept is briefly introduced below.

Instrumental policy learning entails new understanding about the viability of policy intervention or implementation designs. The foci are policy instruments that form the basic building blocks of policy and implementation designs.... [I]nstrumental learning need not be goal-oriented or based upon agreement about goals.... Recognition of the limitations of particular policy instruments, or implementation approaches constitutes instrumental learning (p. 335).
Social policy learning entails a new or reaffirmed social construction of a policy by the policy elites of a given policy domain. The foci are the policy problem itself, the scope of policy, or policy goals. Social learning does not entail individuals or organizations becoming smarter about what it takes for policies to be improved. Rather, it involves a rethinking among the policy elites that comprise a policy domain of the dominant view about fundamental aspects of a policy. It entails reaffirmation or revision of the dominant causal reasoning about policy problems, interventions or objectives (p. 337).

Political learning entails policy advocates learning about strategies for advocating policy ideas or drawing attention to policy problems. The foci are judgments about the political feasibility of policy proposals and understanding of the policy process within a given policy domain (p. 339).

The basic criteria to draw lessons from the U.S. experience will be based on those three kinds of foci of policy and political learning. For the purpose of this dissertation, however, some modification is required especially in terms of political learning. While May's original learning agent for political learning is the policy advocacy group, and puts emphasis on strategies for advocating policy ideas, in this dissertation, I will assume the South Korean regulators or policymakers as the main learning agent of all three lessons. Instead of focusing on a particular advocacy group's learning about strategy, this dissertation will simply focus on judgment about political feasibility of general policy proposals from previously identified three economic traditions as potential advocacy groups in South Korean context. For that purpose, I will diagnose the U.S. experience in terms of the role of and proposals from those three economic traditions in the context of the general deregulatory movement. The U.S. analysis for political learning will be included in Chapter V. The overall lesson-drawing for South Korean policymakers will
be carried out by changing May's terms to instrumental policy lessons, social policy lessons, and political lessons in Chapter VI.

b. Case Study

Overall research design of this dissertation can be characterized as a comparative case study. However, the term "case study" defined as a method for collecting primary data is more relevant to the second part of my research. For example, while structural logic and problem structuring analyses are mostly based on the already existing theoretical discussions and empirical findings, the analysis of access charge policy in South Korea is based on primary government and related institutions' documents. Those documents were gathered during my visit to South Korea in 1993. During that time, I also had some opportunities to interview officials from the Ministry of Communications as well as researchers from the Korea Telecom Research Center, who had been involved with access charge project. The discussion of South Korean access charge policy in this dissertation is mostly based on those two sources of information.
CHAPTER III

HISTORICAL REVIEW OF ECONOMIC THOUGHT AND ECONOMIC REGULATION IN THE UNITED STATES

A. Introduction

As a policy, the access charge practice in the U.S. contains theories and assumptions through which it is related to the behavior of target groups. As it represents a form of regulatory pricing control taken by the formulation of antitrust policy in the presence of barriers to entry, its behavioral assumptions can be explored in terms of both regulatory and antitrust economics. By recognizing economic theories as an important intellectual source to build behavioral assumptions of the current interconnection pricing practice in particular as well as those of economic regulation in general, in this dissertation, I presume that economic regulation has been developed as a process of knowledge (i.e., theories) utilization from various economic science communities. The models and images of reality from these communities are considered not only as intellectual basis for providing coherence to concepts and directions of antitrust and regulation, but also as source of causing conflict and confusion over policy issues. Assuming this, the purpose of this chapter is to identify the most influential economic
traditions from the U.S. regulatory history, place them in historical context, explore their perceptions of market behavior, their respective preference on policy instrument for dealing with the market power problem, and their formulations of public interest associated with their preferred type of regulatory policy.

American history shows that, not only the early institutionalists such as Thorstein Veblen, Richard T. Ely, John R. Commons, John M. Clark, and Adolf Berle and Gardiner Means, but also the post-classical economists such as Edward Chamberlin, supplied one of the greatest critiques of classical economics, which had dominated economic philosophy and policy in late nineteenth and early twentieth century, and provided an intellectual foundation for economic regulatory approach based on public interest. Even though both traditions have contributed to our understanding of market imperfection and the role of regulation in correcting it, their approaches have been based on totally different methods, and have become prominent in different policy areas. For example, the early and succeeding institutionalists have been more prominent in the field of administrative regulation. Deeply influenced by Darwinian evolutionism and German historicism, the institutionalists paid more attention to the evolutionary aspects of institutional development. The focus on "ideology, technology, history, habit, previous investment, and lack of information or difficulty in communications" as driving force for individual human motivation and institutional structure led them to reject rationalistic psychology of self-interest that dominated both classical and neoclassical economic theory (Hovenkamp, 1990, p. 1014). For them economics could not generalize about the behavior of business firms. Each had its own working rules, which required individual
study. As a result, economic theory in this tradition paid much more attention to specific types of institutions and even single business firms, in order to determine how they functioned as a closed system. The influence of institutionalism was substantial on the design of administrative regulation as shown in the works of Henry Carter Adams, Richard T. Ely, John R. Commons, J. M. Clark, Martin G. Glaeser, James C. Bonbright, Gardiner Means, and so on (Trebing, 1984, 1994).

On the other hand, the post-classical economists such as Joan Robinson and Edward Chamberlin made big contribution to developing industrial organization theories which shed light on the imperfect structural aspect of market. Their theories and ideas were succeeded by mainstream industrial organization theorists (i.e., market structuralists) and became the dominant view for antitrust policy for decades. In spite of some early intellectual influence and theoretical contribution from institutional economists such as Adolf Berle and Gardiner Means, structuralists have taken markets as a fundamental unit of business analysis like classical or neoclassical economists (Sullivan, 1980). While the importance of a firm as an actual institutional business unit was recognized, their analysis tends to focus market structure in terms of a hypothetical firm as an abstract entity rather than in real life industries (Bain, 1986, p. 21; Bernhard, 1970, pp 51-53). In addition, their theories have been often written in the language of price theory, with diagrams and mathematics. But their willingness to sacrifice some mathematical rigor and tractability of perfect competition model for relevance and empirical validity distinguishes them from the orthodox neoclassical tradition (Keppler, 1994, Sullivan, 1977).
More recently, the orthodox neoclassical economists, who take price theory of self-correcting markets as the most important policy model, propose different perspective of economic regulation. Most importantly represented by the Chicago school, in brief, their model posits that consumers benefit from a free, competitive market that forces producers to make the most, at the least cost, sold at the lowest prices. The essence of this model lies in its claimed scientific proof of the automatic, self-regulating tendency of markets through the price mechanism. Price is the universal solvent of economic theory. Left unfettered, the forces of the marketplace will work toward an equilibrium price and output level and thus to optimal allocation of resources. Chicago school price theory adheres closely to the classical school's strong preference for a "free" market. In addition, their and other neoclassical theories bring a bias to antitrust and regulatory policy to the effect that its only rational purpose is to promote efficiency (i.e., allocative efficiency and productive efficiency).

The current policy debate over economic regulation can be characterized by increasing impact from orthodox neoclassical economists and defensive efforts by structuralists and institutionalists over the nature of economic regulation. Even though the latter two views have been developed in different contexts and have been prominent in different policy areas, they have common perspective to see market imperfection and necessity of policy intervention to correct it. As the current policy trend has been characterized as relaxing restraints on entry into some of the areas previously the province of the regulated monopoly incumbent, the two perspectives seem to find more complementary aspects, and make common defensive effort to protect "public interest"
from the spirit of strict deregulation (i.e., removal of price control on a natural monopoly as well as repeal of antitrust) (For a particular emphasis on structuralist paradigm by institutionalist, see Trebing, 1995).

The following discussion will be divided into three parts. Before proceeding to discuss those three economic traditions directly, in the second part of this chapter, I will review more earlier economic thoughts and their relationship with the emergence of early regulatory policies in the U.S. For that purpose, I will primarily focus on federal level of antitrust and regulatory policies. This review will serve as a context to understand historical and intellectual origin of those three schools in focus. The third part of this chapter consists of three sections which will show how each economic tradition perceives the market behavior. The first half of each section will contain historical context of inception or development of each economic tradition, brief introduction of its founders’ theoretical contribution and methodological characteristics. The second half of the section will be allocated to discuss the more specific positive, sometimes normative, theory of market behavior from each economic perspective and relate it to the nature of particular type of economic regulation as policy intervention mechanism each tradition prefers. The final part of this chapter will be devoted to identifying each tradition’s vision of social welfare or well-being, and formulation of public interest, to which economic regulation is presumed to serve.
B. Historical Review of Early Economic Thought and Emergence of Modern Economic Regulation in the U.S.

1. Overview

Changes in production and marketing techniques in the 1800s provided advantages for large-scale business corporations. However, aggressive actions on the part of entrepreneurs caused agitation for control of big business. The failure of the existing legal structure to limit business abuses generated the demand for new legislation to restrain business. In this context, two important federal legislations related to modern economic regulation were the creation of the Interstate Commerce Commission in 1887 and Sherman Act of 1890. The former was created to regulate the nation's railroads. The latter was to promote competition and prevent market dominance by giant corporations such as Standard Oil. Whether these legislations were affected by the contemporary economic thought is not obvious. Considering its preference for "laissez-faire" policy, it seems to be rather obvious to see little role of classical political economic thought on the creation of those government involvements. While some might see the role of newly emerging economics tradition, which was influenced by German historicism, in the early regulation of railroads, it is more questionable whether there was any influence of a particular economic tradition on the Sherman Act¹ (Thorelli, 1954; Letwin, 1965; 

¹ Hans Thorelli (1954) points out about economists' role in Sherman Act legislation as follows; In fact, (the economists') impact on public attitude towards the trust problem at the time the Sherman Act was passed appears to have been almost imperceptible. And in accordance with legislative custom at the time, rooted in traditional distrust of experts, Congress itself considered one antimonopoly bill after another without ever, insofar as is known,
Scherer, 1990). It is more likely that political forces such as Granger Movement or populist movement drove such early legislations. These political movements were extended to reform movement of the early twentieth century in the U.S.

Aside from these political movements, there emerged a critical concern with classical and newly emerging neoclassical economic thought, which dominated the economic communities until the late nineteenth century, but failed to provide good explanation of the newly emerging concentration of industry and its problems. Dissatisfaction with them led some economists to develop theories to explain the market concentration in some industries. These theories (e.g., natural monopoly), which were more like a confirmation or formalization of ideas presented in earlier judicial cases, were used to justify newly emerging market concentration (Hovenkamp, 1991). In the presence of market power following concentration, however, classical and neoclassical economists could defend laissez-faire policy as restraint on the abuse of economic power by just shifting their emphasis from actual competition to "potential competition." Under the influence of German historical school, on the other hand, "New School" political calling on the advice of professional economists (p. 120).

Granger movement was partially a response by farmers in Midwestern states to the poor service and excessive rates of the railroads. During the 1870s Granger-dominated legislatures established commissions to regulate railroads in a number of cases. The railroads protested the new laws, and several Granger cases reached the U.S. Supreme Court. The most important of these cases was Munn v. Illinois (1877), which became the first major test of right of states to regulate business activity. On the other hand, in the 1880s the populist movement became a potent political force. A coalition of farmers, laborers, and small businessmen, populism was an expression of resentment and frustration by the little guy against "captains of industry," the term coined by Thorstein Veblen, and their vast and oppressive organizations (Petersen, 1981, p. 60). This movement was culminated in the legislation of Sherman Act of 1890.
economists, who were more concerned with historical facts and ethical problems caused by newly emerging concentrated market, proposed a more positive state role to curb the abuse of economic power by private interests. This intellectual development reinforced the contemporary political populist movement and provided momentum for the reform movement in the late nineteenth and early twentieth century in the U.S.

In terms of particular economic regulation, New School economists' intellectual and institutional contribution was more visible in the development of public utility regulation. Henry Carter Adams and Richard T. Ely were important figures who provided the rationale and institutional tools for utility regulation. The spirit of the New School economists were succeeded by institutional economists who became the most important school of economic thought in the construction of federal regulatory as well as social welfare policies during the New Deal era. On the other hand, the New School economists' contribution to antitrust policy is questionable. The Sherman Act was doubted by these economists from the beginning since they saw ruthless competition through restoring atomistic competitive order as an ineffective and inefficient tool when compared to regulation in the face of increasing economies of scale in modern industry. Even though they supported a positive government role as an umpire for fair play in competition, they did not take an aggressive approach in the antitrust enforcement goals. It was not until Frank Roosevelt's second term that the strong implementation of antitrust policy gathered momentum with the aid of newly arising economic theories and empirical findings. These new economic thoughts were eventually incorporated into the structure-conduct-performance paradigm in the field of industrial organization, which dominated
the perspective of antitrust policy for decades in the U.S. This meant that the performance of a industry was thought to be directly related to its conduct, and that its conduct was directly shaped by its structure.

The following discussion will be centered on the early intellectual development of economic thought in the U.S. and their implications for economic regulations. However, the focus of this discussion is not to shed light on their influence on specific legislation or judicial decisions. Instead, it is to trace the development of important economic concepts and theories, identify economic science communities who developed them, and explore their ways to use them to support or oppose general economic regulatory role of government. This discussion will serve as a context to understand the historical and intellectual origin of the following economic schools.

2. Classical Economic Thought and Emergence of Neoclassical Economics

The Interstate Commerce Commission's regulation of railroads and Sherman Act's legal controls on competition coincided with the heyday of classical political economy\(^3\) and the emergence of modern neoclassical economic thought\(^4\) (Hovenkamp, 1989; Rowe, 3 Nineteenth century economists referred to their subject as "political economy". In an effort to carve out economics as an autonomous scientific discipline separate from politics, it was Alfred Marshall who changed the name of subject matter from political economy to "economics" (Landreth, 1976, p. 285).

4 Classical political economy was constructed by Adam Smith, David Ricardo, John Stuart Mill, and preached by Francis Wayland, Amasa Walker, Arthur Latham Perry and Francis Bowen in the U.S. (Kennedy, 1985). On the other hand, neoclassical economics started to emerge in 1870s with works by William Stanley Jevons, Leon Walras and Alfred Marshall. The main criterion for distinguishing between the two is the latter's emphasis on marginalism. For example, the former saw the value of commodity
1984). Classical political economy drew its inspiration from faith in the robustness and efficient functioning of private markets. It saw liberty or freedom from government and authoritarian restraints in economic and social life as an ideal. The medium of freedom of exchange in the market would allow the individual's acquisitive goals to be fulfilled the fullest extent, consistent with the liberty of each other member of society (Glaeser, 1957, pp. 202-204; Millon, 1988, pp. 1236-1238). The welfare and social control implication of the thought was "of an unconscious realization of the general welfare through the conscious striving of individuals for individual welfare" (Glaeser, 1957, p. 203). Through the operation of "natural laws" or "free competition," the sum of each individual's orderly pursuit of self-interest would yield the greatest benefits to all of society, as if "led by an invisible hand."

In this system, restricting the freedom either of production (e.g., state enforced monopolies) or of trade (e.g., protective tariffs) was suspected as "unnatural" attempts to make particular groups better off by depriving some people of their properties and bestowing them on others (Kennedy, 1985, p. 947; May, 1989, pp. 270-277). From this view, state regulation was merely to protect the individual's personal security and property interests from the force and fraud of other individuals. The functions of government were limited to those of umpire in the struggle.

While the classical political economy was full of such ethical terms as "naturalness," "freedom," "fairness," or "justice," the history of newly emerging
neoclassical economics was largely that of removing those vocabularies to sustain the scientific claim under a newly grown positivistic idea (Hovenkamp, 1990 b; May, 1989; Kennedy, 1985). With the focus on modern "science," the latter started to represent a positive approach based on replicable observations of "facts" and the formal activity of generating models composed of elements with a merely logical rather than empirical relationship. Using marginal utility or supply and demand principle, for example, such neoclassical economists as Jevons and Marshall were able to detail Adam Smith's vision of the interdependence of all prices and markets and thereby to clarify the workings of the market mechanism.

In this process, the early notion of "free" competition of classical economists was elaborated into a model of "perfect competition," which can be characterized by fungible products, small firms, easy entry and exit from business, and constant returns to scale (Hovenkamp, 1988; for the complete development of perfect competition theory, see Stigler (1957)). In this model, competition among many firms would eliminate their strategic behavior and force each firm to produce the best product at lowest cost or decline and close. If an innovation made products better or cheaper, it would have to be copied by every firm in the market. Those that did not do so would suffer the consequences. In this way, the invisible hand - market competition - would guarantee consumers the best combinations and quality. From this perspective, the outcome of economic activity is free only in the sense of "consumer sovereignty" (Kennedy, 1985, p. 960). People are free to consume what they want subject to rigid constraints imposed by
the pricing of commodities at their efficient prices and by their initial resource endowment.\footnote{Whether these economic thoughts affected the legislation of early economic regulation has been controversial especially in the current debate in antitrust policy. More recently, for example, the vague terms of Sherman Act brought its legislative intent back into focus and raised controversy over the influence of the contemporary economic thought on the legislation. In particular, Judge Bork's review of legislative history of Sherman Act led him to a conclusion that the only goal of Sherman Act is economic efficiency. As this conclusion was extended through the application of neoclassical price theory to the justification of market autonomy, it opened new stage of debating the original influence of economic thought on the legislative intent. Counter arguments were brought up by many antitrust scholars who saw the political force as main drive for the legislation. Considering the emphasis on laissez-faire nature of classical political economy or emerging neoclassical economics, for example, they cannot be said to have played any significant role in either bringing about or shaping the substance of the Sherman Antitrust Act (Chapman, 1991). Instead the Sherman Act can be seen as an expression of "America's pragmatic tradition of political intervention to mediate conflict by law" rather than enaction of "that day's pieties about the fittest survivors" or codification of "a timeless economic calculus" (Rowe, 1984, pp. 1514-1516). It was a Congress reaction to "pervasive public outrage over the great trusts, and popular demand for the restoration of a balance of economic power in American society" (Millon, 1988, p. 1224).}

3. Emergence of Natural Monopoly and Destructive Competition Theories

The American monopolies of the early nineteenth century were often not created by technology or the marketplace, but by monopoly charters given to firms by the government (Hovenkamp, 1984). For classical economists or early neoclassical economists, who held a relatively static equilibrium model of the economy, in this context, only artificial government privilege was responsible for trust intrusion into the system (May, 1989; Hovenkamp, 1989). Without governmental intervention, it was supposed that economy of atomistic competition would naturally follow. Monopoly
profits in an unregulated industry were impossible since new competitors would enter the market if an industry earned higher profits than other industries. From this perspective, governmental action was unnecessary to ensure dispersion of economic power. Since those theories normally assumed that very large firms could never be as efficient as smaller ones in the presence of constant or decreasing returns to scale, they never suggested that there may be situations in which great efficiency through increasing scale might result in monopoly (Hovenkamp, 1988, 1990; Millon, 1988). Until the late 1880s, therefore, prevailing American economic thought refused to accept either the inevitability or the naturalness of large-scale concentrations of capital (Horwitz, 1985, p. 190).

In spite of the early economists' insistence on the inherent inefficiency of large firms and their subjectivity to inexorable erosion by competition, the rise and apparent success of the great trusts in the nineteenth century required some economic explanation. American economists such as Henry Carter Adams, Arthur T. Hadley, John Bates Clark, and Richard T. Ely addressed this problem through elaborating the modern cost concepts (e.g., fixed and variable costs), and constructing "ruinous" or "destructive" competition and the "natural" monopoly theories (Hovenkamp, 1988; Millon, 1988; Sharkey, 1982; Lowry, 1973). It was the development of the railroad in the middle of nineteenth century

\[ \text{(6)} \]

\[ \text{Even though demand theory was quite well developed by that time, the cost problem had been paid little attention by the classical, and even early neoclassical economists (Hovenkamp, 1989, p. 125).} \]

\[ \text{(7)} \]

\[ \text{The term "natural monopoly" was used for the first time by Richard T. Ely in the 1880s (Lowry, 1973).} \]

\[ \text{(8)} \]

\[ \text{While these cost terms and theories mostly had analytic nature, they also seemed to be empirically constructed over a long historical fact. For example, the term} \]
that prompted the emergence of those theories. The railroad represented the industry with a large and highly specialized fixed investment and relatively low operating costs. During the late 1800s competition in that industry often resulted in excess capacity and the railroads responded by cutting prices. However, competing railroads often faced the same problem and retaliated with further price cuts. The history of American railroads is replete with examples of price wars between competing lines. With the development of theoretical and conceptual economic literature on the railroad problem in the 1880s and 1890s, it began to view railroads as an extreme example of economies of scale or ruinous competition.

The economies of scale implied circumstances that inhibited the simultaneous existence of two or more competing firms either because supply itself was unavoidably

"ruinous competition" was already used in cases as early as in Charles River Bridge v. Warren Bridge in 1837 in spite of being explained in less technical terms (Hovenkamp, 1989, p. 128). In addition, the distinction between variable and fixed costs was more likely to be drawn from the observation of the business world. This empirical aspect seemed to make those economists, who were also very much influenced by German historical school and its inductive method, readily use those analytic terms to explore contemporary economic problems (See "5. 'New School' Political Economists and Economic Regulation" in part B). While these theories and terms have been elaborated and discussed in detail in the neoclassical tradition (e.g., Sharkey, 1982; Kahn, 1990), in addition, they were used to shed light on new weaknesses in the neoclassical model of equilibrium markets at a time when the theory of perfect competition was just emerging (Hovenkamp, 1989). Interestingly enough, the names of those econoamists (e.g., Henry Carter Adams and Richard T. Ely) who developed and used those theories in early developing stage of economic regulation, appear more often in the institutional economic literature.

The correlation between a legal right to a monopoly and the level of technology in an industry was not particularly strong until after the mid-nineteenth century (Hovenkamp, 1984).
limited or because capital requirements discouraged rival entrants. \textsuperscript{10} Before the late nineteenth century American policymakers did not have a developed economic theory of natural monopoly. Instead it was believed by common sense that certain markets performed most efficiently as monopolies (Hovenkamp, 1984, pp. 1282-1284). The lack of a usable model for regulated monopoly led early policymakers in the U.S. to rely on a list of enterprises historically perceived as entitled to monopoly status. While some of these enterprises (e.g., bridges, ferries, and railroads) were eventually recognized as natural monopolies, other industries (e.g., slaughterhouse) which received a franchise from the state were potentially competitive industries. Furthermore rapidly changing technology in the early nineteenth century complicated the monopoly status of an industry. Without a consensus model for regulated monopoly, therefore, the policy debate on the state's power to create monopolies and its power to regulate \textit{de facto} monopolies\textsuperscript{11} was dominated by "political" concerns\textsuperscript{12} (Hovenkamp, 1984, pp. 1293-

\textsuperscript{10} Natural monopoly problem as a rationale for public intervention can be contrasted with the ruinous competition in terms their relationship with competition. For example, the natural monopoly requires government intervention since there is too little competition, while the problem of ruinous competition is that there is actually too much competition (Petersen, 1989, p. 230).

\textsuperscript{11} Without a theory of natural monopoly, for example, \textit{Munn v. Illinois} (1877) was determined by the fact that the grain elevators were in fact monopolies and that they performed a service in the "public interest." The Court viewed these firms as holding a "virtual monopoly", designated them "affected with a public interest," and established the state authority to regulate their operations.

\textsuperscript{12} Hovenkamp (1984) provides insight that when the regulated industry was viewed politically, the focus centered on a interest group conflicts about how wealth should be distributed. Quite apart from the political process, on the other hand, early economists provided the justification of regulated industry in terms of relevant technology and of the physical environment where the market is located. Most recently
In this social context, the development of natural monopoly theory eventually provided policymakers an important economic criterion to judge "where the line between competitive industry and regulated monopoly ought to be drawn" (Hovenkamp, 1984, p. 1312). Some of the previously chartered and newly emerging regulated monopolies (e.g., utility industries) could be justified by the more objective criterion. While who should and how to regulate monopoly might remain as a political question, at least the question of whether to create or keep a monopoly in those industries was answered by natural monopoly theory.

On the other hand, the basic argument of ruinous competition was that in markets with relatively high fixed costs, competition will continually drive prices down to the level of variable costs, without enough remaining to cover capital investment. The presence of high fixed costs complicated the classical equilibrium theory by suggesting that firms already in the market would remain as long as prices generated enough revenue to cover their operating, or variable costs and to contribute towards the amortization of

Hovenkamp (1995) criticized public choice or public interest group theorists such as Stigler, Posner and Peltzman who view "political bargaining among rent-seeking special interest groups as the best explanation of regulatory outcomes" (p. 549). According to him, their explanation makes any search for underlying, technical reasons for regulation uninteresting or unimportant. He points out, on the contrary, "The history of regulation is not merely about political process; it is also about "technical" factors such as technology, market characteristics, information, and innovation" (pp. 553-554). In this context, the early neoclassical economic tradition provided theory of "natural monopoly," one of the most important market failure concepts, as a determining factor of appropriateness of regulation.

These questions have been answered differently by neoclassical economists and institutional economists. Their approaches are based on different normative assumptions and therefore accompany different political implications.
fixed costs. Competition would force capital-intensive industries to charge ruinous prices that would eventually drive those industries into bankruptcy. To avoid mutual destruction, competitors combined to control output. The competitive process itself seemed to push business into combinations. In this sense, it became possible to think of the trusts as products of "natural" forces (Millon, 1988, p. 1271).

4. Potential Competition and Laissez-faire Policy Defense

By the turn of the century, many economists believed that economies of scale or high fixed costs explained and "justified" the growth of the trusts. They rejected optimistic assumptions about the efficacy of old style competition as a check on concentration. Instead they expressed optimism about large corporate growth as simply "the natural product of a progressive evolutionary process unfolding over time" (May, 1987, p. 569).¹⁴ This optimism was mostly facilitated by the classical or early neoclassical economists' belief that "when actual competition was eclipsed its place would be taken by potential competition" (Thorelli, 1954, p. 116). For them, open rivalry in the market in the traditional sense is but one form of competition. Without real competition, therefore, potential competition was presumed to "effectively neutralize the

¹⁴ This optimism appeared in several ruinous competition defenses in the early history of common law and Sherman Act cases (Hovenkamp, 1989, pp. 129-136, May, 1989, p. 285). This theoretical development, more importantly, was reflected in the establishment of "rule of reason" in the 1911 Standard Oil (Peritz, 1989, 1990; Hovenkamp, 1989). The supporters of rule of reason believed that competition could sometimes be as dangerous as combinations. They believed that agreements to mitigate effects of competition, for example, in the case of ruinous competition, were sometimes justifiable.
possibility that the trusts could produce market dominance, or the ability of one firm or a small group of firms to charge prices well above costs" (Hovenkamp, 1989, p. 145). The spirit of potential competition was well summarized by contemporary sociologist Franklin H. Giddings' statement. For him, competition was a type of energy. Then, "that competition in some form is a permanent economic process is an implication of the conservation of energy" (Giddings, 1887, p. 66; quoted in Thorelli, 1954, p. 117). As a result, if less actual competition were present, then more potential competition necessarily existed. Many contemporary writers\textsuperscript{15} based their argument against governmental measures against the trusts on the alleged efficacy of potential competition as an instrument of social control. In short, facing continued advance of technology and economies of scale, a policy of laissez-faire could be still supported by just changing their emphasis from old-fashioned perfect competition to potential competition.

The effectiveness of potential competition and the ensuing more generous attitude toward private monopoly or trust depended on the classicism (or neoclassicism)'s emphasis on long-run perspective (Hovenkamp, 1989, pp. 143-153). Recognizing government restrictions as only market entry barriers, it was presumed by early economists that all monopolies must face competition in the long run, unless the state prevents competition from occurring. The long-run perspective led the economists to more laissez-faire tendency to see "the general, or final, effects of policies, not in the

\textsuperscript{15} They included Andrew Carnegie as an entrepreneur, Franklin H. Giddings as a Sociologist, John Bates Clark and George Gunton as economists (Thorelli, 1954, pp. 109-132).
temporary dislocating resulting from one firm's having control over an important resource in a given market" (Hovenkamp, 1989, p. 150).

5. "New School" Political Economists and Economic Regulation

But all economists did not accept these trusts and monopolies without doubt. Among economists who accepted heightened concentration as the inevitable product of a natural process, there were some economists who were more concerned with "the behavior of the men in charge of the giant combinations" or "monopoly power which would always be wielded in an antisocial manner" (Millon, 1988, p. 1273; May, 1987, p. 570). The economists such as Richard T. Ely, Henry Carter Adams, John Bates Clark, E. Benjamin Andrews, Edwin R. Seligman,\(^\text{16}\) who were exposed to and influenced by the German historical school of political economy,\(^\text{17}\) mostly represented this perspective. Impressed with the Darwinian hypothesis, this school put emphasis on the relativity of economic truth and the necessity of adjusting economic thought to the conditions of a particular time and a particular society. It also protested against the philosophical and

\(^{16}\) Many of these economists had postgraduate education in Germany under the auspices of the German historical school. But after returning to the U.S., many of these German-trained economists became involved with the new theoretical development in the mainstream economics, and became its eminent members. The most important figure in this transition was John Bates Clark. He was considered as the most important contributor in early development of neoclassical economics in the U.S. (For a brief history of educational background and of professional activities of these economists, see Seckler, 1975, pp. 14-18).

\(^{17}\) The original German historical school includes Wilhelm Roscher, Gustav Schmoller, and Max Weber. Max Weber's Protestantism and the Rise of Capitalism was the one of the most famous works from the school.
psychological premises of neoclassical tradition from which economic laws are derived and the use of the deductive method for establishing them (For the methodological discussion of German historical school, see Pribram, 1983, pp. 219-225; See also Fine, 1956, pp. 198-202). This tradition of rejecting all a priori principles and relying on history and statistics to provide the facts of economic life led these new economists in the U.S. to approach economic problem "in a pragmatic spirit, judging each case on its individual merits" (Fine, 1956, p. 204).

From this tradition, for example, they pointed out that the appeal of laissez faire was outdated for more complex social problems after the industrial revolution, even though it had been legitimate and correct, facing excessive restrictions of the "mercantalist" era, to call for end to paternal government and for the adoption in a policy of laissez faire. In addition, they were critical of the classical assumption that the individual in following his own self interest unconsciously serves the best interests of society and that, therefore, state intervention is both unwise and unnecessary (Fine, 1956, p. 203-205). The emphasis on identicality between individual interest and social interest was denied by these economists, especially facing a newly emerging social condition that self-interest dictated that monopoly power would always be wielded in an antisocial manner.

Reacting to an increasingly apparent discrepancy between the conclusions of classical political economy and the demands of economic policy, these economists focused their energies on how government should respond to those "immoral forms of the pursuit of self-interest," which could not simply be let alone. Having decided that some
combinations and all natural monopolies were inevitable, these economists preferred a regulatory approach or nationalization to a reestablishment of an atomistic competitive order. For example, any attempt to prohibit or "destructor" those combinations and monopolies by law was thought to reflect the outdated belief "in the universal existence and beneficence of free competition" (Seligman, 1887, p. 374: Quoted in Letwin, 1965, p. 75). Then only relevant policy question became to be "where and how beneficial cooperation can be introduced without involving fraud and baneful monopoly" (Andrews, 1889, p. 137; Quoted in Millon, 1988, p. 1274) or whether an industry of increasing returns should become an "irresponsible, extra-legal monopoly, or a monopoly established by law and managed in the interest of the public" (Adams, 1887, p. 53; Quoted in Letwin, 1965, p. 75).

In spite of their common distrust of those huge, privately controlled monopolies, those economists differed as to the exact action government should take (Thorelli, 1954, pp. 121-132; Fine, 1956. pp. 229-251; Letwin, 1965, pp. 71-77). For example, Richard E. Ely classified monopolies into two kinds: natural and "artificial." The former included "those businesses which become monopolies on account of their own inherent properties" Other monopolies were artificial, facilitated through governmental grants of patents, copyright privileges, or through private combinations. Monopolies in manufacturing and processing industries did not enjoy superior efficiency and were merely artificial products of anticompetitive combinations. Eli recommended public ownership and operation of natural monopolies such as public utilities. For artificial trusts, on the other hand, the
proper policy was withdrawal of the tariffs and other legal privileges that protected them\textsuperscript{18} or by regulating the natural monopolies that created them.\textsuperscript{19} Henry Carter Adams, who introduced notions of "increasing returns," "constant returns" and "decreasing returns," recognized two spheres of economic activity, a competitive sphere and a noncompetitive sphere. Then the power of the state should be used to "determine the plane of competitive action" (Adams, 1887; Quoted in Thorelli, 1954, p. 130). Once this has been done, competition can be relied on to secure to the public the greatest possible benefits. In his view, the play of competition should be encouraged wherever possible, but the rules of the game had to be publicly sanctioned. When competition gives way to monopoly, however, state intervention is necessary to ensure that the public will be served. Adams, without committing himself, recommended several options: carefully guarded franchises, regulatory commissions, public competition with private industry, or public ownership. John Bates Clark also acknowledged ineffectiveness of competition in some industries such as public utilities, and recommended governmental ownership or, preferably, regulation in those industries. As the most active supporter of strength and social usefulness of potential competition, however, in general, he called for modest state intervention. Only where the potentiality of competition was not great enough to prevent abuse would it be necessary to turn to regulation of the direct and continuous type.

\textsuperscript{18} For example, in the age of monopoly from the late nineteenth and early twentieth century, the state and federal governments were generous in establishing tariff protection for business and in granting large subsidies to railroads.

\textsuperscript{19} This method was suggested by Ely, especially noticing railroads, which were supposed to be natural monopolies, granted the Standard Oil company the rebates and very low rates (Letwin, 1965, p. 76).
As shown in the works of these economists and other economists in Progressive era, it was generally agreed that natural monopoly such as public utility might be controlled by the state, either by outright government ownership or by direct government regulation. Even when they were most ardent in denying laissez faire or classical economic theories, however, these economists granted that competition was necessary and beneficial in other industries. But it appeared that their emphasis shifted from laissez-faire to the active state role for the optimal amount of competition (i.e., regulated competition). The former was an uncritical acceptance of the notion that free competition could be maintained without government intervention. As free competition did not prevail in the economy and private firms could not be trusted to achieve fair competition, on the other hand, New School economists stressed the role of government as "an umpire to ensure that the competitive game was cleanly played and that those who violated the rules of fair play were punished" (Fine, 1956, p. 386).

Letwin (1965) explained this compromise by the progressive economists' balanced position between liberalism and interventionalism, between "English" and "German" views (pp. 72-73). The principle of free competition was a value long appreciated in British political economy. On the other hand, competition was considered inherently harmful by the German school, who presented "outright aversion to the organization of

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20 But the nature of Progressive era economic proposition in terms of competition policy is quite different from that of the following New Deal era antitrust policy. Recognizing benefit side of economies of scale, the former put more emphasis on regulation, including self-regulation and creative cooperation than ruthless competition. On the other hand, the latter is characterized more aggressive approach in the antitrust enforcement goals (Hovenkamp, 1985, p. 221).
the capitalist economy and rational principles" and put emphasis on "organic totality of the nation" (Pribram, 1983, p.219, p. 213). In the process of compromising these two traditions, American progressive economists coined a native "American" economic policy by discovering "when competition was useful and when it was inferior to combination or monopoly" (Letwin, 1965, p. 73). In the same vein, Sklar (1988) explained the "corporate liberalism" emerged in the Progressive era as the general movement seeking to "affirm administered markets and the growth of regulatory government without embracing a totalistic statism - or a corporate state" (p. 34). Its vision was characterized by limiting the state's command of the market to public utilities, and rendering the general economy, although subject to regulatory policing and modification, relatively autonomous (Sklar, 1988, p.36-38). Facing economic power in the newly concentrated industries, the general welfare and the public interest was thought to be achieved by a "a growing role for positive government in both regulative and distributive functions, but by and large in a manner consistent with the greatest possible preservation of private initiative and private-property ownership as against state direction and state ownership" (Sklar, 1988, pp. 38-39).

The reform movements of the early twentieth century were to witness the implementation in varying degrees of recommendations from those economists in Progressive era to the problem of the relationship of the state to the individual and to the economy (Fine, 1956). For example, the passage of the Federal Trade Commission and Clayton Acts of 1914 embodied the belief of the Progressive generation in efficient government by an administrative state. In addition city governments during the
Progressive era assumed the ownership of municipal public utilities or subjected them to strict regulation; state governments strengthened their control over railroads and brought public utilities under state supervision; and the federal government increased the power of the Interstate Commerce Commission over railroads, and sought by means of new legislation to arrest the development of trusts.

C. Behavioral Assumptions of Economic Regulation from Three Economic Perspectives

1. Behavioral Assumptions of Economic Regulation from Institutionalist Perspective

a. Origin of Institutional Economics

As the operation of modern capitalism was not conforming to the predictions based on traditional economic theorizing around the turn of century, many economists started to question the assumptions and conclusions of the classical or newly emerging neoclassical theory. In particular, New School political economists, who were familiar with and friendly toward the German historical school, became important part of challenging the orthodox economic thought and criticizing traditional doctrine that minimal government interference produced the maximum social well-being. Socially, around the same time, political force such as populist movement was providing the momentum for social control and reform. It was this surroundings when institutional economics began in 1898 with the publication of Thorstein Veblen's article entitled "Why is Economics not an Evolutionary Science?" John R. Commons, Wesley Mitchell, and John M. Clark were the early outstanding figures of this tradition.
The influence of the German historical school on American institutionalism is quite visible (Seckler, 1975; Hovenkamp, 1990). Veblen was associated as a student or a co-worker with John Bates Clark, who had German mildly reformist thinking in spite of his more well known affiliation with American neoclassical economics, and Richard T. Ely, who was an ardent believer in the superiority of the inductive method of German historicism. Furthermore, Eli, with his student John R. Commons, was the founder of institutionalism at the University of Wisconsin by retaining historical tradition in their courses of study. Consequently, the inductive method, via the study of history, became the important part of institutionalism (Oser, 1970, p. 331). Unlike the German historical school, however, the institutional economics emphasized the role of institutions in economic life. An institution is not only an organization or establishment for the promotion of a particular objective, but also an organized pattern of behavior, accepted as a fundamental part of culture. Then the role of economists is to study human behavior in its institutional setting.

While the institutional economics shared the critical attitude to conventional economic theory characteristic of German historical school, it was a characteristically American movement with unique features of its own, lent to it by its connection with the American philosophy of pragmatism (Pribram, 1983, pp. 355-357; Spiegel, 1983, pp. 628-629). In accordance with the teachings of pragmatism, institutional economics formed an unique American economic thought which has been interpreted as a "revolt against formalism," that is, formalism of abstract deductive reasoning in the orthodox economics. Appealing to experience rather than to universally valid reason, institutional
economics replaced *a priori* abstract reasoning by empirical studies. Like pragmatism, in addition, Darwinian influence led institutional economists to reject static viewpoint that sought to discover eternal economic truths without regard for differences of time and place, without concern for changes that were occurring constantly. Instead they stressed the biological aspects of evolution and assign to economics the task of explaining man's adaptation and survival under the ever-changing conditions of social, political and economic life. Most institutional economists took the reform Darwinist point of view instead of the social Darwinist one. While the latter adhered to "natural selection" view and put emphasis on laissez faire, under which the fittest were guaranteed survival, the former took "artificial selection" view and stressed the man's ability to learn the art of adjustment to new conditions by deliberate purposeful action (See Hovenkamp (1993) for the discussion of difference between social Darwinist and reform Darwinist, and between marginalism and Darwinism).

Institutional economics reached its high point in the interwar period in the U.S. when it was the principal school of economic thought (Foster, 1991, p. 207). Especially exerting a strong influence on policy, not only were the institutionalists fervent protagonists for reform movements in early twentieth century, but also became the main participants in policy-making in the New Deal era. 21 For many, the New Deal was

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21 The most distinguished institutionalist in this reform movement was John R. Commons. His contribution in modern American institution was well recognized by one of the most prominent neoclassical economists. Milton Friedman spoke to world-known "Chicago School" scholars gathered in a conference on the "Intellectual History of Law and Economics" in 1981 as follows: "I would share the view that institutional economics was empty as a part of economics. But I do not share the view that the people who participated in the institutional movement failed to have a very important influence on a
believed to be the product of institutionalism (Dorfman, 1959; Boulding, 1957; Pribam, 1983; Oser, 1970). In terms of reform, the institutionalists denied that market prices are adequate indices of individual and social welfare and that unregulated markets lead to the efficient allocation of resources and a just distribution of income. Espousing liberal, democratic reforms in order to bring about more equitable distribution of wealth and income, they introduced principles of the welfare state into the economic policies of the U.S. Holding that the interest of public transcend of the individual, and focusing on the need for regulation of the market, in particular, institutionalists provided not only a rationale for public interest regulation, but also practical tools for its implementation, through the study of cost characteristics and pricing, ratemaking reforms, and organizational and institutional reforms (Trebing, 1994).

The general methodological and theoretical concerns of institutionalists is well summarized by Seckler (1975) as follows:

The institutionalists protested at the overly abstract and deductive character of mainstream economics. They wished to make economics more 'relevant' to social problems and employ it as an instrument of reform....Above all, the institutionalists wished to provide economics with a criterion of value other than the price of commodities. They wanted to distinguish between the right and wrong, production and exploitation. They were concerned with economists' preoccupation with perfectly competitive model and free trade while the world was becoming dominated by big business and imperialism. They emphasized the impact of technology on society and the force of legal and social institution in determining human choices (p. 1-2).

lot of things. John R. Commons, for example, has had very little influence on the development of economics as a discipline, but he had a tremendous influence on the growth of many legal institutions, principally through his disciples at Wisconsin.....I spent a year once at the University of Wisconsin, and the influence of John R. Commons was oppressive" (Kitch, 1983, p. 171).
In order to understand the theoretical nature of institutionalism in general, as well as an intellectual context of institutionalists' perspective of economic regulation in particular, which will be discussed in the following section, I will briefly review the theoretical contribution of two of the most prominent early institutionalists: Thorstein Veblen and John R. Commons.

(1) Thorstein Veblen

Institutionalism started with Veblen's attack on neoclassical economics in his article "Why is Economics not an Evolutionary Science?" For Veblen, the impact of the dynamic and "life process" aspects of the culture can be studied only within a framework derived from an evolutionary discipline. Thus Veblen regarded biology as being an inherently better prototype for studying economic behavior than physics, from which the neoclassical economists derived their preoccupations with static equilibria.

With the shift of focus of economics to evolutionary process, Veblen tried to explain what orthodox economic theory assumed as given, the particular institutions of a culture. To understand the development of the industrial society, in particular, Veblen developed some concepts about traits of human nature. Veblen terms these relatively fixed underlying traits of human behavior "instincts." He regards the most important instincts which shape man's economic activities as the "parental instinct," "workmanship," "idle curiosity," and "acquisitive instinct." The parental instinct is

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22 This summary is based on several economic history books. It includes Landreth's *History of Economic Theory*, Rima's *Development of Economic Analysis*, Pribram's *A History of Economic Reasoning*, etc.
originally a concern for family, tribe, class, nation, and mankind. The instinct of workmanship makes us desire to produce goods of high quality, to be proud of and to admire workmanship, and to be concerned with efficiency and economy in our work. Idle curiosity leads us to ask questions and seek explanations for the world around us. It is an important element in accounting for the development of scientific knowledge. The acquisitive instinct is the opposite of the parental in that it leads the individual to regard his own welfare rather than that of others.

Veblen sees the chief dynamic influences on human behavior as deriving from changes in technology, i.e., changes in "the methods of dealing with the material means of life." Man's technological activities are a reflection of his instincts of parenthood, workmanship, and idle curiosity. The noninstrumental, nontechnological, prescientific manner of approaching the unknown and seeking explanations or effects Veblen calls "ceremonial behavior." Ceremonial behavior is static and past-binding since it derives from social institutions, which change only slowly, if at all, generation to generation. Thus, Veblen saw an essential dichotomy in all human behavior which reflected, on the one hand, the impact of a dynamic technology and, on the other, the static ceremonial influences derived from prevailing institutions.23

Veblen's analysis of the culture and economy of his time is founded upon this dichotomy. According to Veblen's view in The Theory of the Leisure Class, for example, consumption patterns are less the result of the rational calculation of marginal gains and

23 This dichotomy has been incorporated with John Dewey's instrumental theory of value and further developed by succeeding institutionalists such as Clarence Ayres, Paul D. Bush and Marc R. Tool.
losses than the result of habit, and consumption patterns of others in the society who stimulate "emulative display" and "conspicuous consumption." This is the source of the fundamental dichotomy which characterize consumer behavior. Society seeks to emulate the standards do not satisfy man's need - derived from the "instinct of workmanship" - to engage in useful, welfare-serving activities. Man's technological bent is thus perverted by a culture which is oriented toward wasteful, conspicuous consumption.

Veblen's further attack on the market system appeared in The Theory of Business Enterprise. Distinguishing between making goods and making money as a basis for the observation, he pointed out that the monetary returns from investments negatively affect the life process of the society. The community is abused via the "advised idleness" of industrial plants and the "capitalization of inefficiency," which reduces output in order to maintain prices. Waste from this source is compounded by advertising directed at the sale of fashionable goods, which contribute to "the making of money" for business enterprise rather than "the making of goods" for consumer satisfaction. In Absentee Ownership, in addition, Veblen explained both the greatness and the weakness of modern capitalism by "absentee ownership," a notion that one had a right to property not in his immediate physical control. With the "transition to the machine industry and factory system," absentee ownership became the rule rather than the exception, and owners became "investors." This led to the separation of ownership and control and an attendant lack of accountability.

In spite of Veblen's restraint from proposing specific government measures due to his social Darwinist tendency, we can draw some implications from his observations.
For example, the lack of accountability of modern capitalism justified more intensive regulation by the state (Hovenkamp, 1990). In addition, the functioning of the price system cannot be equated with human well-being when man's instinct for workmanship is perverted by patterns of consumption which emulate a wealthy leisure class. Thus the state might do well to mitigate these undesirable influences by taxing items for conspicuous consumption to compensate those who experience psychological losses in consequences of their display (Rima, 1978, p. 318). Contrasted with orthodox economists who "were amazed at the welfare produced by the modern industrial economy, Veblen illuminated "illfare" of modern capitalism and became "a rallying point for many who felt that government action might remedy some of the most conspicuous faults of a pecuniary culture" (Landreth, 1976, pp. 335).

(2) John R. Commons

John R. Commons was not only a pioneer in institutional economics, but also one of the most important economic reformers in the first half of the twentieth century. Public utility regulation, social insurance, and collective bargaining in the U.S. all owe much to Commons (See Dorfman, 1959, pp. 377-398). In this respect, he has been described as "the intellectual origin of the movement toward the welfare state" (Boulding, 1957, p. 7).

For Commons, it is not atomistic, hedonistic individuals acting in competitive markets that form the exchange relationships that connect the separate parts of the economy. Orthodox price theory might satisfactorily explain exchange and price in a few
very special situations where there is complete anonymity between buyer and seller and therefore exist only "exchanges" but no "exchange relationships." For Commons, however, individual actions are characterized by transactions instead of purely individual behavior or a simple exchange of commodities. Orthodox economists' market mechanism premised on the latter ignores habit, custom, and all the cultural, sociological, and psychological forces, which invade on usual market transactions. Transactions became a key element in Common's theoretical structure (Dorfman, 1959, pp. 388-389; Rutherford, 1990, pp. xxv-xxvi; Chamberlain, 1964, pp. 72-76).

Commons distinguishes three types of transactions. These are bargaining, rationing, and managerial transactions. A bargaining transaction is between legal equals, while managerial and rationing transactions are between a legal superior and a legal inferior. In managerial transactions the superior is "an individual or a hierarchy of individuals, giving orders which the inferiors must obey." In the rationing transaction the superior is "a collective superior or its official spokesman, for example, a legislature, a court, an arbitration tribunal, or a corporation's board of directors. Bargaining transactions "transfer ownership of wealth by voluntary agreement between legal equals," managerial transactions "create wealth by commands of legal superiors," rationing

\[\text{24} \] Legal equality does not imply equal economic power. On the other hand, the orthodox price theory assumes equal economic power in bargaining transactions. From institutionalist point of view, the equal economic power is applicable only to the unusual situation of competitive markets.

\[\text{25} \] Hovenkamp (1990) identifies the difference between Commons' institutional theory of the firm and Coase's neoclassical theory in terms of transaction concept. For Commons, for example, managerial transactions or transactions within the organization is fundamentally different from bargaining transactions, which were market transactions
transactions "apportion the burdens and benefits of wealth creating by the dictation of legal superiors."

Then Commons focuses on the relationship of "institution" with these transactions. He defines an institution as "collective action in control, liberation and expansion of individual action." This collective action includes not only the activities of organizations such as business firms and labor unions, but also "unorganized customs, the laws of the courts, the common law of courts, and total bundle of patterns of conduct, which a society sanctions or compels of its members" (Chamberlain, 1964, pp. 71-72). While Commons called the former "going concerns," he saw the latter "working rules." Working rules evolved from the settlement of disputes and the selection of practices or customs deemed good in terms of general welfare. These rules are seen as affecting the transactions undertaken by individuals and organizations. While property rights in scarce resources result in conflicts of interest in transactions, for example, these conflicts are not manifest in most transactions because over time precedents (i.e., working rules) are established by custom, habit, law, and so forth, and "standardized expectations" are shared by participants (Zimarowski, 1987). On the other hand, Commons defines a "going concern" as "joint expectation of beneficial bargaining, managerial, and rationing transactions, kept together by 'working rules' and by control of the changeable strategic or

between separate individuals or organizations. Assuming choice of type of transaction depends only on costs, on the other hand, Coase treated bargaining transaction (e.g., by procuring an input on the market) and managerial transaction (e.g., by making the input for itself) as economic substitute for each other.
'limiting' factors which are expected to control the others” (Quoted in Dorfman, 1959, p. 389).

In order to understand the motivation inducing an institution or an individual to enter a transaction, Commons posits a volitional theory of behavior (Chamberlain, 1964, pp. 76-80; Zimarowski, 1987, pp. 406-407). To Commons, man has capabilities, in his own nature, of controlling the natural forces around him and of adapting his environment to his own needs and purposes. With focus on collective action, purpose and "willingness" - volition - were to be found not only in the individual but also in his organized activity. Then survival of institutions is at least partially subject to his control. Commons' focus on a purposeful, artificially selected and human-directed evolutionary process can be contrasted with Adam Smith's system which posits "a limitation on the size and scope of institutions, an enhancement of individualism, and the moderating influence of the divine hand of God to smooth out the system and increase societal wealth" (Zimarowski, 1987, p. 407).

From the latter tradition, classical or neoclassical theory saw the conflicts which come from problems of scarce resources being solved in impersonal competitive markets, which by assumption removed all cultural, sociological, psychological, and legal elements from the analysis. Only assuming rationality of economic behavior, it held that, for the most part, the working out of these conflicts in competitive markets led to results that were superior to any results that might be achieved through government intervention. The optimal economic values or scarcity values are determined by this market mechanism.
For Commons, on the other hand, society is characterized by a necessary conflict of interest arising out of property rights in scarce resources. Property rights have evolved over centuries from "the working rules enforced by community upon individuals in their transactions respecting that which is or is expected to be scarce" (Commons, 1961, p. 75; Quoted in Dugger, 1979, p. 378). This fact of scarcity necessitates exchange transactions, invoking competition over the terms of agreement. While economics is supposed to focus on market exchange, it ignores the fact that the basis of competition is the relative bargaining power, "the power resident in property rights to withhold the goods and services from another's use" (Chamberlain, 1964, p. 85). For example, people do not make choices in a state of natural equality. Instead, the common man often must "choose between the alternatives offered by owners" (Quoted in Duggar, 1979, p. 378). Since Adam Smith believed that the interests of individuals weighed more or less equally in transactions, he could not see the possibility that certain institutions, by suppressing the market mechanism, could come to yield power disproportionate to the numbers they represented (Hovenkamp, 1990). As long as people bring this element of bargaining power to their transactions, the question will inevitably be raised as to whether their exercise of it is "reasonable." Reasonableness is essentially the determination of how much disparity of bargaining power is tolerable. This is an "ethical," not an economic question. To Commons, ultimately, the questions of the exercise of power is seen to be solved by appeal to some objective authority such as courts. Bargaining power cannot be equal between people or groups. But equal access to the law can be relied on to provide limits on exercise of such power, and lead "individuals and groups into reasonable
relations with each other, bringing order out of conflict" (Chamberlain, 1964, p. 84).

"Economic values, scarcity-values, which have been validated by this process are then reasonable values. Establishing valuation on scarce goods and services, the determination of prices, is not something arising out of an equilibrium of human atoms, but by the purposive transactions of many individuals and groups within a setting of law and custom. Thus, economics, ethics and law combine to create a system of reasonable values" (Chamberlin, 1964, p. 86).

Commons wished to preserve and increase liberties while recognizing the existence of collective organizations and unequal political, legal, and economic power. What was important to Commons was to ensure that the power of one individual or collective was not used to control the behavior of others in an unreasonable fashion, and in practice that could be done only by creating new forms of collective action and working rules designed to equalize power, provide representation of interests, and liberate those currently operating under coercion, duress, or unfair competition (Rutherford, 1994). Then the basic thrust of Common's approach was to include the social sciences, history, ethics, and law in his analysis and to recognize that governmental intervention was often necessary to bring about desirable social consequences. Being practical in the sense of investigating "what could be rather than what should be," choosing "existing practices as the source or foundation of his 'normative' prescriptions," and having his personal desire to "improve the lot of the underdog and the powerless," (Dugger, 1979, pp. 370), Commons advocated monetary policy to prevent depression, legislation to recognize the right of labor to organize, workman's compensation to assist the
unemployed, health and accident insurance to care for the unfortunate, regulation of public utilities to prevent monopoly practices, and other social reforms. Thus, although he made almost no impact on orthodox theory, the reforms he advocated and helped to implement have significantly influenced the structure of American capitalism.

(3) Comparison between Thorstein Veblen and John R. Commons

One of the most important contribution of Veblen was his focus on technology as a principal force in the evolution of economic structure and performance, and as the basis of the logic of industrialization. In particular he characterized evolutionary process as the tension between the developmental force of individual creativity (i.e., technology) and the repressive force of institutions (i.e., ceremony). But under the social Darwinist influence, Veblen doubted man's power to change social structures by deliberate action and restrained from proclaiming a program that called for action. Consequently he saw the institutions in less favorable way. On the other hand, Commons took a much more favorable view of the role of institutions. He saw some institutions as facilitating collective action which would lead to economic development. In other words, he saw organizational development as a vital force as well as technology. Thus, Commons' characterization of evolution relies less on continual conflict between creativity and institutional inertia and more on the application of creativity to the design of institutions themselves (Foster, 1991, p. 210).

In spite of this difference, they have more in common in several aspects. For example, both saw power relations take precedence over the price mechanism as the force
governing economic outcomes. In their analyses, in addition, they considered explicitly the interactive links between market institutions and other institutional arrangements in society, such as those embodied in law, custom, and ethical behavior. With common concerns with power relations and emphasis on consideration of broad sense of economy, the relative emphasis on technology and institution by Veblen and Commons appears to be complementary, especially when we explore the institutionalist's perspective of economic regulation in the following section.

b. Market Perception and Economic Regulation from Institutionalist Perspective

Since most institutional economists take the economic system to be open, evolving, and goal-directed, they are concerned with the factors that lead to changes in this process and that determine the direction in which economic system is moving. Among the factors that result in a change in the structure and functioning of the economic system, institutionalists identify technological change as a primer mover in social evolution and as an instrumental provider of possibilities for life enhancement. For them, technological change is "...simply a fact, [that]demands societal adaptation, and offers potential for progress if controlled intelligently with an eye toward attainment of warranted objectives" (Petr, 1984, p. 8).

However, technology can also give power in an institutional context, when the power of ideas and inventions can be appropriated by individuals and groups for their personal benefit and often detrimentally to the community. For institutionalists, economic power emerges from comprehending the changing technology and deliberately
manipulating the institutional response, often in the interest of a narrow group, which Veblen called "the vested interests" (Stevenson, 1987). In particular, institutionalists have seen technological process alter the production possibilities and condition the development of modern corporate system. The impact of technological change on the means of production enables their owners to acquire power that subsequently conditions the operation of the entire system. This power is often represented as "...the power to enforce social consequences not congruent with the existing social standards of value, morals, and ethics" (Stevenson, 1985, p. 335).

Since Veblen's concern with the impact of concentrated power on the social system, institutionalists have perceived a vast area of power, especially over the formation of preferences and values (Stanfield, 1984; Gruchy, 1987). Contrary to the neoclassical perspective which hails consumer preferences as sovereign without any investigation of their worth or the power process by which they are formed, institutionalists take consumer wants or preferences as something to be explained and not to be taken as given. In this vein, their attention has been centered on what forces are at work in the determination of collective as well as individual wants, and how they may be changed.

Institutionalists do not accept that distribution is simply matter of allocation in accordance with market prices. In the presence of persuasion, manipulation, or coercion of the less powerful by the more powerful, the pattern of distribution is a reflection of the distribution of the power. For example, market-based sharing of the material benefits of production often brings out distributional inequities (Stanfield, 1983). Also purchasing
power inequality accompanied by income inequality means unequal influence in resource allocation decisions (Schutz, 1995, pp. 1164-1165; McFarland, pp. 1991, 57-58). Firms, getting signals as to "what the public not merely wants but is willing and able to pay for," will center on those commodities desired by people with relatively high incomes. The poor with little purchasing power can not transmit enough "signals" to affect firms' product design decisions. Their only choice is to take "whatever offered that is cheapest" (McFarland, 1991, p. 57). In addition, in the presence of constant change in industrial structure and economic relationships, there is high chance that agents with economic power can take advantage of that change so as to "immunize" themselves from high risks and deflect them to others (Stevenson, 1987). As Commons identified earlier, a fair or "reasonable" distribution of risks requires collective action through public institutions such as the public utility agencies.

Contrasted with institutionalist's broad concern with market power, neoclassical economists perceive corporate power as the power to alter market outcomes to achieve an allocation of resources which would not have resulted in a competitive economy. Market power represents only the ability to influence the price of a commodity one sells or buys (i.e., deviation of price from marginal cost). As defined such, then, in competitive equilibrium all parties are equally powerless. For institutionalists who see "corporate power" as "the ability of large corporations to control the channels of the economic and political process and to use that process to the social and economic detriment of society," however, the orthodox perspective neglects a vast of area of power (Stevenson, 1985, p. 335). The ceteris paribus assumption is a tool to be used to avoid the power issues such
as influencing the "wants" of consumers, affecting the outcomes of elections so as to maintain certain views in the elected officials, or preventing the election of officials with other views (Stanfield, 1984). While this assumption contributes to theory of neoclassical economics, it prevents us from seeing critical imperfections such as power relations in reality which require better public policy (Klein, 1988, p. 392; 1984, p. 59-60). For institutionalists, neoclassical economics, in spite of its assertion of "positive science," is normative. For example, it has served to rationalize status quo by denying the presence of power in the hands of any agency, by postulating automatization and pure competition, and by ignoring of qualitative change in social affairs. Then neoclassical economics is "basically an apologia for the status quo and for the vested interests" (Bronfenbrenner, 1985, p. 19).

In general, the institutionalists have associated their logic of industrialization (i.e., technological change) with a logic of economic reform. For example, the institutionalist's acceptance of the big corporation is coupled with the demand for regulation and democratic control of corporate power. Concentration of economic power in the private sector requires a governmental sector that can somehow marshal and reflect the collective wishes of the participants as they would be expressed in the absence of concentrated market power (Klein, 1988, p. 410). Recognizing that "concentration of industrial organization is an inevitable tendency and one that is salutary if controlled in the public interest," therefore, the institutional predilection is summarized by the phrase "concentration and control" (Stanfield, 1984, p. 37). In spite of their common distrust of market concentration, however, the response of institutionalists toward it has varied from
centralized planning or joint partnership of government, labor, and business, to the direct regulatory control in industries characterized as natural monopolies, to the strict and aggressive application of the antitrust laws (Stevenson, 1985, p. 337-338; 1987, 1484-1486). 26

The inception of economic regulation, particularly in utility industries, was not only highly consistent with the institutionalist interpretation of the social control, but also mostly indebted to early institutionalists. Like New School economists, early institutionalists accepted the new industrial order of twentieth-century capitalism as inevitable outcome of technological improvement. What disturbed them was that the

26 The first group of people, who include John K. Galbraith, Alan Gruchy, and J. Ron Stanfield, are mostly under the influence of Veblen, who emphasized that the tendency toward corporate or industrial concentration is universally inevitable and overpowering. They tend to hold the view that antitrust aimed at preserving or developing an effectively competitive market are futile (Mueller, p. 287). The second group, who seem to be more connected with Commons' line of thought, believe that there are a limited number of industries where natural monopoly characteristics augur for concentration (Stevenson, 1985, p. 338; 1987, p. 1485). While early institutionalists in the second tradition made major contribution in developing institutions to exercise social control over "natural monopolies," their role in antitrust policy was very limited because they were not cohesive enough to develop a single strand thought toward antitrust as an instrument of social control (Mueller, p. 289). Finally, economists in the third group, who include Walter Adams, David Martin, and Willard Mueller, tend to doubt the ability of centralized public planning and support aggressive application of the antitrust laws. Even though this group is classified as institutionalism by Stevenson (1985; 1987), however, their perspective of antitrust policy seem to be better represented by structural approach in industrial organization. While institutionalism influenced the development of the structuralist approach, the latter can still be distinguished from the former in that its creation was also very much credited to another line of newly arising economic thought (e.g., monopolistic competition theory). While we can find small group of institutionalists who prefer antitrust as instrument to control corporate power, it seems to be a more correct impression that institutionalists, in general, prefer "concentration and direct regulation" approach to structural reform of concentrated market through divestiture and dismemberment. 83
promise of emergent technology was being thwarted by social and market structures that were imbued with the ceremonial, the pecuniary, and the invidious (Stevenson, 1987). In order to realize the full promise of new technologies as well as to prevent vested interests from exploiting the markets, they saw regulation or social control of private allocation mechanisms imperative, especially in concentrated markets. It was this context where the public interest theory of regulation was formulated by early institutionalists such as Henry Carter Adams, Richard T. Ely, John R. Commons, and John M. Clark, and succeeding institutionalists such as Martin G. Glaser, James C. Bonbright, etc (Trebing, 1984, 1994).²⁷ According to the theory, firms that provided essential services and possessed market powers were deemed to be affected by the public interest and were required to provide adequate service at just and reasonable rates. The institution of control was to be the independent regulatory commission. An accounting system was established and developed into the uniform system of accounts, essential for comprehension and comparability of utility data.

Trebing (1984b) has explained this theory of regulation as one that is "viewed as a method for resolving conflicts and coordinating social objectives in an industrialized economy and, more importantly, as a means of curbing monopoly power and preventing the abuses associated with the unrestricted use of that power" (p. 353). Therefore, the regulatory body "as a principal representative of government should serve as a protector

²⁷ Henry Carter Adams and Richard T. Ely are often classified in "New School" economists. Due to their connection with German historical school and intellectual influence on institutional economic thought, however, they are also identified as institutionalists.
of social values affecting the environment, low income consumers, and act as a shield in neutralizing the negative effects of the use of market power by the regulated utilities" (Schwartz, 1985, p. 312). From this perspective, the public interest utility regulation is "to restore competition where that is feasible, and, where that is not feasible because of the presence of oligopoly or monopoly power, to protect the consuming public from the abuses in the use of that power" (Gruchy, 1987, p. 136).

While the current neoclassical economic concern with efficiency emphasizes market costs and market values in regulatory policy, institutionalists are more concerned with "adaptability, accessibility, accountability, and distributional fairness of the firm" (Stevenson, 1987). Unlike the neoclassical economic view that the prices are determined by impersonal, automatic, power-free, price-competitive markets, closely related to these concerns, institutionalists characterize and appraise pricing as "an exercise of achieved power by discretionary agents" (Tool, 1995, p. 72). From this perspective, power is used to determine prices, pricing activities represent deliberate acts, that specify how persons will relate to one another. Facing increased market concentration, diversification, and spread of the holding company structure in utility industries, then, it becomes more problematic who exercise this discretionary power for whom. Recognizing the prevalence of market power and risk of abandoning principles of cost-based rates and adopting questionable pricing practices, institutionalists advocate economic regulation that can provide measures for accountability, prevent the exploitation of control over access to bottleneck facilities, and ensure equitable allocation of the costs and benefits of joint production (Miller, 1990a, 1990b, 1994; Trebing, 1986, 1987, 1994).
2. Behavioral Assumptions of Economic Regulation (Antitrust Policy) from 

Structuralist Perspective

a. Origin of Structuralism in Industrial Organization

The initial politically motivated antitrust movement lasted about three decades, commencing in 1890 and culminating with the enactment of the Clayton and Federal Trade Commission Acts in 1914. However, the outbreak of World War I pushed populist reform movement in early twentieth century into the background as the U.S. devoted its energies first to the war. The alliance of government and business for industrial mobilization during this period created a climate of collaboration that lasted for years. The rise of trade association movement with government sanctification, reduced antitrust's adversarial force with a spirit of cooperation. Anti-antitrust sentiments prevailed during 1920s, and efforts at prosecution were almost minimal. It was time when a spirit of laissez-faire was revived. Furthermore, the National Recovery Act (NRA) of 1933 replaced competition with a system of government and business directed "cooperation" and essentially suspended the antitrust laws to accommodate NRA codes (Keller, 1981; Rowe, 1984; Mueller, 1988).

The revival of antitrust came from the New Deal’s confrontation with big business only after cooperation brought no prosperity. Despite an increase of new programs and economic experimentation, the economy went into a recession in 1937, which pushed production and employment down to distressing levels, demonstrating that the past policies had failed to revive it. Turning on "Big Business as the culprit of the intractable malaise," the Administration became no longer sympathetic to the business point of view,
and turned to the renewal of market competition through vigorous antitrust efforts (Rowe, 1984, p. 1520). As the Great Depression already appeared to refute in practice many of the premises of classical and neoclassical economic theory, with the change of political climate, "[t]he time seemed to ready for a much more regulatory theory of political economy and of state policy toward business" (Hovenkamp, 1991, p. 356). In terms of antitrust, in particular, it was the beginning of "a brilliant synthesis of law and economics" which "blended populist distrust of power with economic learning" (Rowe, 1984, p. 1520). The new development of economic theories and findings in 1930s and 1940s, not only provided momentum to bringing greater substance and consistency to a vague body of antitrust legislation, but also set the stage for new heyday of antitrust enforcement for decades in the U.S. The history of this new economic learning is the present focus in turn.

The explicit articulation of the perfect competition model in 1920s invited the attacks on the model in the 1930s and 1940s (Hovenkamp, 1988, p. 1673). Just as the perfect competition model matured in the economic literature, the structure of the business firm evolved in ways that called into question the assumptions that markets of the real world typically approximate the conditions of economists' model of perfect competition. In terms of a particular historical event, the crisis of liberal capitalism following the stock market in 1929 was perceived as a crisis of traditional economic theory, which failed to deliver convincing explanations of the events and was unable to outline possible remedies (Keppler, 1994, pp. 4-5). As a response to economic theory that appeared unable to explain basic price and output phenomena in reality, revised
perception of business markets took shape for economists. Two of the most important contributions to changing market view came from Adolf Berle and Gardiner Means in institutional economic tradition, and Edward Chamberlin, and Joan Robinson in mainstream economic tradition.

In their 1933 book, *The Modern Corporation and Private Property*, Adolf Berle and Gardiner Means argued that an inherent attribute of the modern business corporation was the separation of ownership and control. Concerned with the rise of big business and the growth of industrial organization, they saw the assumptions of classical economists no longer apply to the large corporations whose shares are traded on the stock exchange. The classical economists had assumed that one person or a small group of investors would supply the capital for a business venture and manage it themselves, reaping profits or sufficient losses based on their managerial talents and their diligence. This logic implies that the profits of corporate enterprise should go to the owners, the shareholders who supply the capital. But in a situation in which owners of corporate securities could not perform both the functions of suppliers of capital and managers of those capital assets, shareholders, who had the motive to maximize profits, had "surrendered all disposition...to those in control of the enterprise." Managers, who had the power to make the firm profitable, received salaries which were often set without obvious relation to profit, thus depriving corporate managers of the classical profit motive (Hovenkamp, 1988, p. 1684). As the managers have no incentive to be efficient, for they are not entitled to the bulk of the profits, Berle and Means concluded that the large corporations cannot be engines of efficiency. In short, "the exposition of the atom of property destroys
the basis of the old assumption that the quest for profits will spur the owner of industrial property to its effective [that is, efficient] use" (Quoted in Hessen, 1983, pp. 276-277).

In addition to the breakdown of the most essential premise of classical profit-maximizing corporation that also maximized the wealth of society, Berle and Means' study contributed to the new concern about vertical integration (Hovenkamp, 1988, 1685-1688; 1989, pp. 164-166). For example, they argued that vertical integration could actually reduce the efficiency of large corporation because vertical integration made costs "indeterminate" - firms had unreliable information about those costs functions that they performed internally than through market transactions. This observation of Berle and Means was manifested in the 1930s and 1940s literature on the theory of the firm, which developed a consensus that the long-run average cost curve of the firm is U-shaped rather than continually downward sloping; in short, firms could become too big, causing their costs to rise. But if, as Berle and Means suggested, costs became indeterminate when firms grew very large, corporate managers would not know when their companies had become inefficient dinosaurs (Hovenkamp, 1988, p. 1687). With Great Depression which undermined American's faith in the classical market system, Berle and Means' book contributed much to the rhetoric of government policy toward big corporate size in business in the New Deal and later. In particular, it affected

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28 Berle and Means' perspective can be contrasted with Ronald Coase's firm theory (Hovenkamp, 1988). In his essay "The Nature of the Firm," Ronald Coase argued that the principal characteristic of the firm was "the suppression of the price mechanism" - to the extent that the firm was vertically integrated, it eliminated the need for market transactions. Coase assumed that markets are imperfect and that firms have imperfect information about markets, but he also assumed that firms have nearly perfect information about their own costs.

Aside from institutional tradition, on the other hand, literature of the 1920s in mainstream economics started to view firms as exacerbating imperfections in the competitive market by "differentiating" their products from one another in order to minimize direct competition (Hovenkamp, 1989, pp. 139-143). Under the theory of perfect competition, for example, firms in industries with high fixed costs that produce fungible, or staple, commodities are always at risk of ruinous competition. Such industries are likely to experience periods, or "cycles," during which products command prices just barely above variable costs; during those periods they lose money. Firms in such industries can reduce their vulnerability to periods of low demand in one of two ways. First they can consolidate, creating in the process a more concentrated industry structure that is less prone to competition. Second, they can differentiate their products from those of their competitors. The result is a product-differentiated oligopoly in which each firm behaves as much like a monopolist. Even though many firms exist in the market, they behave more like monopolistic than competitors. Prices are based more on customer demand, which differs to the extent that products differ, than on costs. This line of thinking was culminated in Chamberlin's Monopolistic Competition (1933) in the U.S. and Robinson's Imperfect Competition (1933) in the United Kingdom (Hovenkamp, 1989).
By introducing concepts such as product differentiation and mutual interdependence, particularly in the U.S. context, Chamberlin's work represented an important effort to advance economics beyond the traditional polar cases of perfect competition and pure monopoly, reflecting the richness and complexity of the industrial economy of the U.S. (Meehan and Larner, 1991; Keppler, 1994). Rebutting Alfred Marshall's price theory which analyzed markets by building two models, a monopoly model and a pure-competition model, Chamberlin explicitly stated that "Monopolistic competition is a challenge to the traditional viewpoint of economics that competition and monopoly are alternatives and that individual prices are to be explained in terms of either the one or the other" (Chamberlin, 1950, p. 204; Quoted in Landreth, 1976, p. 394).

While the Marshallian analysis concluded that, in the absence of unusual situations that might create monopoly, the outcome of free-enterprise laissez faire would be competitive markets, Chamberlin held that the outcome would be monopolistically competitive markets. Chamberlin discredited a long history of neoclassical economic theory to identify free enterprise with competition as follows:

Yet, it must be obvious that the typical outcome of free enterprise is not pure competition, but monopolistic competition... In other words, an essential part of free enterprise is the attempt of every business man to build up his own monopoly, extending it wherever possible and defending it against the attempts of others to extend theirs (Chamberlin, 1950, p. 213-214; Quoted in Landreth, 1976, p. 400).

Chamberlin's work was the starting point for a vast quantity of literature examining the implications of monopolistic competition for public policy with regard to the regulation of firms with market power. By changing the way we look at the economic system, at the
same time, it played an important role in establishing new government attitude toward business in New Deal era (Rowe, 1984, p. 1544; Hovenkamp, 1988, p. 1680-1681).

The influence of institutional economic tradition on Chamberlin as well as Berle and Means is visible. First of all, Gardiner C. Means\textsuperscript{29} explains how he entered the institutional camp as follows:

\begin{quote}
In my search as a scientist for the appropriate postulates to underlie a macrotheory for the modern economy, I found myself in the camp of the institutionalists. Certainly my studies of the modern corporation, of price behavior, and of the structure of American economy were studies of institutions. But my drive throughout was to obtain the essential postulates for a new and realistic macrotheory, a new paradigm to displace the orthodox (Means, 1975, p. 149).
\end{quote}

Unlike Means' direct association with institutionalism, the influence of institutionalism on Chamberlin's monopolistic competition was indirectly recognized (Keppler, 1994; Peterson, 1979). Most importantly, for example, Chamberlin acknowledged the writings of Thorstein Veblen as one of important inspirational sources of his new theory of market structures (Landreth, 1976, p. 392; Peterson, p. 670). In spite of its more analytic nature reflecting neoclassical tradition, furthermore, it was favorably reviewed and widely accepted by contemporary institutional economists as an attempt to infuse realism into the neoclassical model of the firm (Peterson, 1979, p. 671). In addition, the model of monopolistic competition was rejected by rigid neoclassical mainstream economists (e.g., Chicago school) who also rejected institutional economics on methodological grounds (Peterson, pp. 671-672; Keppler, 1994, pp. 7-9). While institutionalists puts emphasis on realistic assumptions because important policy prescriptions are often based on them, the

\textsuperscript{29} His coauthor, Adolf Berle, was a professional lawyer.
focus of neoclassical economists centers on the predictive quality of a theory which counts most, not realism of assumptions. To the latter, Chamberlin's replacement of the assumption of product homogeneity with that of product differentiation commits the same mistake of questioning the assumptions of a theory (Peterson, 1979, pp. 671-672). In addition, Chamberlin's quest for the practical relevance of a general theory of microeconomics was disregarded by neoclassical mainstream economists who put more emphasis on mathematical tractability of the theory (Kepler, 1994, pp. 6-9). In spite of his relevance to institutional economics due to his theory's containment of institutional element, his work seems to be more inclined to be in neoclassical economic tradition in that it assumed the basic set of concepts formulated under abstract neoclassical price theory (Peterson, 1979, p. 680).

The upheaval of these new theories, particularly Chamberlin's theory, readied economics for the postwar development of a school that focused attention not on the individual or the firm but on the industry30 (Sullivan, 1980, p. 7). Under the leadership of

30 Even though the pioneering study of Berle and Means shed light on the importance of institutional (i.e., legal and financial) analysis of real operating business units, its impact on theoretical or methodological aspect of structure-conduct-performance paradigm seems to be very limited. The latter paradigm, which permeated most of analysis of antitrust policy for decades in the U.S. was more influenced by Chamberlin's theoretical contribution, and its notion of industrial structure was still based on the concepts of neoclassical microeconomic theory. While this tradition treats the firms hypothetically, institutionalists in the tradition of Berle and Means' study take the existing business firms as the fundamental units making up the structure of industry. In such a structure, the orientation is not around one product and its market but rather around the total activities represented in the legal-fiscal-administrative entity. This orientation is more likely to show the effect of absolute size of a firm on competition and monopoly power as discussed in Berle and Means' study (Bernhard, 1970, pp. 51-55). In spite of their methodological differences, the importance of institutional focus was well recognized by the early contributors in structuralist paradigm. For example, Edward S.
Edward S. Mason and Joe S. Bain, "structure-conduct-performance" paradigm was established in the 1950s with the focus on analytically sophisticated, empirically informed studies. Doubting that any rigorous set of presuppositions would adequately explain any particular market, this new tradition was characterized by "a style of inquiry proposing more complex and realistic models even at the cost of less precise theoretical solutions" (Sullivan, 1977, p. 216). In particular, the artificial premises of perfect competition or pure monopoly were replaced by a general economic theory of competition in imperfect markets, in which scale economies, barriers to entry, and product differentiation made perfect competition impossible even in markets characterized by multiple producers.

While orthodox neoclassical economists tend to emphasize the long-run rather than short-run concerns in terms of market barriers to entry, economists in the structure-conduct-performance paradigm were more impressed by short-run strategic considerations (Hovenkamp, 1989, p. 166). This tradition, often recognized as "mainstream" view in industrial organizations, and here called the "structuralism," had a substantial impact on antitrust policy in the U.S., especially during the period from the late 1950s to the early 1970s.

Mason commented in 1939 that, "The theory of oligopoly has been aptly described as a ticket of admission of institutional economics. It is to be regretted that more theorists have not availed themselves of this privilege." (Quoted in Mueller, pp. 290-291). Joe S. Bain also warns that modern price analysis may, "obscure the significance of institutions or the fact that economics really deals with human beings and physical things rather than with mathematical symbols" (Quoted in Bernhard, 1970, p. 53).
b. Market Perception and Antitrust Policy from Structuralist Perspective

Institutional economics, which I discussed in previous section, often employs a "pattern model" to provide realistic and relevant explanations of social issues and problems. The main characteristic of this method is to avoid distorting the real economic world by imputing to it a logicality or a rationality (Wilber and Harrison, 1978; Gruchy, 1987). The pattern model, therefore, does not lead to a body of economic theory that has predictive quality. On the other hand, structuralism in the field of industrial organization employs deductive models (theories) to predict firm or market behavior. To understand economic reality, in particular, the imperfect market competition models (e.g., oligopoly models) have been used to predict the ways in which the various elements of market structure influence market conduct and market performance. Unlike orthodox neoclassical economists such as Chicago school who put more emphasis on the predictive power of a deductively constructed theory regardless of its assumptions, however, structuralists have been more flexible in incorporating more realistic aspects in their framework (e.g., existing market structure), and in using inductively derived propositions (e.g., entry barrier) to explain the reality of industrial organization.

The reality which structuralists identified through employing oligopoly theories and gathering empirical evidence appeared to be full of imperfect market conditions. These conditions include irrationalities among consumers and producers, consumer royalties, segmented markets, differences in access to knowledge, controls on key inputs, barriers to new competition, transaction costs, etc. (Shepherd, 1990, pp. 12-13). In the presence of these imperfect market conditions, market forces alone are insufficient to
stimulate the entrenched power of a firm's or oligopoly's dominant position. In addition, concentrated industrial structure promotes anticompetitive forms of conduct which adversely affect the performance of the economy. By providing economic explanation of the market imperfection, and the existence of prevalent market power and its anticompetitive abuse, structuralists draw attention to the necessity of government intervention to restore the competitive force as the primary regulator of economic affairs.

In structuralists' analysis, the market structure is often classified into monopolistic, oligopolistic, or competitive. Describing how firms behave in a market, conduct is often identified with pricing conduct (e.g., collusive or independent), and product strategy (e.g., product differentiation). The performance category has such dimensions as efficiency (e.g., characteristic results of the perfect competition model), progressiveness (e.g., technological progress), and equity or fairness (e.g., relative rewards and price stability) (Cartesnsen, 1983, pp. 498-499).

The original emphasis of structural analysis was to put on market structure rather than business conduct as the source of adverse economic performance (Audretsch, 1988, p. 138). With market structure seen as the determinant force of market conduct or performance, for example, cartelization was regarded as being a greater risk in markets of few sellers than in markets in many. In addition, structuralists often put emphasis on the additional possibility of non-collusive but interdependent pricing in oligopolistic markets. Under oligopolistic market conditions, consequently, more attention has been paid to tacit agreement such as price leadership and parallel pricing often facilitated by the exchange
of information regarding costs, output, and pricing policies (Sullivan, 1977, p. 1217; Eisner, 1991, p. 100). Joe Bain summarized this tendency as follows:

The higher the degree of seller concentration, the greater should be the tendency toward cooperative action to establish a joint profit maximizing industry price and output. And the smaller should be the incentive for individual sellers to pursue independent competitive policies that are designed to enhance their market shares and profits at the expense of their rivals (Bain, 1968, p.120).

As such, high concentration normally implies nonprice competition among members of an industry, and therefore noncompetitive performance. For example, noncompetitive structure often results in poorly controlled costs, which lead to higher prices even if no monopoly profits are earned (Weiss, 1979, p. 240). Concentration also allows oligopolists to limit output to maintain high prices even if costs are adequately controlled. In doing so, they underallocate resources and fail to realize the welfare gains associated with large-scale production. In addition, concentration lessens incentives to be inventive and progressive (Scherer, 1987, pp. 1010-1019; 1984, p. 247). Empirical analyses, for example, reveal that while there exists some early positive relationship between concentration and innovation as a form of nonprice competition under price-fixing agreement, the relationship becomes negative at some point. At that point, the innovate strategies are largely suspended because higher interdependence at increasing levels of concentration lead the firms to recognize that those strategies threaten to undermine the existing arrangement.

In the 1960s structuralists' primary focus on market structure evolved into a wider concern incorporating exclusionary conduct - business behavior that may create existing
power where it otherwise would not exist or may enable existing market power to realize economic rents (Audretsch, 1988, pp. 139-140). Raising the question of how supra-competitive prices can be sustained over time in highly concentrated markets, in particular, Joe Bain considered "barriers to entry" to be factors that permitted established firms to "elevate their selling prices above the minimal average costs of production and distribution... without inducing potential entrants into the industry" (Bain, 1968, p. 252). Bain identified as barriers to entry the economies of large scale and the advantage of established firms over potential rivals in terms of absolute cost and product differentiation.

Industrial concentration would be of little consequence in the absence of barriers to entry. Since Bain's initial recognition, therefore, the perception of market imperfection in structuralist paradigm has been largely incorporated in the notion of barriers to entry. In addition to economies of scale, structuralists have recognized the variety of advantages possessed by established firms in concentrated industries as barriers to entry. These may include high capital requirement, product differentiation, distributional networks, excess capacity, retaliation and preemptive action, patents, etc. (Shepherd, 1990, pp. 19-23). While some of barriers to entry are intrinsic to the underlying conditions of the market (i.e., "natural"), others are established by dominant firm's own voluntary or strategic actions (i.e., "artificial") (Shepherd, 1990, pp. 19-20). These advantages allow dominant firms to raise costs of entering a market, thus protecting their market shares.

Even though structuralists recognize large-scale economies as an important natural entry barrier, they are less likely to attribute existing oligopolistic industry
structure to scale efficiencies (Weiss, 1979, pp. 250-254; Scherer, 1987, pp. 1002-1006). From empirical evidence, for example, they argue that economies of scale can be realized at fairly low levels of production. Unlike common belief that large firms realize efficiencies by exploiting numerous economies of scale, existing concentration levels are many times greater than one can explain through an analysis of economies of scale. In addition, structuralists from logical point of view, hold that conditions of oligopoly insulate firms from market force, and no longer compel them to pursue efficiencies so that minimum-efficient state production would not be achieved.

Since Bain's conception of barriers of entry, on the other hand, structuralists have directed their great attention toward practices creating "artificial" barriers (Audretsch, 1988, p.139). Unlike the old structuralism, as a result, the contemporary structuralism emphasizes the influence specific business practices have on effective market structure and ultimately performance. As noticed by Chamberlin already in early 1930s, for instance, product differentiation tends to disaggregate markets and lead to nonprice competition. In the presence of promotional economies of scale, intensive advertising is used by dominant firms to maintain concentrated market structures. It is argued, for another example, that through vertical integration, market control can be extended into either an upstream or downstream market. By requiring potential entrants to acquire additional capital and knowledge of additional stages of the production process, entry barriers are created (Weiss, 1979, pp. 256-257). Other types of barrier-creating conduct identified by the structuralists include all types of vertical restraints like tying arrangements, exclusive dealing, territorial contracts, or resale price management. For
example, exclusive dealing enables powerful manufacturers to impose costs on smaller competitors by prohibiting them from contracting with more efficient distributors, thereby increasing the price they must charge consumers (Krattenmaker and Salop, 1986, pp. 230-47). Most recently, furthermore, the literature on strategic deterrence, strategic entry, limiting pricing and preemptive investment reflects the concern toward monopoly power via business conduct (Schmalensee, 1982; Scherer, 1980; Krattenmaker et al., 1987; Krattenmaker and Salop, 1986; Lande, 1994).

For structuralists, as shown above, there exist not only significant amount of natural or artificial entry barriers, but also opportunities for the dominant or oligopolistic firms to exploit those imperfect market conditions against existing rivals as well as against any possible entrants. As understanding the market behavior in such a way, it is easily understandable that structuralists, in general, advocate interventionist policy over the most substantive areas of antitrust (e.g., horizontal restrictions, monopolization, mergers or vertical restrictions), (Scherer, 1977, pp. 981-1001; Audretsch, 1988, pp. 146-159).

In particular, with the emphasis on stronger enforcement of section 2 of the Sherman Act, which has been the most important antitrust factor to establish market structure of telecommunications industry in the U.S., structuralists have supported restructuring (e.g., divestiture or dissolution) as a remedy for its violation. In this respect, structuralists tend not to think that significant efficiency losses would accompany divestiture (Audretsch, 1988, p. 149). Based on their empirical work which demonstrates that economies of scale are exploited at relatively low levels of production, it has been
believed that divestiture could effectively expand the number of competitors without sacrificing scale economies. Thus, Scherer concludes, "I believe there is persuasive evidence that in many situations substantial divestiture could be accomplished with little or no sacrifice of scale economies or other efficiencies" (Scherer, 1977, p. 1000). While Shepherd recognizes that antitrust has tended to preserve the existing order and limit change, in addition, he advocates a greater emphasis on restructuring concentrated industries as the solution. In fact only dissolution or divestiture will mitigate the monopoly problem, because, "If oligopolists behave noncompetitively because of the very market structure in which they operate, punishing them without altering the underlying structural conditions may do little to improve economic performance" (Shepherd, 1985, p. 314).

The structuralism was the dominant position in industrial organization for most of the postwar period until it was challenged by Chicago school in 1970s. As antitrust policymakers and practitioners appealed to economics to interpret the complexities of business behavior, during that period, structuralism provided a new understanding of market behavior and of the relationship between the state and business. Especially, important was the structuralists’ observation that markets were not self-sustaining, and the reaffirmation as an economic goal of the need for open markets with multiple small actors. Together these observations provided technical support for advancing the economic goals, as well as the political and social goals central to antitrust (Rowe, 1984, pp. 1520-1524; Eisner, 1991, p. 112). Even though structuralists generally do not directly address their analytic concern about social and political values, their view of the
relationship between economic efficiency and competition tends to be complementary to the social and political justification of antitrust enforcement. At the same time, their strong support for traditional antitrust remedies make them more likely to embrace those social and political goals (Scherer, 1977, 1990; Weiss, 1979; Shepherd, 1990).³¹

3. Behavioral Assumptions of Economic Regulation from Neoclassical Economic Perspective

a. Development of Neoclassical Economics

Classical economic theory evolved into a more sophisticated form in neoclassical theory. Neoclassical economics represented the integration, principally associated with Alfred Marshall, of the utility theory of values with the cost of production theory of the classical economists. Its main concern was to explain commodity and factor prices and the allocation in which all prices are determined simultaneously. As shown in the previous sections, the analytical tradition of neoclassicism after Alfred Marshall's *Principles* and the laissez-faire policy conclusions which most interpreters inferred from

³¹ Contrary to Chicago school that sees static economic efficiency as the only valid performance measure for the antitrust policy, structuralists also take into consideration as their performance standards progressiveness in the use of resources (i.e., dynamic efficiency), and fairness (i.e., prevention of wealth transfer from consumer to monopoly). But its analytic focus does not include any direct consideration of such noneconomic values as balance of power, reduction in the range of private discretion, or protection of small businesses. (Pitofsky, 1979; Schwartz, 1979). In spite of the lack of direct concern with such political values, on the other hand, their emphasis on divestiture, dissolution, or decentralization as antitrust policy measures is more likely to lead them to embrace other noneconomic goals different from economic ones. In the same vein, legal scholars who find more political justification for antitrust enforcement have been willing to accept the structuralist view of industrial organization (Sullivan, 1977, 1995; Fox, 1980; Peritz, 1990; Fox and Sullivan, 1987).
it, were severely challenged by New School economists, institutionalists, and "postclassists" such as Edward Chamberlin.

This disassociation from the orthodox tradition was joined by Arthur Cecil Pigou in 1920s, who represented the first thorough attempt at applying the apparatus of neoclassical price theory to formulating welfare economics (Rima, 1978, p. 319-322; Landreth, 1976, pp. 404-408). Much of his work places him firmly in the mainstream of neoclassicism. But his inquiry into the conditions required for maximizing welfare asserts his dissent from tradition. Pigou contends that the principle of diminishing marginal utility permits a scientific, objective, positive conclusion that a more equal distribution of income will increase economic welfare. There are several implicit assumptions behind Pigou's conclusions, the most important being that individuals have the same capacities to derive utility from income, that interpersonal comparisons of utility are possible, and that utility can be cardinally measured. Given these assumptions, then economic welfare is maximized by maximizing the sum of the cardinally measured utility functions of individuals. Pigou's another most significant deviation from orthodox theory lay in his focus on the divergence between social and private costs and benefits. With the illumination of social costs and benefits, Pigou derived an important implication that not all competitive markets produce levels of output that maximize society's total welfare.

The Counter arguments to these criticisms against neoclassical economics and policy recommendations were numerous and varied (Rima, 1978, pp. 324-341). For example, Pigou's argument concerning the need for special concern about social costs and benefits generated a heated controversy with Frank H. Knight of the University of
Chicago in 1920s. Rebutting Pigou's support for taxes and subsidies to correct divergences between private and social marginal costs, Knight, in his essay "Fallacies in the Interpretation of Social Cost" and subsequent writings, urged that Pigou's demonstration of the failure of the market mechanism is in fact indicative of the failure of government to establish and protect private property rights.  

In addition, Knight responded to institutionalist's critique against neoclassical methodology by holding that instead of incorporating all the relevant factors in behavioral assumptions, it is not only proper but necessary to abstract from reality and focus on those aspects which are relevant to explaining economic behavior (e.g., pecuniary behavior). Economic man does not and, indeed, cannot approximate the man of the real world. But the abstraction is useful, in Knight's view, for helping us understand the purely economic dimension of human behavior. In making this abstraction, furthermore, the economist is following precisely the same procedure as the natural scientist who also excludes the influence of those variables whose operation is either irrelevant or prejudicial to the conclusion he is seeking to establish. In this vein, Knight rejected Veblen's argument that consumer sovereignty is destroyed because people are conditioned to imitate the consumption patterns of the financially well-to-do and saw it simply as an expression of Veblen's personal disapproval of certain types of consumer behavior. Heeding back to the classical liberalism of Adam Smith and being skeptical of positive state action as a means of combating social and economic ills, Knight helped mold the economic views

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now associated with the economic tradition of the University of Chicago, which he joined in 1927 (Rima, 1978, p. 326).

In addition to Knight, Sir John R. Hicks of Oxford University became an especially important British participant in the reaffirmation of the neoclassical tradition. The refinement of modern utility, demand, and equilibrium analysis is, in large measure, attributable to the foundation he laid in *Value and Capital*. It is largely due to Hicks that the Paretian technique of the indifference curve has become a standard tool to demonstrate that it is possible to examine consumer behavior without resorting to the assumption that utility is a cardinally measurable magnitude. His rationale for eliminating utility as a measurable magnitude (and the value judgments associated with such measurements) is that it makes it possible to eliminate latent elements of utilitarianism in economics. As Hicks put it, "If one is a Utilitarian in philosophy, one has a perfect right to be Utilitarian in one's economics. But if one is not (and few people are Utilitarian nowadays) one also has the right to an economics free from Utilitarian assumptions." (Quoted in Rima, 1978, p. 325). The contribution of Hicks ultimately led the new Paretian welfare economics which holds that utility cannot be cardinally measured and that interpersonal comparisons of utility are impossible.

These and following Counter arguments to the criticism against neoclassical analysis and policy recommendations were all associated in one way or another with a philosophical movement known as logical positivism (Hovenkamp, 1990, pp. 1031-1047; Rima, 1978, pp. 324-326). Philosophically speaking, the 1920s and 1930s was an era of logical positivism, which held that the ideal of all science, including economics, is to be
"value free." From logical positivist perspective, the concept of utility as a cardinally measurable magnitude as well as the kind of welfare analysis which emerged from it, were seen inconsistent with its dictum that economics must be value free. In the same vein, Pigou's welfare analysis, which emphasized the possibility of divergences between social and private costs and benefits, was unacceptable since it was at least implicitly based on value judgements. As such, logical positivism played an important role in Knight's rebuttal to Veblen and Pigou and in Hick's reconstruction of neoclassical demand theory and the new welfare economics (Rima, 1978, p. 325).

Since the incorporation of philosophy of logical positivism in its defense as a science, the neoclassical economics has limited itself to two types of generalizations: tautologies which are generalizations derived by logical deduction from one or more premises and therefore acceptable a priori (i.e., without proof) and generalizations which are empirically verifiable (Hollis, 1994; Mini, 1974). For economists as logical positivist, knowledge or truth is perceived as an "accurate reflection" of a reality outside the human mind that is discoverable only a priori. There is a natural order of things amenable to a priori discovery and serving as a guide to action. The natural order of things in neoclassical economics is the perfectly competitive world. The neoclassical theory as the representation of pure world of reason in the Cartesian tradition requires logical deduction and mathematics to comprehend this order (Hollis, 1994; Mini, 1974). It presents us with a set of internally consistent statements concerning normal or natural relationship formalized in equilibrium models. The theory working out of internal logic,
within the single institution of the market, represents a neutral allocational and distributional mechanism.

As the method of logical deduction and mathematics necessitates a rather high level of abstraction in the reduction of complexity to simplified essences (Mini, 1974), the theory, in this tradition, abstracts from the facts of experience and relies on unrealistic assumptions. The unrealistic assumptions, however, do not matter as Friedman (1953) advocates a proposition be determined not by its plausibility but rather by its predictive power. From this perspective, theories do not even attempt to describe reality, but serve only as instruments for making predictions. Therefore, the only relevant question is which sort of model results in more successful predictions. For example, the model of perfect competition seems quite "unrealistic" when one looks at business firms in the real world. But for neoclassical economists, it turns out the predictions implied by perfect competition model are "better" than others (Hollis, 1994).\footnote{Whether this is true or not is matter of one's perspective. From institutionalist point of view, the prediction made by neoclassical theories are often nonfalsifiable, and the failure of their predictions is blamed to the ceteris paribus clauses, unreliable data, or absence of clear-cut testing procedure itself (Wilber and Harrison, 1978). Consequently the theory is insulated from refutation. In this vein, the neoclassical microeconomic theory is more than often considered as an \textit{a priori} formal model that compels assent by logic, not by its conformity with empirical reality (Mini, 1974; Pheby, 1988; McFarland, 1991). Then the function of economic theory becomes more prescriptive than descriptive.}

While the previous nonorthodox economic traditions could be seen to emerge as a result of an effort to incorporate important issues of the day in their works, the advancement in orthodox neoclassical economics has emerged from the continuing search for "knowledge," from logical positivist perspective, quite independently of the...
contemporary events. Only focusing on internal factors within the discipline, under the aegis of "scientific" methodology, this tradition of neoclassical economics could be further developed and elaborated through more sophisticated mathematical treatment, but with little consideration of environmental factors which may have affected the nature of tradition. The aspiration of neoclassical economists to be seen as scientists led ultimately to rejection of the normative positions of other economic traditions in favor of the apparent positivism of mathematical logic. In spite of its ultimate success and current recognition as the principal school of economic thought in the U.S., it was not until the late 1960s when the U.S. economy started to falter due to adverse changes in economic conditions, that the policy position of neoclassical economics started to get more attention in the practice of economic regulation (Trebing, 1994; Hovenkamp, 1988).

Actually the orthodox neoclassical tradition experienced a few decades of decline since Great Depression, which appeared to refute many of the premises of neoclassical economic theory, but has reemerged over the past decades in the works of Chicago school economists, and more recently in the writings of "contestable market" theorists. In spite of considerable diverse interests among them, this group of professional economists are united as advocates of an individualistic market economy. Like their classical and neoclassical predecessors, they appreciate efficacy of markets at achieving beneficial private orderings, and review government attempts to regulate markets skeptically (Bork, 1978; Posner, 1976, 1979; Baumol et al, 1982; Bailey and Baumol, 1984; Baumol and Willig, 1986; Demsetz, 1982).
Putting more emphasis on freedom of market entry and on the temporary or curable nature of monopoly, for example, they have challenged the traditional view of regulation as a remedy to correct for market failure and protect consumers, even in the case of natural monopoly. In the presence of more efficient mechanisms, such as bidding or auctions the public interest regulation is unnecessary (Demsetz 1968; Marvel, 1987). Further it is often believed as ineffective since it has been assertedly manipulated by regulated industry in its interest, and used as an instrument of wealth redistribution (Peltzman, 1971, 1989; Stigler, 1971, 1974; See Wenders (1988) for the application to telecommunications industry).

Even welfare theory, as a less extreme neoclassical approach, presumes a well functioning free enterprise system. The private competitive market is presented as the normal and natural order, only occasionally interrupted by imperfections. In the rare event of unavoidable market failure, it prescribes that regulation be applied narrowly and so as to mimic, to the extent feasible, the operation of the free market. For the achievement of economic efficiency, in the Pareto or the Kaldor-Hicks Compensation principle sense, as the sole goal of economic regulation, government intervention should be minimized so as to ensure that a state of free competition is obtained. In the case of nonoptimal market conditions, government should apply appropriate market principles for optimality. These would include assessing costs to cost-causers and using marginal cost analysis tools for pricing purposes (Kahn, 1978, 1980; See Egan (1988) and Egan and Weisman (1986) for the specific application of marginal cost pricing and Kaldor-Hicks Compensation rule to telecommunications industry).
In practice, neoclassical theory substitutes a simple model of an ideal system for complex realities. Then economists in neoclassical tradition rely on this theory to reach conclusions about the economic effects of the legal or regulatory rule (Hovenkamp, 1990). For example, from the orthodox Chicago school perspective, the price theory model under perfect competition is the best policy tool currently available for maximizing economic efficiency (Bork, 1978; Posner, 1976, 1979). Economic efficiency (i.e., allocative and productive efficiency) can be strictly defined in terms of empirical concepts, such as marginal cost, or producers’ or consumers’ surplus. By incorporating a theory of welfare called "welfare maximization," which identifies welfare with economic surplus, empirical measurement of welfare effects of a regulatory or antitrust rule becomes possible (e.g., Kaldor-Hicks Compensation rule). Neoclassical economic analysis proceeds in terms of comparison between the often clumsy, always imperfect actual world of regulation with an ideal world of competition. For them, most markets are competitive. When monopoly exists, it tends to be self-correcting since the monopolist’s higher profits generally attract new entry into the market. Even within highly concentrated markets, it is maintained, potential competition is capable of achieving equitable and efficient results.34

34 From institutionalist point of view, the fallacy of this kind of approach lies in the identification of an abstract model with reality (Stanfield, 1983). As a result, neoclassical economic analysis simply ignores such economic realities in utility industries as the continued existence of conditions favorable to discriminatory and preferential allocation of joint costs. Also overlooked is the requirement within these industries for coordination and interconnection, and the ability of dominant incumbent producers in control of bottleneck facilities to retaliate against new competitors dependent upon and vulnerable to their pricing policies. In each of these cases, policies are proposed to be followed without regard to the facts of experience and in accordance only with an ideal
In spite of general influence of the neoclassical economics in the current debate over the nature of economic regulation, the following section specifically deals with the Chicago school perspective of antitrust policy since it has been recognized as the most influential economic school in recent history of the U.S. antitrust enforcement.

**b. Market Perception and Economic Regulation (Antitrust) from Chicago School Perspective**

In the 1970s, the dominance of economic structuralism in industrial organization and antitrust policy was challenged by Chicago school who supported free markets and presented efficiency as both the ultimate value and the product of unfettered market activity. The Chicago school, which evolved from a shared set of concrete solutions to antitrust problems developed largely by Aaron Director, George Stigler, Robert Bork, John McGee, and Richard Posner, was a reaction to structuralism in industrial organization (Posner, 1979, pp. 931-932; Audretsch, 1988, p. 142; Page, 1989, p. 1231). According to Posner, the industrial organization as a field of economics in 1950s and 1960s tended to be "untheoretical, descriptive, ‘institutional,’ and even metaphorical" (1979, pp. 929). Criticizing the structuralists' focus on particular industries, Posner described the methodology of structuralism as follows:

> These studies exemplified the particularistic and non-theoretical character of the field. The powerful simplications of economic theory - rationality, profit maximization, the downward sloping demand curve - were discarded, or at least downplayed, in favor of microscopic examination of the idiosyncrasies of particular markets.

The "kinked demand curve," "workable competition," "cutthroat competition," "leverage," "administered prices," and the other characteristic concepts of the industrial organization of this period had this in common: they were not derived from and were often inconsistent with economic theory, and in particular with the premises of rational profit maximization. They were derived from observation, unsystematic and often superficial, of business behavior (Posner, 1979, p. 931).

On the other hand, the Chicago school antitrust analysis "has prevailed with respect to its basic point: that the proper lens for viewing antitrust problems is price theory" (Posner, 1979, p. 932). By relying on neoclassical price theory, Chicago scholars have shared their commitment to general principles which underlie the theory. In their analysis, for example, economic actors are characterized by their rationality and their common goal of profit maximization. Without the restrictions of the market they will combine inputs in the most efficient manner. As a result, markets are self-equilibrating and efficient. When left to function freely, markets will tend toward the Pareto optimum. The reliance on price theory leads to a skepticism of other models of imperfect competition (Page, 1989, p. 1230).

One of the implications from price theory based on those assumptions is that firm size and concentration levels are determined through the interplay of market forces and technical demands of production. Firms operating at the most efficient scales of activity will drive their less-efficient rivals out of business. To determine the most efficient scale of production, then, one need only observe the size of firms which have survived the competitive process (Stigler, 1968, pp. 72-74). Rebutting the empirical relationship between concentration and monopoly power in structuralism, in this vein, Bork asserts as follows:
Even if it could be demonstrated (and it probably has not been) that there is a persistent correlation between industry concentration and profitability, that fact would be utterly ambiguous. High rates of return are consistent with other factors besides restriction of output, primarily superior efficiency, so that if these debatable correlations could be made to stand up, they would provide nothing of interest to antitrust policy (Bork, 1978, p. 33).

Under Chicago analysis, therefore, persistent market concentration is not at all synonymous with market power. Rather, it indicates either that the market has been rendered concentrated by large-scale economies, or that, through cost reductions and product improvements, some firms have been able to attain persistent economic profits.

Closely related to its rejection of concentration and market power relationship, the Chicago school questions the importance of entry barriers and ultimately the validity of the structuralist position. As noted above, the structuralist present barriers to entry as the advantages of established sellers which allow them to maintain prices above competitive levels without attracting new entrants. Following Stigler, on the other hand, the Chicago school narrows barriers as a cost of production "which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry" (Stigler, 1968, p. 67). This refinement, while subtle, is of great significance. While structuralists consider economies of scale as a barrier, Chicago school, assuming entrants have access to the same technology, does not. Product differentiation does not constitute an entry barrier because the advertising expenditures required of a new entrant exactly equals that required of existing firms in the market to maintain their share (Posner, 1979, pp. 996). In addition, no capital barriers exist because even the firms already in the industry have raised and must continue to raise the requisite capital (Posner, 1976, pp. 92-93; Stigler,
1968, p. 70). In the absence of entry barriers, the significance of market structure is greatly diminished. In particular, the connection between structure and conduct becomes difficult to support. Thus, unlike structuralist view, which considers market structure to be endogenous to conduct, the Chicago school considers market structure to be exogenous of conduct (Audretsch, 1988, p. 145).

Once discounting entry barrier, the Chicago approach acquires an important characteristic, i.e., its simplicity when applied to business activities at issue in antitrust disputes (Page, 1989, pp. 1237-1243). In Chicagoan analysis, all business activities are designed to maximize profits. There are only two possible avenues for firms seeking to increase their profits. The first is to operate more efficiently and thereby capture more profits from sales at the competitive price. The second is to exercise monopoly power, which will restrict output and raise prices above the competitive level, and thereby decreases sales and increase profits. All business strategies must be intended as steps toward greater efficiency or steps toward monopoly (Bork, 1978). Once entry barriers are discounted, however, all firms are subject to the threat of potential competition. Therefore, monopoly power is virtually impossible to achieve or maintain for any significant length of time. Any effort to restrict output by one firm will be met with expanded output by other firms. In the vast majority of cases, unhindered market forces are an effective check against the development of monopoly power (Easterbrook, 1984, p. 20). Because nearly all firms know that they cannot succeed in achieving or exercising monopoly power, they do not try. If firms engage in nonmarket strategies, they will often do so in pursuit of further efficiency gains. If they execute their strategy successfully,
they do so on the basis of efficiencies denied to less efficient counterparts. Then, high levels of market concentration and the exercise of market power may be indicative of efficiencies.

Closely related to its analysis of business behavior is Chicago school's interpretation of antitrust goal. Where structuralists assign a multitude of goals, providing the basis for a more interventionist policy, the Chicago school acknowledges just one decisive goal of antitrust policy - the pursuit of economic efficiency. In his book, Robert Bork argued that "the legislative history of the Sherman Act, the oldest and most basic of the antitrust statutes, displays the clear and exclusive policy intention of promoting consumer welfare" (Bork, 1979, p. 61). Appealing to generation of objective and workable rules to resolve antitrust issues instead of legislative intent, on the other hand, Frank H. Easterbrook supported Bork's justification for an exclusive consumer welfare goal: "I agree with Robert Bork that, whatever one makes of [the legislative] history, the antitrust laws should be treated as if they served no goal other than economic efficiency...Any other approach renders the statutes in comprehensible" (Easterbrook, 1981, p. 266). In sum, from Chicago school point of view, "(1) consumer welfare was the only major goal intended by Congress in enacting the antitrust statutes, (2) consumer welfare is the only value that should therefore be pursued, and (3) most of antitrust's current problems are the result of erroneously pursuing goals other than economic efficiency" (Audretsch, 1988, pp. 145-146). Under the Chicago policy program, therefore, only reductions in economic efficiency are grounds for objection to a practice.
The consumer welfare goal implies that the sole concern of antitrust law is with actions designed to restrict output and raise prices. Given the effectiveness of market forces in countering and frustrating such strategies, little justification usually exists for antitrust enforcement. The Chicago school analysts, in this vein, argue that the horizontal cartel-like arrangement is the only form of business association that should be consistently addressed through enforcement. By their very design, such arrangements exist to earn monopoly profits by simultaneously fixing prices and reducing output. Cartels are inherently unstable since members have a propensity to defect when the association is unprofitable. In addition, new competitors are drawn to the market when the association is too profitable. Nevertheless, cartel-like behavior results in significant short-term welfare losses. Accordingly, Chicago school is united in its support for policies prohibiting price-fixing (Posner, 1979, p. 933; Audretsch, 1988, pp. 146-147).

On the other hand, the Chicago school reveals little if any concern over vertical constraints. Each of Chicago analyses of traditional concepts of anticompetitive exclusion such as foreclosure (tying, vertical integration, and exclusive dealing) casts doubt on the assumption that the practice is typically a means of gaining monopoly profits, and implies that some other explanation for the practice is more likely. Director showed, for example, that a monopolist of one product could not both charge the monopoly price for that product and require purchasers to accept another, unwanted product (Director and Levi, 1956, p. 290; Posner, 1976, pp. 171-174). His analysis questioned the monopolist’s incentive to use its power in the market for the tied product as leverage with which to restrict output in the market for the tying product. Similarly,
the Chicago analysis of vertical integration by exclusive dealing or merger showed that a monopolist cannot increase monopoly profits by acquiring another level of production, since there is only a single monopoly profit to be made in the sale of any product (Posner, 1976, pp. 196-200; Bork, 1978, pp. 227-231). Unlike structuralist view, Chicago school explains that those practices actually fulfill a positive function by allowing firms to minimize uncertainty: they can secure access to necessary resources and distribution sites. The Chicago analyses also addressed the argument that tying and vertical integration protect a monopolist' market position by requiring new competitors to enter more than one market or at more than one level. But the Chicago school redefinition of entry barriers largely undercuts the structuralist position that vertical restraints in concentrated industries deters new competition by forcing entry at multiple levels, thus increasing the capital requirements for entry (Posner, 1979, pp. 934-944; Audretsch, 1988, pp. 150-151).

Eisner summarizes the structuralist framework and Chicago school in industrial organization as follows:

The SCP (structure-conduct-performance) framework is premised on the conviction that industrial structure predisposes firms toward certain forms of behavior. High concentration and protective entry barriers insulate dominant firms from market forces. They can act alone or in concert to manipulate prices and output levels to maximize profits and impede new competition, ultimately suppressing the performance of the economy as a whole. The Chicago school, in contrast, bases its vision of industrial organization on a simple theoretical premise: rational economic actors working within the boundary of the market seek to maximize profits by combining inputs in the most efficient manner. A failure to act in this fashion will be punished by the competitive forces of the market. Once this premise is accepted, the relationship and problems identified by the proponents of the structural framework appear questionable at best (Eisner, 1991, p. 107).
On the other hand, Hovenkamp compares the two traditions in terms of their simplicity as follows:

The monopolistic competition model that was created by Chamberlin, and which influenced antitrust policy during the New Deal, was far more complicated and made it far more difficult to examine a particular business practice and proclaim it efficient or inefficient. For example, within this model product differentiation could increase consumer choice or encourage innovation; however, it could also be a mechanism by which large firms in concentrated industries avoided price competition with one another. Likewise, Joe Bain's complicated notion of "conditions of entry" appeared simultaneously to praise and condemn economies of scale in the production process. On the other hand, they made it difficult for new firms to enter the market and, at least in concentrated industries, facilitated oligopoly behavior. Within the Chicago school model, on the other hand, both of these problems have unambiguous solutions. Product differentiation is almost always a blessing for consumers. When it is not, the firms participating in the differentiation will be injured rather than benefited, for consumers will refuse to buy. Likewise, economies of scale are an unmixed blessing in all but extremely concentrated markets (Hovenkamp, 1984, pp. 224-225).

As such, Chicago school theory makes for an attractively tidy antitrust world. For the Chicago school, the central goal of policy must be the promotion of business efficiency. The fundamental assumption underlying Chicago position, on the other hand, is that the most efficient level of activity is the market, and firms tend to act rationally, seeking out new and greater efficiencies as a means of maximizing profits. Given the unquestioned assumptions of the Chicago school, in short, efficiency will be the natural and necessary product of unfettered economic interaction. As a movement away from market interaction, then, state intervention necessarily entails added inefficiency. If the goal of antitrust is to promote the realization of efficiencies and to maximize consumer welfare, the role of the state must be minimized. From Chicago school perspective,
consequently, public policies manipulating business behavior are required only on the rare occasions. By focusing on the analysis of business practices which reflect only efficiency producing decisions under the constraints of competitive pressure, it has been asserted that the Chicago school provides a convenient tool to identify those occasions and save time and effort of the antitrust enforcement. When their activities were directed solely toward those violations that Chicago school theory identifies as socially harmful, for example, enforcement agencies would only need to pay attention to such practices as cartels, for though they are always under pressure and soon fall apart, they may do some harm before the inevitable breakdown. To prevent "false positives" which arise from condemning conduct that is often not monopolistic but efficiency enhancing in the sense that the Chicago models predict, the Chicago school insists that deregulation and disengagement be among central goals of policymakers instead of enforcing antitrust vigorously for those rare cases.

D. Normative Assumptions of Economic Regulation from Three Economic Perspectives

1. Introduction

Having examined market perceptions of three economic traditions in terms of economic regulation, we may face several questions which may never be answered by means of positive economic analysis; Do product differentiation and advertising waste resources, or do they result in greater welfare in terms of an increased variety of goods on the market?; Are oligopoly firms an undesirable locus of economic and political power
resulting in misallocation of resources, or is their size necessary to capture all the economies of scale available in a modern technological society? If oligopolies are undesirable, should these firms be reduced in size by antitrust action, or should the size of the firm be left alone and the firms be either controlled or owned by the government? etc. All these questions tend to involve not only the manner in which market is conceptualized, but also deeply held disagreements about the nature of government and the relationship between government and the market.

Instead of finding the market as an unbiased allocational and distributional mechanism, for example, institutionalists, through their pattern model lens, find market often characterized by existence and abuses of power and privilege. More importantly, institutionalists present market as an institution or a policy-based mode of economic governance (Hickerson, 1987; Larkin, 1986). Therefore, they tend to freely question whether market is the most appropriate mechanism for realizing a given set of goals. Seeing markets as efficient, self-equilibrating, and prepolitical in origin, in contrast, neoclassical economists are disposed to assigning the state as a secondary role. State "intervention" is cast as unnecessary or residual, if not counterproductive (Eisner, 1991). In spite of their common analytic focus on market as the primary mechanism of resource allocation, on the other hand, structuralists reveal significant disagreement with orthodox neoclassical economists over the self-sufficiency of market and the positive role of the state in manipulating business organization and industrial structure to shape conduct and economic performance.
Once having established each economic tradition's market perception and preference to the nature of regulation, in this section, I want to explore the more details of normative rationale for those different economic traditions to provide for the defense of their preferred nature of regulation. These normative questions of economic regulation will be more involved with their vision of social welfare or well-being, and their interpretation of public interest, to which their preferred policy instruments are directed to serve. The utility regulatory and antitrust legislations have been understood as a public interest law designed to regulate the exercise of private economic power. As the change in the nature of regulatory policy has been the result of recurrent controversy over the public interest to be served, those three economic traditions have offered different formulations of the public interest to be associated with their preferred type or nature of regulatory policy. By examining three general policy instruments identified by those three schools in terms of their respective interpretation of public interest, this section sheds light on strengths and weaknesses of three general policy instruments, and identifies their possible purposes of usage under the name of public interest.

2. Institutionalist Perspective: Direct Regulation (Direct Performance Control)

The institutionalist recognizes not only the inevitability of concentration of industrial organization in modern industrial society, but also that its control is in the public interest. Direct regulation of concentrated corporate power has been preferred to antitrust strategy by institutionalists due to its more visible and easier nature to manage in the interest of economic balance and social reproduction than dispersed power (Stanfield,
1984). In search for rationale for regulation, in general, institutionalists do not rest on the market model (Stanfield, 1984; Stevenson, 1987; Klein, 1988; Miller 1985, 1990). The purpose of regulation "is not to approximate efficiency or the result of competitive markets, but rather to overrule the market and subordinate it to conscious social value and purpose" (Stanfield, 1984, p. 33). Competitive market economies per se provide no automatic means for introducing noninvidious, nonpecuniary criteria into the process of economic decision making and control. No matter how important to the quality of human life, that which does not enter into the calculation of commodity production is neglected in the functioning of such economies. Hence, it is not a suitable frame of reference for institutionalists to restore competitive market or to implement regulation to secure the results that such markets would provide. To the contrary, direct government intervention in the economy and the application of nonpecuniary and noninvidious standards and principles is seen as an actually preferred alternative to the market when market creates problems (Rutherford, 1994, p. 148).

Closely related to institutionalists' preference to direct regulation is their emphasis on instrumental valuation theory. As an important conceptual tool to deal scientifically with normative issues related to regulation, the valuation theory of institutionalists can be distinguished from the subjectivism of neoclassical economics. In neoclassical economics, the consequences of each person's choice is wholly private, independent of the ideas, wishes, purpose of everybody else. As a result, neoclassical economists regard any goal as rational by definition, or makes no distinction among ends and treat them all equally legitimate. The "given" nature of ends situates them beyond human judgment,
effectively insulating them outside the realm of human choice (Miller, 1989). The consequences of this subjectivistic approach is to prevent the economists from examining those cultural process of value formation.

Affected by John Dewey's instrumental theory of social value, on the other hand, institutionalists not only deny the validity of the introspective psychology of neoclassical economists that finds the essence of valuation in the subjective feelings of the individual, but also find that valuation is a matter of action or modes of behavior carried on in the context of the real cultural world. According to Dewey, then, what is required is an experimental value principle that is consistent with the view of social and economic phenomena as an evolutionary process. Values serve as instruments for forming hypotheses concerning a given problem situation (Gordon, 1985). The "ends-in-view" arise within such a situation and their test is whether they solve the particular problem of the situation. Dewey insisted on focusing on ends-in-view in lieu of ends with intrinsic value. He rejected such ultimate ends since such ends could lead to the dogmatic rationalization of ends justifying means regardless of the costs of means (Lutz, 1985, p. 151). In short, valuative criteria arise from within the process itself; they are not externally imposed as some "self-evident" metaphysical ultimate. Contrary to neoclassical economic perspective, then, value and valuing are regarded as observable phenomena carried on within the social process through the application of intelligence and action to problematic situations. Since all social choices require the application of criteria, and since all choices produce consequences, one may reflect upon the character of consequences emerging from the use of criterion and thus the property of the criterion
itself. From this perspective, values are not transcendent, isolated, or subjective. Emergent values, rather, are objectively tested to determine their success or failure in resolving problematic situations.

Contrary to neoclassical economists who put aside value issues but take "reason" to be only way to discover an "immutable" natural order, institutionalists, who are practically oriented, have been concerned with the valuation process where the individual uses his or her critical faculties in appraising or valuing the means to the acquisition of desired or esteemed ends-in-view. Instead of searching for certainty or the foundations of knowledge through reason, in this context, application of human "intelligence," defined as "selection and arrangement of means to effect consequences and with choice of what we take as our ends"(Dewey, 1929, p. 170; Quoted in Miller, 1989, p. 345), has become an important method in insititutionalist tradition. From institutionalist perspective, therefore, values originate and can be scientifically explored in the cultural process of selection and arrangements of means to arrive at humanly identified ends-in-view to correct for humanly specified problems. More specifically, institutionalists take the instrumental valuation principle as "a trial and error process through which inquiry and experience lead to the formation of value judgments and to course of action (institutional adjustments) designed to correct problems that are subject to continuous assessment" (Hickerson, 1987, p. 1138). This continuous testing and redesign of institutional structure through recourse to the instrumental value is the route to problem solving of general regulatory problems.
Even though institutionalists do not propose any particular value criterion separated from particular situation or actual social experience, as already discussed, they recognize there are social values that the private market system does not take into account. For institutionalists, that is, some values are expressed only socially. As the choices people make as political participants are different from those they make as consumers, therefore, to conceive of a policy problem is inescapably to apply social value criteria (Tool, 1978; Klein, 1984; Sunstein, 1990). Public interest regulation, as the outcome of conscious choice made at some point in the history of culture, in the same vein, has value structure that correlates the behavior within it. For institutionalists, the values employed as correlates of behavior within regulation are "collective" ones rather than "individual" ones (Klein, 1984). Collective values, which reflect the value systems of groups of individuals, are related to the broad characteristics of the community or the nation. Contributing to individual development and the enhancement of the community's life process, these collective values or ends-in-view include such goals as equity, security, humaneness, compassion, freedom, and justice (Klein, 1984; Tool, 1979). Then, public interest regulation should be concerned not only with provision of relevant commodities or services, but also with establishment or creation of societal or cultural conditions that reflect those values. Taking this perspective, the public interest becomes much more than the sum of private interests. Distinguishing their perspective from the "narrow" efficiency goal of neoclassical economists, in this vein, institutionalists present public interest as seeking for "higher efficiency," "instrumental efficiency," or " loftier reason"

As the only institution admitted into neoclassical economic analysis is the market, on the other hand, "the market both defines and measures value" for neoclassical economists (Miller, 1990, p. 242). The market is posited as an efficient, natural, and neutral allocational and distributional mechanism. In neoclassical model, in addition, the individual is accepted as the only reality and individuals act as if they were driven only by economic rationality. Individual efficiency is both means and goal of economic activity and the sum of individual accounts is taken as the measure of social result. In short, the public interest is seen strictly as the sum of private interest. Public policy conclusions, then, follow from "first principles" not only "without regard to situation particulars or the facts of experience," but also without any "attention to the social nature of individual activity and the social consequences of political policy" (Miller, 1989, p. 354; 1990, p. 242).

Contrary to the market mentality of the neoclassical view which enshrines this particular institution as a judgmental standard, for institutionaists, the market itself is not a value. Market is an institution, the performance of which is to be evaluated according to criteria provided by the instrumental valuation process (Hickerson, 1987, p. 1136). For institutionalists who "use instrumental criteria with which institutions are judged," it is "the mistake of the neoclassicist who uses the institution of the market as a criterion" (Larkin, 1986, p. 49). By limiting themselves largely to an analysis of the private market system and how it contributes to the supply of individual values, neoclassical economists
neglect the role of government and its contributions to the supply of collective values. In this context, the instrumental valuation method, while it does not afford the comfort provided by certainty of belief in preestablished principle, is considered an important approach that permits social scientists as well as institutionalists to put their knowledge and skill to the service of achieving a collective interest or reflecting social values (Miller, 1989, pp. 346-347).

In addition to their emphasis on instrumental valuation method, institutionalists have been distinguished from neoclassical economists in their way to see values related to commodities and services (Gruchy, 1987; Hovenkamp, 1994). For a long time, economists have distinguished between subjective use values and objective exchange or market values. But the relative emphasis on those values has been diverged depending on each different economic tradition. Since the content of a use value is said by neoclassical economists to be determined by a rational person who knows best what is of value to him or her, for example, according to the orthodox economic interpretation there is no need to investigate any further into the subjective nature of the rational person's concept of use value. In neoclassical economics, therefore, attention has always been centered on exchange or market value, which is the value that emerges in the marketplace.

On the other hand, the institutional economists have paid much more attention to the concept of use value than do the neoclassical economists. Because people are evolving biological organisms responding to a common environment, for institutionalists, their basic needs are much more similar than they are different. According to the interpretation of the institutionalists "the valuation process is a concrete, historico-
cultural, never-ending process in which individuals, with the power to reason but who are also responsive to cultural and technological influences, make decisions as to what constitutes use values - the values that contribute to the enhancement of the individual's and the community's well-being" (Gruchy, 1987, p. 64).

The institutionalist treatment of the value problem particularly related to commodities or services was originated in Veblen (Gruchy, 1987). Veblen argued that utility analysis should begin with human beings as biological organisms with definable needs and consider the objective question of the mixture of goods and services that would maximize a person's social productivity. The test for a product's value should be whether it enhances "human life on the whole - whether it furthers the life process taken impersonally," rather than how it satisfies the needs of some particular individual (Veblen, 1967, pp. 318-319; Quoted in Gruchy, 1987, p. 67). Then, Veblen emphasized that the most relevant kind of "value" for the economics was value-in-use, not exchange value. The basis of value-in-use was found by Veblen to be in "serviceability" to the community, whereas the basis of exchange or pecuniary value was found to be in disserviceability to the community. This disserviceability took the form of the quality of "vendibility," which did not coincide with serviceability. Instead it was a market value that arose in the "transactions of exchange, purchase and sale, [and] bargaining for the purpose of pecuniary gain" (Veblen, 1919, p. 311; Quoted in Gruchy, 1987, p. 68).

According to Veblen, the value-in-use was best determined objectively by procedures involving sciences other than economics. For him, real value rests on "material circumstances reducible to objective terms of mechanical, chemical, and physiological
effect" (Veblen, 1919, p. 311; Quoted in Gruchy, 1987, p. 68). Therefore, value-in-use is objective in the sense that the use value of an object can be demonstrated by following the procedures of such laboratory sciences as physics, chemistry, and the other natural sciences. By contrast, exchange or market values are described by Veblen as "psychological" rather than objective.

The concepts of social or biological value that institutionalists advocate were never subject to the kind of precise quantification that neoclassical economists believed their discipline required. Paying attention only to exchange values, for the latter, value means the utility maximizing individual's subjective willingness to buy or sell. The neoclassical concept of value as strictly individual willingness to pay proved to be the foundation for mathematical theories of great elegance and simplicity (Hovenkamp, 1994). By getting accuracy of definition and accuracy of measurement, however, neoclassical economists had to restrict the meaning of economic "welfare" to those things capable of being produced with money and to those choices that reveal themselves through market transactions (McFarland, 1991; Hovenkamp, 1994). As shown above, on the other hand, institutionalists drew more attention to objective welfare judgment based on the assumption that human beings are developing biological and social organisms with certain common needs. In spite of the lack of capability of generating observations to which numbers can be attached like that of neoclassical economists, in this context, institutionalist's urge to incorporate the idea of use values in policy judgment should be seen as an attempt to be more faithful to the concept being measured, "welfare" or "well-being" of a society's members.
From institutionalist point of view, direct regulation can be considered as an effort to close the gap between use value and market value by applying social control to the actual economic system. The aim of this social control is to remove those features of the current private enterprise system that distort value systems and their contributions to individual and community welfare, and create a gap between use values and their counterpart exchange or market values in the real economic world. Taking into consideration of instrumental valuation theory in the particular context of this dissertation, not only closing the gap between use value and exchange value of basic telephone service, but also achieving its full potential use value might be cited as an instrumental value which plays an unquantified role in the case of price formation in telecommunications regulation. In general, institutionalists see prices as being set administratively rather than through the interaction of demand and supply constructs (Tool, 1994). In particular, they argue that prices are set in a way which reflects instrumental value criteria. The regulatory pricing policy in telecommunications industry, then, can be considered as the direct application of values derived from culture which are in operation. To attempt to explain them entirely within the context of neoclassical utility theory is to misunderstand completely the interaction of values and economic behavior.

Recognizing the importance of social values that the private market system does not take into account, "it is the position of the present-day institutionalists that it is only when there is a socially acceptable provision of both private market values and social extra-market values that there will be an adequate flow of genuine values to meet the needs for individual and community well-being" (Gruchy, 1987, p. 137). In this vein, the
criterion of value that institutional economics provides is "complex, nuanced, subtle, pragmatic" (Miller, 1989, p. 345). For institutionalist, efficiency of neoclassical economists, as interpreted as the least cost consistent with given purpose, is but one aspect of efficiency. Efficiency, in the institutionalist or pragmatist tradition, rather means "fittedness to purpose" (Anderson, 1993). Instrumental efficiency or higher efficiency all imply that means are well suited to ends. As their ends-in-view incorporate societal or cultural conditions and social values that contribute to individual development and the enhancement of the community's life process, in this context, institutionalists ask not "Does this approach conform to some preestablished pattern?" but "Does it work to enhance human life?" (Miller, 1989, p. 345) Their end-in-view is not perfect world, but society characterized as "serviceability" through pragmatic improvement.

3. Structuralist Perspective: Antitrust (Indirect Performance Control)

The main attention of structuralists has been centered on concentrated industrial structure which promotes anticompetitive forms of conduct, which in turn adversely affects the performance of the economy. The structuralists' remedy for the market concentration problem is to make those firms with unnecessary or undesirable market power subject to the more discipline of the market by restoring competitive order. In contrast to institutionalists who prefer direct regulation, therefore, structuralist antidote for corporate power is antitrust enforcement, which would return market to a competitive state. In a normative sense, in this respect, the perfect competition model plays an important role for structuralists. This model is consistent with their concern with the
establishment of market conditions, where the existence of dispersing market actors bring aggregate production or prices that are not affected by individual economic decisions. The importance of the model in structuralism does not lie not in the static aspect of the model (e.g., as a reference to evaluate deadweight loss) or in the exact conditions which the model presupposes. Rather the structural focus seeks to establish market conditions more amenable to market force, and to retrieve more of the dynamic benefits of competitive process. In this vein, structuralists promote the view of open markets and independent action since they are likely to produce the most dynamic change and the highest degree of responsiveness to consumers.

For structuralists, following their view of market imperfection and the role of competition, the antitrust legislation is interpreted to preserve competition as a process, to curb coercive or exploitative market behavior, and to preserve an environment conducive to rivalrous behavior among competitors (Fox and Sullivan, 1987, p. 970; Scherer, 1990, p. 254-255; Shepherd, 1990, p. 11-12). Competition itself is valued because it keeps powerful firms from exploiting consumers through excessive prices. Competition is also valued because it tends to reduce waste and tends to increase innovation (i.e., "dynamic efficiency"). Although antitrust policy may have had some negative effect in terms of foregone scale-economy costs, structuralists admit, the efficiency losses are probably small and outweighed by efficiency gains in other, more difficult to measure, areas such

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35 While perfect competition requires a large number of firms, each of which is too small to influence prices, for example, effective competition in reality does not have to be in that way, but "requires only: (1) about five to eight comparable competitive firms, able to apply strong mutual pressure toward excellent performance, and (2) reasonably free entry of new competitors" (Shepherd, 1995, p. 304).
as dynamic efficiency (Scherer, 1987; 1990). The concentration on the process of effective rivalry, then, is believed to increase not only the allocative efficiency, but also the rate of technological progress, the extent to which economies of scale are exploited, and the degree to which firms avoid waste in their use of the resources. In short, structuralist's point of view of antitrust policy can be characterized by the notion of "competitive process" or process of effective rivalry.

On the other hand, the orthodox neoclassical economists see the function of antitrust to promote efficiency, which is supposed to be measured through such concepts as consumer and producer surplus, or "economic welfare." Therefore, they value competition only because it promotes efficiency. Then antitrust laws should be interpreted to proscribe only inefficient conduct. For purposes of antitrust, inefficiency should be defined only in terms of artificial output limitation, which is inefficient by definition because it blocks the flow of resources to the production of goods that people want. Everything that is not output-limiting is efficient and therefore is or should be lawful. On the other hand, competition as process "does not presume to define desired, efficient outcomes," but centers "on an environment that is conducive to vigorous rivalry and in turn, to efficiency and progressiveness" (Fox, 1981, p. 1169). That is, competition is valued as an important end in itself. To value competitive process itself as a central tenet of antitrust is not only to enhance economic efficiency, but also to embrace a higher social interest which might not be reflected in the notion of efficiency.

As such, the most significant "values" disagreement in antitrust has been whether the antitrust laws should be applied only to maximize efficiency or whether they should
advance other goals, such as preserving the number and freedom of small firms, insuring fairness in the marketplace, and preventing income transfers from consumers. Sometimes these latter goals are referred to as "noneconomic" in contrast to an "economic" or efficiency goal. In spite of their relatively broad interpretation of economic efficiency beyond a static one, structuralists in industrial organization have not been directly concerned with such noneconomic values. Nevertheless, those noneconomic values are more likely to be embraced by structuralists since they are, in general, consistent with structuralists' emphasis on competitive process as the central concept of the antitrust policy, and their deference to divestiture, dissolution and decentralization as policy measures. For example, Scherer, as a leading mainstream economist in industrial organization, discuss fairness issue in antitrust as follows:

[E]conomists have no solid basis for insisting, merely because we have been unable to develop tools to deal with the problem scientifically, that consideration such as "fairness" have no place in antitrust analysis. Deeply-rooted standards of fairness, considered to have been violated by the early "trusts," had much to do with the passage of the first United States antitrust laws. Such standards are not easily enforced.... It is far from obvious, however, that this enforcement difficulty makes it necessary

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36 Classification of economic and noneconomic goals or values is not obvious. Mostly it depends on one's perspective. Like institutionalists, for example, a concern about wealth distribution, even broader social and political goals, could be described as "economic," though they are different from an exclusive concern about efficiency. Hovenkamp (1984) provides one interesting illustration in terms of this point. While consumers may prefer small business to big business based on their distrust of market power, they buy big business' products because they realize that their individual purchase of small business' product in spite of their higher price would not be effective unless other consumers join them. That is, there exists free-rider problem. In order to maximize the social welfare, in this case, policy maker is required to take the real consumer's preference into consideration. This may imply the keeping small businesses is the best for society in welfare economic sense.
to abrogate fairness standards and replace them with an emphasis on allocative efficiency (Scherer, 1990, p. 255).

Contrary to the efficiency goal which is advocated on the basis of economic theories and empirical studies, the argument for considering nonefficiency values are based largely on legislative history. Many legal scholars identified noneconomic values from the historical analysis of early antitrust legislations, particularly Sherman Act in 1890 (Millon, 1988; Peritz, 1989, 1990a; Hovenkamp, 1989; May, 1987). These noneconomic values are often called "populist values" or "populism." In spite of different nature between populist values, and economic value held by structuralists, "the precise objective of antitrust policy was unimportant, for populist and economic approaches yielded consistent results" until early 1970s (Baker and Blumenthal, 1986, p. 330). But the emergence of the Chicago view brought out the new perception that populist objectives could be attained only at the sacrifice of economic objectives. In addition, it was recognized that policy direction would depend not only on the policymaker's attitude towards populism, but also on his preference among competing economic schools (Baker and Blumenthal, 1986, p. 331-332).

From the populist perspective, Congress in 1890 was concerned about power, not efficiency (Millon, 1988, p. 1287). Capturing the cultural context of populism and explaining it in terms of liberal and republican conceptions about political economy, Millon describes the intent of the Sherman Act legislation as follows:

[Legislators] readily ignored the possibility that enhanced efficiency might justify concentrated production. Even if monopoly were capable of creating social benefits, the lack of competitive pressure or governmental regulation coupled with the monopolist's pursuit of self-interest could only
result in abuse of power. Consumers would pay extortionate prices while the owners of ruined smaller businesses watched from the sidelines. More fundamentally, the enormous wealth of the great trusts represented massive, uncontrolled power that would inevitably subvert the integrity of the political process and result in plutocracy. In their economic power as well as their political influence the trusts symbolized tyranny and despotism. There could be no "welfare trade-off" because they offered nothing of value to society.

Just as separation and balance within government prevented concentration of power in any single constituent element, so too was atomization of economic power the solution to the crisis brought on by the concentrated power of the trusts (Millon, 1988, p. 1288).

As the balance of power interpretation implies, populists' emphasis in competition policy lies in "eliminating gross inequalities and the associated ideal of competition free of private power" (Peritz, 1990a, p. 310).

This value orientation of populism is sharply contrasted with that of Chicago school or orthodox neoclassical economists. The Chicago school of antitrust analysis advocates a noninterventionist approach that allows private citizens to define the optimal allocation of economic resources through their individual market decisions (Fox, 1986, pp. 1718-1720). This value, i.e., liberty of contract or "political freedom" from government intervention, renders legitimate the resulting distribution of wealth and power. If inequality is the result, it is because equality is inconsistent with liberty. In this sense, the conflict between efficiency value held by the Chicago school and populism rests on the tension between commitments to liberty and equality (Peritz, 1990a; 1990b). While "a primary commitment to liberty supports competition free of government intervention - laissez-faire," a fundamental dedication to equality "underwrites
competition free of private market power - the ideal of perfect competition and the pragmatics of workable competition" (Peritz, 1990b, p. 773).

Taking most legal historians' or structuralists' perspective, antitrust policy has embodied a bundle of social values. Therefore, understanding antitrust policy and its relation to the notion of "public interest" requires attention to "public" values associated with competition policy. In order to understand the characteristics of those values, furthermore, we may need to understand the nature of the means to accommodate those values, and distinguish it from those of other means. For structuralists, as already noted, indirect market control through antitrust measures such as divestiture or prevention of merger, is the fundamental regulatory instrument to achieve those public values. On the other hand, institutionalists see direct control over performance as the proper object of economic regulatory policy, and therefore prefer direct regulation of price and other aspects of performance. Direct performance regulation compels specific conduct that the regulator determines to be in the public interest and to represent optimal performance. This direct regulation requires a departure from a presumed norm of self-correcting competing markets. If a social value is achievable not by specific action which recreates a market, but only by direct continuous regulation of performance, then competition, the central objective of antitrust, cannot provide the socially desired performance. Since institutionalists often see social values which the competitive process cannot reflect, their answer for the market problem is not the restoration of market process, but application of other institutional alternatives one of which is the direct regulation.
On the other hand, structuralists' main concern is to resurrect the proper function of market by encouraging competitive process. In that sense, structuralists' value orientation is largely limited to the social values which are latent in the revitalization of competitive process. While both structuralists and institutionalists recognize the importance of social or public values in the conception of public interest in economic regulation, therefore, it can be said that the former attributes more credit to the function of market competition than institutionalists. When the issue becomes involved with the choice of instrument over the same market power problem, the structuralists' preference is well represented in the following statement: "[U]nless antitrust law and enforcement preserves an environment that keeps markets open and fluid, private power will grow and will invite intrusive and inefficient government regulation and control" (Fox, 1981, p. 1169; emphasis added). As such, antitrust scholars including structuralists are more likely to reluctantly accept direct regulation as an "intrusive and inefficient" second best choice.

While both performance control and antitrust are economic regulatory systems, they reflect fundamentally different perceptions of how to achieve optimal performance. As far as each economic tradition embodies its positive and normative views in the separate domain of regulatory practices, and the entire domain is understood in terms of a particular economic characteristic of industry, there would be no conflict between two traditions. For example, understanding utility industries in terms of natural monopoly characteristics presupposed the undesirability of competition, so that there was not much room to discuss the competition policy in those industries. On the other hand, antitrust
issues were considered mostly relevant to unregulated industries. It can be said that the
technological characteristics provided a comfortable basis for the division of intellectual
contribution of two schools in separate regulatory system. But once the technological
change in the regulated utility industries brought a new belief in the effectiveness of
competition in a certain portion of those industries, the confrontation of two economic
views became inevitable. That is, the difference of two economic views creates tension
when antitrust rules come into conflict with a directly regulated industry.

As discussed in the previous section, for example, an effort to close the gap
between use values and exchange values through direct social control may reflect an
instrumental value which might not be achieved in competitive market world. An
introduction of a new strategy which seeks to close the gap between use value and market
value by restoring a competitive order, then, may inevitably bring conflict between the
instrumental value and the new values which competitive process tries to impose.

In spite of their potential conflict, institutionalists and structuralists have a very
important factor in common - distrust of private market power. As far as those two
perspectives are presented in two separate domains, as already noted, they will find a lot
of room to complement each other to cope with private market power. As in the case of
"essential facilities," for example, in a market whose competitive result depends on the
control of market power in the other related market, the two perspectives can be more
compatible each other to accommodate an important social goal which they share under
the notion of public interest.
In summary, structuralists advocate competition not only because it facilitates static and dynamic efficiencies, but also it advances other social goals. While their distrust of market power is compatible with institutionalist view, the attributes of their preferred instrument to deal with market power preclude the important valuation process institutionalists consider necessary for achieving collective values.


In general, neoclassical economists hold the view of well-functioning market system. Only when that well-functioning mechanism suffers a "failure" or experiences an "imperfection," in this view, is a remedy required. The public utility sector was well accepted as an example of an imperfect market, primarily because of its monopolistic characteristic. Given that historically these industries also produced a necessary service, the neoclassical economists tended to reluctantly accept the idea of regulated monopolies. Regulators were urged, however, to apply market principles such as marginal cost pricing and the placing of costs on cost causers to the extent possible within regulation.

As shown in the previous discussion of Chicagoan antitrust view, social control increasingly was depicted as ineffective and unnecessary, and as standing in the way of the establishment of a more perfect economy, a competitive one. Their perception that bigness may be good in market but never in government led them to doubt the established remedies of direct regulation as well as antitrust. More recently, contestable market theorists revived the old idea of "potential competition" and provided its elaborated view
that perfectly competitive performance is possible even in highly concentrated markets.

Without sunk cost barrier, the existence of potential competition can impose discipline on monopolists and oligopolists so as to conform their behavior and performance to those of competitive market. Together these theories of regulation and industrial organization have had substantial affect on the current deregulation movement. By shedding light on the detrimental effect of regulation has on the efficiency, Chicago economists and contestable market theorists not only have provided momentum for deregulation, but also have elevated "economic efficiency," defined in neoclassical economic terms, to the most important value in public interest. Most recently, in this context, William Baumol provides a neoclassical economic version of public interest as follows:

[T]he public-interest standard for economic regulation calls for it to adopt only rules and procedures that are consistent with economic efficiency, not because economic efficiency is the only goal of society, but because such efficiency is a necessary condition for maximization of the general welfare...........

In short, to the economist the free competitive market becomes the embodiment of the public-interest standard. Such a market where it is present, should be left alone, without regulatory experience, because there is no more effective means known for the promotion of economic efficiency. And where the market is not competitive, a hypothetical competitive market's behavior and performance should be used to provide the rules promulgated by the regulator who should seek to elicit from the regulated firm those patterns of behavior that would emerge in the presence of competition. Regulation, in the view of economists, should avoid departures from these guidelines, and should certainly never deviate from them casually and without explicit justification (Baumol, 1995, p. 256).

Many of the economic concerns about the impact of regulatory policy on the economic efficiency fall within the domain of welfare economics. Of all the theories of welfare, the welfare theory called "wealth maximization," which identifies welfare with
economic surplus, has been considered an important principle to evaluate regulatory and antitrust policies (Hovenkamp, 1990, p. 816; Peritz, 1990, p. 303). Wealth maximization, representing allocative efficiency, is a much more global kind of efficiency than is productive efficiency. While the latter is a ratio between the amount of a firm's inputs and the amount of its outputs, the former refers to the welfare of society as a whole. Most importantly, once welfare maximization is accepted as the guiding principle in neoclassical regulatory and antitrust economics, the practical impact is that doing so makes (at least theoretically) the empirical measurement of welfare possible. For its claims to science, however, wealth maximization measures a society's welfare by making many assumptions that must be characterized as normative. In order to understand its normative nature, it is necessary to go back to the previous discussion of utility measurement problem.

One of the most significant debates in welfare economics this century has been over the utility measurement issue. The early welfare economists such as Pigou believed that measurement of utility across individuals was both possible and essential to policymaking, while the newly emerging ordinalist economists believed that such "interpersonal comparisons" of utility were impossible. Under the demand of logical positivism as the neoclassical economist's accepted methodology, this cardinal-ordinal utility question was resolved in favor of the latter. The resolution was accompanied by the adoption of Pareto and Kaldor-Hicks efficiency criteria that avoid any requirement for interpersonal utility comparison.
Under the Pareto definition, a situation is efficient, or "Pareto optimal," if no change from that situation could make someone better off without also making at least one other person worse off. Likewise, a given situation \( A \) is "Pareto superior" to situation \( B \) if the move from \( B \) to \( A \) does in fact make at least one person better off without making another person worse off. The Pareto definition of allocative efficiency imposes such a strict requirement on efficiency-based policymaking that its conditions can virtually never be fulfilled. Nearly all policy changes fail to be allocatively efficient under the Pareto test.

Because of this severe practical limitation in the Pareto efficiency criterion, efficiency-based policymaking must generally be guided by some notion of efficiency other than orthodox Pareto efficiency. The most common alternative, generally advocated by the neoclassical economists, is "potential" Pareto efficiency, sometimes called Kaldor-Hicks efficiency. A change is efficient in the potential Pareto sense if the gains experienced by those who gain from the change are larger than the losses experienced by those who lose due to the changes. Such a change is said to be "potential" Pareto efficient because it could be turned into a pure Pareto efficient move if the gainers would compensate the losers out of their gains. If that occurred, then the losers would be no worse off, because they would have been fully compensated. However, the gainers would still be better off, because they have something left over after they have paid the compensation. Importantly, the potential Pareto criterion does not require the gainers actually to compensate the losers. That would be a distributive concern. The move is

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"potential" Pareto superior if the gainers could compensate the losers fully and still have some gainers left over.

While these Pareto and Kaldor-Hicks standards rank social states, they do not provide the characteristics in virtue of which one state may be compared with another (Coleman, 1980, p. 521). In this context, wealth maximization represents a characteristic of states of affairs that enables comparisons. Because wealth is a characteristic of certain states of affairs that enables them to be ranked by the use of both the Pareto and the Kaldor-Hicks criteria, wealth maximization, in conjunction with these criteria, can provide a basis for preferring one state of affairs to another. For example, a Pareto-superior exchange is, in the system of wealth maximization, a good thing - not because it increases welfare, but because it increases wealth (Coleman, 1980, p. 523).

In particular, wealth as value in dollars performs an important function in Kaldor-Hicks efficiency. Kaldor-Hicks efficiency is a measure of welfare only if we give the term "welfare" a peculiar definition, quite different from that given by Pareto efficiency. Paretian standard imposes an unanimity condition on policy changes and requires no comparative assessment of subjective gains and losses. In contrast, Kaldor-Hicks requires that gains and losses be traded against each other, and this requires a common welfare currency. Kaldor-Hicks accomplishes this by assuming the constant marginal utility of dollars, and by assuming that a dollar gives as much utility to one person as to another. Although this move from utility to dollars may solve some formal problems for the economic intent on measurement, it also create some contradictions (Hovenkamp, 1990, pp. 833-834).
As noted earlier, in the neoclassical welfare analysis, the stated assumption is that utilities derived from individual choice are noncomparable. But the assumption as applied in policy analysis through Kaldor-Hicks standard or wealth maximization is that dollars produce the same amount of welfare or utility in everyone regardless of existing wealth. Therefore, a dollar given to one person must be treated for policy purposes as creating the same amount of welfare as a dollar given to someone else.\textsuperscript{37} As a result, the transfer of a dollar has no welfare consequences and cannot be justified within economics. While wealth maximization as a Kaldor-Hicks standard substitutes wealth for utility since, unlike the latter, dollars are comparable, it cannot avoid the premise that the welfare produced by a dollar is both constant and the same for everyone. The notion of the absolute comparability of dollars is inconsistent with ordinalism as premise about welfare in neoclassical economics (Hovenkamp, 1994, p. 15). Without any empirical foundation, in addition, any defense of the assumption that a dollar produces the same marginal utility is normative as much as early welfare economists' view that the marginal utility of a dollar in the hands of the poor is greater than the marginal utility of a dollar in the hands of the wealthy (Hovenkamp, 1990, p. 847-851).

Wealth maximization avoids the issue of interpersonal comparison of utility and other problems such as Scitovsky Paradox which prevent utilitarianism from being incorporated particularly in Kaldor-Hicks standard (Coleman, 1980, pp. 518-520). On the

\textsuperscript{37} For example, a transfer of a dollar from a consumer to a monopolist has no welfare implications. In this context, the market efficiency model is not concerned with "wealth transfer" caused by existence of monopoly in market system, but only with the "deadweight loss."
other hand, wealth maximization requires the existence of prices for its application (Coleman, 1980, pp. 512-524). Unlike utilitarianism which purports to take into account any and every preference, therefore, wealth maximization takes into account only those that can and are exercised in commercial markets. Wealth maximization supported by neoclassical economists represents welfare confined to those things capable of being produced with money and restricted to those choices that reveal themselves through market transactions. In short, the neoclassical economists measure welfare by looking at the market choices declared by those who have sufficient resources to make them. Consequently, "non-economic goals are ignored, those without the wealth to vote for their preferences are ignored, and those who believe that their votes in political markets serve to protect their non-economic preferences are ignored" (Peritz, 1990, p. 304). That is, "the system of wealth maximization cannot tell us anything about right conduct where no prices exist" (Coleman, 1980, p. 526). In particular, it is ignored that "preferences have levels of intensity that are not proportional to the preference holder's ability to pay" (Hovenkamp, 1994, p. 13).

The strength of wealth maximization lies in its stripped-down definition of social welfare capable of generating observations to which numbers can be attached (Hovenkamp, 1994, pp. 36-37). By putting emphasis on observing and rationalizing individual preferences as they are evidenced through voluntary market exchange, however, the wealth maximization standard restricts its analytic focus on the welfare measured exclusively by reference to individual's revealed preferences. Such an approach to welfare measurement is called "subjective" because it relies on the observed choices.
that individuals subjectively make (Hovenkamp, 1994, p. 22). By relying on the observed choices, it takes the preferences as exogenous, but overlooks the fact that preferences have also social origins.

As already noted in the normative perspective of institutionalist, human beings are developing biological and social organisms with certain common needs. Accepting endogeneity or social origin of preferences, in this context, makes it possible to make "objective" welfare judgments. The latter is not based on observations of market choice or interpersonal utility comparisons, but rather on observations of need, often using the observer's standards to determine what is needed and what is not (Hovenkamp, 1994, p. 41). In the similar context where Veblen referred to the natural sciences to infer use value, objective welfare judgments can be made to infer what is good for another without observation of the other's asserted preference by referring to scientific findings in disciplines such as psychology, sociology, or natural sciences other than neoclassical economics. The meaning of economic welfare has been constrained by the latter's method to include only those elements of human satisfaction that can be purchased with money. At least, then, the objective welfare judgment may be different from that of neoclassical economists in that in the analysis of the former ability to pay does not define the limits of a person's well-being.

The previous discussion implies that the market bias in contemporary neoclassical economics results from the insistence that welfare be measured exclusively by reference to revealed preferences (Hovenkamp, 1994). Given standard neoclassical economic assumptions, markets can be shown to be welfare enhancing, or efficient. The analysis of
regulatory rules in neoclassical economics, in the similar vein, has been based on the assumption that the only policy values that can be counted are those which reflect individual preferences in some way that can be observed and measured. Many critiques of existing regulatory policy then fault the policy for being inefficient under that criterion. As discussed in the normative proposition of intitutionalists, however, once the concern of regulatory policy "moves beyond facilitating markets to questions about human well-being, the role of preference endogeneity becomes much more prominent" (Hovenkamp, 1994, p. 51).

A more general methodological question involves the concern about the normative appeal of wealth maximization against other alternative moral theories (Coleman, 1980). This question draws attention to the issue of whether the pursuit of efficiency, rooted either in utility or wealth maximization, is preferable to some other conceptions of right action or justice. Wealth maximization, whose claim to the first principle, in this vein, requires justification. Assuming wealth is not something of intrinsic value, for example, wealth maximization can be justified in terms its instrumental role of promoting other things of value (Coleman, 1980, pp. 528-530).

On the other hand, wealth maximization is often provided its normative ground by libertarian argument (Posner, 1979). In a libertarian tradition, wealth maximization can be understood as a liberal value because it is the product of market transactions between willing buyers and sellers. The formulation contains an important implication about what is normal or natural for society. The social norm, it is implicitly asserted, is the individual bargain and liberty of contract. It is by these means that wealth is maximized.
If wealth were not increased by reason of the exchange, the exchange would not be undertaken. Therefore, individuals exercising their liberty through market behavior act in a wealth-maximizing way. Consequently, the pursuit of wealth maximization is justified not because of its relationship to net wealth, but because noncoercive market behavior is efficient. Liberty as the moral value attached to individual economy is transferred to the pursuit of efficiency (Coleman, 1980, pp. 540-545).

In the sense that the methodological choice about how welfare should be measured has led to market bias in the neoclassical economics, methodologies are ideological (Kramer, 1975). In neoclassical economics, markets are described ideally as places "where people assert their preferences, weigh them against the preferences of others and reach mutually satisfactory social arrangements" (Hovenkamp, 1994). Assumptions about preference have enabled neoclassical economics to describe markets by means of mathematical models that have great elegance and rhetoric power. In this context, neoclassical economics has much to offer. The economic case for the efficiency of competitive markets is strong. Market trading can be considered as "the most efficient way of determining the best final resting point of resources" (Hovenkamp, 1994). Assuming that economic efficiency is the only goal of the regulation, a coherent strategy of regulation would be possible within the economics of market failure.

As human welfare has no a priori meaning and is subject to numerous definitions, however, neither wealth maximization nor any other version of allocative efficiency captures all the meanings of the welfare, or well-being, of individuals in a society. In particular neoclassical economics has been well known for its weakness in the issues of
distribution. While it can talk about the effects of a distributive policy on the total wealth of society, for example, it cannot tell anything worthwhile about the effects on well-being produced by the distribution itself. Other economic methodologies provide different interpretation of the welfare or the well-being of society that are more concerned with distributive issues. In the absence of any empirical basis for making the jump from wealth maximization to welfare, then, the question of whether and to what extent, social institution in general and regulatory policy in particular should be arranged to pursue efficiency remains an important social choice issue.

E. Summary

Having reviewed three economic traditions, we found that they have different perceptions of market behavior, different preferences on policy instrument, and different interpretations of public interest. These differences in the positive analysis of market behavior and the normative proposition of regulation should be understood in terms of their changing emphases from political economy to economics, from judgments about values to technically abstract assessments, from concern over economic power in multiple forms to concern over power of a particular form. Facing issues of market concentration, market power, and government intervention, the those three economic traditions have been sharply divided over their problem definitions, solutions, and their desired outcomes.

Instead of finding the market as an unbiased allocational and distributional mechanism, institutionalists may find a market characterized by abuses of power. In that
context, institutionalists' focus on economic power is much broader than neoclassical economists' and structuralists' definition of market power. As a result, institutionalists observe instances of market power which drive the market to serve "invidious" and "pecuniary" private interest. More importantly, institutionalists present the market as an institution or a policy-based mode of economic governance. Therefore, they tend to freely question whether the market is the most appropriate mechanism for realizing a given set of goals. In this view, direct regulation is considered an effective alternative to market for the purpose of controlling those market powers and restoring more important community values and serving a "higher efficiency" than simply economic efficiency. The public interest is served by applying instrumental values in a problem situation and appraising the consequences. Those instrumental values encompass variety of social values which market competition cannot accommodate in its process.

Structuralists also observe imperfect markets, where the existence of barriers to entry, interdependence of firms in a concentrated market, or anticompetitive strategic behavior by dominant firms not only make perfect competition impossible, but also make natural market forces ineffective for controlling market power. As compared with institutionalists, however, their analytic concern with market power is limited to those powers which can be exercised over a firm's own or its rival's pricing and output decisions in ways that harm competitive process. Structuralists prefer an antitrust solution instead of direct regulation for a market concentration problem since it avoids the "intrusive and inefficient" nature of direct regulation. They prefer the process of effective rivalry to static efficiency as a central tenet of antitrust policy. The
concentration on the former is to increase the dynamic efficiency as well as allocative efficiency. In spite of their rather limited focus on economic rationale for antitrust, their emphasis on structural remedies (e.g., divestiture) to accommodate effective rivalry has been consistent with other noneconomic values (e.g., populist values). Therefore, structuralists’ normative position in terms of antitrust regulation is well supported by other legal scholars who find other social and political justification for competition policy from legislative history.

Finally, orthodox neoclassical economists employ a perfect competition model to describe the market behavior. As the market power is interpreted only as the ability to influence the price of a commodity, all parties in competitive market are presumed to be powerless and equal. Seeing the market as efficient, self-equilibrating, and prepolitical in origin, neoclassical economists are disposed to assigning a secondary role to the government. They advocate market autonomy most of the time since they perceive the market to be the most efficient mechanism. Given the assumptions of the neoclassical model, efficiency will be the natural product of unfettered economic interaction. As a movement away from market interaction, government intervention necessarily adds inefficiency. In cases of market failure, the market rule is recommended. From the neoclassical economic perspective, regulations should only be designed to improve the efficiency of markets. Most recent effort by the Chicago school and contestable market theorists shows that "bigness" is good in market, but never in government. This perspective casts considerable doubt about the use of established remedies found in direct regulation, as well as antitrust. Even within highly concentrated markets, potential
competition is believed to be an effective means of achieving efficient results. Consequently, neoclassical economists see deregulation as a proper tool for promoting the public interest in economically efficient markets.
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<th>Structuralism</th>
<th>Neoclassical economics</th>
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<td>Relatively narrowly defined economic power (e.g., a firm's ability to exclude its competitors as well as to influence its own output and price)</td>
<td>Narrowly defined economic power (e.g., ability to influence its own output and price)</td>
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<td>Direct regulation (Direct performance control): Collective action as an alternative to market</td>
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Table 1. Comparison of Three Traditions of Economic Thought and Economic Regulation
CHAPTER IV

THEORETICAL REVIEW OF INDUSTRIAL STRUCTURAL POLICIES
FOR TELECOMMUNICATIONS INDUSTRY
IN THE UNITED STATES

A. Introduction

The purpose of Chapter IV is to explore antitrust issues related to interconnection policy by reviewing some antitrust economic theories, and to set the stage for discussing interconnection pricing policy in Chapter V. In short, the primary purpose of this chapter is to answer the following question: What is the industrial organization context under which government price control on access service is required?

The antitrust concern most related with interconnection policy starts with the "essential facility doctrine." Like other early legal doctrines developed to define the antitrust policy in the U.S., the essential facility doctrine was not an explicitly economic doctrine. But once economic concepts and theories became pivotal to the definition of antitrust policy in 1950s, they have been used as important surrogates for legal concepts and doctrines. As already noted in Chapter III, in the U.S., there have been two dominant economic traditions to interpret the antitrust policy. One is structuralist view and another
is Chicago school view. These two schools have been vying for dominance in constructing the nature of antitrust policy for a long time. As a way to address the industrial organizational issues related to interconnection policy and its pricing, in that context, I will incorporate those two economic perspectives in the discussion of the essential facility doctrine.

The essential facility doctrine has been based on the idea that a firm possessing a lawful monopoly over a unique resource can violate the antitrust law if it exploits that resource in ways that exclude or disadvantage its competitors. More recently, however, this judicial assumption has been challenged by Chicago school perspective, which shows that "leverage" activity (i.e., monopoly extension from one market to another by vertical restrictions) is not inevitably economically harmful and might be beneficial. While the Chicago criticism of leverage theory provides some efficiency-based reasons to refuse to provide access to an essential facility, this approach has also been criticized in several aspects. Most of this criticism comes from structuralist or traditional legal points of view and is summarized below in terms logical contradictions of Chicago school assumptions, permissibility of unlimited market power exercise in upstream market, possibility of raising entry barrier, and controversy over antitrust goals.

The previous discussion reveals a dilemma: namely, that the essential facility doctrine, while protecting the nonintegrated competitor from efforts of the facility owner to foreclose competition, also might foreclose the facility owner from realizing inherent static efficiency advantage arising from a more complete utilization of its integrated service. This difficulty makes it more cautious to apply the essential facility doctrine to
an unregulated market. On the other hand, the presence of commission regulation in vertically related market makes the doctrine more applicable with less controversy. In general, a regulated monopolist has an incentive to link the provision of its regulated product with the provision of other unregulated products, to capture the returns denied by regulation. The case for forcing access is therefore strong in the case of a price-regulated monopolist whose denial of access, aids it in evading rate regulation. In those industries where a monopolist lawfully operates in a regulated natural monopoly and in a related market that can be competitive, furthermore, the doctrine proscribes the monopolist's denial of rivals' access to the essential facilities.

The obvious way to prevent regulatory evasion using vertical foreclosure is to order the monopolist to divest itself of its second-level operation and forbid its subsequent integration. This antitrust remedy not only deprives the regulated firm of its incentive to discriminate among unaffiliated providers but also prevents the potential cross-subsidization. In the case of mandatory access, without structural remedy, more attention should be directed to the price at which the facility owner is paid since it would be easy for a monopolist to deal by offering access at unreasonable prices. The U.S. telephone industry shows important element of both types of industrial organization structures. I will present both structures as a general background to discuss the U.S. access charge practice and newly developing interconnection pricing theories and models.
B. Theoretical Review of Interconnection Policy

1. Essential Facility Doctrine and and Leverage Theory

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<th>Outcome</th>
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<td><em>United States v. Terminal Rail Road</em> (1912)</td>
<td>Owners of rail terminal facilities for traffic entering the city of St. Louis were required to reorganize to provide nondiscriminatory access for all traffic.</td>
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<tr>
<td><em>Otter Tail Power Co. v. United States</em> (1973)</td>
<td>An electric utility could not refuse to sell or wheel power to communities that decided not to renew its retail franchise.</td>
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<tr>
<td><em>MCI Communications Corp. v. American Telegraph. &amp; Telephone Co.</em> (1983)</td>
<td>AT&amp;T violated antitrust laws when it refused to allow MCI to connect with its local telephone facilities.</td>
</tr>
<tr>
<td><em>Aspen Skiing Co. v. Aspen Highlands Skiing Corp.</em> (1985)</td>
<td>Ski operators violated antitrust laws by refusing to continue a long standing joint marketing arrangement with an individual operator. While companies have no general duty to cooperate with competitors, a monopolist must offer a legitimate business reason for its conduct.</td>
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Table 2. Evolution of the Essential Facility Doctrine

While a company may lawfully refuse to deal with anyone for reasons sufficient to itself, the exception is the monopolist who has a facility to which access is deemed essential by a lawful authority. In that instance, the law may require that the monopoly give access to its competitors on a nondiscriminatory basis. In general terms, the essential facility doctrine bars a monopolist's refusal to allow access to a facility whose
availability is vital to the competitive capability of rivals in upstream or downstream market (Kovacic, 1992). Since it was first applied by the United States Supreme Court in 1912, the doctrine has evolved under Section 2 of Sherman Act which prohibits use of monopoly power in one market to gain and maintain market power in a different market (Cross, 1992). (See Table 2).

The court explained how to determine whether a facility is "essential" in the eyes of antitrust law. For example, in the case concerning AT&T’s refusal to allow MCI to interconnect MCI’s long distance service with AT&T’s local distribution networks, the Seventh Circuit identified "four elements necessary to establish liability under the essential facilities doctrine" (MCI Communs. Corp. v. AT&T, 708 F. 2d 1081, 1983). These are (1) control of the essential facility by a monopolist; (2) a competitor’s inability to practically or reasonably duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility. In addition, the Supreme Court’s 1985 decision in Aspen Skiing Co. v. Aspen Highlands Skiing Corp. is interpreted as adding a fifth requirement to the MCI essential facility formula - namely, the absence of a legitimate business justification for the refusal to deal (Aspen Skiing v. Aspen Highland Skiing Co., 472 U.S. 585, 1985).

In order to be "essential," in short, the facility must be unique, to the extent that a competitor cannot practically or reasonably duplicate the facility. But even if a facility qualifies as essential, antitrust liability will not attach unless the monopolist exerts control over the facility and offers no legitimate business reason for refusing access (Gerber, 1988). The antitrust liability will be imposed in situations where courts presume that the
likely intent of the monopolist engaging in the refusals to deal is anticompetitive. For enforcing the essential facility approach, therefore, it becomes important to take a position on the disputes over exactly what constitutes "anticompetitive practice" in vertical economic relationship (Tye, 1987).

For example, a denial to a downstream competitor raises the question of whether the upstream monopolist can increase market power in downstream market by "leveraging" its power and becoming the sole or dominant downstream producer. To the extent that the essential facility doctrine is designed to prevent an integrated facility from gaining downstream market power by denying access to downstream competitors, the doctrine becomes analogous to a leverage theory. The Supreme Court first proscribed such "leveraging" in United States v. Griffith, declaring that "the use of monopoly power, however lawfully acquired, to foreclose competition to gain a competitive advantage, or to destroy a competitor, is unlawful" (United States v. Griffith, 334 U.S. 100, 1948; Quoted in Ratner, 1988, p. 360). In terms of the essential facility doctrine, Judge Cudahy in the MCI Communications Corp. v. AT&T explains that a refusal to provide access to an essential facility "may be unlawful because a monopolist's control of an essential facility (sometimes called a 'bottleneck facility') can extend monopoly power from one stage of production to another, and from one market to another" (Quoted in Werden, 1987, p. 445). In this vein, the essential facility doctrine cases have been recognized as condemning the attempt by a firm with monopoly power in one market to leverage that power to secure a competitive advantage in a second, non-monopoly market.
As the essential facility doctrine has been based on the idea that a firm possessing a lawful monopoly over a "unique resource" can violate the antitrust laws "if it exploits that resource in ways that exclude or disadvantage customers arbitrarily or invidiously" (Mahinka and Johnson, 1983), its structure suggests the overriding importance of intent. For example, most courts view the relationship between facility user and a monopolist in "horizontal" terms - that is, as a monopolistic firm using a unique economic weapon to drive his competitor out of the market (Gerber, 1988). A monopolist who unilaterally refuses to deal is therefore presumed to possess anticompetitive intent (and thus is held liable) only where he competes with the facility user. The horizontal view of refusals to deal, however, has been challenged from the neoclassical economic perspective (i.e., Chicago school). In the latter view, more important than a monopolist's competing with a facility user is the fact that the monopolist is also a seller in the user's market. In other words, from this perspective, leverage theory ignores the "vertical" monopolist-user relationship. Once taking into consideration the vertical relationship, however, the Chicago school asserts that as in other vertical economic relationships, the monopolist will generally act on the basis of efficiency motives rather than on some form of anticompetitive intent.

2. Chicago School Approach

As noted in Chapter III, in recent years the Chicago school approach has had substantial impact on the direction of antitrust enforcement. The result, especially in terms of activity under Section 2 of Sherman Act, has been a greater focus on the effect of
business conduct on efficiency. Contrary to traditional judicial assumptions, the Chicago school approach shows that leverage activity by the dominant firm is not economically harmful, but is beneficial. In general, the Chicago school critique of leverage theory is based on the fixed sum argument (Bork, 1978; Posner, 1979; Kleit, 1991). According to this argument, if, the existing degree of monopoly power was legally obtained, the monopoly profit deriving therefrom is also legal. Then, the fixed sum claim provides justification for restrictive practices in that in any well-defined vertical stream of production, there is only a single volume of monopoly profits and a profit-maximizing firm with market power may be able to gain the same monopoly profits at only a single stage of production. If the expansion of market control from one stage to the entire vertical stream does not increase monopoly profits, the argument continues, there would be no further restrictions of output, and no exacerbation of existing degrees of monopoly power. In short, the total amount of restriction that the monopolist will profitably be able to impose is fixed regardless of the practice that is used.

In terms of essential facility doctrine, the Chicago school urged a permissive approach to vertical foreclosure on the grounds that the availability of a "perfect price squeeze" would create incentives for monopolists actually to encourage competition at prior or subsequent stages in a vertical market relationship. By establishing the price of market access, the firm with market power can appropriate the efficiency advantages of entrants. As a result monopoly power can be always exhausted through the price mechanism, thereby, eliminating any anticompetitive incentives for vertical market restrictions. The vertical market foreclosure, in this context, would not add any
additional market power, but would be necessary to block entry of inefficient competitors or prevent inefficient market practices.

From this perspective, the intent theory of liability under section 2 of the Sherman Act should either be abandoned or applied narrowly to refusals to deal. The law should presume that efficiency motivates the monopolist absent any anticompetitive incentives for refusals to deal, since not only does the fixed-sum model invalidate assertions that refusals are anticompetitive, but monopolists, like competitive firms, also benefit from increased efficiencies and lower costs. Although the refusal might eliminate competitors, in this context, dominance at the second level would result from the monopolist's ability to provide superior service, lower costs or greater efficiency, and not from its first-level monopoly.

3. Anticompetitive Price Squeeze

Although the first essential facility cases involved an absolute denial of access, access could be also offered on such burdensome terms that the foreclosure of competition had the same effect (Werden, 1987; Ratner, 1988; Kovacic, 1992). An essential facility case may not be based on an absolute denial of access, but on the complaint that the price for access to the facility is so high that the competitor cannot compete with the essential facility owner at the second industry level.

The anticompetitive price squeeze has been described as a mechanism by which a vertically integrated monopolist might leverage additional monopoly profits by squeezing independent firms between high costs and low output prices. The logic of the price
squeeze cases are similar to the refusal to deal cases decided under the intent theory.

Both lines of cases focus primarily on exclusionary intent. For example, the standard objection to a price squeeze is that it may permit a firm with monopoly power at one level of an industry to drive independent competitors out of business and thereby extend its monopoly power to a second industry level.

The Chicago school critique of the price squeeze is similar to that of refusals to deal (Hovenkamp, 1985). First, a firm that presumably has the right to deal, or refuse to deal as it pleases does not have to use a price squeeze to injure downstream competitors. It could quite easily refuse to deal with them. Second, the notion that the squeeze is profitable is simply another instance of the overused leverage theory that a monopolist can use its monopoly power in one market to obtain additional monopoly profits in a second market. However, as has been demonstrated, the monopolist of a single stage can obtain its full monopoly markup in that stage alone and will not enlarge its profits by adding another stage.

4. Critiques of Chicago Perspective from Structuralist View

a. Logical Contradictions on Assumptions

The Chicago critics against leverage theory have been criticized in several aspects. First of all, William Tye (1992) points out logical contradiction of the Chicago approach. As already noted earlier, the Chicago school argument for a permissive approach to vertical restrictions by monopolists is based on microeconomic price theory, and relies on a number of assumptions. For example, the permissive model minimizes concerns over
possible anticompetitive behavior in vertical relationships by "(1) defining 'anticompetitive' chiefly as reductions in economic welfare resulting from price increases in downstream consumer markets, (2) assuming zero transaction costs and perfect information, and (3) assuming the ability to extract all possible monopoly profits at one stage in a vertical relationship with a sufficiently high price" (Tye, 1992, pp. 17). "Since (4) any inefficient vertical market structure or practice is a source of profit and there is no obstacle to achieving that profit given the assumptions, the necessary conclusions are that (5) vertical foreclosures of competition (such as denial of a competitor's access to an essential facility) are redundant as a tool of monopolization, and rarely, if ever, can lead to inefficiency, and that (6) such denials can in fact be explained only by the desire to enhance economic efficiency" (Tye, 1992, p. 17-18).

Tye (1992) argues the assumed absence of transaction costs and of market imperfections necessary to justify the presence of perfect monopoly power through the pricing mechanism contradicts the market imperfections and transaction costs necessary to justify the primacy of efficiency concerns and the efficiency grounds for the vertical restraints. For example, if the price squeeze necessary to maximize upstream monopoly profits has been exercised, there is no subsequent efficiency rationale for a refusal to deal (vertical foreclosure). The ability to apply a perfect price squeeze makes a vertical foreclosure redundant as a means of enhancing monopoly profit, but by the same token it also makes a vertical foreclosure redundant as a means of achieving efficiency gains. In this circumstance, it may be argued by Chicago school that vertical foreclosure is necessary since imperfect information about relative costs and high "transaction costs"
block the exercise of the perfect price squeeze, and therefore make it impossible for inefficient entrants to be foreclosed via pricing mechanism. But this argument contradicts the original conclusion that a monopoly profit was always available through the pricing mechanism and could not be enhanced via a foreclosure of competition.

**b. Permissibility of Unlimited Market Power Exercise in Upstream Market**

In addition, the assertion that since the monopoly power is legally obtained, the attack on restrictive practices as profit maximization tool by the monopoly is against the legitimacy of the monopoly status, can be rebutted in that it may well be desirable to permit some monopolies to come into and remain in existence, yet provide them with smaller rewards than those they might realize if permitted unlimited exploitation (Kaplow, 1985). In the similar vein but more radical sense, Ratner (1988) suggests designing an essential facility doctrine that prohibits welfare harmful denials of access regardless of whether the denial will maintain or obtain market power. He admits making denial to access illegal only in the case of maintaining or obtaining monopoly power makes the essential facility doctrine ineffective since when monopoly pricing (i.e., price squeeze) is possible, denial may not be necessary and does not provide any addition of market power. But still the input monopolist's supranormal pricing of input can result in inefficient output reduction and should be outlawed. This approach is similar to Areeda and Turner's (1978) recommendation to make a substantial, persistent monopoly illegal without regard to conduct adversely affecting competitors in order to avoid the net welfare loss caused by monopoly.
The previous discussions and suggestions result from the assumptions different from the Chicago school about how the relevant market works. For example, most Chicago school supporters believe that self-adjusting mechanisms at work in the marketplace cause the resulting monopolies to be better for the net welfare of society than the alternative of dissolving the monopolist into competing firms. From this perspective, a monopolist will either have its dominant position eroded by entry, or will survive by providing society with products more cheaply. The dominance of a monopolist who has survived, therefore, arises from superior efficiency and once the dominance is attained, the firm is able to obtain only economic rent (from superior efficiency) rather than monopoly profits. Therefore, the supranormal rewards that dominant firms may obtain are a necessary, efficient inducement for superior performance. Any constraint on dominance or its rewards will chill incentives for efficiency.

These arguments by the Chicago school, however, would hold true only under perfect market conditions. But they are incompatible with the presence of any market imperfections (Shepherd, 1990; Tye, 1992). In Chicago perspective, all nonefficiency advantages are ruled out by assumption. By refusing to take the imperfect market conditions into consideration, however, the Chicago approach could permit some firms to obtain dominance and excess profits from nonefficiency sources. The relative importance of efficiency versus monopoly should remain an empirical issue rather than merely a deductive one (Shepherd, 1988).

Taking these two different perspectives, profits from a exercise of the price squeeze might be interpreted in two ways: legitimate economic rent from the Chicago
perspective vs. unlimited monopoly profits from the imperfect market perspective. In the context of the former view, the allegedly essential facility could be duplicated at some price by competitor, though in practice it may not be economical to do so. An essential facility is therefore typically a resource possessed by the monopolist and enjoys a significant cost advantage. The income earned through ownership of a cost-reducing facility is an economic rent. A monopolist as having a competitive advantage because it has exclusive access to a cost-reducing facility should not be taken to mean that he receives a monopoly profit (Hylton, 1991). Exclusive access to a scarce, cost-reducing facility does not by itself generate monopoly profits. Monopoly profit, as a type of economic profit, is profit in excess of opportunity cost. With the value of the facility included in opportunity cost, the facility owner still makes no profit above its opportunity cost, and thus no monopoly profit (Fisher et al., 1983). Limiting the rewards to the monopolist eliminates incentives toward excellence. In the same vein, a mandatory access to essential facilities and following pricing rules may reduce incentives to develop cost-reducing facilities (Hylton, 1991).

On the other hand, the scholars in structuralist tradition not only point out the possibility of monopoly profits, which are not caused by efficiency due to the market imperfections, but also assert that the rewards for a monopolist are finite rather than open-ended, even though the monopoly position is achieved by efficiency (Ratner, 1987; Kaplow, 1984; Shepherd, 1989). In spite of being considered small payments by society for receiving the specific benefits of the firm’s past and possibly continuing superiority, the reward to a monopolist is still costly to society because it entails the decreasing
welfare effects of monopoly, and therefore only the efficient amount of it should be
allowed. From this point of view, the efficient reward is a profit level at the competitive
rate of return, after adjustments for risk and other factors. Profits above that boundary are
functionless for efficiency and are not related to superiority. This criterion differs from
the infinite amounts permitted by price squeeze, which is the standard favored by the
Chicago School perspective (Shepherd, 1989).

From this perspective, it is conceivable that an appropriate competition policy
would constrain the freedom to set prices (Kaplow, 1985). Limiting the monopolist's
revenues will not chill the creation of cost-reducing facilities because normal returns
supply sufficient incentives to invest. Furthermore, without price regulation, the prospect
of earnings supernormal returns skews the allocation of society's resources by attracting
capital to such ventures. Investors will spend more on unregulated monopolies than on
other industries, despite their equal societal value (Ratner, 1987; Gerber, 1988).
Moreover, competitive profits avoid the subsequent deadening of performance that often
occurs in secure dominant firms lacking the pressures of effective competition (Shepherd,
1990).

c. Possibility of Raising Entry Barrier

Merely eliminating competitors may not be necessarily anticompetitive and the
extension of monopoly power from one to two levels may not necessarily give a firm
added power to raise prices. However, some main arguments have been made against
permitting such an extension of monopoly power (Kaplow, 1985; Gerber, 1988; Austin,
For example, a monopolist may have an incentive to engage in refusals to deal for two reasons aside from increasing efficiency. First, vertical integration by the monopolist creates a barrier to entry in the monopolist's market because any prospective user must enter at two levels, instead one. The issue arises since potential entrants may be less able to affect the behavior of existing firms when it becomes necessary to enter at two levels in order to compete effectively. It is argued that it will be more difficult to raise the capital for this endeavor than if, for example, it were only necessary to enter at the upstream level, relying on existing downstream retailers to sell one's output (Viscusi et al., 1992). The Department of Justice Guidelines explain this point as follows:

More capital is necessary to enter two markets than to enter one. Standing alone, however, this additional capital requirement does not constitute a barrier to entry to the primary market. If the necessary funds were available at a cost commensurate with the level of risk in the secondary market, there would be no adverse effect. In some cases, however, lenders may doubt that would-be entrants to the primary market have the necessary skills and knowledge to succeed in the secondary market and, therefore, in the primary market. In order to compensate for this risk of failure, lenders might charge a higher rate for the necessary capital (Quoted in Viscusi et al., 1992, p. 227).

Second, downstream vertical integration certainly can facilitate price discrimination. If, for example, various downstream customers have diverse demands, it generally would be profitable to charge these customers different prices, which are not available in a competitive downstream industry.

Under these two circumstances, the profitability of the monopolist's expansion into the second level may depend on his ability to use his first-level power to eliminate his second-level rivals. Therefore, it is likely that the monopolist will assume control of
the second level even though he is less efficient than his competitors at that level. In terms of the first incentive, however, the Chicago school argues that the barriers-to-entry argument fails because vertical integration that is inefficient will only encourage new entrants into the market who will perceive that they now can compete with the existing monopolist. Moreover, the need to enter two markets simultaneously and to build twice as many plants, for example, will create no deterrence so long as there are efficient capital markets because the potential profits in the industry will draw capital. According to the Chicago school, in addition, price discrimination is not necessarily a bad result. Price discrimination enhances economic welfare in a variety of situations, and in general produces an ambiguous effect.

**d. Controversy over Antitrust Goals**

In addition, as noted in Chapter III, one's response to the economic argument in favor of permitting vertical restrictions by a monopolist depends on one's view of the proper goals of antitrust policy. While the Chicago perspective identifies the economic efficiency with the concept of "competition" and derive its meaning exclusively from neoclassical price theory, it has been criticized by legal scholars and structuralists who take the competitive process as the central tenet of antitrust policy. The latter tends to identify a broad version of antitrust policy goals - a mix of social, political and economic goals (Flynn, 1990; Hovenkamp, 1985, Fox, 1981).

It is important to note that the efficiency justification for permitting vertical restrictions assumes that efficiency is the sole goal of antitrust. In terms of
monopolization cases, more specifically, the Chicago school has defined "harm to competition" as a foreclosure of competition that results in an "economic inefficiency" as measured by losses of welfare in downstream consumer markets (Tye, 1992). However, if there is any reason to believe antitrust policy is established to embody other social, economic and political values, the mere emphasis on static efficiency cannot be a sufficient performance measure for antitrust enforcement (Hovenkamp, 1985; Fox, 1981).

5. Evaluation of Essential Facility Doctrine in Unregulated Market

The previous discussion reveals a dilemma in the essential facility doctrine, while protecting the nonintegrated competitor from efforts of the facility owner to foreclose competition, also might under some circumstances arbitrarily foreclose the facility owner from realizing inherent static efficiency advantages arising from its integrated service. Consequently, it is very difficult to determine the existence of a "valid business reason" for denying competitive access especially in unregulated markets, since it ultimately requires to answer the question of whether there are substantial market imperfections upstream or downstream that would be cured by granting access on the terms proposed by the plaintiffs and whether there are any efficiency losses incurred in granting use of the facility itself (which should be incorporated into the price of access) (Tye, 1987). In addition, before imposing a duty to deal, the courts must consider the difficulties of enforcing such a remedy (Areeda and Hovenkamp, 1994). An improperly applied remedy can be as destructive of competition as a monopolist's illegitimate refusal to deal can be. These difficulties make it more cautious to apply the essential facility doctrine to an
unregulated market unless we are reasonably confident that we thereby significantly improve market conditions (Areeda and Hovenkamp, 1994).

On the other hand, administrative regulation in a vertically related market bears on the essential facilities debate in several ways (Areeda and Hovenkamp, 1994, Kovacic, 1992; Werden, 1987). On one hand, the administrative power to compel service and to limit the monopolist's restriction of output or other exploitation of customers reduces the social need for intervention under the antitrust laws. On the other hand, such intervention may seem more imperative because the monopoly protected by a legal license is very durable and might evade regulation, which is often imperfect, by excluding competition controlling adjacent markets (Brennan, 1987; *Harvard Business Review*, 1974); at the same time, judicial remedies are more administrable when regulatory agencies are in place so to supervise prices or other terms of dealing implementing the antitrust court's decision (Kovacic, 1992).
6. Theory of Essential Facility Doctrine in Regulated Industries

According to the Chicago school, so long as a monopolist is free to charge a market price for his resources, its denial of the resource can seldom be shown to reduce output or increase price. Unlike the assumption by the Chicago School, however, the ability to impose a perfect price squeeze is not always satisfied, and vertical foreclosures could thus offer new opportunities for anticompetitive behavior (Ordoer et al., 1985). Four sets of circumstances exist in which the dominant firm cannot execute a perfect price squeeze. Such a practice is infeasible if (1) there is alternative, albeit inferior, source of supply for the monopoly product; (2) price discrimination requires a low price for the monopolized product and a high price for complementary products; (3) inflexible rules govern prices or the division of revenues between the dominant firm and the producers of complementary products; (4) the dominant firm is subject to comprehensive rate-of-return regulation. In these cases, a firm with market power at one stage of

\[1\] When essential facility doctrine is discussed in regulated industry, it presumes that the regulation in a related essential facility market is legitimate. Such a market is often characterized by natural monopoly with high sunk costs. As orthodox neoclassical economists such as contestable market theorists also recognize high sunk costs as barriers to entry, they have supported policy to encourage access to high sunk costs facilities. In other words, the mandatory access to the essential facility is acceptable to contestable market theorists since it can mean lowering sunk cost entry barrier.

What distinguishes them from structuralists, however, is that they prefer efficiency as a rule of newly emerging competitive market by allowing new competitors' access to sunk cost facilities. Once competitor's access to essential facilities is allowed, in other words, neoclassical economists see very little reason to regulate the behavior of integrated regulated firm in competitive market. In addition, if any reason exists to regulate, it should follow market rule based on efficiency. On the other hand, structuralists raise the question as to the existence of effective rivalry in the newly competitive market. In short, even though both approaches may agree that a crucial policy in a regulated industry is a procompetitive policy, they can be sharply divided over the nature of competition.
production or over one component of a product may nonetheless have an incentive to extend its market power to other stages of production or to other product components.

In general, a regulated monopolist has an incentive to link the provision of its regulated product with the provision of other unregulated products, to capture the returns denied by the regulation (Brennan, 1987, 1995). For example, in price-regulated industries, refusals to deal by monopolies may evade price regulation. Consider a monopolist whose regulated price depends on its costs. If it reports those costs correctly to regulators, the price will be set below the monopoly level. An upstream monopolist might thus refuse to deal with unintegrated downstream competitors in order to establish or strengthen its own downstream monopoly and its ability to extract supracompetitive profits from the downstream market. Regardless of whether the facility owner is already integrated, or denies the access then integrates later, denials of access to downstream competitors could enable a regulated facility owner to make unconstrained price and output decisions in the downstream market. While such an outright vertical foreclosure might not be probable in the presence of regulation, the conduct in the form of more subtle discrimination can be possible over the terms, conditions, or quality of the regulated firm's output available to its competitors (Brennan, 1987, 1995). The case for forcing access and monitoring terms and conditions is therefore strong in the case of a price-regulated monopolist whose denial of access aids him in evading rate regulation.

A rule prohibiting denials by a regulated facility, that increases opportunities for regulatory evasion, would serve for the antitrust goal of avoiding market power increases. While certain vertical integration actions by a price-regulated monopolist into an
unregulated market could be presumptively unlawful, this rule would not be applied to an existing regulated integrated monopolist. As this rule would be effective only when the upstream market is regulated and the downstream market is not (Ratner, 1988), on the other hand, recent deregulation of some industries may increase the concern about denials for regulatory evasion purpose. In industries where a monopolist lawfully operates in a regulated natural monopoly and in a related market that can be competitive, it should not be allowed for the monopolist to deny new competitors' access to the essential facility (Areeda and Hovenkamp, 1994).

Another possible explanation for the applicability of essential facility doctrine in regulated industry comes from the fact that monopolies that historically had been regulated as public utilities did not acquire their market dominance necessarily by superior skill and intelligence, but rather received a license or charter from the government on the condition that they would be subject to regulation. Requiring these single-firm monopolies to provide other competitors with access to essential facilities, therefore, is consistent with an antitrust goal of not penalizing monopolies that acquired their market dominance by superior skill and intelligence (Areeda and Hovenkamp, 1994).

7. Vertical Disintegration as a Remedy for Essential Facility Doctrine

Two obvious ways to prevent regulatory evasion using vertical foreclosure or discrimination are to prohibit the entry of the regulated firm into downstream markets, or to order the monopolist to divest itself of its second-level operations and forbid its
subsequent integration (Brennan, 1987; *Harvard Business Review*, 1974). Without the vertical integration or entry, the regulated firm lacks the unregulated market in which it can charge prices and capture returns exceeding competitive levels. It, therefore, has no incentive to discriminate among unaffiliated providers of the related competing services. Furthermore, divestiture prevents potential cross-subsidization from regulated service to unregulated service by integrated monopolist.

Under traditional regulation, [for example] the rates for the regulated service such as local telephone subscription are, at least in theory, based on the regulated firm's costs for providing those services. If such a telephone company diversifies into other markets that use similar types of labor, resources (including financial capital), equipment, and technologies, such as long-distance service, it could increase its profits by assigning the expense of those similar inputs to the related account. If its regulator treats those misallocated expenses as if they were spent on providing local telephone service, it will pass along those costs to the customers in the form of higher telephone rates. As far as accounts are concerned, the firm will show earnings for telephone service equal only to the normal rate of return. It would get its profits from the unregulated enterprises, for which it had in effect charged some of the expenses to local telephone customers. While the profits show up in the unregulated markets, and thus, may appear to be the result of monopolization of those markets, they essentially are the direct result of exercising monopoly power over local telephony (Brennan, 1995, p. 464).

Divestiture has the advantage of being relatively simple to administer. The court's role is limited only to an order to divest the bottleneck portion of market from the monopolist's entire operation. Yet divestiture requires greater certainty that economies of vertical integration (i.e., economies of scope) do not exist. Preventing entry of a regulated monopolist, who can produce the unregulated good at lower cost than its competitors, into a downstream market, sacrifices the benefits of lower production costs. In the presence of economics of scope, a regulated firm may have an advantage that
would make the unregulated market a natural monopoly. In this case, the optimal public policy response may be to permit the regulated firm to enter the additional market, and to extend regulation as well (Brennan, 1987).

Another disadvantage of divestiture is that forbidding the monopolist’s integration might reduce the vigor of competition at the second level, even though the promotion of such competition is a principal concern of bottleneck theory. When the market for the unregulated product is highly concentrated and unlikely to see much entry, for example, permitting the regulated firm to enter may make the unregulated market less concentrated and improve its performance. In addition to the increased competition in the short run, it may make it possible for the regulated firm to discover new products for markets as yet undeveloped in the long run (Brennan, 1987).

8. Imposing Duty to Deal and Controlling Access Price

While mandatory access without structural remedy might retain the monopolist as a competitor at the second level, it is more difficult to administer than divestiture since an antitrust court must confront the issue of the price the facility owner is to be paid for access. Without this supervision, it would be easy for a monopolist to evade a duty to deal by offering access on unreasonable prices. Poorly equipped judicial regulation, however, may not be suitable for producing the appropriate supervision needed to administer access pricing. In the case of regulated industries, in this context, it has been suggested to assign the duty to determine and enforce competitive price for access to
administrative regulatory body (Ratner, 1987; Kovacic, 1992; Areeda and Hovenkamp, 1994).

The assignment of remedial authority to an administrative regulatory body, however, raises some fundamental questions about possible conflicts between the intention of an antitrust court and goals of a regulatory authority. More specifically, a question can be raised as to whether the regulatory body may look only to antitrust considerations, or give effect to complementary (or even conflicting) policies embodied in the agency's statutory charter (Kovacic, 1992). Even without the issue of probable conflict between two institutional authorities, it will be very important to understand the factors the regulatory body should take into account in setting the "compensatory" rates and establishing terms and conditions for access. The structural logic analysis of the FCC access charge in Chapter V will answer this question.

C. Building Models of Industrial Organization for Telephone Industry in the U.S.

1. Models of Telephone Industry Organization

A consistent characterization of the telephone industry is prerequisite to formulating a sensible public policy toward it. There have been two important views to see the telephone industry in the U.S. These are the end-to-end and the discrete market views² (Bolter et al, 1984). While the former contributed to an important social policy

² These two views coincide with two important accounting philosophies in telephone industry: station-to-station view and board-to-board view. I will discuss the latter views in Chapter V. Even though both classifications can be used interchangeably, I will use end-to-end and discrete market classification in this chapter just because it looks to be more relevant to the discussion of meaning of "industrial organization."
formulation in the telephone industry in the U.S. for a long time, the latter view has recently become more popular since it served as basic industrial organization model for procompetitive interconnection policy in the U.S.

**a. End-to-End Service Market Model**

In end-to-end service model, the entire nationwide telephone network is viewed as if the industry were a single, unified, integrated monopoly firm. All components and facilities essential to providing telephone service, including customer premises equipment (CPE), may be considered part of a technically indivisible whole. In this model, the telephone system can be viewed as a seamless network connecting any telephone through local and long distance facilities to any other telephone. The output produced by the telephone network, if viewed from the perspective of end-to-end model, consists of services, typically local service, and toll service (i.e., intrastate toll and interstate toll services) (Bolter et al, 1984). The Figure 1 shows the characteristic of the telephone market when the network services are defined based on end-to-end service model.

Historically, in the U.S., the interconnection of alternative transmission networks to the national network was restricted to licensed and approved monopoly carriers in other geographic areas. Independent systems that were seen as potentially competitive were denied interconnection. Interconnection restrictions were a key part of the policy foundation for maintaining the all-inclusive telecommunications monopoly over end-to-end service (Melody, 1972). Despite differences in facility ownership in the U.S., nationwide telephone service was provided to consumers as if a single entity were
providing nationwide, end-to-end service, through the cooperation between the Bell system and the independent telephone companies. The industry partnership simply provided "joint through services" and divided revenues in accordance with separations and settlements procedures.

The notion of end-to-end service can be grounded in the economic nature of telephone service (Sitchter, 1987, Bolter et al., 1984). The concept of end-to-end service embodied a particular economic view of the telephone network, a view that was especially influential in the industry's development of pricing policies. If one perceives the telephone industry as a single, integrated, end-to-end network producing three major services, for example, it is possible to view most costs in the industry as "common" or "joint." More specifically, the industry's investment decision involves common plant that is jointly or commonly used to provide more than one service. Consequently the costs of providing any particular component or category of service are far from obvious, and in fact, can vary widely depending on one's preference in cost allocation methodologies. This perception of industrial organization had played an important role in cost-setting and price-setting policies in the U.S.

b. Discrete Market Model and Interconnection Policy

In discrete market model, rather than being presented as a single, integrated, end-to-end entity producing broadly defined services, the industry is viewed as comprised of at least three separate but related markets: local exchange service, long distance transmission service, and customer premise equipment (CPE). The discrete market model
does not imply, however, that CPE, local exchange service, and long distance
transmission service cannot be viewed as an interconnected system, or as a "... set of
complementary products which must used together in order to provide value" (Bolter et
al., 1984). Rather, the discrete market model simply suggests that an end-to-end system
such as telephony need not necessarily be organized as an end-to-end monopoly or
industry partnership. This discrete market model provides the basis for the economic
rationale of procompetitive interconnection policy in the U.S.

From the procompetitive economic point of view, for example, the telephone
network is considered as a big publicly extended "system" like a computer, with the local
exchange, terminal equipment and long distance as its "components" (Brock, 1981).
Unbundling lowers barriers to entry and intensifies competition by allowing substitution
to occur in each component of the system. Interconnection has a similar effect on
telecommunications networks (Mueller, 1988). It allows competitive substitution to
occur along specific routes or lines rather than between complete system.³

The discrete market-based interconnection view implies that effective competition
is not always possible across the entire spectrum of system services offered in the
telecommunications industry. This is because some elements of service in an integrated

³ By analogy, the interconnection of telecommunications networks is treated the
same as the standardization of the interfaces between computer components. The latter is
considered to have important procompetitive effects since it permits the competition over
individual components instead of complete computer system (Besen and Saloner, 1988).
In spite of such an analogy, the "components" of a network are not identical, mass-
produced objects like computer printers. There can be as many different components as
there are combinations of users. Consequently the classification of components of a
network is very much arbitrary (Mueller, 1988).
network are characterized by economies of scale or barriers to entry. In telecommunications industry, at least until recently, much of the investment in the local exchange facilities was considered to represent substantial sunk cost barriers to entry to both the market for local exchange service and, more importantly, to the market for long distance services. The operation of the local loop was considered to constitute a natural monopoly. The equipment used in local access becomes a bottleneck facility because no interexchange carrier could deliver a message to the intended recipient's telephone without purchasing the access service from the local exchange carrier. Without access to local exchange facilities, interexchange carriers can neither originate nor terminate long-distance services, unless alternative bypass facilities are generally available. Therefore, interconnection to local exchange facilities has been considered to be crucial to the effective implementation of a public policy permitting competitive opportunities in telecommunications.

As already discussed in the previous section, mandatory interconnection has been seen as one of solutions to enhance competition by giving all competitors access to bottleneck portions of the formerly regulated systems and to prevent vertical foreclosures of competition across competitive portions of the network. Once it is decided that a mandatory interconnection policy is the best way to proceed, it is crucial question to ask how best to set the ground rules on the terms and conditions broadly acceptable to the interconnection parties and to find ways of ensuring the benefits to the consumers. Linking the competing networks on equal terms and conditions is intended to prevent a dominant network from using its control of access to gain an unfair advantage over
competitors. These terms and conditions are needed to create a framework to ensure fairer competition, and "a cost-oriented, unbundled set of interconnection payments for users and carriers" to the local telephone network (Walker and Solomon, 1993). In this vein, local exchange "access charges" represents one approach for accommodating the further growth and development of competition in the long distance transmission market.

2. Two Discrete Market Models of Interconnection Policy in the U.S.

a. Structurally Separated Toll Market: InterLATA Toll Market

Until 1970s, there was essentially no competition for long distance telephone services in the U.S. AT&T was a de facto monopolist in domestic long-distance communications market. In the 1950s, however, a new technology - microwave communications - transformed the prospects for competition in long-distance services. In 1959, the FCC issued its Above 890 decision granting private microwave systems access to a dedicated portion of the radio spectrum and allowing the construction of such systems regardless of their economic effects on the established common carrier (Allocation of Microwave Frequencies Above 890 Mc., 27, F.C.C. 359, 1959). In 1963, Microwave Communications Inc. (now MCI) filed to seek authorization to operate as a specialized common carrier (SCC) offering private-line service between St. Louis and Chicago. The FCC, in its 1971 Specialized Common Carrier decision, ordered a policy of allowing entry of new carriers into this specialized communications field (Specialized Common Carrier Services, 29, F.C.C. ed 870, 1971).
MCI later sought to offer Execunet, a service equivalent to massage telephone service (MTS). The FCC sought to restrict MCI to the service allowed in its *Specialized Common Carrier* decision. The courts overturned this restriction as an attempt to grant AT&T a monopoly in the long-distance market without undertaking a proceeding to determine that such a monopoly was in the public interest. By 1978 the FCC effectively found that competition in interexchange switched service markets was in the public interest. The next few years saw several additional deregulatory moves by the FCC.

Once the FCC let competitors into the long-distance markets, AT&T fought back in the marketplace. This aggressive defense attracted concern of the U.S. Department of Justice, which brought a major antitrust suit against AT&T in 1974. After more than seven years, the suit was settled by a consent decree. On January 8, 1982, the U.S. Department of Justice announced that it had reached agreement with AT&T on the terms of a modification of the 1956 AT&T Consent Decree. On August 24, 1982, the Modification of Final Judgment (MFJ) between AT&T and the U.S. Department of Justice was entered and eventually approved by Judge Harold H. Greene of the U.S. District Court for the District of Columbia.

The key to AT&T's power to impede competition, as noted previously, was its control of local telephone service. As the previous theoretical discussion of anticompetitive conduct by an integrated incumbent in regulated industries who owns essential facilities shows, AT&T allegedly used its control of this local monopoly to keep competitors (long-distance carriers and equipment manufacturers) at a disadvantage in two principal ways (Baker and Baker, 1983; Besen and Woodbury, 1983, Brennan, 1987,
1995). First, it prevented competing long-distance carriers and equipment manufacturers from gaining access to the local network, or delayed that access, thus placing them in an inferior position vis-a-vis AT&T's own services. Second, it supposedly used profits earned from the monopoly local telephone operations to subsidize its long-distance and equipment business in which it was competing with others.

The MFJ became a landmark in the development of the telecommunications industry in the U.S. and its effects on the structure and operation of the telecommunications industry has been extensive. Under the MFJ, local Bell Operating Companies (BOCs) providing local exchange telephone services were divested from AT&T. AT&T would continue to own a nationwide interexchange network operated by its Long Lines Department. Furthermore, AT&T was freed from the restrictions of a 1956 court ruling that had kept it from entering any business other than regulated communications. On the other hand, the newly divested BOCs were forbidden from providing any interexchange telecommunications services. The rationale was that if the post-divestiture BOCs were free to offer their own interexchange services, like the previous integrated AT&T, they might use their continuing dominance of the local networks in their service areas to impose competitive disabilities on their interexchange competitors. Instead of favoring AT&T, they now would favor their own long-distance affiliates.

The MFJ, furthermore, reconfigured the Bell System, redefining basic exchange areas and making them much larger. The Bell System territory was divided into about 160 of these new exchanges, called local access and transport areas (LATAs), ranging
from large metropolitan areas to entire states. Under MFJ, the BOCs provide regulated telecommunications services \textit{within} LATAs (intraLATA), and AT&T and other interexchange carriers provide services \textit{between} LATAs (interLATA). So when the decree prohibits the LECs from providing interexchange telecommunications services, it really prohibits \textit{interLATA} telecommunications services. The Figure 2 shows the basic structure of the post-divestiture telecommunication industry where the interexchange carriers compete over \textit{interLATA} (toll) service by interconnecting with local exchange companies. This industrial structure served as basic industrial organization context for FCC access charge policy.

\textbf{b. Discrete Toll Market with Vertically Integrated Carrier: IntraLATA Toll Market}

More recently, in the U.S., more vexing issues have emerged as a result of introduction of competition in intraLATA market. As already noted, the provision of the MFJ forbid BOCs from providing interLATA long distance services. On the other hand, the divestiture Court left the question of whether there ought to be intraLATA, intrastate competition to state regulators. Consequently, another market structure has emerged as a product of state policies to deal with intraLATA competition. Ironically, all of the same problems that led to the breakup of AT&T reappear in the intraLATA market. Aside from the issue of arbitrariness of an attempt to "draw component boundaries where none exist" (Mueller, 1988), the new important issue has been raised as to the interconnection pricing under such a market structure where a LEC supplies access to IXCs while
simultaneously competing with them in toll services within LATA. This new market structure can be represented by Figure 3.

In my dissertation, this market structure will be taken into consideration by presuming a newly evolving industrial organization in interLATA market. More specifically, I will discuss interconnection pricing issues under the new market structure by assuming that BOCs are allowed to enter interLATA toll market. By doing that, instead of touching directly intraLATA market issues in the U.S., I can incorporate the newly emerging theoretical discussion within the structural logic analysis as an ongoing policy structuring process in federal level.
Figure 1. End-to-End Service Market Model
Source: Author construct
Figure 2. Interconnection Based on Discrete Market Model (InterLATA Toll Market Model)

Source: Adapted from Korea Information Society Development Institute, *Study of Interconnection and Rate Allocation between Telecommunications Common Carriers*, Seoul, South Korea, December 1989, p. 72.
Figure 3. Interconnection Based on Discrete Market Model (IntraLATA Toll Market Model)
Source: Adapted from Korea Information Society Development Institute, *Study of Interconnection and Rate Allocation between Telecommunications Common Carriers*, Seoul, South Korea, December 1989, p. 71.
CHAPTER V

STRUCTURAL LOGIC ANALYSIS OF THE FEDERAL COMMUNICATIONS COMMISSION (FCC) ACCESS CHARGE PLAN

A. Historical Review of the FCC Access Charge Plan

1. Pre-Divestiture Era

The history of access charges problem in the U.S. can be divided into two periods, pre- and post-divestiture. Divestiture was the breakup of the Bell System on January 1, 1984 as part of the Consent Decree (Modified Final Judgment) between the U.S. Justice Department and American Telegraph and Telephone Company (AT&T). From this breakup came the concept of access charges. Prior to the divestiture of AT&T, local exchange companies obtained compensation for originating and terminating AT&T's long distance service through a process known as "separations and settlements." The Separations Manual (NARUC, 1947), which was adopted in 1947 and revised several times to outline the steps for performing federal-state cost separations, defines jurisdictional separations as "the process by which telephone property costs, revenues, expenses, taxes and reserves are apportioned among the operations" (NARUC-FCC Cooperative Committee, 1971, p. 95). The process for dividing up the interstate
revenues, which is based on the separations cost allocation, is called the settlements process.¹

Jurisdictional separations arose from the Supreme Court decision in Smith v. Illinois Bell of 1930 (Smith v. Illinois Bell Telephone Co., 282, U.S. 133, 1930). This decision required, for setting rates, that some portion of the cost of the plant that could be used for both interstate and intrastate calls be assigned to the interstate jurisdiction, based on actual use. Prior to that time none of the costs associated with connecting subscribers to the network had been assigned interstate. Only some of the costs of toll boards and the plant to connect those boards had been assigned interstate, hence the term "board-to-board" costing. Smith v. Illinois Bell eventually replaced board-to-board with "station-to-station" costing, which required a portion of the station (telephone) and its connection to the nearest exchange (local loop) be assigned to interstate jurisdiction.

The court recognized the concept of joint use plant - that the same plant was used to place local and toll calls (Oettinger, 1988). Consequently, it stated that, although difficult to do, the "actual uses to which the property is put" cannot be ignored, and requires "some practical method" by which "the different uses of the property may be recognized and the return properly attributable to the intrastate service may be ascertained accordingly" (Smith v. Illinois Bell Telephone Co., 282 U.S. 133, 1930; Quoted in Welsh, 1983, p. 5). In 1943, the telecommunications industry and the Federal Communications

¹ For the Bell Operating Companies, more specifically, it is called "Division of Revenues," and for the independent telephone companies it is referred to as "settlements." The settlements process will not be explored in detail in this dissertation on the basis of judgment that it is not relevant to lesson-drawing purpose of this dissertation.
Commission agreed to a cost separation formula developed by the National Association of Railroad and Utility Commissioner which incorporated "actual use" concept in Smith v. Illinois Bell by measuring "relative use" of local facilities made by intrastate and interstate services. That is, if the local plant is used 10% for interstate services, then 10% of the cost of the plant should be assigned to the interstate jurisdiction. This percentage of interstate "relative use" of the local exchange facilities, known as Subscriber Line Use (SLU) was used as the beginning point for the succeeding change of separations formula.

\[
SLU = \frac{\text{interstate toll minutes}}{\text{interstate toll minutes} + \text{state toll minutes} + \text{local minutes}}
\]

The relative use standard was an interpretation of the Supreme court's "actual use" language (Weinhaus and Oettinger, 1988, pp. 79-82). On the other hand, the successive development of the cost separations formula can be attributed to the subsequent court interpretations of "just and reasonable" rate language in the Communications Act of 1934. The 1934 Act provided the Federal Communications Commission with the power of regulatory oversight over the interstate telecommunications industry (Welsh, 1983). By requiring the provision of service at "just and reasonable" rates, the 1934 Act leaves open to question what constitutes "just and reasonable" charges. Subsequent court decisions also stated that the precise costing method used is not important as long as reasonable measure are employed and just and reasonable rates result. Most importantly, in 1944, the U.S. Supreme Court interpreted just and reasonable rate language in the Natural Gas Act and held that "[u]nder the statutory standard of 'just and reasonable' it is the result
reached not the method employed which is controlling. It is not the theory...but the impact of the rate order which counts" (Federal Power Commission v. Hope Natural Gas Co., 320 U.S., 1944 p. 602; Quoted in Welsh, 1983, p. 8). Furthermore, the Court held that "the commission was not bound to the use of any single formula or combination of formula in determining rates. Its rate-making function, moreover, involves the making of 'pragmatic adjustment'" (Ibid, pp. 8-9; emphasis added). Under the aegis of such broad interpretation, throughout the separations development, the FCC could exercise its discretion over what constitutes just and reasonable and bring changes in cost allocation formula to reflect market conditions and achieve social and regulatory goals.

Since the Charleston Plan was adopted in 1951, the relative use standard had been further weighted in order to shift an even greater portion of the intrastate costs to the interstate jurisdiction (See Table 1). In terms of the effect on interstate cost allocation, the most significant revision in the separations process was the change in the allocation of non-traffic sensitive costs. In 1971 the Ozark Plan introduced two subdivisions of the local operating plant: non-traffic-sensitive (NTS) and traffic sensitive (TS) (Weinhaus and Oettinger, 1988, pp. 75-77). NTS plant in its common use represents plant from the telephone on the customer's premises to the connection to the serving telephone office. The costs of providing this plant are characterized as being virtually insensitive to the amount of use it receives. For example, the NTS costs are not assumed to vary significantly whether customers make one call or 100 calls. The plant beyond the local central office termination includes the remainder of the local central office, other switching offices, local as well as interexchange trunks, and transmission facilities.
These are considered traffic sensitive since their capacity is based on the expected volume of traffic contributed by all users.

<table>
<thead>
<tr>
<th>Year</th>
<th>Separations Plan</th>
<th>Weighting Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947-1952</td>
<td>Local access costs allocated based on minutes of use</td>
<td>1.0 times SLU</td>
</tr>
<tr>
<td>1952-1965</td>
<td>Charleston Plan</td>
<td>1.8 times SLU</td>
</tr>
<tr>
<td>1965-1969</td>
<td>Denver Plan</td>
<td>2.5 times SLU</td>
</tr>
<tr>
<td>1969-1970</td>
<td>FCC Plan</td>
<td>3.2 times SLU</td>
</tr>
<tr>
<td>1971-1982</td>
<td>Ozark Plan</td>
<td>3.3 times SLU</td>
</tr>
</tbody>
</table>

Table 3. Major Separations Changes

The importance of NTS costs lies in the fact that it represents a major portion of local telephone costs. In this vein, the NTS classification allowed the allocation of these costs on a different basis than the remainder of the network. For example, the chief aspect of the use of separations to achieve telecommunications policy goals was in the interstate assignment of NTS costs. The assignment factor evolved from a pure SLU ratio through various weighting factors to the Subscriber Plant Factor (SPF). SPF weighed SLU for length of haul and for a supposed deterrent factor. Under SPF, NTS costs allocated to interstate jurisdiction were approximately 3.3 times SLU from 1971 to 1982. As interstate minutes of use grew relative to local exchange and intrastate toll minutes of
use during 1970s, SPF magnified the amount of NTS local exchange plant allocated each year to the interstate jurisdiction.

While separations was not a pricing mechanism, it had been closely linked to pricing decisions. For example, the allocation of NTS cost to interstate jurisdiction lowered intrastate revenue requirements and consequently made it possible for state regulators to keep local service rates low. Characterized by a process of residual ratemaking, state regulators saw basic exchange tariff increases as a last resort to fill the revenue requirement within a state's jurisdiction (Oettinger, 1988, pp. 35-36). One widely perceived result of this policy of low local exchange rates is the percentage of households reporting a telephone, the penetration level, reaching almost 93% by 1980.

Given the substantial reductions in the unit cost of long distance transmission resulting from technological change and growth in market demand, the FCC authorized some interstate reductions, despite the increased interstate revenue requirement. AT&T, at least until the early 1970s, supported a larger interstate allocation of local exchange costs as a way to prevent the FCC from reducing the interstate rates (Weinhaus and Oettinger, 1988, pp. 62-63).

However, by the 1980s a number of factors created a situation in which SPF was either no longer producing the desired result or the desired result had changed. Interstate usage as measured by SLU continued to climb; this increase, together with the multiplier effect in the SPF calculation, caused SPF to increase from 17.0% in 1971 to 26.0% in 1981 (Bolter et al., 1984, p. 431). This increase in SPF prevented the reduction in interstate toll rates. At the same time, through a series of court and FCC decision, AT&T
found it had competitors such as MCI in the long distance market. Furthermore, the local exchange companies, both Bell and independent, found that they had long distance companies other than AT&T asking for access to their networks to reach potential toll customers. These companies, called Other Common Carriers (OCCs), argued that they should not be required to pay the same as AT&T for access to local companies since their connection were inferior to AT&T's. The OCCs said they should only pay the going business line rate, since that was the facility they used to access the local network.

This controversy was partially resolved by FCC's approval of Exchange Network Facilities for Interstate Access (ENFIA) tariffs which gave the OCCs' access to local networks at rates that were roughly 35% of AT&T's (Bolter et al, 1984, pp. 433-440). This discount purported to represent the OCCs' costs of business opportunities lost as a result of inferior interconnection. The principle was thus established that unequal access could result in discounted interconnection charges. In addition, AT&T paid on the basis of actual number of minutes used whereas the OCCs paid a flat-rate amount of minutes per line. As a result, the controversy over the tariffs continued until MFJ. The MFJ ordered local Bell Operating Companies to avoid discriminating between AT&T and other interexchange carriers. In particular, all interexchange carriers would be provided "equal access" to the local exchange. In addition, the BOCs were ordered to file exchange access tariffs.

Aside from antitrust developments in telephone industry, controversy started over bypass problem from 1970s. Large volume users started bypassing the public network and establishing their own networks or relying on carriers other than AT&T. It was
asserted that these users took these actions because they had lower-cost alternatives, so that using AT&T meant that they were paying more than what they saw as a reasonable share of the costs. The following FCC access charge plan addressed this problem most significantly in its rate design.

2. FCC Access Charge Plan

The divestiture was significant because it brought about changes in the cost allocation and revenue sharing procedures in order to reflect the toll competition that had been allowed years earlier. In order to meet MFJ requirement for unbundled, tariffed access charges, and to rationalize rate structures, the FCC developed a system of access charges which applied to all LECs and all interexchange companies (IXCs). The FCC issued its original access charge plan on December 22, 1982 in its *Third Report and Order* in Docket 78-72, originally scheduled to become effective on January 1, 1984 (*Third Report and Order*, 93 FCC 2d 241, 1982). In their most general application, access charge plan replaced portions of the jurisdictional separations process and the division of revenue processes. In concurrent proceedings, the FCC addressed the separation issue by: (1) freezing the Subscriber Plant Factor (SPF) as of December 31, 1983 at an average of approximately 28%, and (2) replacing the frozen SPF by a uniform 25% gross assignment factor that is to be phased in over eight years starting in 1986. Thus, ultimate 25% of fixed local exchange costs would be allocated to the interstate jurisdiction and the interstate NTS cost allocation would no longer vary by company by state.
The FCC's plan dealt specifically with cost recovery, instead of cost allocations, and is fully described in detail in Part 69 of the FCC's Rules and Regulations (Third Report and Order, 93 FCC 2d 241, 1982). Under this system, separated interstate costs were assigned to access elements, each of which represents a distinct LEC facility or service, according to a prescribed costing method (based on fully distributed costs) and recovered through tariffed charges to IXCs and end users. The plan had eleven specific charges or elements that were designed to compensate local exchange companies for providing access to interexchange companies. For example, the common line element is used to recover the NTS subscriber loop costs. Its portion is recovered directly from customers through a subscriber line charge (SLC) and remainder is recovered on per minute basis from IXCs through carrier common line charge (CCLC).

The distinctive attribute of the adopted plan, which also continued to be its most controversial component lies in the recovery method of the NTS loop costs. The basic premise and ultimate goal of the FCC's NTS cost recovery plan was that most of these costs should no longer be recovered through interstate toll rates, but through monthly flat rates charged by local companies to all customers. In effect, the FCC plan continued to allow 25% of NTS costs to be allocated to the interstate jurisdiction. By assigning all of the cost recovery to local instead of long distance customers, it planned to accomplish the same result that would have occurred any way had it not assigned these costs to the interstate jurisdiction.

As a transition, the FCC planned to gradually shift the cost recovery to local customers. The vehicle was the SLC access element. The interexchange carriers were
temporarily paying the rest in usage based (per minute of use) payments to the local companies. This is the CCLC element. In theory, under FCC's plan, as the CCLC goes down over time, the SLC will increase until ultimately the CCLC will approach zero and all interstate loop costs will be recovered through SLC.²

In practice, if end users were to pay for all the NTS cost, the SLC would have to be set at about $6 per month. However, the FCC's original proposal to collect that amount by a flat rate directly charged to each subscriber met considerable opposition from consumer advocacy groups, state regulators, and Congress, forcing FCC to compromise. A seven-year transitional period was adopted to minimize the impact of shifting NTS charges to the end user. As a result, the FCC ended up increasing the SLC for residential and single line business access lines to $3.50 per month and increased multi-line business rates to $6 per month. The revenue raised in this manner allowed the FCC to mandate a reduction in the access rate changes of interstate long-distance carriers and, therefore, reduced interstate rates.

In its effect, the FCC access charge plan was to essentially nullify the pricing scheme which separations policy had sought based on station-to-station philosophy. In other words, the access charge plan "in essence aimed at grafting a board-to-board era pricing method onto the pre-existing station-to-station costing practice" (Oettinger, 1988, p. 51). The SLC "clearly deviated from the notion of an interstate access charge as only a 'carrier's carrier charge, a principle of interstate NTS local exchange cost recovery always

² The ultimate CCLC will be a nominal amount to pay for a Universal Service Fund which is subsidy to high cost companies.

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implicit in the jurisdictional separations process" (Bolter et al, 1984, p. 440; emphasis original). This major change in principle indicated the FCC's implicit recognition of the discrete market model of industry organization (i.e., board-to-board philosophy) not only as the basis of impending divestiture of the BOCs, but also as the basis for conceptualizing the problem of local access compensation (Bolter et al, 1984, p. 440).

On January 1, 1991, the FCC shifted the largest LECs from a "cost-plus" system to an incentive-based system similar to the price-cap regulation (LEC Price Cap Order, 5 F.C.C. Rec.). The new system places a cap on LEC interexchange charges subject to an annual adjustment that will ensure that prices fall in real, inflation-adjusted terms. The proposed interstate access price-cap index consists of a measure of inflation, a productivity offset and exogenous costs like access charges. The FCC plan gives the LECs a choice of two productivity offsets, i.e., either a 3.3 percent or a 4.3 percent productivity gain each year. In addition, the plan has also "sharing" provisions which requires a carrier to share its excess earnings with ratepayers in the form of further rate decrease. For example, LECs that choose the lower offset of 3.3 % begin sharing at 1 % over the benchmark rate of return; LECs that choose the higher productivity offset of 4.3 % begin sharing at 2 % above the benchmark rate of return. Although the cap itself protects ratepayers from high prices overall, a cap on aggregate prices alone could lead to some relatively high-priced services and some relatively low-priced services. To prevent this, the FCC plan groups services and rates into a complex system of "baskets" and "bands." A so-called "price cap index" is calculated separately for each basket and establishes the maximum rate for services within the basket. Rates within each basket are
allowed some flexibility relative to each other, so long as the index for the basket is not exceeded.

The design aspect of FCC access charge plan can be discussed in numerous ways as it involves such multiple and sophisticated issues that have evolved in the industry over a long time. Rather than touching all the aspects of the plan and technical changes, in this dissertation, I will focus on the most fundamental aspect of using costing and pricing tools to achieve goals stated in the initial access charge plan of 1982. In particular, the primary focus of the analysis of access charge plan will be directed to universal service and prevention of uneconomic bypass as main goals of the plan. The discussion of these two goals and the tools used to achieve them, as embodied in the plan, will be carried out by incorporating institutional and neoclassical economic perspectives in the explanation of behavioral, technical, and normative assumptions of the plan.

B. Structural Logic Analysis of the FCC Access Charge Plan: Elements

The primary agent of design and implementation of access charge plan is the Federal Communications Commission (FCC). It was established as a main body to regulate the interstate telecommunications industry by the Communications Act of 1934. The target of access charge plan can be classified into two groups. One is the target whose pricing behavior is controlled. This includes local exchange companies. Other targets, who are influenced by specific tariffs, include interexchange carriers, big business users, and general end users. The FCC identified four major public policy goals that the access charge plan should achieve: (1) continued assurance of "universal service"; (2)
elimination of "unjust discrimination" or "unlawful preferential rates"; (3) encouragement of "network efficiency"; and (4) prevention of "uneconomic bypass."

Concerning universal service, the FCC noted that "in the context of this proceeding a 'universal service objective' means avoiding actions that would cause a significant number of local exchange service subscribers to cancel that service" (*Third Report and Order, 78-72, March 11, 1983*). This objective is closely related to the fourth objective. Bypass refers to the tendency of large telecommunications customers to elect to use ways of making telephone calls other than the telephone company's local public switched services. If prices are based on costs, and a customer finds and uses a less expensive alternative, we have economic bypass. If a service is priced artificially or arbitrarily high and the customer goes elsewhere, we have uneconomic bypass. The danger of uneconomic bypass lies in the impact when the big corporations will leave the network. The remaining small customers would then be faced with large rate increases to take up the financial contributions of the departed large users. At rates go higher, more customers are forced to leave the network. Consequently, the FCC viewed bypass of the public switched network as a potentially significant threat to achieving its universal service goals.

The encouragement of network efficiency is also closely related to the avoidance of uneconomic bypass in that it was believed, for example, that interstate private line services are used primarily to avoid paying higher toll (i.e., MTS and WATS) rates, not because the services offer any intrinsic technical advantages. Overall, concern of FCC access charge plan was directed to avoiding uneconomic bypass. The elimination of
unjust discrimination addressed the problem of the different and previously established arrangements to compensate local exchange companies for originating and terminating interstate long distance calls (e.g., separations and settlements for AT&T toll services, ENFIA agreement for other common carrier services, and end user charges in the form of ordinary business line rates).

C. Structural Logic Analysis of the FCC Access Charge Plan: Linkages

1. Rules

The rules related to FCC access charge plan include FCC Part 31 (Unified System of Accounts) which provides financial accounting rules, FCC Part 67 (Jurisdictional Separations) which assigns costs to inter- and intrastate jurisdictions, and FCC Part 69 (Access Charges) which allocates interstate costs to access elements and define access elements. Part 31 was revised as Part 32 (Uniform System of Accounts, revised) in 1988. Also Part 67 was revised as Part 36 to conform Part 32 USOAR in 1988.

2. Tools

a. Pricing and Costing as Institutionalized Process

In terms of interstate access charges, local telephone companies are direct targets for regulators (i.e., FCC) to control their prices. Access charges represent a control on the pricing behavior of local exchange companies. Traditionally, there have been two important behavioral aspects related to price control of local exchange companies. First, overall prices have been set so that a firm can cover its costs of doing business, including
a reasonable profit on its capital investment. The point of this stage is to prevent a natural monopoly from fully exercising its monopoly power; hence the focus is on controlling overall prices by controlling profits on invested capital. Second, regulators set the structure of prices. This process allocates costs of the firm among its customers. Seeing backwards, the rate structure is "the set of prices which generates revenues equal to revenue requirements for each service, where the revenue requirements [for overall intrastate and interstate services] reflect the principle of cost allocation being applied" (Fenton and Stone, 1980, P. 17) As access service (i.e., interconnection service) represents one of the several services provided by local exchange companies, its pricing issue is particularly related to the second aspect of price control.

As such, cost-setting and price-setting activities are regulated to affect the behaviors of the regulated industry as well as consumers. As tools represent means to influence the behavior of target groups, we can generally identify costing and pricing methods as tools the regulator can use to affect the behaviors of regulated industry as well as the consumers.

Before proceeding to discuss those costing and pricing methods, however, the main concern of this section is to provide a broad perspective which can characterize

More recently in the U.S., the price cap system of regulation has been introduced as an alternative to just described rate-of-return regulation. This system of regulating rates focuses on the establishment of price ceiling for the services of a multi-service regulated industry. In terms of access charges, the FCC started to apply price cap regulation to interexchange charges of the largest LECs from 1991. In spite of its importance as an alternative regulatory method, price cap regulation will not be discussed in detail in this dissertation since the primary focus of this dissertation is directed to the original design of access charge plan.
general pricing and costing activities related to access charge development in the U.S.⁴ The perspective to see general pricing and costing activities is important since the evaluation of a particular design structure such as the FCC access charge plan might depend on one's general perspective on the general pricing and costing. For example, from neoclassical economic perspective, the prices are determined by impersonal, automatic, power-free, price competitive markets in most markets. Marginal cost is the neoclassical economist's fundamental criterion for determining competitive price and optimum price. The central policy prescription of microeconomics is the congruence of price and marginal cost. This principle represents that under conditions of perfect or pure competition the most efficient, the most ideal price for which a commodity should sell is equal to the marginal cost of the last unit of production.

On the other hand, institutionalists characterize and appraise pricing as "an exercise of achieved power by discretionary agents" (Tool, 1995, p. 72). By understanding pricing as deliberate discretionary acts achieved through the use of power in order to determine prices, pricing activities effectively specify how persons will relate to one another in exchange. Just like an institution is a set of "prescribed or proscribed patterns of correlated behavior and attitudes" (Foster 1981; Bush 1987), pricing activities provide substantial prescriptive and proscriptive influence over other people's economic behavior. For example, prices are designed as instruments by which to control the demands of consumers for services of different kinds and in different amounts. The

⁴ While costing can be defined as "procedures agents use in getting pecuniary costs to determine cost-plus selling prices," pricing refers to "procedures agents use in setting selling prices" (Tool, 1995, p. 117).
prices as the outcome of deliberation by discretionary agents are referred as "administered prices" (Tool, 1995, p. 93).

Contrary to neoclassical economists who see the relation between supply and demand as the main determinant of price, the institutionalist finds many administered pricing practices in private sector as well as public sector. For example, Gardiner Means, through his early empirical research into corporate structure and agricultural pricing, formulated "the theory of administered pricing" and considered it as the normal method of selling in most markets (Means, 1959, 1963). As market force did not provide a sufficient constraint on the power to administer prices, he saw price administration accomplished in large corporations through various techniques, including target pricing. The significance of administered pricing "rests, first on the fact that it lies entirely outside traditional economic theory and, second, that where the area of discretion in price administration is large, administered prices produce economic results and problems of economic policy quite different from those dealt with by traditional theory" (Means, 1959, p. 4).

The reliance on administered pricing in private sector was confirmed by the Brookings study done by Kaplan, Dirlam and Lanzillotti, *Pricing in Big Business* (1958). Focusing on how a business pricing process actually works, they found that the officers who were responsible for pricing decisions did not think of that function as a separate, distinct problem apart from other elements of company policy. The pricing decision was "usually considered part of the strategy for achieving a broadly defined goal" (ibid., pp. 3-4). By showing that pricing policies being dictated by a disparate variety of
considerations, they concluded that they could find no single, unifying principle to explain the determination of price (ibid., p. 289).

More recently, Frederic S. Lee demonstrated that "the kind of costing and pricing procedures used within the business enterprise...are administratively determined. ...[A]dministratively determined prices are administered to the market" (Lee, 1993, p. 30; Quoted in Tool, 1995, p. 135). Price administrators "believe that sales are almost entirely a function of buyer income, level of aggregate economic activity, government demand for armaments, population growth, product design, and perhaps advertising" (Lee, p. 35-36; Quoted in Tool, 1995, p. 135). What these and other institutional studies show is that business, as an institution, has a broader perspective than profit maximization, that not only affects pricing decisions but also varies from one market to another. In addition, in terms of particular pricing method, many studies found that businessmen do not set prices to equate marginal revenues with marginal cost as postulated by neoclassical economic theory, but rather to recover their full costs (Lee, 1990, 1993; Govindarajan and Anthony, 1983; Fremgen and Liao, 1981; Hiromoto, 1988).

In addition to their important findings of the prevalence of administered prices in the private sector, institutionalists shed light on the social importance of administered pricing in the field of utility regulation as reflected in the regulatory discretion as a substitute for the unconstrained corporate power. In this context, an important question can be raised about the nature of administered pricing in those industries. For example, given the natural monopoly characteristics of some utility industries, judgment may be required as to whether the regulation should imitate competition or practice in private
sector as observed and recommended by neoclassical economists. As Bonbright notes, the very nature of a monopolistic public utility "which rules out actual competition also rules out any attempt to secure by regulation all of the good attributes of competitive prices including those of an equilibrium position in which prices are simultaneously equal to a whole variety of costs including average total costs, short-run marginal costs, and long-run marginal costs" (Bonbright, 1961, p. 389). For example, given the fact that marginal cost pricing produce losses and the need for social subsidy of the firm in the presence of scale economies, "[v]irtually the whole spectrum of incentives and efficient signals disappears and such a result would hardly be imitative of competition" (Nowotny, p. 19).

Furthermore, the effectiveness of an optimal pricing rule in regulated market is questionable in the presence of such pervasive administration of prices in the private sector and other imperfect conditions of market. In a seminal article published in 1956, for example, R. G. Lipsey and Kelvin Lancaster presented a mathematical argument demonstrating that under market conditions that do not meet the perfections of Pareto optimality, specific changes in the direction of meeting those conditions would not necessarily increase and could even decrease welfare (Scherer, 1980, pp. 24-29). Then, replicating competition through marginal cost pricing may not be welfare-enhancing, since the adjustment made to accommodate conditions of the ideal model may be counterproductive, unless the situation is characterized by all other Paretian welfare conditions.
Rather than searching for certainty as provided by an ideal model, and attempting to fit the pricing and costing practice into static efficiency considerations, it would be probably be more helpful if analysis would recognize the nature of price control as an institutionalized process as institutionalists see pricing and costing activities, particularly for the purpose of understanding the access charge development in the U.S. As implied in the previous discussion, taking the institutional perspective, regulatory pricing and costing practices are qualified as institutions, and arise as forms of institutional adjustment (Tool, 1995). The change in pricing and costing practices is discretionary not only because they represent "a set of socially prescribed patterns of correlated behavior," but also "because all social prescriptions are the outcomes of conscious choices made at some point in the life history of culture" (Bush, 1987). What is prescribed by pricing and costing practices are values that will be employed as correlates of behavior. Thus the diagnostic characteristic of a pricing or costing practice is the value structure that correlates the behavior within it. Given the central importance of values to the structures of institutions, analytic attention needs to be continuously directed to the social value premises reflected in cost-setting as well as price-setting judgments (Tool, 1995).

While the value premise related to costing and pricing of the access charge in the U.S. will be discussed in the section of "Normative Assumptions of Access Charge Plan,"

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5 While I take the institutionalist perspective to see costing and pricing activities, it does not mean that the practice should take the form of a particular costing and pricing method institutionalists may prefer. Instead, the reason for employing the institutionalist perspective is that it explains the evolutionary process of practice better. In short, it is used for analytic purpose rather than normative one.
the current analytic focus will be directed to two important basic costing and pricing methods: fully distributed cost and marginal cost pricing methods.

The importance of costs for pricing decisions varies across industries. The U.S. history shows that a general costing method has been consistently used to define costs in telecommunications industry, which subsequently have served as important benchmarks for telephone prices. Even though understanding that method is very important to grasp the picture of access charge policy in the U.S., it should be realized that any one costing method will not be appropriate for all purposes. The choice of costing method reflects the objectives which costing or pricing agents are trying to achieve. In the same vein, the appropriateness of any method may change over time as the problem-solving processes require changes in, say, regulatory practices. In the following section, therefore, the general nature of a traditional costing method which has played important role in price-setting purpose in the telecommunications industry will be examined along with a comparison of that method with other costing (or pricing) methods in telecommunications industry.

This general discussion of costing methods will serve as the background for understanding the next discussion of "Behavioral Assumptions of Access Charge Plan," as the latter will illuminate the applied aspects of those methods in ongoing policy debates as well as the practice of interconnection pricing. In short, the main focus of behavioral assumptions of access charge plan will be the more specific discussion of particular problems represented in a problematic situation of setting interconnection price and the applied aspects of those costing tools to solve the problems.
b. Fully-Distributed Costing as Discretionary Regulatory Tool

The FCC access charge plan represents a price control based on fully distributed costing over access services provided by local exchange companies to interexchange carriers. In particular, cost allocation rules such as the Jurisdictional Separation (FCC Part 67 or FCC Part 36 after 1988) and Access Charges (FCC Part 69) represent the fully-distributed costing (FDC) method. While the FDC method is used in Part 67 to separate revenue requirements among the intrastate and interstate jurisdictions, it is used in Part 69 to set directly the prices of carrier access services. When the FCC access charge plan was called cost-based, the meaning of "cost" is fully distributed accounting cost. The key concept of FDC is that all costs are allocated among all services. The purpose of FDC is usually to provide information that allows prices which guarantee recovery of all costs. In spite of its importance as a policy tool to secure financial viability of the regulated firm, the most criticism as well as the strength of the FDC lies in the treatment of common or joint costs.

A common cost can be defined as a cost that is common to two or more services or products, but that does not vary with their level of output. Because the cost-causation rationale for an allocation can be weak or entirely missing in the presence of common costs, any costing method becomes arbitrary when used to allocate common costs to specific products or services. By allocating common costs, therefore, the FDC is

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6 Some economists call the plan "cost-based" since it reallocates interstate NTS costs to end users in the form of subscriber line charge. From this perspective, the previous separations procedures caused "cross-subsidy" and eventually invited uneconomic bypass. The SLC component of the plan, from this perspective, represents a solution based on a "cost-causation" principle to prevent uneconomic bypass.
described as a process that cannot be done except on an arbitrary basis. Contrary to its prevalent usage in private sector as well as government regulation, in this context, FDC is condemned by neoclassical economists "as being irrational and harmful, both for a firm driven by a profit motive and for a society concerned about an efficient allocation of its resources" (Laughhunn, 1989, p. 255; Larson, 1988; Baumol and Walton, 1973; Baumol and Sidak, 1994).

On the other hand, from the institutionalist point of view, the FDC is an important tool in which regulatory discretion is exercised. In this context, most FDC methods exemplify the idea that common costs associated with a particular service or product are "defined" and not "discovered" by the allocation method (Silberberg, 1989). A particular cost allocation method, then, represents a social choice which "ultimately depends on the objectives of the allocation process and the interest and relative power of the affected stakeholders" (Silberberg, 1989, p. 59). In the presence of inevitable arbitrariness of cost allocation, the FDC does not presupposes the existence of objective cost data which can serve as benchmark for correct pricing decisions. Instead, the choice of FDC takes the position that "[t]he decision process does not flow from data to decision to policy, but more nearly from policy to data to decision to revised data (via rule changes)" (Silberberg, 1989, p. 59). In short, discretion and policy goals matter in the FDC.

Once the size of common and overhead costs in the telecommunications industry are recognized, the discretionary nature of fully distributed cost allocation methods becomes significant and can differentially affect stakeholders. Even though there exist several different FDC methods, usage-based cost allocation has been most prominent in
the U.S. telecommunications industry. As pointed out earlier, for example, a 1930 Supreme Court case said that allocations should consider the use made of the property. Since then, allocations based on relative amount of usage of a particular facility had been served as an important benchmark for telephone costing and pricing decision. For example, the subscriber plant factor (SPF), created by the Ozark Plan in 1971 and used to separate non-traffic-sensitive costs, embodied the usage concept, but a weighting factor was applied. The resulting formula was, on average, about 3.3 times the interstate subscriber line usage (SLU). Thus even though usage is only 5 percent, approximately 16.5 percent of subscriber loop costs are allocated to the interstate jurisdiction. This formula, as an obvious example of an arbitrary allocator, cannot be understood without considering specific goals which it served.

The history prior to access charge development in the U.S. shows that the FDC served as an important direct performance control tool that achieved important social outcomes which normal market pricing even under competition may not have achieved. When neoclassical economists criticize the FDC on the basis of efficiency criteria, they often disregard the importance of social choice and discretion exercised in the process of using FDC as an imperfect but still effective instrument to achieve social goals that have little to do with economic optimization. Rather than judging it as inherently defective policy tool, it is more fruitful approach to assess the performance of FDC by exploring its adaptability to a newly emerging environment and its effectiveness in responding to serve changing social values.
c. Comparison between Marginal Costing and Fully Distributed Costing Methods

Neoclassical economists are more concerned with marginal or incremental costs. Often marginal cost is classified into two categories: short-run marginal cost (SRMC) and long-run marginal cost (LRMC). The SRMC is defined as "the increase in total costs that results from the production of one more unit of output, given a particular technology embodied in existing facilities and equipment, and given input prices" (Fisher, 1990, p. 78). On the other hand, LRMC is defined as "the increase in total costs (now including capital and all other costs) associated with the production of one more unit of output" (Fisher, 1990, p. 79). Both costs are forward-looking avoidable cost. The SRMC is considered as an appropriate rule to ration existing capacity as presented by Alfred Kahn: "The economic ideal would be to set all public utility rates at short-run marginal cost...and these must cover all sacrifices, present or future and external as well as internal to the company, for which production is at the margin causally responsible" (Kahn, 1970, p. 71). But SRMC might not be practical or optimal since it may be changed so frequently that pricing changes would be infeasible. As a result of this consideration, LRMC may be the more practical standard for marginal-cost pricing. The LRMC is also used to send consumers a proper signal indicating society's cost, one which reflects not only the cost of using existing plant but also the incremental cost of new capacity. In this sense, the LRMC is considered important benchmark for investment decisions.

While both types of incremental costs are to be used to set efficient prices, they also show some weaknesses. While these two costs are asserted to be equal in equilibrium (Kahn and Shew, 1987), for example, they are often inconsistent each other
and become same only in the special case where existing plant is also the long-run optimal plant (Fisher, 1990, pp. 81-82). In spite of its usefulness in investment decision-making, the logical, long-run time restriction of LRMC requires "an investment decision de novo, with no existing capacity or with all existing facilities just now ending their useful lives simultaneously" (Fisher, 1990, p. 83).

To ameliorate this deficiency of LRMC, Baumol came up with "intermediate" long-run, instead of "the pure and unusable concept of the theoretical long run" (Baumol, 1971, p. 141). Baumol defines intermediate long-run as follows: "The intermediate long-run is long-run in the sense that it includes all capital costs associated with the expansion in output under examination....It is, however, not perfectly long-run because it does not assume that all assets are perfectly liquid with no plant and equipment inherited from the past" (Baumol, 1971, p. 141). Incremental cost can be distinguished from the other marginal cost concepts in that it is the relevant concept for intermediate long-run situation, such that the inherent plant is present and new capacity is added to existing facilities.

These cost concepts have been recommended as the most proper vehicle for regulatory costing and pricing purpose by neoclassical economists. The most distinguishing feature of these concepts lies in their emphasis on "forward looking" or "avoidable" aspect of regulatory pricing. For example, efficiency requires that prices to consumers reflect the costs that their consumption causes, or the costs that would avoided by their abstinence. Thus, sunk costs are irrelevant; prices must equal incremental or avoidable cost in order to ensure that the purchase of a commodity covers the costs of
providing it. Furthermore, incremental costs are important in a competitive environment because competitors will price incrementally.

However, looking forward necessarily implies greater uncertainty than looking back, and uncertainty seems to increase the opportunity for abuse and error (Melody, 1980). In the presence of this potential abuse and error of marginal cost pricing, the FDC can be seen as an important alternative regulatory tool to secure public standards instead of private ones and to increase social accountability of the regulated firms. Neoclassical economists assert that markets will provide improved accountability if regulators abandon their discretion and turn pricing functions over to market force. For many other economists, however, the efficacy of market force is often "asserted" rather than "proven." To take the incremental pricing perspective under the belief that competitive force is already effective may imply that the firms have more discretion to cope with competitive environment and increase efficiency. In the absence of effective competition, however, more opportunity exists for firms to abuse their power at the expense of public interest.

In general, it can be said that a change from FDC to marginal cost pricing represents the fundamental shift in the belief about the effectiveness of competition, in the locus of pricing discretion, and in the accountability of those actually making pricing decisions. But even in the presence of effective competition, there are still social values which competition cannot serve. The employment of FDC under competitive environment should be seen in the context of protecting those values.
More recently, for example, in the U.S., the FDC has been used to separate the shared costs between regulated parts of a telephone company's business and the nonregulated parts, as provided by the FCC Part 64. The usage of FDC in this context can be contrasted with neoclassical economic theories. The neoclassical economists have recommended stand-alone and incremental cost tests as solutions to a cross-subsidization problem. Focusing on an intermediate long-run instead of long-run, incremental cost of a service is simply "the change in total costs to the firm incurred in providing that service" (Larson, 1988, p. 12). On the other hand, stand-alone cost is "the cost of one service, or a group of services, on its own, without producing any other service or group of services" (Meitzen and Larson, 1992, p. 135). Neoclassical economists assert that once regulators set stand-alone cost as price ceiling and incremental cost as price floor, it is the most efficient to let prices be determined by market force or demand (Baumol and Sidak, 1994; Larson, 1988). The price determined between two boundaries is seen as subsidy-free, and efficiency-enhancing and as promoting the least-cost production of a given set or amount of telecommunications services.

Like Ramsey pricing, a well-known neoclassical solution to cost recovery problem in the presence of common cost, however, this method overlooks the equity side of pricing (For the critique of Ramsey pricing, see Sheehan, 1991, 1993). Both methods presume that efficiency requires that captive monopoly customers bear the highest burden of common costs while those with greater demand elasticity gain all the benefits of common production. But their appeal to efficiency and elasticities often obscure the political nature of the problem. For example, elasticity of demand often represents a
"measure of market power" (Fisher, 1990, p. 89). While those who have many options show high elasticity of demand, those with few options are demand-inelastic. Demand-based pricing under imperfect competition is nothing more than transferring burden to those consumers who have no alternative sources of supply. While the highest markups imposed on basic monopoly services may be acceptable based on efficiency criterion, it may not be socially acceptable on the equity ground.

Facing tough choice of either leaving the cost recovery problem up to management, or of finding a politically acceptable way to deal with it, the FCC's choice of FDC method indicates the service categories that share in the benefits of integrated supply should also share the obligation for recovering fixed common cost. In the presence of inevitability of arbitrary nature of cost allocation, the FCC use of FDC illustrates the assignment of costs as characterized by a "political rather than an economic exercise, [one] designed more as a tactical maneuver to achieve strategic objectives than as a means to achieve so-called economic goals such as Pareto efficiency" (Miller, 1995).

3. Behavioral Assumptions of the FCC Access Charge Plan

a. Behavioral Assumptions of the Separations Policy

In order to understand behavioral assumptions of access charge plan, we can divide its assumptions into two categories: costing side and pricing side. As already discussed, access charges replaced portions of the jurisdictional separation process and the cost recovery process through change in pricing method. In that process, the access charge plan appeared to nullify the practical pricing effects for which the previous costing
method had sought. In order to understand this processual aspect, therefore, it should be preceded to understand the behavioral assumptions and theories which buttressed separations policy. In this section, I will briefly review how separations had been effectively used before access charges emerged. In the following section, I will discuss more substantially the underlying theory of separations policy (i.e., station-to-station view) and its more recent interpretation.

The separation process represents fully distributed cost allocation based on station-to-station philosophy. The regulators, as well as the industry, used it as a tool which can redistribute the costs that must be covered by the combination of state and interstate revenues. In this context most of the changes in the process had affected the allocation of NTS costs to the interstate jurisdiction to be covered by interstate toll service revenues. The tool had been related to the behavior of regulators, LECs, AT&T long lines, and consumers under changing economic, social and technological conditions. As briefly illustrated in the history of pre-divestiture development of separations policy, the separations process provided an important mechanism through which pricing decision and cost assignments could have been made on the basis of total operations of telephone industry, not on the basis of the pre-determined cost- causation principle. Most importantly, it has been considered to be a primary mechanism to have brought out universal service in the U.S. (Oettinger, 1988; Sitcher, 1977; Weinhaus and Oettinger, 1988).

Since the universal service as a real-world outcome was a "contingent fact of history" (Chisholm, 1995, p. 30), however, it can be said that it could have been
accomplished by other means or without any policy. Therefore, the retrospective assessment of universal service as the outcome of separations policy requires a judgment about the given outcome over that which would have occurred without the policy or under some other action alternatives. Furthermore, more importantly, universal service should not be understood as externally imposed ultimate ends, which can justify means regardless of the cost of the means. Instead, it should be understood as a valuative criterion used in practical situations. In addition, the universal service as the ends-in-view might have had to be adjusted to more feasible means under the various restrictions the real situation provide. In this context, it is important to understand "existing conditions as obstacles-resources" as a basis to determine action alternatives as well as ends-in-view (Quoted in Bush, 1994). In order to assess the effectiveness of separations policy as an action alternative, in the same vein, it is necessary to understand the general industry and regulatory condition as it existed. In the following, thus, I will provide some illustrations of "existing conditions as obstacles-resources" for accommodating separations policy as an imperfect but still effective tool to achieve universal service.

First of all, to the extent that the separations process was based on fully distributed costing, it was consistent with another important regulatory goal, financial viability of regulated firms. As long as fully distributed costing is required by regulators, it might be argued that their primary goal is financial viability of regulated firm. In other words, the focus on the financial health of a carrier requires that fixed or common cost be fully allocated and recovered through the revenue requirement. Under such support for fully distributed cost pricing to guarantee financial viability of the firms, it was difficult
to discuss new costing and pricing method which might have brought out the universal service in a more efficient way, but may have done so at the expense of financial health of the regulated firms. Neoclassical economists often advocate marginal cost pricing and direct tax-supported subsidy to the potential and departing subscribers as a more efficient way of achieving universal service objective. Considering not only the importance of maintaining financial viability of regulated firms, but also the initial, low penetration rate of telephone service, the political difficulty to tax, the high social cost of verifying qualification, or the potential social disintegration by making low-income status self-certifying, however, how effective a tax subsidy would have been in achieving universal service remains as question.

As far as the relative importance of basic service for human well-being was recognized, in addition, the separations policy seemed to be a plausible choice for reasons rooted in unique historical circumstances. For example, technological advances and improved economies in long-haul transmission systems contributed to a substantial reduction in the unit cost for interexchange facilities. Converely, during the same time period, costs of the provision of the local telephone access line had increased. Without

7 There are many publications about separations process. Most neoclassical economic literature deal with separations process as inefficient cross-subsidization mechanism (For both the historical review of separations process and the application of neoclassical economic cross-subsidization test, see Temin and Peters, 1985; Temin, 1990). On the other hand, Program on Information Resources Policy at Harvard University has published many documents which see separations process from more practical points of view. The latter materials employ historical perspective and explain the development of separations process teleologically. The behavioral assumptions of separations policy seem to be well captured by those publications. The explanation I employ in this paragraph is based on the findings and interpretation those publications provide. See Oettinger (1988), Sitcher (1977), Silberberg (1989), etc.
the periodic separations changes that have occurred, federal regulators and interstate toll rate payers would have had the almost exclusive advantage of the decline of long-haul interexchange costs, and state regulators would have had to burden local customers with substantial increase in price. This explains why each successive separations change increased the allocation of costs to interstate. This had been accomplished by effectively changing the multiplier which was an integral part of the separations formula for NTS costs so that a greater portion of those costs would be allocated to interstate. Under the condition of decreasing average costs for interexchange facilities and possible rate reductions for long distance service whose customers were more likely to be large businesses, the federal regulators found it easier to accept the allocation of a greater portion of the joint and common costs of the local telephone network to their jurisdiction. Consequently, they could share some of the benefits of the declining unit costs of interstate toll service with the state regulators. In this sense, separations policy was one of effective ways "in passing on the benefits of saving in new technology to the individual consumer" (Hills, 1989, p. 143).

As the discussion of station-to-station view in the following section will illustrate, in addition, it was not without any costing and pricing rationale to develop separations procedures to keep local service rates low. For those who recognize that local exchange facilities and costs are common to both long-distance and local services, it has been asserted that the controlling design and cost standards for the local exchange plant have been determined by the long-distance service. From that perspective, the separations procedures could be understood as an imperfect but still legitimate vehicle to assign the
increased costs of local exchange plant that were incurred only to benefit long-distance service, directly to that service.

The separations policy supported by the above argument seems to be most consistent with institutionalist perspective of the regulatory role for public interest. For example, among the factors that result in a change in the structure and functioning of the economic system, institutionalists identify technological change as a prime mover in social evolution and as an instrumental provider of possibilities for life enhancement. As institutionalists observe the power of ideas and inventions to be often exploited for private pecuniary benefit and at the expense of community, they see direct regulation as an important tool to realize the full benefits of important modern technology for the community. Making institutionalist perspective surrogate for the early regulatory view in the U.S., we may summarize the separations process as follows. In the presence of concentration of telephone industry and potential exploitation of market power due to the technological characteristic of the telephone service, the social control was called for in telephone industry in the form of public interest regulation. The regulation was to secure accountability by assuring responsible and responsive commission discretion over pricing policy in the industry. Under changing technological and social situation, regulators exercised this discretion through negotiations and renegotiations with other participants in the process over what would be produced. Within the institutional necessity of financial survival of regulated telephone firms, throughout the separations process, the universal access to basic telephone service appeared to be a consistent social criterion for the cost-setting and price-setting purpose.
From institutionalist point of view, then, separations process, a mechanism to keep basic telephone service at low price, which appears as inefficient cross-subsidization to the neoclassical economists, can be viewed instead as an efficient tool for the preservation of basic rights of citizen access to services regardless of differences in cost of provision or efficient demand. It is consistent with a social goal of fully actualizing social benefits of invention of telephone such as minimizing personal isolation or ensuring access to emergency services. Such an approach to regulation and pricing acknowledges the importance of the following aspects of human life:

socially provided foundations and connections, the social and economic underpinnings and framework of a society that gear it to work for its members, that discourage fragmentation and polarization, for example, and encourage participation, interaction, and coordination; that enhance the links between humans that are the essence of humanity itself” (Miller, 1990, p. 730).

From this perspective, separations process should be evaluated not by asking "does this approach conform to some preestablished pattern?" but by "does it work to enhance human life?" (Miller, 1989, p. 345).

b. Policy Design as Process: Theoretical Development under Station-to-Station View

As already discussed earlier, the station-to-station view of costing and pricing provided the main theoretical and conceptual basis for the separations process. In the station-to-station view, a long-distance call is thought of as going from one telephone (station) to another. From this perspective, toll prices must include a part of the cost of the local exchange because long distance calls require the use of local exchanges on both
ends for connection. This perspective is distinguished from the board-to-board perspective in which a long distance call is viewed as having only one cost element, from the switchboard of one exchange to the switchboard in another exchange. In this model, the same call is broken into parts. The parts between the individual stations and their local exchanges (boards) are considered local; the long-distance call goes only between the local exchanges used for long-distance service.

Since *Smith v. Illinois Bell* of 1930, these two views have been alternatively the primary characterization of the telephone network used by policy makers. The importance of choice between these two perspectives lies in the fact that the legitimacy of cost allocation such as separations, or the existence of a cross-subsidization between interstate and intrastate service, depends on which perspective is used (Weinhaus and Oettinger, 1988, pp. 53-63; Temin and Peters, 1985, p. 201). In this section, I want to explore the rationale of station-to-station model by incorporating institutionalist perspective and show that it has different presuppositions and value orientation from those of board-to-board view which neoclassical economists have identified like "natural law" characterization of telephone network.

Since Veblen, institutionalists have seen technological change as an important factor to bring out opportunity and potential for private power of vested interest as well as for life enhancement. In the presence of constant change in technology and economic relationships, there is high chance that agents with economic power can take advantage of that change so as to immunize themselves from high risks and deflect them to others (Stevenson, 1987; Trebing, 1984). As Commons identified earlier, a fair or reasonable
distribution of risks requires collective action through public institutions such as the
public utility agencies. Telephone industry is an industry characterized by high ratios of
joint to total cost. In this context, "[h]ow the intermeshed costs and benefits of joint
production are to be divided and distributed, and how and by whom these intricate issues
are to be resolved, will have important bottom line consequences" (Miller, 1989). In the
same vein, telephone network development which incorporates new technology, provides
a high chance of risk shifting among service users, or between users and carriers. Facing
such a high risk involved with telephone network development, "[s]hrugging these
matters off as subject to market determination simply begs the question" (Miller, 1989).
Social control is required not to allow such important decision to be made only by the
players "with greatest economic and political clout." In this context, the station-to-station
view can be understood as an important vehicle to prevent an unfair distribution of risks
or burdens.

The board-to-board model supporters argue that the model follows the natural
historical development of network. For example, AT&T used board-to-board accounting
in early years, "reflecting both its initial conception of telecommunications as AT&T
developed from local service to a national network and its corporate organizations" (Peter
and Temin, 1985, p. 215). However, public policy does not have to necessarily follow the
boundary set by historical development. In other words, the risks and the stakes involved
with the development of long-distance line were not limited to that boundary. For
example, being able to receive and send long distance traffic affected the design of the
local exchange and caused more costs than before for local exchange service (Gabel,
1991a, 1995). Unless the usage of long-distance call was evenly distributed over general public, the issue over the responsibility of cost burden seemed to be enough to draw attention of public authority. The Supreme Court decision in *Smith v. Illinois* can be understood in this context. In the presence of "indisputable fact" that exchange property is used both for intrastate and interstate service, for example, Court said: "It is obvious that, unless an apportionment is made, the intrastate service to which the exchange property is allocated will bear an *undue burden* - to what extent is a matter of controversy" (*Smith v. Illinois Bell Telephone Co.*, 282 U.S. 133, 1930; Quoted in Welsh, 1983, p. 5, emphasis added).

Many neoclassical economists overlook this distributional aspect of station-to-station model. To capture the nature of risk distribution in network development, the service definition over telephone network becomes crucial. There can be two conceptions of a telecommunications network, the "facilities network" definition and the "traffic network" definition (Bolter *et al.*, 1984). The facilities network is "...the aggregate of transmission systems, switching systems, and station equipment [i.e., terminal equipment]; it supports a large number of traffic networks" (Quoted in Bolter *et al.*, 1984, p. 376). A traffic network "...is an arrangement of channels, such as loops and trunks, associated switching arrangements, and station equipments designed to handle a specific body of traffic..." (Quoted in Bolter *et al.*, 1984, p. 376). The traffic network definition of a telecommunications network "tends to stress a demand-side approach to the definition of telecommunications services" (Bolter *et al.*, 1984, p. 377). On the other
hand, "the facilities network definition tends to stress a supply-side approach to the
definition of telecommunications services" (Bolter et al., 1984, p. 377).

The service definition from the latter perspective tends to be based on technical
and user characteristic of major facility components that comprise a local exchange
network. Bolter et al. reject the definition based on traffic network perspective on the
ground that the recognition of the identity of certain user groups or the intended purpose
of the usage of the exchange network can be abused by dominant carriers (Bolter et al.,
1984, p. 377-378). For example, "they may use the definition of traffic networks as a
mechanism for implementing price discrimination schemes among users with different
elasticities of demand" (Bolter et al., 1984, p. 377). The access and usage classification,
which have been the most important service concepts in the telephone industry from
neoclassical economic perspective, is based on a facilities network definition. While
those concepts may serve as a basis for a more efficient pricing policy, they overlook the
risk distribution or equity side of network development. However, public policy is also
required to capture the distributional aspect of network development. In this context, the
traffic-based definitions of telephone service can be important constructs for the policy
makers to understand distributional nature of telephone network.

For example, the local exchange network is used to carry out different types of
traffic which require different technical and structural design of network. This network
characteristic has been the primary concern to William Melody and David Gabel. They
argue that the "stand-alone" cost of a network providing only local service would be less
than the costs of the current network that allows long distance calls and enhanced services
to be made as well (Gabel, 1991a, 1995; Melody, 1989). For example, loops designed
only for local telephone would be much less technically sophisticated and costly than
loops designed only for long-distance or enhanced services. Gabel noticed that "long-
distance standards dictated the design of the local network from approximately 1892 to
1983" (Gabel, 1995, p. 155). In addition, "[more recently the engineering requirements of
high-speed data and video services have been the primary factors altering the design of
the local exchange network" (Gabel, 1995, p. 155). Melody, in the same vein, argues that
"[r]ecognizing that the technical standards and cost levels of virtually every component of
the local exchange facilities have been determined by the premium long-distance service,
one would expect that the long-distance service would bear somewhat greater than 50%
of the cost, if costs could be assigned on a cost causation-basis" (Melody, 1989, p. 678).

Contrary to the common economic claim of subsidy based on board-to-board
model such that any contribution of long-distance service to cover the NTS costs of the
local exchange operation is a subsidy, from the above perspective, cost recovery of NTS
costs by long distance rate does not necessarily mean subsidy to basic local service. To
the contrary, recognizing not only that the great majority of the costs associated with
modifying the local exchange network are caused by the technical requirements of non-
basic services, but also that these costs appear as common and joint costs, it is against
"cost causation" principle to assign such common costs as NTS costs across all local
subscribers regardless of their type of use. Furthermore, this cost-causation theory
requires that, "since local exchange service is not the cost driver for the broadband
upgrades, the cost of the upgrades should not be recovered exclusively, or even in large
part, from voice exchange service" (Gabel, 1995, p. 464). Therefore, the introduction of new technologies and new services into the telecommunications requires that the beneficiaries of new services be assigned the costs and basic local telephone subscribers be protected from subsidizing new services.

Given the low incremental costs of adding new services to existing network, however, the neoclassical economic pricing method such as market-based pricing, can lead to "an inefficient artificial stimulation of the rate of introduction of the new technologies" by shifting the majority of the costs to a monopoly basic local telephone service (Melody, 1989, p. 681). The major option for institutionalists under the consideration of cost- causation and potential for cost shifting "involves a fully allocated costing methodology that takes into account the relative benefit derived by each user class from the joint development of the network" (Trebing, 1994, p. 387). In its simplest form, this method subtracts the direct cost of each service from the total cost of the project. The resultant common-joint costs are allocated on the basis of the relative benefit derived. The benefit is equal to the difference between the stand-alone cost of the service and its direct cost when provided over the network.

The above method can be distinguished from the separations method whose cost allocation is based on the relative amount of usage over a particular facility. For example, the former takes into consideration as cost-causer, extra design factors for more sophisticated, higher quality service in a telephone network. Characterized by the arbitrary nature of the weighting factor, the latter is not "a method for allocating costs on the basis of cost causation, thereby obtaining an estimate of the size and direction of
subsidy flows" (Melody, 1989, p. 677). On the other hand, cost assignment based on stand-alone cost may allocate costs among the major service categories so as to "establish a revenue contribution for each class of user that would reflect cost-causation and relative benefits derived from network participation" (Trebing, 1994, p. 387).

As far as we accept the service definition based on the types of traffic rather than facilities, we cannot deny the strong appeal of the argument provided by the above economists, especially in terms of cost-causation and risk or burden distribution. But the nature of cost-causation can be different depending on how we define a service. Neoclassical economists define telephone services based on technical and user characteristics of major facility components. Services defined in this way "do not explicitly recognize the identity of certain user groups or the intended purpose of the usage of the exchange network" (Bolter et al., 1984, p. 378). Most importantly, for the current discussion, the neoclassical economists define access (local loop) to the local network as a separate service. First, they define a service as "something consumers demand and value for the benefits which can be derived from consumption" (Meitzen and Larson, 1992, p. 135). Under this definition, access is a service in its own right because "[e]ven if most customers were not interested in it in order to place calls, many would want it if only to receive calls" (Kahn and Shew, 1987, p. 201).

In spite of this effort to justify access as a service, it is more likely to be true that defining access as a service is to reflect the technical characteristics of access facilities distinguished from other facility components which comprise a local exchange network. More specifically, defining it as a service brings analytic convenience such that the cost
of local access service mirrors the actual facilities used to provide that access service.

Rather than the meaning of access, in this context, Kahn and Shew pointed out, the more important "economic" question is "what is the efficient way of recovering its costs?... in a flat monthly charge, or in charges for usage?" (1987, p. 201). As the characteristic of access facilities shows that costs do not vary as more or fewer calls are made, the efficiency rule demands that price for access service be set in a flat monthly rate. In general, the service classification based on facilities makes it possible to construct a cost function. In neoclassical approach, the access costs and other service costs are represented in the form of a static cost function which transforms the major engineering attributes of local exchange plant into the economist's notion of an abstract technology of production. While this cost function represents the effects of engineering technology and technological change on cost and output, it does not reveal the nature of technology per se.

On the other hand, institutionalist approach raises the question directly about the technology itself embedded in a local exchange network and its change. Knowledge of the nature of the relevant technologies of production and technological change is important since it is "instructive in making some sense out of the resultant fire fights and sieges that occur among the participants in the industries as systems of power are threatened" (Stevenson, 1987). From institutionalist point of view, progression of technological change provides a context where a social concern is addressed to deal with the distribution of the associated risk, of the costs and benefits of change. Once the issue is structured over the nature of technology, its impact on service demand and network
design, and the stakes of participants in the network, the important service concept in neoclassical approach such as access does not play a significant role to construct problem solution.

The service definition of access is to serve for cost recovery independent of the identity of user group or the intended purpose of the usage of the exchange network. On the other hand, the particular concern with the technology embodied in the network draws more attention to the intended purpose of and user group identity in the network since the question raised here is not efficient cost recovery, but the responsibility for the cost imposed on the network by demanding a service which is better served by a particular technology. In short, the major aspect of the problem structured by the latter approach lies not in reaching the hypothetical maximum consumptive potential afforded by current technology and resources (i.e., efficiency), but rather in attending to the conflicts embodied in technological advancement.

While the neoclassical approach structures the pricing problem around the efficiency notion and solves it by conformance to predetermined prescription, institutionalist approach seems to be more historical in that it starts with the observation of development of services which share the same network. Then they observe different services to require application of different technologies for local network design. The technological change is perceived as important when it is incorporated in network modernization or expansion. It can cause unfair risk or burden distribution among network participants. The problem in this context does not arise from the deviation from predetermined pattern, but from changes in the environment which includes technological
advancement and its relationship with stakeholders. Under an environment in constant flux, in general, the direction of the change is determined "by the compromises which persons as members of collectivities are able to negotiate" (Miller, 1978). In the absence of informed input required in such activities, the environment "will be shaped by those with sufficient power to influence public taste and attitudes and the public and private policy makers" (Miller, 1978). In this context, the stand-alone cost test, or cost allocation based on it, is not a tool to achieve a predetermined goal, but a tool to address the problem emerging in the process of network development and modernization, and to provide such an informed input.

The implication of the latter approach in terms of access charge design is obvious. It is unfair to assign the NTS costs to all local subscribers regardless of their types of use since the major portion of the costs are caused by long-distance and other enhanced services. This contention is closely related to the rejection of uneconomic bypass as rationale for introducing end user charges. Under some empirical evidence that bypass is more likely to occur since the telephone companies cannot satisfy the demand from large business customers, for economists who take latter approach, the end-user charges are to shift the burden of local costs caused by business demand to basic local service customers.
c. Behavioral Assumptions of Pricing Side of the FCC Access Charge Plan

(1) Uneconomic Bypass

One central issue confronting the FCC in its design of an access charge plan was "uneconomic bypass." The origin of bypass as a policy problem in telephone industry in the U.S. can be found in the potential behavior of the other common carriers (OCCs) such as MCI under ENFIA tariff (Brock, 1986). Before ENFIA, the OCCs compensated the local telephone companies for their origination and termination of long distance voice services under local exchange tariffs governing business tariffs. On the other hand, AT&T Long Lines was paying, under separations, a higher price for local access. As a result of an AT&T complaint about discriminatory nature of interexchange local access rates, ENFIA tariff emerged as a compromise among AT&T, the BOCs, and the OCCs in 1978 under the FCC auspice. The ENFIA tariff charged a price far above the average cost of all business lines for the access of the OCCs to local exchange office. While most customers had no feasible alternative to using the local telephone company's switched network, the prices for ENFIA lines were high enough to make it potentially profitable for the OCCs to construct special facilities for access to the largest customers. This was the beginning of recognition of uneconomic bypass as policy problem: "prices for the

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8 The particular concern addressed in the FCC access charge plan was "uneconomic" bypass. Uneconomic bypass occurs when a pricing policy causes the cost (to customers) of alternative facilities to be below an exchange carrier's rates but above the carrier's underlying costs of providing the equivalent service capability. On the other hand, economic bypass occurs when the costs for the alternative suppliers of network facilities are lower than the telephone company's cost for an equivalent grade of service (Egan and Weisman, 1986, p. 168).
local line providing long distance access which are far above cost and high enough to make private facilities less expensive for some customers" (Brock, 1986, p. 16).

The bypass possibilities inherent in the ENFIA tariff were greatly magnified by impending AT&T divestiture on January 1, 1984. Under this new market structure, AT&T Long Lines is no longer associated with the BOCs and therefore has a high incentive to bypass local exchange switched access services. Facing this new environment, the central issue confronting the FCC in its design of an access charge plan was the recovery of NTS costs allocated to the interstate toll service under existing jurisdictional separations procedures. In particular, the existing recovery method of NTS costs through "usage-sensitive" rates for switched access was believed to provide a powerful incentive for large-volume toll users to circumvent or bypass the local switched network. The relationship between bypass and NTS cost recovery presumes that customers concerned with an economic choice between alternative means of accessing interexchange services will choose on the basis of relative costs. In the presence of "the ability separately to purchase exchange access" which creates a new market for the origination and termination of interexchange traffic, it invites bypass to continue to charge higher interexchange local access rates than cost by imposing NTS costs on interexchange carriers. "Recognizing the market force acting on local exchange carriers, the FCC concluded that recovery of NTS costs from interexchange carriers not only is economically inefficient pricing but also is unsustainable" (Sitcher, 1987, p. 104).

The perception that existing NTS cost recovery can induce large users to bypass the local network led the FCC to be concerned about the potential financial damage to
local telephone companies (Kowal, 1985, pp. 328-329). Since potential bypass customers include large businesses that spend their money in communications and information costs, the local exchange companies will face a substantial revenue loss if big business customers abandon the traditional telephone network for bypass networks. To regain the lost revenues, the local exchange companies would be forced to increase local rates for residential and small business customers. This rate increase would force off some customers who are not able to pay new rate. Then the local companies may be forced to implement another rate increase in order to recover additional revenues lost from service discontinuations and continued bypass. The cycle, called "death spiral," continues, eventually forcing the local telephone companies out of business. In this context, bypass of the local switched network was perceived as an imminent threat to universal service as well as the local exchange companies's financial viability.

As the goals of access charge plan show, under this threat, the FCC found the source of problem to be the existing cost recovery method. As described in the first section of this chapter, the FCC's original intention in terms of access charge design was to recover all NTS costs allocated to interstate jurisdiction from end users through subscriber line charge (SLC). In terms of a rationale for its introduction, however, the SLC decision was not so much grounded in the extant magnitude of bypass practice, as in "the economic logic that the existing cross-subsidy of local service rates could not be sustained in a competitive marketplace, along with some anecdotal evidence relating to existing bypass activity" (Sitcher, 1987, p. 108). The economic logic incorporated in SLC implies not only that "those costs associated with the local exchange network are
fixed - that is, they do not vary with usage," but also that "the traditional practice of allocating a share of NTS costs to long distance service provides a subsidy to the local network" (Mansell, 1986, p. 151, emphasis added). 9

As noted earlier, political pressure forced the FCC to retreat from its original plan of recovering all NTS costs from end users. As a result, those interstate NTS costs not recovered through end users were planned to be recovered from the interexchange carriers through the carrier common line charges (CCLC). Controversy over using these elements to recover NTS costs, and their relationship with the magnitude of bypass, invited numerous studies and analyses about the source, magnitude and impact of bypass (Bolter et al, 1990, pp. 230-244; GAO, 1986).

Assuming "full and fair" competition in access markets and price as the only important factor to affect a bypass decision, for example, both Gerald Brock's research in the FCC's Office of Plans and Policy in 1984 and Bell Communications Research model in 1984 predicted bypass would be a major problem threatening the revenues supporting the local public switched network (Sichter, 1987, pp. 109-114). Using 1984 telephone industry data, more specifically, the BCR model evaluated how bypass might affect telephone company revenue and came to an estimate of a $ 10 billion decrease in interstate access revenue in 1984. An estimate based on the FCC model also showed a $ 4 billion decrease in potential revenue due to bypass in 1984 (GAO, 1986, p. 56). As predicated on the assumption that the primary force leading to bypass is price differential,

9 As the previous discussion under station-to-station view implies, the choice of the word "subsidy" can be very much value-laden. Depending on one's service concept construction, the outcome of subsidy direction can be totally different.
the implications of those studies were that most bypass and revenue loss would be eliminated by the imposition of end-user charges instead of payments effectively being made by toll services for their utilization of jointly used NTS local exchange facilities (Bolter et al, 1990, p. 231).

By focusing only on price factor, but overlooking other important factors in bypass decision, however, the results of those studies, and other local exchange company studies of the same type, were criticized as lacking relevance in reality. Those other important factors include service quality, "customer reluctance to be locked into any one interexchange carrier," and "concomitant role of responsive telephone company service in reducing bypass" (Sichter, 1985, p. 109; Bolter et al, 1990, p. 231-232; Schwartz, 1985, p. 90-91). By disregarding those factors, these studies "do not forecast how much bypass will occur but only estimates how much could occur if customers considered only relative costs" (Sichter, 1985, p. 109).

On the other hand, a study conducted by the National Regulatory Research Institute (NRRI) in 1984 pointed out that both price and service are important factors in a customer's decision to bypass the local switched network, and that bypass is not a major threat to local telephone company revenues. More specifically, The Bypass Issue: An Emerging Form of Competition in the Telephone Industry described its doubt about the impact of bypass on the local telephone companies as follows:

The conventional wisdom is that a company that bypasses reduces its use of all but the most basic local service. However, there is substantial question about the extent to which bypassers do, in fact, reduce their use of telephone company services.

While every telephone company service has been reduced by some
bypassers, in no case have all bypassers with the equivalent service capability in their bypass system reduced their use of telephone company services. This might imply that some bypass systems have been built to accommodate either growth in existing customer needs or new services needed by the customer (Racster et al, 1984, p. ix).

In the similar vein, studies by independent consultants and large corporate users have found bypass to be a growing phenomena, but not the threat that the telecommunications industry has reported (Mansell, 1986, pp. 153-154; Bolter et al, 1990; pp. 230-231; Schwarts, 1985, pp. 88-89). Large telecommunications customers and user groups commented that bypass systems are most often selected in order to obtain higher service quality, and that bypass systems are not in widespread use for all the communications needs of customers. For example, RCA Communications Inc. states that "bypass occurs when the network [LEC] is not capable of meeting customer needs or when it is not economical for customers to use the network" (Quoted in Mansell, 1986, p. 149). A study by the Bethesda Research Institute found "responsiveness to customer 'needs' (for example, availability, flexibility, reliability) is the most important factor in making these types of [bypass] decisions" (Quoted in Mansell, 1986, p. 154). In general, the emphasis on service quality as what motivates use of alternative services rather than price consideration leads to different conclusion from the latter's such that most bypass decisions have been predicated on the inability of the telephone companies to satisfy the needs of corporate users. Furthermore, non-exchange company studies generally found that the extent of bypass is not so great as found in local telephone company sponsored studies (Bolter et al, 1990, pp. 237-239; Schwartz, 1985, pp. 88-97).
The responses from the economic science communities to the bypass problem are diverse as much as the prediction of magnitude of uneconomic bypass. Probably more convinced by bypass studies based on price differentials, for example, John Wenders, a well-known neoclassical economist in the field of telecommunications policy, argues that the fact or the realization of bypass serves an important function to "make the political/regulatory process choose to implement an economically efficient way of dealing with the industry" by making "the alternative, the continual loading of NTS costs onto toll prices, look worse" (Wenders, 1986, p. 179). From his perspective, bypass cannot be "uneconomic," but a sign of competitive process to serve efficiency by attacking high toll prices set by "regulatory cartel."[10] Unless there is an unloading of NTS costs from toll services, getting toll prices down to the vicinity of cost, bypass pressure will be used to bring it about. As long as bypass acts to undermine an inefficient pricing policy, it would be anticompetitive and inefficient regulatory intervention to prohibit or tax bypassers.

On the other hand, Dennis Weisman and Bruce Egan, who are not only neoclassical economists but also affiliated with telephone companies as researchers, insist that under the burden imposed on local exchange companies, such as "the promotion of universal service" and "the carrier of last resort obligation," competition will not lead to "the same state of economic efficiency" as under perfect market condition (Weisman and Egan, 1986b, p. 272). For example, bypass under asymmetric regulation tends to be a

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[10] The focus on regulatory cartel by Wenders distinguishes himself from the neoclassical economists who are affiliated with private telephone companies as researchers. For Wenders the regulatory cartel arrangement consists of *the industry* and its regulators, not just regulators.
waste of resources since it does not reflect economic cost. In order for competition to work, they argue that the local telephone companies should be deregulated to make a "level playing field" in the interexchange access market. One of their proposals to fix its bypass problem during the transition to deregulation is to grant the local companies pricing flexibility in the form of a volume tapered rate schedule to keep large business customers on the switched network (Egan and Weisman, 1986; Egan and Halprin, 1987; Einhorn and Egan, 1987). Otherwise, the bypasser should be prohibited or taxed in the form of "default capacity tariff" in order to allow the local companies to carry out social obligations, and prevent bypassers from investing unnecessary resources in sunk facilities (Weisman, 1988).

Unlike the previous economists who are more concerned with CCLC portion of FCC plan, Robin Mansell raised a question about the legitimacy of SLC by asking whether the telecommunications bypass threat is "real or imagined" (Mansell, 1986). Based on many bypass studies, he finds empirical evidence that there is "little foundation for the urgent introduction of policy measures in the form of end-user access charges" (Mansell, 1986, p. 155). The threat of bypass is used to justify local exchange plant modernization programs that are caused not by demand for basic local telephone service, but by demand for specialized or enhanced services. As far as bypass occurs when the local companies cannot satisfy demands from the long distance carriers and big businesses, the local companies upgrade the network to meet those demands. According to cost-causation rule, the long distance carriers and large business customers have to pay the share of the costs that they cause to be incurred for the local exchange facilities they
use. In this context, the SLC is seen as a means for the telephone companies and big 
business users to impose their share of burden of network upgrading and modernization 
on all end users.

In the U.S., "bypass never materialized to the extent feared by the local-exchange 
carriers, justifying a slower expansion of the SLC rather than had been called for in the 
early 1980s, when the FCC first addressed the bypass issue" (Brenner, 1996, p. 188). 
More recently two economists expressed their observation of the progress in local 
network bypass as follows: "[T]he bypass threat appears to have been exaggerated, 
lending support to regulatory skepticism regarding the current dire predictions of revenue 
loss from local exchange competition" (Lehman and Weisman, 1993, p. 22). Aimed at 
reducing carrier access charges while raising local service rates, the predictions of very 
large revenue losses for the LECs turned out to be "rather naive and myopic." Lehman 
and Weisman provide three explanation why the bypass threat has not materialized. 
Economically, first of all, AT&T as a largest potential bypasser had to take into 
consideration rate-of-return regulatory constraint. Even though it had made more profits 
by bypassing local exchange switched network, it would have had to refund excess 
earnings or reduce rates to meet the regulatory constraint. Second, strategically, 
interexchange carriers did not want the local exchange companies enter the long distance 
market as a result of financial collapse. For example, "if AT&T were to engage in large- 
scale bypass, it would seriously weaken the premise of a local exchange bottleneck, 
clearing way for BHC [Bell Holding Companies] entry into the interLATA long-distance 
market" (Lehman and Weisman, 1993, p. 22). Finally technological options for bypass
turned out to be more limited than predicted due to inherent problems of new technology such as microwave. In addition, competitors of AT&T in long distance market had to concentrate on establishing their own interexchange networks rather than constructing their own local exchange facilities.

While the previous vision of bypass was premature and failed to recognize the actual conditions that would slow its realization, Lehman and Weisman expect the current rapid change in technology and large structural change to accelerate the speed and scope of the bypass. For example, it is predicted not only that rapid changes in technology will make facilities bypass economical, even for moderate-sized customers, but also that the introduction of price-cap regulation provides AT&T with more incentive to bypass local exchange network (Lehman and Weisman, 1993, p. 22-23).

The U.S. experience shows how difficult it is to structure bypass as a policy problem in practice. The only kind of bypass threat which is policy-relevant and that would justify the imposition of end-user charges is "uneconomic" bypass. It is not necessarily an important policy concern that a customer bypasses the local switched network because it finds an alternative to the same service at a lower cost than the exchange carrier's, or finds a service to be superior to, or not even offered by, the exchange carrier. But in reality, it is hard to distinguish between economic and uneconomic bypass. The empirical studies often show conflicting result such that for some researchers major bypassers leave the network because the price is too high, but for others they leave because the local company does not provide what they need at any price. For the former, rate "rebalancing" through end user charges such as SLC is a solution to
bypass problem. As long as the CCLC remains as an element in the access charge plan, the former will characterize bypass as an uneconomic policy problem.\textsuperscript{11} For the latter, bypass problem and solution have been exaggerated and effectively shifted costs caused by large business users to general end users. From this perspective, "the move toward policies that support end-user access charges is a reflection of the threat of changes in technology and institutional structure to established interests - the LECs, long distance carriers, and large business users of telecommunications services" (Mansell, 1986, p. 152). As long as SLC remains as an element in access charge design, it will be unfair or "unreasonable" rate to end users. Aside from these various perspectives, it is clear that the original FCC view of access charge took the potential uneconomic bypass problem seriously, and saw rate rebalancing as an efficient and reasonable policy intervention.

\textbf{(2) Universal Service}

The SLC approach was intended to keep large users of long distance service on the network and prevent a threat to universal service. The importance of uneconomic bypass as a potential threat to universal service was closely related to changes in the meaning of universal service (Hills, 1989, p. 132; Aufderheide, 1988, pp. 87-90). By early 1980s, for example, the telephone penetration level reached more than 90% of households in the U.S. This was regarded as having achieved "universal service" by

\textsuperscript{11} Pricing for traffic-sensitive (TS) elements can also cause bypass since these prices are based on fully distributed costs rather than marginal costs. But the recovery of TS costs based on usage-sensitive rates is less controversial since unlike NTS costs, the TS costs are believed to be usage sensitive. Furthermore, TS costs are considered relatively small for NTS costs.
many observers so that discussion has subsequently tended to focus on "drop-out" rates, rather than on "an expansionary conceptualization of the term" (Hills, 1989, p. 132).

The emergence of SLC can be understood as a result of such a change in the perception of universal service goal. Most importantly, the FCC appeared to adopt more narrow view of universal service as "avoiding actions that would cause a significant number of local exchange service subscribers to cancel that service" (Third Report and Order, 78-72, March 11, 1983; Aufderheide, 1988, p. 87, emphasis added). This working definition by FCC can be contrasted with the more proactive or expansionary view of universal service by state regulators and consumer groups. The latter view was expressed in such a way that "[t]he concept of universal service stresses the full participation of the citizenry, regardless of their ability or willingness to pay"; "[u]niversal service involves both making it possible for those that do not now have telephone service to get it, and preventing current telephone subscribers from having to drop service" (Quoted in Aufderheide, 1988, p. 88).

Closely related to FCC's working definition was how the FCC perceived the behavior of general end users in terms of telephone subscription. In general demand for local telephone service has been characterized highly price inelastic by economists (Perl, 1982; Gordon and Haring, 1984). Given the working definition of universal service, and the empirical evidence about inelastic local service demand from economists, the FCC's decision of SLC was predicated on the assumption that the SLC would have no significant effect on universal service. That is, the NTS cost recovery from toll service was supposed to become largely irrelevant to the goal of universal service in the sense
that recovery method would not be needed to induce the vast majority of subscribers to stay on the network. Furthermore, the goal of universal service could be more efficiently accomplished through direct subsidies of high cost telephone companies and to waive the application of end user charges to low income subscribers.

The FCC took this approach in the form of "FCC Life Line Program" and "Link-Up America" (Dordick and Fife, 1991). The former allows a total reduction in fixed charges for telephone service to offset the federal SLC for low income households satisfying a means test, subject to verification. The federal and associated life line programs are funded through charges paid by interstate ratepayers and reflect matching local rate reductions approved by state utility commissions. On the other hand, Link-Up American was established in 1987 to partially offset high installation charges which prevent subscribership. The empirical studies show that those telephone assistance programs have had a significant impact in maintaining penetration among low-income families (Dordick and Fife, 1991).

Many supporters of rate rebalancing pointed out that despite sharp increases in SLC, universal service was not harmed in the least. According to early prediction, the SLC would cause a nationwide decline in telephone penetration of as much as eight percentage points (NARUC v. FCC, 737 F. 2d, p. 1108). This predicted dropoff did not happen and the rate of telephone penetration has reached 93.6 percent of the nation's households as of March 1991 (Kellog et al, 1992, p. 486).
d. Policy Design as Process: Theoretical Development under Board-to-Board View

(1) Interconnection Pricing in Structurally Separated Discrete Market

By the introduction of SLC, the pricing side of the FCC access charge plan has been interpreted to take the board-to-board philosophy. In the same vein, the neoclassical economic approach has taken consistently the board-to-board or discrete market view, and provided pricing theories. These theories will be briefly reviewed and discussed in terms of their problem structuring characteristics below. The theories will be discussed in two different contexts. The first context is the case where toll carriers are totally separated from local carriers, like divested InterLATA market in the U.S. As the most recent theoretical development in the neoclassical economic tradition shows, the presence of an integrated essential facility owner competing with nonintegrated carriers has implications for interconnection pricing. I will separately present the theory and compare it with the most likely approach from structuralist point of view. While this discussion is most appropriate for the interconnection pricing for intraLATA toll competition in the U.S., it becomes relevant to the federal policy as the local exchange carriers are expected to participate in interLATA toll competition.

Under the board-to-board philosophy, a long-distance call is viewed as having only one cost element, from the switchboard of one exchange to the switchboard in another exchange. As noted earlier, most neoclassical economists who follows the board-to-board philosophy dispute the station-to-station view by arguing that the demand for access itself causes the costs and toll or local usage does not increase these costs (Kahn, 1984; Kahn and Shew, 1987). In contrast to the station-to-station philosophy, this view is
based on the complementarity of demand among access, local usage, and toll usage. But
demand complementarity does not mean that cost sharing is appropriate, nor does it mean
that separate markets should not exist for each of these three elements of a toll call.
Access lines, local usage and toll usage are used, not produced together. Their
connection is on the demand, not the supply side (Wenders, 1984).

In this view, the separation of access and usage prices known as a "two-part tariff"
is appropriate because telephone service involves two components, access to the switched
system over non-traffic sensitive equipment and network usage over traffic-sensitive
equipment. In this context, efficient prices require a flat rate for network access and
incremental cost-based prices for all local and toll usage. From this perspective,
interexchange access service or interconnection service is not distinguished from other
local access and usage service. Therefore, same rule (i.e., two part tariff) is applied to
access charges or interconnection prices (Bolter et al, 1984; Duvall, 1984. Kahn and
Shew, 1987).

For neoclassical economists, the departure from this rule represents the policy
problem. Unlike institutionalists who take changes in the environment as a source of the
problem and provide solution to it, the authority of neoclassical prescription is based on
the law-like deductive method of its production. A problem is recognized when a
practice or behavior does not conform to the neoclassical prescription, and is solved when
a practice or behavior is brought into conformance with the prescription.
(2) Interconnection Pricing in a Discrete Toll Market with a Vertically Integrated Carrier

The two part tariff solution is considered economically the most optimal one for interconnection pricing in a carrier access market where local exchange companies are structurally separated from toll companies. On the other hand, in an industrial organization where a local exchange carrier supplies access to interexchange carriers while simultaneously competing with them in toll services, the interconnection pricing issue becomes complicated, as the LEC provides the input for use not only by itself, but also by its rivals in the market for the final product (i.e., retail, or downstream market). In this context, an interconnection pricing rule, called "efficient component pricing rule (ECPR)" was recommended by Baumol and Sidak (Baumol and Sidak, 1994). Under this rule, the supplier of interconnection services is entitled to charge its rival the sum of its interconnection cost and its opportunity cost, where the latter is defined as the contribution to overheads which the supplier of interconnection service would have made had it continued to sell the output.

The inclusion of opportunity cost in interconnection pricing is based on the following principle:

Under a competitive market standard, when a firm provides an input or component for another firm and as a result suffers some loss of profit that it would otherwise have earned, then the supplying firm "must be permitted to price the article in question at a level sufficient to compensate it for the profits it is forced to sacrifice because of its supply to other firm" (Farmer, 1994, p. 19).
Baumol identifies this compensation for the profits as the opportunity cost of the provision of the input, which should be paid by downstream competitor as part of the interconnection price. In short, opportunity costs represent profit contributions that the monopolist forgoes by selling interconnection service rather than downstream market services.

The ECPR requires and ensures that the outcome of the competition will be determined by the relative efficiency of the rivals in downstream market (i.e., toll market). As a result, the responsibility for supplying the contested service will be distributed among rivals in such a way to minimize total costs. Therefore, if the only aim of interconnection pricing is cost minimization at a given level of output and prices, the ECPR is appropriate. A new entrant will come into a market only if its total costs can beat the incremental costs of the incumbent in the competitive segment. Since it is revenue neutral for the incumbent, it eliminates incentives for incumbents to keep rivals out (Baumol and Sidak, 1994).

The claimed optimality of the ECPR is based on explicit or implicit assumptions such as homogeneous downstream toll market, competitors as price takers in the toll market, and no fixed costs for competitions (Mitchell et al., 1995, p. 100). Under the existence of these preconditions, the ECPR is to ensure that the retailing function in downstream market subject to competition is performed by the most efficient of the rivals. On the other hand, it has been recognized that the ECPR does not fulfill other important functions of competition even under those assumptions. For example, one function of competition is to determine prices. Since it seeks to achieve efficient use of
inputs but not competition in the sale of the final products, the ECPR provides no tool to improve final output pricing (e.g., driving prices for final product to marginal cost) (Michell et al., 1995; Albon, 1994; Farmer, 1994, Tye, 1994). Unless we assume that the price the competitors in downstream market take as given is optimal, the efficient component pricing preserves the allocative inefficiency inherent in the preexisting price structure.

Like the Chicago school prescribes the maximization of net efficiency gains as the only proper antitrust policy goal, in spite of the lack of direct concern with allocative efficiency, the ECPR may be justified on the basis of net gains between allocative and productive efficiencies. But once we take more broad interpretation of antitrust goal of interconnection pricing policy, the effectiveness of ECPR may be further limited. The economists in structuralist tradition see more broad social function of competition. For them, the antitrust goal of interconnection policy is to supplement or supplant imperfect regulation with competition. From this perspective, "competition is to be introduced into a market dominated by an inefficient incumbent with heretofore insufficiently regulated monopoly rights" (Mitchell et al., 1995, p. 101).

While the ECPR assumes the perfect regulatory intervention or perfect competition (or contestable market) for efficient pricing of final product in order to draw optimal efficiency formula, economists in structuralist tradition see more imperfect markets and regulatory conditions, and a need to ensure effective competition in order to correct imperfections. In this context, the structuralist question of interconnection pricing might be expressed as follows: what kind of interconnection pricing is likely to be "if
regulators wish to encourage competitive access as a means of achieving effective competition in the market for the final product?" (Tye, 1994, p. 207). The ECPR, while securing productive efficiency, by "[i]ncluding opportunity cost of the regulated firm in the price of access to new entrants, would forever frustrate this goal" (Tye, 1994, p. 210).

The nature of the most likely counter proposal made by structuralists as an alternative to the ECPR seems to be well represented by William Tye's "standard of competition on equal terms" (Tye, 1994). He explains it as follows:

> Competition on equal terms means in the present circumstances that ownership of a bottleneck facility should be competitively neutral: ownership of such a facility should convey neither a competitive advantage nor disadvantage. In short, (1) fix if only where it is broken; (2) do not allow a breakdown of effective competition in one part of the regulated industry to infer the other parts; (3) minimize the scope of regulatory intervention (Tye, 1994, pp. 216-217).

While under the ECPR, the competitors in downstream market have no chance to recover their sunk costs, a standard of competitive access on equal terms is more likely to allow the competitors to recover their sunk costs.\(^\text{12}\) In this context, the most noticeable rationale

\[^{12}\] This pricing proposal is made in the context of railroad industry. But the central tenet of the proposal seems to represent the structuralist view pretty well and be applicable to the telephone industry.

\[^{13}\] Tye illustrates this case in terms of railroad industry where the competitors face the integrated upstream monopoly as a result of merger policy. The railroad case is different from the telephone industry since in the former, nonintegrated competitors invested in their sunk cost facilities before the merger was made. Under such circumstance, "[r]egulation of post-merger competitive access should be designed to afford the parties the protection they would have obtained through contracts before sinking costs, knowing that a merger would occur" (Tye, 1994). The standard of competition on equal terms demands fair chance for non-integrated competitors to recover their sunk costs. While Tye did not mention about its applicability in other industries, the standard's basic tenet would not seem to change in other industries.
for opposition to the provision of competitive access on equal terms has been that such policies would subsidize inefficient competitors to stay in the market (Kleit, 1991; Kahn and Tayler, 1994). Competition on equal terms allegedly would be "wasteful" because there would be no assurance that the lowest incremental cost firm would prevail in the downstream market. Although the competition on equal terms may have some negative effect on static productive efficiency, on the other hand, for structuralists, the efficiency losses are probably small and outweighed by efficiency gains in other, more difficult to measure, areas. For them, as discussed in Chapter III, interconnection pricing rule to construct effective competition in final product market will serve as a major vehicle not only to produce allocative and dynamic efficiencies but also to achieve other social goals.

Given institutionalist perspective discussed under station-to-station view and the above two approaches, we will find that the regulator must make some kind of value judgment about where to position himself or herself. The neoclassical economic analysis cannot tell us how to choose between these rival policy alternatives. While the appeal of efficiency and the logical power of neoclassical economics cannot be denied, it does not follow that we should opt for efficiency to the exclusion of other social values such as redistribution or consumer protection. The choice from these competing values will rather depend on the social preferences that emerge from political process.
4. Normative Assumptions of the FCC Access Charge Plan

a. Analysis of Social Welfare in Valuation Process

The normative assumptions of access charge plan represent a theory of social welfare or well-being, or public interest. As the plan did not emerge as a discrete social choice, but as a form of redesign of previous costing and pricing practices, its normative theory can be analyzed in terms of a continuum of instrumental valuation process. Taking an instrumental valuation approach presumes that the locus or place of origin of values is in the actual social process. Rather than being a matter of subjective feeling or introspection, in other words, valuation is a matter of action or of modes of behavior carried on in the context of the real, cultural world (Gruchy, 1987). Contrary to the neoclassical economic perspective, in this process, there are no preconceived norms such as the values of the competitive market toward which the society inevitably try to move the system (Klein, 1979). Even though the perfect market model may include the notions of efficiency and productivity, it cannot possibly encompass all the evolving norms.

Universal service is such a norm that has evolved through a social process, that even perfectly competitive market may not enclose. Even though it was not Pareto optimal by the neoclassical economist standard, the old universal service mechanism was reasonably well supported by then-prevailing norm in the U.S. It also was the product of a conscious social and political judgment about the relative importance of developing and maintaining local versus long distance service. In this process, disregard of Ramsey or other pricing efficiency should be seen not as a rejection of efficiency but as a conscious social choice to achieve other social values. Furthermore, it should be noted that the
value criteria embodied in the social choice were not externally imposed as some “self-evident” metaphysical ultimate ends. Instead, they arose from a particular problematic situation.

A problematic situation arises when an individual or a society finds something about it that is "undesirable" (Chisholm, 1996). However, "what is judged undesirable varies across individuals, given their models of expected outcomes, which depend upon both their value premises and their expertise" (Chisholm, 1996). Recognizing that one's particular understanding of a problematic situation is influenced by his cognitive map which is also affected by his value premise and expertise, it is very helpful to understand the cognitive map and value premise with which the early regulators structured problems and created solutions so as to achieve universal service in the U.S.

For the early development of universal service in the U.S., the institutionalist perspective seems to provide the most plausible approximation to the regulator's cognitive map and value premise. In general, it has been argued by institutionalists that if the real, as opposed to pecuniary, value of a service or commodity is to be enhanced in society, then it is necessary to do more than promote free trade or competition. In this context, institutionalists see administrative regulation as an important tool to accommodate the real use value of a service that contribute to the enhancement of the individual's and the community's well-being. The pursuit of universal service was more likely to be a result of early regulators' emphasis on real use value of basic telephone service.
In terms of values related to commodities and services, as discussed in Chapter III, institutionalists paid much more attention to the concept of use value than market or pecuniary value. The early institutionalists such as Veblen argued that utility analysis should begin with human beings as biological organisms with definable needs and consider the objective question of the mixture of goods and services that would maximize a person's productivity. From this perspective, utility was defined as the power or quality of a good to be "serviceable" to the individual and the community and to provide for the survival of both, rather than the power to provide satisfaction to the individual (Gruchy, 1987, p. 68). The test for a product's value should be whether it enhances "human life on the whole - whether it furthers the life process taken impersonally," rather than how it satisfies the needs of some particular individual (Veblen, 1967; Quoted in Gruchy, 1987, p. 67). In short, the basis of use value of a service lies in the serviceability to the community.

Contrasted with "subjective welfare judgment" where there is no need to investigate the concept of use value as a rational person knows best what is of value to him, institutionalists draw more attention to "objective welfare judgment." This concept is based on the assumption that human beings are developing biological and social organisms with certain common needs. Furthermore, unlike neoclassical economists who treat one's preference as exogenous, the objective welfare judgment presumes that preferences are endogenous. For example, similarities of preferences or common needs are often a product of similarity of environment. Therefore, common survival needs can be inferred from observations of the environment itself (Hovenkamp, 1994). The role of
preference endogeneity becomes more prominent when a policy is concerned with serviceable use value.

Universal service can be seen as a product of an objective welfare judgment based on the use value of basic telephone service. Even though basic telephone service has not always been essential for human survival, regulators could have inferred presumed preferences for it from the environment. For example, the observation of a technologically advanced environment could have led regulators not only to presume the common preferences for the basic telephone service and make judgments about its serviceability to human well-being, but also to influence our tastes such that we consider it a necessity rather than an option. In this sense, the real value of basic telephone service can be seen as socially determined by its serviceability to community. Minimizing personal isolation, or ensuring access to emergency services, are some examples of serviceable use value of basic telephone service which are social but might not be subject to precise quantification as in neoclassical welfare economics.

Taking the cognitive map and value premise of institutionalist as surrogates for those of regulators involved with universal service development in the U.S., we can better understand the policy choice of separations procedures. Once recognizing the importance of socially derived use value of telephone service, under the changing technological and social environment, the policy problem can be structured around the opportunities that exist to increase access to the telephone service as well as to prevent individuals from dropping service. The application of the use value criterion from the institutional perspective rests on the value judgment that the use value criterion is superior to the
alternatives such as pecuniary or market value. Therefore, the neoclassical economic meaning of "welfare," which is restricted to those things capable of being bought with money and to those choices that reveal themselves through market transactions, becomes less relevant to a choice among alternative courses of action. On the other hand, the term "well-being," distinguished from the economic term "welfare," of a community becomes more prominent in an effort to reflect use value in policy judgment.

Until the emergence of access charge plan, universal service had been an consistent instrumental value (i.e., ends-in-view) in cost-setting and price-setting decision making. Separations process was one of the most important instrumental means to achieve that ends-in-view. However, the introduction of a new strategy close the gap between use value and market value by restoring a competitive order brought out conflict between the previous instrumental value and the new values which competitive process is supposed to accommodate. It is important to note that an essential part of the evolution of separations policy was a crucial structural condition of the traditional telephone industry: the absence of any significant degree of competition. The new problematic situation arose as a consequence of the radical change of the industry structure from a monopolistic, integrated structure to a potentially competitive and pluralistic one. In this context, the previous institutional choice of separations and settlements was seen to deviate from this new norms, and uneconomic bypass was considered as the symptom of this departure from the norms.

The U.S. experience shows that in the presence of growing toll service competition and the divestiture of the most dominant integrated incumbent, the FCC
recognized potential uneconomic bypass as the fundamental public policy problem. It saw the source of the problem as the previous cost allocation and recovery mechanism. More specifically, it was assumed that the problem arose because the traditional costing and pricing method created an incentive to bypass the exchange network even where it is cheaper mode of service delivery. In response to the problem, the FCC reduced the so-called subsidy of local exchange service by interexchange service users by reallocating some of the fixed costs of local access lines from interexchange to exchange service. That is, shifting the burden of the NTS costs recovery from interexchange usage to end-users was seen as the obvious solution for countering the uneconomic bypass threat. The introduction of SLC indicated the FCC's implicit recognition of a discrete market model of the industry as the basis for conceptualizing the problem of local access compensation. Yet this solution inevitably invited conflict with another fundamental public policy issue - universal telephone service. Much of the concern with and criticism of the FCC's access charge plan centered on the potential effect of end-user charges on the affordability of basic local exchange telephone service. Once the emphasis in universal service shifted to the drop-out rate of telephone subscribers and the market demand analysis showed price inelasticity of local service, however, the expected "loss" in universal service seemed to be more acceptable to federal regulators given the other gains expected from the SLC implementation.

The value judgments reflected in the introduction of SLC were more likely to focus on social welfare as defined and advocated by neoclassical economists. The factors the FCC considered important to its decision were mostly cost and price elements as
measured in the marketplace. The reduction of uneconomic bypass and the minimization of disconnection of telephone service were all warranted on the basis of increasing efficiency. In short, in the FCC decision, the problem was structured and the solution was selected on the basis of individual reactions to prices, that is, revealed preferences.

This bias inevitably invited conflict with another important policy concern, which asks not "how will a utility-maximizing individual responses," but rather "what maximize the well-being of those living in a particular society" (Hovenkamp, 1994). The responses from the Congress, consumer groups, and state regulators to the original access charge plan should be understood in this context. For example, the District of Columbia Public Service Commission argued that an adequate measure of the impact must include "the overall effect of increased rates on subscribers...[which] includes what the subscriber gives up to keep his or her telephone, known as the loss in 'well-being'" (Quoted in Aufderheide, 1988, p. 88, emphasis added). This loss in well-being, "while nonquantifiable or quantifiable only in an impressionistic sense, ha[s] the potential to be far greater than the sum of losses to the individuals involved and substantially in excesses of losses attributable to allocative inefficiencies associated with the preservation of that social network" (Miller, 1985). These concerns forced the FCC to compromise its original plan which intended to impose full interstate NTS costs on end users.

The impact of FCC access charge plan seems to be very much inconclusive since uneconomic bypass did not happen to the extent the original FCC plan and LECs direly predicted and proposed as main rationale for full imposition of interstate NTS costs on
end users. The unrealization of uneconomic bypass can be interpreted in various ways. For example, from the perspective of seeing SLC as unfair imposition of cost burden on end users, the bypass was exaggerated to benefit "captains of industry." On the other hand, for someone who takes rate rebalancing as an inevitable step under competition, it might be asserted that the bypass has not been exacerbated because of introduction of SLC even though original plan of full imposition of the NTS costs on end users has not been implemented due to political pressure.

In addition, the decrease in subscription rate was not realized as a result of the success of other policy measures such as Link-Up America and above all, inelastic demand of local consumers. But whether the individual consumers' well-being has been increased as a result of SLC can be a moot point. While an economic measure can show quantitatively the increases in social welfare from the introduction of SLC, it does not mean all consumers benefitted from the rate reduction in long-distance service following decreased carrier access charges. The economic welfare models implicitly assume that a dollar loss and a dollar gain to different consumers have offsetting impact. But this

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Rose (1992) characterizes the first stage of lesson-drawing as finding a program that "works"; a program works if it has been implemented and remains in effect. The U.S. access charge plan had been implemented and remained in effect with some modification until the most recent change in market structure. Given the original goals such as prevention of uneconomic bypass and preservation of universal service, the plan can be said to have been very effective. But whether the original FCC behavioral assumptions of the plan were right or what makes access charge plan effective is a different question since, depending on one's perspective, the failure of full actualization of uneconomic bypass could be attributed either to the compromised end user charges or to the other institutional or service quality factors.
notion of social welfare is clearly odds with the notion that politics revolves around who
gains and who pays. For example, Horwitz describes this aspect as follows;

[In contrast to 40 percent increase in local rate since 1984], long-distance
rates have dropped nearly 30 percent during that same period. Yet
according to AT&T figures complied in 1984, just 10 percent of
residential users make over $25 worth of long-distance calls per month;
just 14 percent of business users make over $50 worth of long-distance
calls per month. It is these users who benefit from deregulation. Any
assessment of the divestiture which claims that the increase in local
telephone rates will be balanced by a corresponding decrease in long-
distance rates fails to recognize the vast difference in user classes
(Horwitz, 1989, pp. 274-275, emphasis in original).

b. Summary of Problem Structuring Analysis

The economists in the U.S. who are consistently concerned with the distributional
aspect of rate rebalancing are institutionalists. As structural logic analysis in terms of
separations policy as well as problem structuring analysis show, the institutionalists have
provided a consistent view which sheds light on the politics involved with technology,
emphasized more the distributional aspect of telephone network development, and drew
attention to the objective welfare judgment to enhance the well-being of community as
well as individual. In particular, they show how the problem can be differently structured
if we incorporate a more concrete aspect of technological evolution in the policy analysis
instead of making it discernable only in an abstract econometric estimation of cost
function. From this perspective, contrary to the FCC assumption, end user charges are
seen not as the solution but as the problem since they unfairly and unreasonably burden
general consumers and benefit large business user groups and telephone carriers. In spite
of their appeal to the distributional side of telecommunications pricing policy, the institutionalists' industrial organization view, and problem representation and solution seem to be inconsistent with the logic and assumption of competitive policy.

Contrary to the institutional approach, economists who are willing to take market competition or deregulation as a decisive driving force of the contemporary telecommunications industry, are more likely to be divided over the logic and nature of competition in the newly constructed market structure under discrete market view. The nature of this difference can be captured by exploring the proposals of interconnection pricing, particularly in the industrial organization where a local exchange carrier supplies access to interexchange carriers while competing with them in toll services. Focusing on effective rivalry in the currently deregulated toll market, for example, the structuralists are more likely to seek a policy which creates a situation where ownership of the local bottleneck facilities confers neither a competitive advantage nor disadvantage. From this perspective, the interconnection price should be designed in such a way that the ownership of bottleneck facilities is prevented from providing the facility owner any artificial advantage in competing over other services. More concerned with static efficiency (i.e., economies of scope) assertedly inherent in vertically integrated service, on the other hand, the orthodox neoclassical economists emphasize an interconnection pricing policy which can minimize the total industry cost. In this context, Baumol's efficient component pricing rule is considered as a solution to secure the productive efficiency in the industry. As the only goal of competition policy is to achieve
efficiency. From the latter perspective, the effect of eliminating competition by applying
the rule is not a big concern since it secures higher static efficiency.\textsuperscript{15}

The discussion of the social policy lessons for South Korean access charge policy
will be based on the above three economic perspectives. More specifically, the public
interest interpretation from the three economic traditions will serve as a normative basis
for the possible policy scope or policy goals with which South Korean regulators can
design access charge policy.

c. Political Learning

As shown in the previous application of institutionalists' and neoclassical
economists' views to those of regulators, the case for the introduction of SLC rests on the
very different conception of the public interest from that which was relevant to the
previous costing and pricing practice. By placing this change in the normative
proposition of public interest in a more broad context of regulatory reform movement in
the U.S. and examining the role of neoclassical economics in it, we may draw some
political lessons which entail new understanding and judgment about the political
feasibility of and prospects for policy proposals not only from the neoclassical economists
but also from other economic traditions.

There is a large literature in the U.S. to explain the deregulatory movement which
started in late 1960s. The mostly cited reasons to bring out deregulatory movement in the

\textsuperscript{15} In this logic, they assume either that perfect regulation or perfect market
provides efficient pricing for toll market or that the gains from promoting productive
efficiency are much larger than losses in allocative efficiency by eliminating competition.
U.S. are inflation, technological progression, change in political ideology, new business
demand, consumer movement, and theoretical contribution from neoclassical economics
(Horwitz, 1989; Steiner, 1983; Trebing, 1984, 1994; Derthick and Quirk, 1985). While
all these factors have been inextricably linked to change social norms in favor of market
competition, market rule and efficiency, the particular role of neoclassical economists in
the deregulatory reform movement has been well recognized as shown in Derthick and
Quirk's statement: "If [neoclassical] economists had not made the case for procompetitive
deregulation, it would not have occurred - at least not on the scale the nation has
witnessed" (Derthick and Quirk, 1985, p. 246).

As the neoclassical tradition had existed prior to the recent reform movement and
its theoretical development had matured long time ago, the question has been often raised
as to why it suddenly became so much influential in the field of economic regulation.
The most plausible explanation seems to be that ideological change in politics and newly
developing problems such as inflation¹⁶ sought for policy agenda or solution and

¹⁶ Peter O. Steiner explains the role of inflation in the reform movement as follows:

I suggest that much of the force for deregulation comes from our inability
to understand and cope with inflation. Inflation has proved to be a great
instrument of reform of things that did not cause it: things such as the Fair
Trade Laws and macroeconomics. Much of the deregulatory pressure, it
seems to me, comes from people, in government and out, who are
frustrated about their government's inability to cope with inflation in other
ways. Regulation makes a nice scapegoat, and deregulation is a form of
doing something (Steiner, 1983, p. 1288, emphasis added).
neoclassical economists provided it.\(^{17}\) As the neoclassical economists had been the most important constructive force to show the fallibility of economic regulation, in this process, deregulation or market autonomy was promoted as solution. As shown in Chapter III, neoclassical economists' list of regulation's deficiencies has been enormous. In this sense, neoclassical economists have made great contribution to realizing "the loss of faith in regulation arises....from the fact....that government as well as markets can fail" (Steiner, 1983, p. 1288).

On the other hand, the neoclassical economists see government failure but neglect market failure that originally caused government to intervene. The leading neoclassical economists show little respect for the underlying needs which motivated regulation in the first place and still remains. The neoclassical economic approach has focused "mainly on the consequences of regulation for allocative efficiency and general price levels," and has "largely ignored questions, central to policy design and political judgment, of its distributive effects" (Derthick and Quirk, 1985, p. 248). In this sense, the real danger of advocating "perfect" market model as a substitute for "imperfect" regulation seems to lie

\(^{17}\) The policy process framework most conducive to the explanation of general deregulatory movement in the U.S. seems to be the garbage-can model of Cohen, March and Olson (1972). From this perspective, policy formation does not proceed in stages but rather as the confluence of three, largely independent, streams of events and activity. The political stream comprises electoral, partisan, and pressure group factors. The problem stream consists of conditions defined by people in and around government as problems; entry is governed by social indicators and focusing events such as crises and disasters. Finally, a policy stream consists of proposals, generated by communities of specialists, awaiting consideration. The separate streams merge at critical junctures, opening up opportunities for joining solutions to problems and both to favorable political events. The application of this policy process perspective to the regulatory reform movement in the U.S. can be found in both Derthick and Quirk's *The Politics of Deregulation* (1985) and Horwitz's *The Irony of Regulatory Reform* (1989).
in its use as "a simplistic ideology," rather than as an "analysis of trade-offs" (Steiner, 1983, p. 1305). Horwitz describes this trade-off as follows:

The deregulation of price-and-entry-controlled infrastructure appeared to make sense to various political actors in the context of high inflation, regulatory protectionism, and, in telecommunications, technological ferment. With universal service accomplished, and with regulatory barriers seemingly blocking progress and innovation in infrastructure industries, the traditional combination of industry protection, nondiscrimination, and reasonable rates seemed outmoded to reformers of many ideological stripes (Horwitz, 1989, p. 283).

Deregulation may untie the connection between regulated industry and agency, but in so doing, it unleashes the very forces which called forth regulatory controls in the first place. Open entry and competition make for short-run efficiencies and long-run economic uncertainties. By distributing risks and benefits in a decidedly differential fashion, deregulation undermines the traditional principle of equity (Horwitz, 1987, p. 267).

While the neoclassical economic tradition has been the dominant intellectual force in the current deregulatory movement, as such, it has not provided a balanced view between the need for changes in the extent and form of regulation, and the desirability of some regulation. In spite of their decreasing social influence under the newly emerging norms, the structuralists and institutionalists in the U.S. have served as an important counter-intellectual force to remind and check the danger of the simplistic ideology of laissez-faire and save important social value floors which old regulatory regime tried to achieve. They have consistently shown that even though the economic problems that brought out regulation in the first place may have abated, they did not simply go away in many cases.

As the neoclassical economists show a way to perform a regulatory function more efficiently, under the contemporary norms, prevailing practice constructed in the previous
regulatory era may be regarded as socially wasteful and replaced more and more with policy proposals from neoclassical economic tradition. But if we look back the history of economic regulation in the U.S., we will realize that the efficiency through market autonomy and market rule cannot be a ultimate ends but serve only as a transitory end-in-view. While it may be the most dominant motto nowadays to say that "even very imperfect competition is preferable to regulation" (Kahn, 1987), it may not take such a long time to realize not only that efficiency is only one of many social values, but also that regulatory oversight is still necessary and will be inevitable in the presence of highly concentrated market condition, limited potential market entry, deterioration of service quality, and other abuses of market power.

As long as we accept the inevitability of competition or deregulation as the currently popular social norm in regulated industries, but understand the necessity of regulatory oversight to bring out effective competition to achieve various social goals, we will see more role of structuralist point of view to define the nature and scope of regulatory oversight than any other school. In the U.S., in this context, we can observe the institutionalists currently to share many of the structuralist points of view. Both schools' common belief in market imperfection and distrust of private market power, and broader interpretation of public interest beyond static economic efficiency, explain their closeness.
CHAPTER VI

DRAWING LESSONS FOR SOUTH KOREAN TELECOMMUNICATIONS INDUSTRY

A. Introduction

South Korea's telecommunication industry, led by government, is currently undergoing a major transformation. In July 1990 the Ministry of Communications (MOC) of South Korea, now reorganized into the Ministry of Information and Communications,\(^1\) called for comprehensive restructuring of the Korean telecommunications industry, subsequently followed by amendments to the relevant laws and regulations. The main focus of the plan can be summarized as the introduction of competition in some submarkets traditionally operated by monopolists, Korea Telecom

\(^1\) The Ministry of Information and Communications (MIC) is understood as the main administrative, policymaking, and regulatory institution responsible for information and communications activities in South Korea. It was established as part of a comprehensive government reorganization plan announced in December 1994. Like the Ministry of Communication, its predecessor, it approves telecommunications rates charged by Korea Telecom, DACOM, and other common carriers. In the case of domestic telecommunications rates, these are also subject to review and approval by the Korean Price Stabilization Committee and the President of the Republic. The MIC also approves the lines of business in which the carriers may operate, the form of standard agreement they use in provision of services, agreements for interconnection with other service providers, and other important aspects of operations.
(KT) and the Korea Mobile Telecommunications Corporation (KMTC). According to the plan, KT would maintain a monopoly in providing local telephone services. Competition would be introduced progressively in long-distance, international and mobile telephone services. As a first step, KT for the first time began to compete with the Data Communications Corporations (DACOM), which was established in 1982 as the data communications service provider, over international telephone services from December 1991. On February 24, 1995, DACOM was designated as the second domestic long-distance telephone service provider. As scheduled for 1996, DACOM now enters into the market for domestic long-distance service.

Like the U.S., as DACOM had to use the KT's network facilities in order to compete long-distance market, access charges paid by DACOM became a great concern to both parties as well as MOC when the decision to introduce competition was made. A series of negotiations between KT and DACOM produced an agreement in October 1991 (Agreement on Interconnection between Public Switched Telephone Network of Korea Telecom and International Telephone Network of DACOM, 1991). According to the agreement, a cost-based tariff would be adopted on the first day of the 25th month from the day on which DACOM would begin to provide the international telephone service. For the time being, KT would calculate the charge of the facilities used by DACOM by applying its existing domestic tariffs to monthly tariffs. The use of existing domestic tariffs was inevitable since the existing accounting method employed by KT did not

\[ \text{\textsuperscript{2}} \] This is called a simple-added method. Unlike the U.S. access charge which was based on the cost of every access element relevant to interconnection service, the simple-added method simply applies existing domestic tariff to monthly access minutes.
reflect the technical characteristics of telecommunications business at all, and therefore it was impossible to get the cost information of separate telecommunications services. As the first step to improve the situation, in this context, MOC introduced new accounting system, called Unified System of Accounting, whose main idea was largely imported from the U.S. system. Based on the new accounting system, the MOC adopted an access charge plan in December 1992. But the plan has not been implemented as originally designed due to some controversial aspect of local cost recovery to KT and DACOM.

While the South Korean program was of great concern to KT and DACOM, its design did not draw much public attention and controversy since its construction and implementation was independent of other pricing structures such as local service rate. Furthermore, the implication of cost-based access charge to long-distance rates was very limited under the strongly government-monitored competition and service rates. The absence of full domestic toll competition also made the stakes involved with access charge between KT and DACOM relatively small. But as shown in the current introduction of competition in the domestic toll market, MIC has taken more aggressive market restructuring initiatives and has moved toward a more market-oriented approach. Along with this restructuring of market organization, corresponding regulatory or deregulatory measures with respect to pricing and other business operations have become more important and drawn more analytic attention. As the market structure and general regulatory system become more mature in South Korea, in the same vein, the role of interconnection pricing or access charge will be very crucial and important.
In this context, as a pioneer of economic regulatory and deregulatory policies, the U.S. history and debate in terms of interconnection and access charge policy can serve as an important guiding framework for South Korean government. But considering the current South Korean situation, the importance of the U.S. experience as the source of policy learning for the South Korean government seems to lie not so much in the static instrumental components of a particular program, but as in the fundamental ideas, values, problems embedded in the development of that program. Now facing a comprehensive paradigmatic change in almost all aspects of the regulatory system after the long absence of systematic economic regulation, South Korean regulators can be expected to rethink their basic attitudes regarding the various policy instruments and alter their choices accordingly. This situation also requires a new understanding of policy problems or goals. In this vein, understanding the values, policy problems and goals underlying the U.S. program and its alternatives may provide a substantial knowledge basis to better select a policy choice, and to construct the nature of program as it evolves as a response to the emerging problems. By making more explicit the different assumptions upon which the U.S. policy and its alternatives rest, in this context, the structural logic analysis and problem structuring analysis contained in the U.S. model can provide important sources of information from which various types of lessons can be drawn. In particular, South Korean government can learn from the long evolutionary process of the U.S. access charge development about the goals of policy or fundamental ideas and values relevant to the program as well as the instrumental aspect of the program.
The remaining of the chapter will be composed of three parts. The first part will discuss general telecommunications policy trend in South Korea. This part is to illustrate the fundamental change in policy paradigms in South Korea and provide some rationale of the relevance of the U.S. experience to South Korea in terms of this paradigm shift. Instead of bringing out specific changes in the current South Korean program, considering this general policy trend, the main focus of lessons drawn from the U.S. experience will be directed to shaping general policy ideas and values as well as accommodating the long term development of access charge program in South Korea. Prior to discussing particular lessons for the South Korean context, I will provide a brief description of the policy design process of the access charge program. It will show the arbitrariness of the program design process and absence of particular cause and effect relationship of the program which can be related to any imminent public interest goal. This description also leads us to recognize the meaningfulness of the discussion of the U.S. experience at a more general level than program level. The final part of the chapter will provide the lessons from the U.S. experience in general terms. As noted earlier, this discussion will be carried out by classifying lessons into three categories: instrumental policy lessons, social policy lessons, and political lessons.

B. General Telecommunications Policy Trends in South Korea

1. Privatization Policy

Before proceeding to examine general South Korean telecommunications policy trends, three concepts are defined to be used as a conceptual building block to discuss
those trends: privatization, liberalization and deregulation. According to Waterson (1988), privatization means a change in ownership from public to private. Privatization may be partial or full, so that some activities of the former company may be split off, or the company may be forced to contract out some of its previously in-house activities or some or even the whole of the company’s equity may be sold. On the other hand, liberalization means relaxing or abolishing restraints on entry into some of the areas previously the statutory or customary province of the monopoly incumbent. Deregulation means removal or substantial diminution of the regulations by which the firm or firms in an industry are governed. This might mean the removal of price controls on a natural monopoly, which could nevertheless remain a natural monopoly barred to entry. Liberalization and deregulation are conceptually separate in that regulation normally covers much more than restrictions on entry.

In South Korea, a government-owned authority was for many years the monopoly provider of telecommunications infrastructure. Before early 1980s, the Ministry of Communication had the dual responsibilities of operating the day-to-day telecommunications business and making government policy. In 1981 the Law on the Establishment of the Korea Telecommunications Authority (KTA) was enacted. As a result, the fully government-owned public corporation was established in 1982 and was given the responsibility of operating networks and supplying services which were previously the responsibility of the Ministry of Communication (MOC). Although KTA, renaming itself Korea Telecom (KT) later, was released from direct control of the MOC, it was still wholly owned by the government.
While public enterprise should be accountable to government, day-to-day decision making should be left to enterprise managers and freed from political influence. This has been referred to as the "arm's length principle" (Hemming and Mansoor, 1988). In this sense, a public enterprise is to serve public interest by internalizing the regulatory function and securing its responsibility through ministerial or legislative oversight. In practice, however, public enterprises have been subject to government influence which extends well beyond that necessary to ensure that enterprises fulfill their economic, financial, and social objectives (Ambrose et al, 1990).

For example, most developing countries have chosen to simply become outright owners of the telecommunications network, setting tariffs so as to benefit from the monopoly position of the public enterprise and acquire additional fiscal revenue. Indeed, for many countries, the state-run corporation is something of a "cash cow" generating substantial resources for the treasury (Ambrose, et al., 1990). Then the monies are often used for less compelling objectives than economic and more immediate social objectives. Likewise, the history of Korean telecommunications shows the revenues from telecommunications services collected by the national treasury often cross-subsidized other less profitable sectors or served other objectives unrelated to telecommunications (Kim, 1993). But as the law determining tariffs did not clarify proper rules to get information about revenues and costs by service category, it became difficult to demonstrate the extent to which the tariff system is abused to create unnecessary cross-subsidies and serve other objectives irrelevant to public interest.
In many industrialized countries as well as developing countries, increasing private sector involvement in public enterprise has been considered as one way to tackle the poor performance of public enterprise. This can be achieved to different degrees, but it is privatization in the form of denationalization that is attracting the greatest interest. Privatization is believed to limit the scope for political interference in decision making, to increase managerial incentives by making managers responsible to shareholders who will monitor their performance better than government, and to impose the financial discipline of private capital markets (Vickers and Yarrow, 1988; Choi, 1993).

The similar argument has driven the MOC in South Korea to seek privatization of KTA. The Ministry organized the Privatization Promoting Committee and task force in February, 1988 to facilitate the privatization of the Korean Telecommunications Authority. On January 1, 1991, KTA was converted from a governmental authority to a joint-stock company, Korea Telecom (KT), that the government plans to privatize. The main purposes of the privatization plan were to allow the newly renamed KT to respond flexibly to customer needs, to promote managerial efficiency, to provide cost effective and convenient services to the public, and to allow KT to respond effectively to competition in the telecommunications market (Korea Telecom, 1993). The plan had been to sell 25 percent of its outstanding common shares in an initial public offering, followed by the sale of another 24 percent over the subsequent years. Privatization plans have been delayed for several reasons, including the unexpectedly poor performance of South Korea's stock market. In 1993, KT sold off 10 percent of its total stocks. It
planned to sell an additional 10 percent each year until reaching its privatization goal (Larson, 1995; Choi, 1993).

While it is often envisaged by radical neoclassical economists as a method of insulating enterprises from public policy interventions, in general, privatization of a public enterprise is not necessarily a form of deregulation. Privatization is considered as a solution to the problem of control related to public enterprise. But privatization of itself does not necessarily alter the need for public control. Privatization has been sought because public enterprise has been viewed as a flawed instrument of public control, not because public control is seen as illegitimate (Heald, 1985). In this context, privatization is more likely to imply that public control could be secured without public ownership.

In spite of its partial nature, privatization has been one of the most important policy directions in South Korean telecommunications industry. With privatization and fundamental structural change of the telecommunications industry within which competition has been to be established, South Korean government has devoted a lot of its efforts in developing regulatory capabilities. In this context, the U.S. experience provides the alternative form of public control, where the telecommunications market has not been government-owned, but regulated by independent commissions. In spite of some current deregulatory movement, furthermore, it has been agreed by many scholars that the American regulatory system has worked best (Vietor, 1994; Heald, 1985; Sewlyn, 1993). In this context, the long and rich experience of the U.S. economic regulation of privately-owned telephone service providers can serve as an important starting point to get insight for a newly required regulatory framework in South Korea.
2. Liberalization Policy

One important policy trend in South Korea is its liberalization policy. Since the basic policy direction determined was to liberalize the once monopolized telecommunications market structure through the introduction of competition in the early 1990s, major changes have been taking place in the structure and organization of the Korean telecommunications sector. For example, in 1990, full-blown competition was introduced in the value-added telecommunications service sector. Also, in December 1991, DACOM was allowed to compete with KT in the international telephone service. DACOM now starts competition with KT in the domestic long-distance service. Also competition has been introduced or scheduled to be implemented in other service areas such as paging service and cellular mobile services. These changes are largely the result of South Korean policymakers' recognition of growing demand from diverse telecommunications services, and intense pressures from South Korea's major trading partners for a more liberal and open telecommunications regime (Kim, 1993; Larson, 1995).

Economically, liberalization is likely to be most beneficial when technical change or demand conditions have turned what was once a natural monopoly into an industry where parts at least would benefit from substantial competition. In the U.S. extensive analytical work has been undertaken to examine the empirical validity of the natural monopoly concepts as they relate to telecommunications services (Evans and Heckman, 1984; Charnes et al, 1985). In general the outcome of this work is inconclusive and contradictory. The lack of adequate and consistent cost data is an important constraint in
this context. There is also considerable scepticism as to the validity of undertaking empirical tests, valid in a static framework and for a given vector or production characteristics and technology, and in an industry subject to rapid technological changes such as experienced in telecommunications. In particular, it is often questioned to what extent such tests would be useful in formulating policy given an industry where a range of technologies exist to provide a given service mix, where new technologies and new service characteristics are emerging rapidly and where cost and demand structures are also changing rapidly.

Instead, structural changes in many countries, including the U.S. and South Korea, have been brought out as a result of recognizing that the growing demand for telecommunications reduces the importance of economies of scale in long-distance telecommunications. There is general agreement, in addition, that as a result of rapid technological change in switching and network facilities, as well as the emergence of alternative transmission technologies that any natural monopoly characteristics which may have existed would have been significantly eroded. Under this situation, questions regarding the existence of natural monopoly were not at the forefront of arguments for change in South Korea. Rather, emphasis was placed on the need to improve management efficiency, innovative ability and service flexibility.

The pace of liberalization is often considered to depend on the extent to which the sources of growing demand are organized to offset the demands of the monopolistic structure (Noll, 1985). In the U.S., in particular, part of the movement towards liberalization can be traced to the profound dissatisfaction of business users (Horwitz,
As communications technology was rapidly becoming more sophisticated and relatively less expensive, large business users realized that they could cut cost by leaving the public switched network and building their own transmission systems or sharing such systems with other companies. In turn, the combination of dissatisfaction from the large users and the ability to build stand-alone systems contributed to the pressure for competition in the U.S.

In the similar vein, an interview of telecom managers of large, global Korean companies carried out by Monitor Company\textsuperscript{3} in early 1991 shows that most interviewees had been dissatisfied with telecommunications services provided by KT. For example, large companies including Hyundai Corp., Sunkyong Ltd and Daewoo Corp. provided one voice: "KT is very bureaucratic and has no flexibility. They must change this attitude. They must have market and customer-oriented thoughts" (Monitory Company, 1991, p. 658). The Monitor Company Report illustrates the discontent by the Korean business groups in terms of service quality, prices, customer services, and billings.

In spite of this dissatisfaction of the telecommunications services by business users, how much the competitive policy has been driven by business user group is a different question in South Korea. In the U.S., states choose different policies because they are subjected to different pressures from interest groups. This means that factors external to the regulators and the government are highly influential in producing policies. This interest group factor is often cited to characterize the demand side of liberalization.

\textsuperscript{3} The Monitor Company in the U.S. was hired by KT to develop a long-term strategic management plan to help cope with increased competition and privatization.
policy in the U.S. (Noll, 1985; Horwitz, 1989). But in South Korea where traditionally
government has played a central role in terms of policy making and has become the sole
controller of various interest groups, pluralistic forces such as business user groups do not
seem to have played major role to create competitive environment for
telecommunications services. Instead, the liberalization policy in South Korea is
classified by a government-initiated, strategically monitored one rather than naturally
incurred demand-oriented one.

The liberalization issue is sometimes viewed as more than a simple question of
competition versus monopoly. For example, it also involves with the question of the
impact of foreign service providers on the domestic service structure under conditions of
liberal market entry. Prior to the early 1980s, the national telecommunications service
structures were similar in market structure, and telecommunications policy was viewed
primarily in terms of its domestic implications. Since then, emergence of different
market structures have changed perceptions as to what is fair and unfair in terms of
international economic relationships. Telecommunications industry has drawn a great
attention in international economic and trade negotiations, and controversy has been
brought out over the entry opportunities in equipment and service market in other
countries.

In the same vein, Korean government had to deal with trading partners' request for
a more market access into the Korean telecommunications sector. The bilateral
negotiations with the U.S. were especially influential in liberalization movement in South
Korea. Larson summarizes this process as follows:
Continued worsening of the United States' overall trade balance during the 1980s led the U.S. Congress to pass the Omnibus Trade Act of 1988. Under the terms of the act, South Korea, among other countries, was named a 'Priority Foreign Country,' the legal terminology for an unfair trading nation, for its market barriers to foreign imports. The telecommunications provisions included in that act provided a background for U.S. requests that South Korea liberalize its telecommunications markets and led to a series of bilateral negotiations. When the Uruguay Round of multilateral trade negotiations on a new international trade agreement stalled in 1990 and thus failed to establish a multilateral resolution to telecommunications issues, among others, Korea and the U.S. mutually agreed to settle the issue of market liberalization through their bilateral talks (Larson, 1995, p. 14).

Negotiations between the U.S. and Korea, which covered the entire spectrum of the telecommunications field, ensued. Major subjects were market access in telecommunications services, standards for communications equipment, type approval, tariffs, and government procurement. The first major result of these talks was the conclusion of a Korea-U.S. Internal VAN Agreement under which foreign VAN (value added network) operators became eligible to compete in the Korean market beginning in July, 1991. The other outstanding issues were resolved and a more comprehensive agreement concluded in February 1992. Among other things, it institutionalized transparency in standard-setting procedures and type-approval. South Korea also agreed to open up its government procurement contracts in the telecommunications sector and key tariffs were cut by 40 percent (Larson, 1995, p. 232).

Due to the large telecommunications trade between the U.S. and South Korea, the two countries are expected to make more bilateral negotiations on a regular and ongoing basis. The introduction of liberalization policy in the South Korean telecommunications market was in part a response to such specific foreign pressures.

By promoting privatization and liberalization at the same time, the South Korean government is expected to rely more on market force and regulatory techniques to accommodate social goals, and market efficiency in telecommunications industry. In this context, the greater experience of the U.S. in terms of telecommunications regulation and
more recent increased reliance on market forces can provide an important reference point for analyzing the competitive nature of emerging telecommunications markets and the strengths and weaknesses of different tools available for regulation in South Korea. At the same time, an examination of long debate over the nature of public interest following the choice of different policy options in the U.S. can provide an important insight to construct public interest goals in South Korea.

In spite of some environmental differences between South Korea and the U.S., the most important tool to create competitive environment has been the interconnection policy in both countries. The U.S. experience shows that in order to secure fair competition, access charges must be introduced such that they can not be used as an entry barrier by the dominant telecommunications carrier. Accordingly, the regulatory authority must use open and transparent procedures and calculation methods to set access charges. In this context, the U.S. model, the first access charge plan developed in the world, can serve as an important guiding framework for other countries' access charge policies. The possibility of gaining policy insight from the study of the U.S. program may be limited by differences in the nature of liberalization, and other cultural, political and socioeconomic goals for the telecommunications sector. However, with these caveats in mind, the possible lessons to be drawn from the U.S. experience cannot be ignored.

On the other hand, the lessons may be very limited if we look at only the static design structure of the U.S. program. Instead if we pay more attention to the patterns of change in the ideas and values reflected in the U.S. access charge development, we can draw more relevant and meaningful lessons which can be applied to evolving process of
Korean telecommunications policy. Under the current paradigmatic change in telecommunications policy in South Korea, long-run oriented lessons are more relevant. Likewise, the following discussion of South Korean access charge development is not to replace the current program with another program. Instead it is to illustrate the starting point from which further adaptation is required as changes in other market and regulatory conditions make the interconnection pricing play more significant role in South Korea.

C. Access Charge Program Development in South Korea

Before 1994, as already noted, there was no systematic and consistent accounting framework to analyze costing and pricing of different telephone services in South Korea. Under such situation, KT and DACOM agreed in October 1991, that KT would charge its existing domestic tariffs for the use of its facilities by DACOM until cost-based tariffs would be adopted. The access charge plan was adopted by the MOC in December 1992 and has been partially implemented since 1994. In this section, I will briefly review the access charge program development in South Korea and its nature.

Premised on the preparation of a new accounting system, in July 1992, a proposal, entitled, Notice of Interconnection Standard between Telecommunications Carriers, was submitted to the MOC. This proposal dealt with terms and conditions for interconnection and provided the procedures for calculating a cost-based access charge. But this proposal does not show any specific goals and objectives the access charge policy tries to achieve.4

4 Also the adopted final Notice does not show any special goal of the access charge plan.
Instead, the goals of access charge plan were revealed in a report submitted by the MOC Access Charge Development Team. According to this proposal, access charge plan is (1) to maintain universal service and secure a fair environment for competition; (2) to lead early settlement of new business structure in telecommunications industry; and (3) to lead a balanced development of telecommunications business (MOC Access Charge Development Project Team, 1992, p. 12).

Similar to its definition in the U.S., an access charge is understood in South Korea as compensation for the use of various access services resulted from interconnection between carriers. These access services include (carrier) local access service, long-distance access service, local and long-distance access service, mobile telephone access service and port telephone access service. Each access service provider is to calculate its access charge by identifying every cost caused by access service and classifying it into specified access elements (MOC Interconnection Standard Setting Project Team, 1992, p. 13).

The access element is classified into lines, transmission and switches, based on the function of telecommunications facilities. Each access service includes its own

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5 Unlike the U.S., the competition was initially introduced only in the international long-distance service market in South Korea. Therefore, DACOM, as a new competition, has had to use also KT facilities for domestic long-distance service as well as local service to complete its service. As DACOM enters the domestic long-distance market most recently, only the carrier local access service becomes relevant in the South Korean long-distance market. Mobile telephone access service and port telephone access service represent interconnection service provided by the Korea Mobile Telecommunications Corporation (KMTC) and the Korea Port Telecommunications Corporation (KPTC). As the primary focus of this dissertation is the access charge related to long-distance service market, the following discussion will be directed mostly to the KT access services.
access elements. For example, local access service includes subscriber line, local trunk line, local transmission, and local switch element. Like the U.S., the proposal employs NTS and TS classification to characterize the nature of service elements. The local trunk line, transmission and switch are considered as TS elements whose costs are assumed to vary proportional to call minutes. On the other hand, the subscriber line is considered as NTS element whose costs are incurred regardless of the call minutes.

For the TS elements, it was proposed that the access charge rate per minute would be calculated by dividing the cost of each element by the total demand (i.e., total minutes of use). But access charge rate for the subscriber line element would be calculated in several steps. First of all, it was suggested to divide the cost of subscriber line equally into a part recovered from basic charge (i.e., end-user charge) and a part recovered from usage charge, by assuming both access and usage as causer of subscriber line cost. Secondly, the costs allocated to the usage charge part would divided into a part recovered from pure local call service (i.e., KT's local usage service) and a part recovered from the use of local network for other services (i.e., carrier local access service).

The one half of the costs allocated to the usage charge part would be assigned to the KT local usage service and carrier local access service based on relative call minutes (i.e., similar to subscriber line use (SLU) in the U.S.). The other half would be assigned to these two categories by applying a weighting factor to relative call minutes. The weighting factor is calculated by dividing the average KT local service revenue per
minute and local network users' average service revenue per minute, by the sum of both average revenues per minute.\footnote{According to an interview with a Korea Telecom Research Institute representative who was working in the MOC, this formula was created by some KT representatives in Access Charge Development Project Team. Their rationale to design this formula has not been revealed. However, the idea of weighting factor seems to be imported from the idea of composite station rate (CSR) ratio in the U.S.}

Another important concept in the original proposal is "cost compensation charge."\footnote{The cost compensation charge can be thought as Universal Service Fund in the U.S. which is subsidy to high cost local exchange companies.} This charge is intended to develop the local network and maintain universal service by distributing the burden of deficit from the operation of local telephone business among all carriers who use local network. This deficit would be calculated by subtracting total local service revenues from total local service costs. The sources of local service revenue are basic charge, local call charge, and carrier access charge. This deficit would be allocated to each carrier based on weighted call minutes by applying the same weighting factor described above.

But these recommendations in the early proposal were not adopted by the MOC. The final MOC Notice in December 1992 shows that an access charge would be calculated by dividing the costs of each access element by total estimated demand without separating the subscriber line element from the other elements (MOC Notice 92-162). Consequently, the access rate for local subscriber line element is calculated by dividing total NTS costs by total minutes of use, and this rate would be applied to each carrier based on its relative minutes of use. Notice 92-162 did not adopt the concept of cost
compensation charge. The MOC Notice does not provide any specific goals or rationale used to reach the given design.

In spite of lack of specific information as to its decision rationale, we can draw some implications from the MOC decision by examining the particular situation in South Korea. First of all, the cost allocation formula in the original proposal and in the final Notice does not state or imply any specific public interest goal. In the absence of any direct connection to other service rates such as local rates, domestic toll rates, and international toll rates, the general allocation formula, weighting factor, and cost compensation rule in the original proposal have no specific public interest-type meaning. For example, in the U.S. weighting factor was important mechanism to allocate the NTS costs in order to keep local rates low. The role to be played by the U.S. weighting factor was to increase universal service. But in South Korea, the design and implementation of access charge policy was separately considered from the local rate policy. Without any implementation plan to connect the access charge to local rates, the role of weighting factor is very ambiguous. Furthermore, considering KT has been the only supplier in lucrative domestic toll market where it could charge very high rates, the role of the cost compensation charge might have been doubted.\(^8\) In addition, the role of overall access charge has been insignificant in terms of international toll rates under the circumstances where the rates has been regulated by the MOC in such a way that DACOM could charge

\(^8\) International long-distance service revenue was composed of 15% of total revenues of KT in 1991, as compared with domestic long-distance service of 36% and local services of 40%.
at rates initially 5 percent below those offered by KT, and as of 10 February 1993, 3 percent.

By excluding cost compensation charge and weighting factors, aside from its irrelevance to local and long distance rates, in appearance, the MOC plan implies, at least in the short run, that KT has to take all the responsibility to make up the deficit from operation of local telephone service. In addition, DACOM has had an artificial advantage in its international toll rates. These policies in favor of DACOM can be understood in a specific policy environment in South Korea. As a result of foreign country pressures, it has been expected that it is inevitable to partially open basic telecommunications market to foreign telecommunications operators in near future. Under such pressures, the relative favoritism toward DACOM and somewhat “unfair” treatment of KT can be understood as a strategy not only to discipline and prepare the inexperienced and inefficient incumbent for a incoming competitive environment, but also to raise a new domestic carrier which has capability to compete with foreign carriers as well as KT. In this sense, the nature of original interconnection pricing plan in South Korea reflects a more strategic nature of the MOC liberalization policy. Even though it was scheduled to be implemented from 1994, however, the plan has not yet been fully implemented as designed. Instead, only the cost-based rate for long-distance access service has been applied.

The implicit problem South Korean government saw in terms of interconnection price setting situation was quite different from the problem the FCC perceived when it established access charge plan. This difference should be understood in a particular
context where South Korean government is located. Facing a new competitive force in the long-distance service market, the U.S. program was established in the form of relatively incremental change in terms of instrumental choice under a well-developed regulatory regime. On the other hand, the interconnection pricing issue in South Korea emerged in the situation where carrier interconnection was inevitable in order to initiate competition policy, but the government did not have proper regulatory tools such as a cost-accounting system to handle the new environment. The introduction of the new cost-accounting system and the application of the new cost data to access charges should be considered as the first step to establish a new regulatory regime in South Korea. In the absence of natural and strong competitive forces due to the rather early stage of liberalization policy, the design of the interconnection pricing in South Korea seemed to implicitly favor a new entrants, attempt to discipline the dominant incumbent by imposing it full responsibility to recover local service deficit, and thereby prepare existing carriers for a more competitive environment in the long run.

Under the current Korean context, the meaningful lessons which can be drawn from the U.S. experience may not be limited to the instrumental aspect of the U.S. program to solve a particular problem. Rather, the discussion of the U.S. experience becomes more relevant when we anticipate possible problems which can emerge in the process of facilitating more natural competitive market forces, and establishing a more systematic and consistent regulatory framework. In this vein, a review of patterns of change reflected in the U.S. access charge development and debates over policy alternatives can provide South Korean government with substantial knowledge and
information as to what future problems can be expected from the liberalization policy, as well as an important insight into regulatory policy options. While the U.S. model may not provide all the lessons needed to lead a current program change, in particular, it may provide more fundamental lessons which can lead Korean regulators to rethink their basic attitudes to various policy options and their related values. Under the current paradigmatic policy change in South Korea, it might be argued that learning about ideas, problems, and values are more important to direct policy choices than learning about a particular program.

D. Drawing Lessons

1. Instrumental Policy Lessons

Without prior systematic costing and pricing experience, South Korean regulators are now expected to develop their basic attitudes towards various regulatory tools and adjust their choices to the evolving situations. In this context, the U.S. experience provides some lessons as to how Korean regulators see their own costing and pricing activities (i.e., tool use activities). The evolutionary process of the U.S. access charge development shows that instead of just assuming costing and pricing activities as an application of market rules or of just taking the market force as inevitable force to determine price, the South Korean regulators had better take the position of deeming their costing and pricing activities as valuation process where they apply important social

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9 In this dissertation, instrumental policy lessons concern generic learning about policy tools, and are not restricted to lessons about means to particular ends.
values to the problem situations and select appropriate costing and pricing methods to solve the problems.

As shown in the evolutionary process of the U.S. access charge plan, in the valuation process, the successful attainment of a particular ends-in-view (i.e., instrumental value) would generate new ends in a never ending process of previous ends becoming means towards new ends. The universal service was such an important ends-in-view whose actualization at least as perceived by the FCC set a stage in which a new value premise was adopted by the FCC in its price-setting judgment. This evolutionary process implies that instead of preconceiving an ideal set of principles and trying to derive specific policy proposals from it, we can start "from practice and apply theory to it" by reevaluating practice in terms of neglected considerations or different interpretations of desired outcomes (Anderson, 1987, pp. 31-32). For example, the decision to use subscriber line charge (SLC) can be considered as such an application of the neglected efficiency principle to the practice under a particular problem structure perceived by the FCC.

As such, seeing costing and pricing activities as valuation processes applied to practice is not to apply predetermined rule automatically, but to require assessment of the values latent in practice and the newly emerging values which may be needed to be incorporated in new situations. By shifting the primary emphasis from the principle to practice and valuation, we may be able to discuss more broad range of costing and pricing tools and find diverse values for which those tools can be used. Keeping in mind that price-setting and cost-setting judgments are involved with valuation will let the regulators
recognize consciously where and how the economy in general and the industry in particular have been directed and moving.

By introducing new cost-accounting systems in the telecommunications industry, South Korean regulators are equipped with a good tool to direct the industry in diverse valuational dimensions. In this context, the U.S. experience shows that how a particular costing method has been designed and redesigned as the market structure and other conditions have changed. In that process, the fully distributed costing method has been the most important direct performance control tool for regulators in the U.S. In that sense, the FDC method has provided important values which other costing methods may not provide. In addition to making the regulated industry more accountable, the method has been used to incorporate emerging various social values in different circumstances. It does not make political or social values illegitimate just to assert that the arbitrariness of regulators' discretion embodied in FDC is inconsistent with efficiency goal, or the norm or logic of competition.

As a practice, the FDC in the U.S. has not only shown its adaptability, but also secured distributional fairness, and accountability of the regulated firm. The most criticism against the FDC comes from the doubt of its effectiveness under competitive environment. Once we start from practice instead of abstract principles underlying, say a perfectly competitive world, the question as to the replacement of the FDC method with the currently most popular marginal or incremental cost pricing implies a different direction for the burden of proof. For example, we will find it necessary to fully investigate the effectiveness of competition in reality and the values we may have to
compromise as we give up the practice. The U.S. experience shows that the FDC as a
tool can play important function of protecting regulated basic service consumers even
under the effective market force. The merits and appropriateness of new costing and
pricing methods should be weighed against the values we may lose as a result of
replacing the practice with those methods. Seeing the use of costing and pricing methods
in terms of a more broad set of values beyond static efficiency will make the discussion of
public interest more dynamic and balanced.

As shown in the access charge plan in South Korea, whose value premise is too early to assess, fully distributed costing is beginning to take its place as a practice. By
referring to the U.S. experience, Korean regulators can use the FDC as an important tool
to secure public standards instead of private ones and to increase social accountability of
the regulated firms.

Among the components in the FCC access charge plan, the SLC distinguishes
itself from others because of its marginal cost pricing characteristic or its consistency
with logic or rule of newly emerging competition. While it may not be conclusive
whether the SLC has been the main contributor to the prevention of uneconomic bypass,
it cannot be denied that the SLC increases efficiency in terms of cost recovery of
telephone services. While the SLC was an important instrument for the FCC to cope with
potential uneconomic bypass and increase efficiency in telephone rate policy in the U.S.,
it was also response to a particular interpretation of the situation by the FCC. With a
different frame of reference, the situation could be structured as a different problem. In
this context, I will discuss lessons about the problems related to interconnection price-setting by incorporating three economic perspectives in next section.

2. Social Policy Lessons

The access charge or interconnection pricing issue has been recognized as intrinsically difficult or seemingly arbitrary. In this context, a structural logic analysis of the U.S. practice and the problem structuring analysis of different action alternatives suggested by the three economic traditions can provide important social policy lessons for South Korea. Those analyses carried out in the context of the U.S. show that the problem in interconnection pricing situation can be structured in several ways, and thereby provide a good reference point for the South Korean regulators to learn possible policy problems, the scope of policy, or policy goals as they move toward more reliance on the natural competitive force in the toll service market.

First of all, the institutionalists observe the incorporation of modern technology in a telecommunications network and the potential unreasonable risk or burden shifting to the end-users who are not the main causers of costs. Recognizing that the great majority of the costs associated with modifying the local exchange network are caused by the technical requirements of non-basic services, institutionalists see it unfair and unreasonable to assign such common costs as NTS costs to all subscribers regardless of their types of use. This approach implies that certain portion of NTS costs should be

\[ \text{[Equation]} \]

\[ ^{10} \text{The focus of social policy lessons in this dissertation is policy problems related to interconnection pricing.} \]
recovered through the interconnection price. Unless the usage of long-distance call is evenly distributed over the general public, the South Korean officials need to pay attention to the cost causation and cost allocation when they design interconnection pricing policy. Furthermore, this problem approach sheds light on the important role of public authority in protecting regulated basic service users under network modernization. While this kind of problem representation and solution may look contradictory to the currently popular competitive policy and efficiency argument, it can be justified on the basis of objective welfare judgment rather than revealed preferences and wealth maximization. In other words, the imposition of NTS costs in the long-distance service market can be supported by the deliberate regulatory judgment that the well-being of general public is more likely to be protected, even at some sacrifice of efficiency.

Closely related to the imposition of some portion of NTS costs to the long-distance service market is the concern with problem such as uneconomic bypass. As the case of uneconomic bypass in the U.S. shows, any rate rebalancing decision making requires more thorough investigation into institutional and distributional factors as determinants of the behavior of affected parties. The lack of uneconomic bypass in the U.S. provides a typical case of showing the methodological vulnerability of neoclassical economic approach. In neoclassical economics, assumptions necessary to proceed with the usual calculation often appears unreasonable because they effectively detach analysis from relevant complex realities. The unrealistic assumptions, however, do not matter from neoclassical economic perspective, since a proposition is not determined by its plausibility but by its predictive power. From this perspective, theories do not even
attempt to describe reality, but serve only as instruments for making predictions.

However, the prediction made by neoclassical theories are often unfalsifiable, since the failure of their predictions can be blamed to the *ceteris paribus* clause, unreliable data, or absence of clear-cut testing procedures itself (Wilber and Harrison, 1978). Consequently the neoclassical theory is insulated from refutation. In this vein, the neoclassical microeconomic theory is more than often considered as an *a priori* formal model that compels assent by logic, not by its conformity with empirical reality. The uneconomic bypass prediction based on perfect competition market, and its unactualization, but still finding its excuse in the violation of *ceteris paribus* clause, illustrate a more prescriptive nature of neoclassical economic theory than positive or descriptive one.

As such, the U.S. experience provides important lessons such that without understanding methodological and ideological shortcomings of dominant economic perspective, the mere application of its research results may result in unnecessary bias toward a particular policy alternative such as the imposition of NTS costs to end users, and thereby unfair social economic policy. When the important policy decision such as subscriber line charge is made in terms of a potential problem like uneconomic bypass, it is important to weigh the information from the neoclassical approach against other important sources of information related to institutional and technological factors which affect the choice of firms. For example, the U.S. experience shows that bypass has been more quality than price-driven, that the demand of business users has not been so much price-elastic as previously asserted by neoclassical economists, because of institutional and technological constraints. Considering noneconomic factors, the policy implication
might be more favorable to the idea of certain amount of NTS costs to be recovered by interconnection pricing.

When the overall industrial organization is characterized by local carriers completely divested from long-distance carriers, the issue of access charge is mostly limited to the conflict between distributioonal fairness and efficiency reflected in so called rate rebalancing. As long as the local carriers charge same rate to all interexchange carriers, the divested market structure makes the role of access charge less significant in terms of antitrust concern. With a more administrative regulatory concern (e.g., monopoly pricing or universal service), in this context, institutionalist and neoclassical economic perspectives have been sharply divided over the nature of access charge in the U.S. On the other hand, the role of access charge becomes more complicated, and significant in terms of toll service competition, when a local carrier supplies access to interexchange carriers while competing with them in toll services. Aside from institutionalist concern with the distributional fairness in the context of joint use of telephone network, in this case, the structutralists and neoclassical economists lead us to more fundamentally think about the nature of competition and the role of interconnection pricing in it.

While the neoclassical approach provides a simple rule to achieve productive efficiency under the assumption of perfect market condition or perfect regulation for toll rates, structutralists see more imperfect market and regulatory conditions, and emphasize a more broad social function of competition as a less intrusive alternative to direct regulation. The problem in an interconnection pricing situation for structuralists is
characterized by establishment of competitive environment as a replacement of direct regulation under the imperfect market condition where the dominant incumbent often behaves anticompetitively. For the latter, then, the role of interconnection pricing is more likely to establish effective rivalry in toll service market by preventing new entrants from getting any disadvantage in terms of access charge. As neoclassical economists observe, interconnection pricing policy from structuralist perspective may have some negative effect on static productive efficiency. However, for structuralists, the efficiency losses are probably small and outweighed by efficiency gains in other, more difficult to measure, areas. For them, interconnection pricing is an important tool to construct effective competition in toll service market which in turn contribute not only to allocative and dynamic efficiencies, but also to other social goals.

In a sense, the FCC access charge plan can be interpreted to enclose all the three economic perspectives. First, structuralist point of view can be related to the divestiture which established more equal conditions for the competitors in the toll market, even though it was not the pricing solution. Second, the introduction of subscriber line charge is more likely to be a solution from the neoclassical economic perspective to an administrative regulatory problem (e.g., financial threat to local carriers due to the potential noneconomic bypass). Third, in a sense, the political force which led to the compromised FCC plan might be said to reflect the institutionalist idea. If the local exchange companies enters interstate toll service market, the interconnection pricing debate will be concentrated on whether the proposals like the efficient component pricing rule should be applied to secure the static productive efficiency.
As the experience of access charge pricing in the U.S. shows, the importance of interconnection pricing can be found in its role as a regulatory tool to affect the local rates and toll rates by regulating monopolistic behavior and encouraging competition at the same time. The above three descriptions of problems and solutions are only relevant to the circumstance where the interconnection pricing is used to play such an important role. In South Korea, however, separate development of interconnection pricing policy and other service rate policies make the role of the former insignificant in terms of its policy impact. In order for the program such as the U.S. one to be meaningful in South Korea, several steps should be preceded. For example, the long-distance service market should be directed toward allowing the carriers to use price as competitive means. While certain measures might be necessary to control the behavior of a dominant firm like KT, it is against the spirit of liberalization policy to fix the toll rates at an artificial level by government fiat. In addition, the local rates have to be adjusted in a way that they can be seen in terms of whole operation of telecommunications network. Without establishing the environment of seeing the local rates in terms of other service rates, it is difficult to secure the consistent performance control to protect the basic service users, monitor the anticompetitive behavior by the dominant firm, and to bring out real benefits from the competition.

While the South Korean government is obviously making a lot of efforts to construct a regulatory environment which is more amenable to the meaningful discussion of the above problems and solutions, it takes some time to reach such an environment. Even though the specific discussion of the above problems and solutions in the South
Korean context seems to be premature, more general social policy lessons may be drawn to guide the general telecommunications policy in South Korea by looking at the concepts of public interest which underlie those problem definitions and solutions.

Previously absent of any systematic regulatory regime, what is needed for South Korean government is clear articulation of what public interest is and how it can be achieved. In spite of some efforts, under the various immature conditions, the telecommunications industry in South Korea still looks much like "a cartel led by government" (Kim and Ro, 1993). As shown in the case of access charge design in South Korea, in this situation, it is hard to find any specific public interest goal. However, the continuing willy-nilly approach to regulation may bring out more confusion and wastes at the sacrifice of general public. In this context, it can serve as a good starting point for the direction of the general telecommunications policy in South Korea, to think about, deliberate on and debate the public interest concepts and their related general policy intervention mechanisms, which are provided by the three economic perspectives, summarized in Chapter III, and illustrated by the evolutionary process of access charge development in the U.S. and the problem structuring analysis of various economic approaches to interconnection pricing.

Reflecting the current Korean condition, an increased role for market forces is inevitable, and an increased role for active competition in some markets and services are probably is desirable. But this is not the end of policy direction and regulation. As the telecommunications market becomes mature, South Korea is expected to face a highly concentrated industry characterized by tight oligopoly. In addition, such issues as price-
discrimination, cross-subsidization, and price leadership will draw the regulatory
attention. The social goals such as universal service may be less emphasized than the
competitive benefits. Under such circumstances, what South Korean government is
required is a clear vision of public interest, and if necessary, intervenes directly through
regulation to ensure that the benefits inherent in telecommunications network
infrastructure are maximized for all public. In this context, what the U.S. experience
shows is that there always has been and will be a major role for both administrative policy
guidance and market forces, and that the current deregulatory movement is just a shift in
the balance between regulation and market forces (Melody, 1986). The role and shape of
interconnection pricing in South Korea will emerge in the process of constructing the
balanced relationship between regulation and market forces. Considering the U.S.
experience which shows that interconnection pricing can serve diverse public interest
goals, then, the choice of its nature in South Korea will be one from various competing
values beyond static efficiency, and eventually depend on the social preferences that
emerge from political process.

3. Political Lessons

As modified to represent the learning about the political feasibility of policy
proposals from various economics communities, the political lessons for South Korean
policymakers can be drawn from the long history of economic regulation and the role of

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\[^{11}\text{In this dissertation, political lessons are concerned with lessons about political feasibility of proposals from those three economic research communities and their role in policy process especially under the current deregulatory movement.}\]
different economic traditions in it. U.S. regulatory history shows that deregulatory movement in the U.S. can be partially attributed to the regulatory failure. Neoclassical economics has played an important role in the process by showing that government as well as market can fail. But the fallacy of neoclassical economic approach lies in its almost blind devotion to market autonomy and market rules. In spite of its presence as a dominant intellectual force in the current deregulatory movement in the U.S., it has not provided a balanced view between the need for changes in the extent and form of regulation, and the desirability of some regulation.

In this context, the structuralists and institutionalists have served as an important counter-intellectual force to remind and check the danger of the simplistic ideology of laissez-faire. They have consistently shown that even though the economic problems that brought out regulation in the first place may be abated, they did not simply go away in many cases. While it cannot be denied that the neoclassical economic approach has been dominant in academic fields and getting momentum to have more influence on the regulatory policy in the U.S., we can also observe many of the ideas of structuralists and institutionalists in the U.S. have prevailed in practice: structural separation, continuous regulation on dominant firm in toll market, use of fully distributed costing for the test of cross-subsidization.

The U.S. experience shows that often academic research (and their related policy proposals) did not produce much knowledge in the empirically verified sense, i.e., definitive, undisputed truths. Instead they had more profound significance, in terms of concepts and values for what is perceived as the problem (e.g., uneconomic bypass), the
way it looks, its extent, and solutions provided to it. In the same vein, South Korean regulators may draw upon an existing body of research to understand the present state of things, the possibilities available to them for the solution of pressing problems, and the pros and cons of options and objectives. In this context, it is important to reflect the U.S. experience which shows that research from different economic traditions were transformed to a discourse of action, and in that discourse, norms and alternatives with a view to concrete action became important. Then, the ultimate choice is more a question of discussing, negotiating, and compromising a practicable plan than identifying the scientifically "best" one (Albaek, 1995).

Understanding political feasibility in this way, all three economic traditions will continue to affect the shape and nature of regulatory practices in the U.S., in spite of some changes in their relative power of influence. As the neoclassical economists show a way to perform a regulatory function more efficiently, under the current norms, prevailing practice constructed in the previous regulatory era may be regarded as economically wasteful and replaced more and more by policy proposals from the neoclassical economics tradition. On the other hand, structuralists and institutionalists will play an important role to check the simplistic market ideology by drawing more attention to the analysis of trade-offs of promoting market autonomy and market rule. Under the current deregulatory atmosphere, in particular, the structuralist view will be appealing to many political participants, who see public interest goals beyond static economic efficiency, and share the distrust of private market power. As technology and market conditions
reinvite the original public interest spirit of regulation, in the long run, the voice of institutionalists may get stronger.

In South Korea, nowadays, the neoclassical economic approach has been getting more influential in government as well as academic fields. Part of the reason can be found in the role of the U.S. educated neoclassical economists in South Korea who occupy important positions as policy analysts in government and research institutions. Under this situation, deregulation has drawn a lot of attention and appeared to be the most important slogan for the policy direction, as presented in economic journals and literature, and policy debate. Deregulation may be more appealing in South Korea due to a more peculiar social problem which cannot be understood in the U.S. context.\textsuperscript{12} Deregulation in the U.S. can be interpreted to imply a change in the emphasis of public interest goals. The previous more equity-oriented public interest goal has been replaced with a greater emphasis on the efficiency goal.

On the other hand, the deregulation in South Korea has a different meaning such as clearing up the source of past corruptions from which many government officials and politicians have made illicit fortunes by extorting the businessmen. As a return, big business groups, called "Chaebul" in South Korea, could get a lot of advantages and benefits for doing business. Since the new civilian leadership which was established in 1992, however, there has been continuous efforts to gouge out such a deep-seated social

\textsuperscript{12} The scope of deregulation discussed in this section is large enough to encompass the whole field of administrative regulation in South Korea. The following discussion will be narrowed to the concern with the deregulatory movement related to big business groups in South Korea.
disease. As regulation is identified with the corruption, mischief, red tape, and inefficiency, in this context, the deregulatory spirit has been getting momentum to drive many fields of Korean society. Under such situation, the voices of the neoclassical economists in South Korea are inevitably expected to get larger.

But overlooked is whether there has been any real effort to think about the proper meaning of public interest in terms of economic regulation in South Korea. Deregulation may bring out the severance of cohesion between business and politicians and administrators, high efficiency, international competitiveness of firms, but it may also bring out more distributional disparity in wealth. Looking back upon the rapid economic growth of South Korea in the last several decades, many Koreans share the feeling that the most neglected area is wealth distribution. Under this situation, as many neoclassical economists assert, setting wealth maximization as the primary public interest goal through deregulation begs the question. To the contrary, the views of public interest provided by institutionalists and structuralists seem to serve as an important starting point to redirect the role of regulation toward a new, higher social efficiency, which includes important social equity component, and balance the currently almost uncritical acceptance of neoclassical economics and its perspective on the role of markets.

Rather than relying on a deductively derived ideal model to guide a policy, it is more important for South Korean regulators to face the imperatives of imperfect markets, dynamic market structures, and social and political realities, to deliberate on and debate public interest objectives in reality, and to make an effort to balance those competing social and economic objectives. In this context, structuralist and institutionalist
perspectives have much to contribute to the task of finding public interest objectives and pointing the way to new and improved economic regulations to achieve those objectives.

In spite of continuous changes in their relative extent of influence, all three economic traditions have served as important research communities to affect the shape and nature of regulatory practices in the U.S. Those practices are more likely to be products of discussing, debating, deliberating on, and compromising action alternatives among those research communities and other political participants. In the growing popularity and dominance of neoclassical economic approach in South Korea, what the U.S. experience implies is that it is necessary for the Korean government to secure a more balanced view by paying attention to diverse research communities, and enhance more reasoned policy making by encouraging their participation in policy process. Such an effort will also serve to democracy the new South Korean leadership claims to stand for.
CHAPTER VII

CONCLUSION

By analogy to the policy learning approach, the contribution of this dissertation can be discussed from three perspectives: who learns?; learns what?; and to what effect? As a policy analysis, first of all, this dissertation is directed to three kinds of audiences: academic community, regulators or policy makers in the U.S. and policy makers in South Korea.

The academic community can learn from this dissertation about how to operationalize the lesson-drawing approach. By combining the policy learning approach with two types of policy design analysis, this dissertation shows that we can learn about ideas, problems, and scope of policy, as well as instruments particularly from indirect policy experience. The structural logic analysis illustrates the importance of using a valuation process to understand a policy. By viewing a policy phenomenon in terms of its evolutionary process, in particular, it sheds light on the importance of the changing shape of related values as well as the evolving shape of the object of study to understand and explain a policy. Consequently, the structural logic analysis I implemented in this
dissertation illustrates that policy learning can encompass process-related, as well as static learning such as lessons about a particular instrument.

Furthermore, by incorporating a knowledge utilization perspective in the structural logic analysis of a particular pricing program which has been considered as the exclusive domain of currently dominant neoclassical economics, this dissertation also directs some attention to a currently, relatively neglected perspective, and tries to interpret unexplained part of the practice in light of that perspective. Rather than taking the anchored policy to be determined by the objective reality, by incorporating neglected perspective in structural logic analysis, this dissertation serves the agents of policy learning for "the interest of objectivity and of balance, of reasoned and deliberate judgment" (Anderson, 1987, p. 43). As a result, the structural logic analysis of this dissertation is more like an open-ended research which keeps the argument open, does not resolve it, and as Pierce's dictum recommends that one must "always keep the door open for further inquiry" (Quoted in Anderson, 1987, p. 43).

If the purpose of policy learning is to improve the quality of the decisions taken in government, it is important to make more complete information about instruments available to policymakers. By investigating currently available action alternatives, in this context, problem structuring analysis complements the structural logic analysis, which primarily focuses on practice. The incorporation of the positive and normative perspectives of three economic traditions in a structural logic analysis not only aids the actual choice of action alternatives, but also to aid in the ability of policymakers to better apprehend the assumptions by which they choose both their problems and their action
alternatives. By exploring assumptions and values which consist of theoretical basis of each school, and revealing diverse technical, conceptual, and valuational dimensions related to the design of interconnection pricing, this dissertation provides a comprehensive explanatory framework for interconnection pricing policy.

The U.S. regulators can learn from this dissertation that economics as the important knowledge source for their decision making is much like a discussion based on argument. As shown in the review of economic thought and regulation in the U.S. and the subsequent model building exercise, three important economic traditions in the U.S. regulatory history have not produced much knowledge in the empirically verified sense, but involved with convincing one another, by reorganizing and restructuring knowledge, that the world should be viewed from precisely their point of view. While this reorganizing and reformulating effort of knowledge may not have helped to resolve the "factual" and "technical" controversies over policy problems, it has helped many policy participants in the U.S., including scientists, public officials and lay advocates, to form their views of the way the world is put together. In spite of their importance in the U.S. economic regulatory history, these three economic traditions have not been systematically and analytically compared and contrasted at the same time. In this context, Chapter III of this dissertation can serve as an important reference point to understand the opposing interests of those three traditions and the pros and cons of their proposed policy options and objectives. By directly connecting these three economic perspectives to the discussion of practice and alternatives for interconnection pricing, this dissertation
provides a more concrete context in which to understand those three economic perspectives.

Facing paradigmatic policy change such as privatization and liberalization, South Korean regulators are expected to adjust themselves to new regulatory tools and evolving competitive environment. In this context, this dissertation provides some important lessons about general regulatory policy as well as interconnection pricing policy in South Korean telecommunications industry. One of the important lessons provided in this dissertation is the importance of context as well as valuation process in the application of pricing and costing methods as policy tools. As the universal service goal and separation policy in the U.S. illustrate, the application of important social values to the facts of human condition can be a legitimate function of economic regulation. Costing and pricing methods, in this context, can be chosen by taking into consideration instrumental values in evolving social processes, i.e., changing context.

For example, in South Korean context, fully distributed costing policy such as separations might not be necessary as a policy tool to achieve universal service since it has been asserted that universal service has been accomplished in a rather peculiar way during 1980s (Kim and Lee, 1991). On the other hand, under the current South Korean

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1 The main methods to lead to universal service in South Korea were called "Immediate Telephone Installation System (ITIS)" and "Widening and Automation (WA)" (Kim and Lee, 1991). Facing a long-standing backlog of unsatisfied telephone demand in 1970s, the Ministry of Communication initiated the ITIS in the early 1980s to make it possible to install a telephone within one or two days upon request by expanding transmission networks and providing high-capacity switching equipments on a large scale. On the other hand, the WA was to "narrow down the geographic gap in receiving telecommunications services" by reorganizing local call zones and reducing them to smaller numbers, and implementing the automation of local, long-distance and
situation where the efficacy of market force seems to be in doubt for providing improved social accountability of regulated firms, the newly introduced cost accounting system in South Korea and fully distributed costing method as a new practice can serve as important regulatory tools to increase social accountability of a dominant firm such as Korea Telecom. In addition, as the previous means to achieve high subscription rate in South Korea was not based on consistent cost allocation and accounting data, the systematic application of the FDC based on the new accounting data will streamline the overall telephone rate system in South Korea, and enable a more organized consideration of universal service as an important policy variable in evolving telecommunications environment. As the quality and reliability of the telephone services have been neglected as a result of primary emphasis on quantitative growth of telephone penetration, furthermore, we can still think about their improvement as the important social value in terms of universal service in South Korea.

International switches (Kim and Ro, 1993, p. 481). The prime beneficiaries of reorganizing local call zones were subscribers in rural areas. In addition, rural areas were given priority over urban areas in terms of switch automation (i.e., use of digital switches). In this context, "the WA can be appraised as having made a great contribution to expanding subscriber network in rural areas, which had been traditionally far behind in receiving telecommunications services" (Kim and Lee, 1991, p. 36).

These policies required huge investment in telecommunications sector during 1980s in South Korea. The financial support for such investment was mostly provided by imposing extra burdens on new telephone subscribers through installation charges and telephone bonds. In the presence of high supply-demand gap, sufficient wealth accumulated through rapid economic growth in South Korea made it possible to implement those policies effectively without facing any significant resistance (Kim and Lee, 1991, pp. 36-37). Contrary to the U.S. where network subscription rate had been increased through the implementation of low local access rate policy, as such, subscription of telephone service in South Korea could be expanded even under the actually increased local access rate due to the very high unfilled telephone demand and the rapid economic growth.
Under the current circumstance where the incentive for competition is generally very weak because of the long history of growth under strong government control (Kim and Ro. 1993), the role of direct regulation is expected to be inevitably strong for a while in South Korea. In this context, institutionalist perspective of public interest seems to serve as an important starting point for Korean regulators to improve the economic regulatory practice. This means that South Korean regulators need to make a substantial efforts to construct a more consistent and systematic regulatory institution in which important social values can be well represented through cost-setting and price-setting judgments.

Even though the institutionalist point of view seems to be more relevant in the current context as the South Korean situation is more likely to be characterized by the direct performance control by government rather than reliance on market forces, in the long run, other economic perspectives seem to serve as more influential reference points in the South Korean telecommunications policy. As shown in the privatization and liberalization policies, for example, the ultimate policy direction in the South Korean telecommunications has been set to move toward a more market-oriented competitive environment. In order to reach such an environment, however, it should be preceded by allowing a more natural pricing competition in the toll service market, and by the establishment of a more consistent rate relationship between local and other services. Then the role of interconnection pricing will become more significant as a regulatory tool, and the problems and solutions discussed in the context of the U.S. practice and ongoing policy debate will become more relevant and suggestive to the South Korean context. As
the social goals such as universal service are expected to continue to be important, but be less emphasized than the competitive benefits, in near future, articulating the nature of competition will become an important factor in deciding the characteristics of interconnection pricing in South Korea. As the South Korean telecommunications industry gets relying on market force more and more, in general, the public interest interpretations from structuralist and neoclassical economics perspectives seem to serve as important frames of reference to articulate the nature of competition and construct related competitive policies.

As such, this dissertation provides some important public interest concepts which South Korean regulators can take advantage of in order to guide general regulatory policy, as well as interconnection pricing policy in telecommunications industry. As the U.S. experience shows, the importance or prominence of a particular public interest concept in South Korea will be determined by specific context. This context might bear on different times or different industrial sectors. Aside from the telecommunications industry, for example, under the current social norms in South Korea where the distrust of administrative type of regulation of general big businesses is deeply seated because of the abuse of power and graft of the previous authoritarian regimes, public interest concepts related to competition policy from the structuralist point of view seem to offer important new directions for monitoring the behavior and performance of concentrated industries. In this vein, the exploration of antitrust policy in the U.S. may provide good policy measures to discipline big businesses in South Korea which have not been exposed to
natural competitive forces under the government protection, check their growing power in
the current deregulatory drive in Korean society, and ensure their social responsibility.

In spite of the current increasing popularity and dominance of neoclassical
economic approach in the field of economic regulation, the assertion of efficiency as the
only public interest concept related to economic regulation, and the mere reliance on
market through deregulation, without taking into consideration its tradeoff, begs the
question. In South Korea where the previous rapid economic growth brought out the big
disparity of wealth as the new social problem, in particular, the views of public interest
provided by institutionalists and structuralists seem to provide an important insight to
balance the current, almost blind adherence to laissez-faire policy by neoclassical
economics, and thereby incorporate the importance of social equity in economic
regulation. In this context, rather than relying on a deductively derived ideal model to
guide a policy, it seems to be more important for South Korean regulators to recognize
social and political realities, to encourage participation of diverse research communities
for the deliberation on and debate of public interest objectives, and to make an effort to
balance those competing social and economic objectives. As the U.S. interconnection
pricing experience shows, then, the choice of the nature of economic regulation in general
and interconnection pricing in particular, will be one from various competing values
beyond static efficiency, and eventually depend on the social preferences that emerge
from political and democratic processes. Even though they may not be rational from a
deductive, rational economic point of view, taking a practical point of view, the economic
regulatory practices, constructed through compromise and consensus among political
participants in a democratic process of solving regulatory problems and supported by
good practical reasons, appear to be rational enough.

As implied in the above discussion, the common implication of this study for
academic communities, regulators in the U.S. as well as in South Korea, is the importance
of argumentation perspective in policy analysis. First of all, academic communities can
provide tradeoffs among policy choices by systematically incorporating argumentation
perspective in their policy learning approaches. While this dissertation does not employ
specific analytic tools for argumentation, it provides some insight into the potential that
much can be learned from systematic investigation of arguments related to the
development of practice and its alternatives. Regulators and practitioners can provide
more reasoned policies by taking into consideration different arguments, and deliberating
on and debating their norms and assumptions with a view to concrete action. The
knowledge from the analysis of different arguments can provide the regulators more
capability to see a matter from enough different points of view to provide them with
scope for action.

Democracy has been interpreted as an effort to bring more reason to the political
decision-making process. In addition, democracy has been interpreted as an effort to
prevent any individual group in society from achieving a disproportionate degree of
influence on public policy. The more democratic a society, the more ready it will be to
listen to different interests and views. After the long experience of authoritarian military
leadership, the newly established civilian leadership in South Korea now claims to stand
for democracy. By illustrating the U.S. regulatory policy experience in terms of diverse
conceptions of public interest, in this context, this study provides some initial materials which can be contributed to the construction of debate, argumentation and the play of opinions, on the general regulatory policy as well as the interconnection pricing policy in South Korea.
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