

**The Effect of Privatization on Efficiency and Work Values: Turkey's  
Cement Industry Example**

**Özelleştirmenin Etkinlik ve Çalışma Değerleri Üzerindeki Etkisi:  
Çimento Endüstrisi Örneği**

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## The Effect of Privatization on Efficiency and Work Values: Turkey's Cement Industry Example<sup>1</sup>

### Özelleştirmenin Etkinlik ve Çalışma Değerleri Üzerindeki Etkisi: Çimento Endüstrisi Örneği

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#### Abstract

*The objective of this study was to measure the efficiency of resource usage, with reference to the selected cement industry example in Turkey, chosen from Public Economic Enterprises, which are subject to privatization, and to reveal the interaction between efficiency scores and work values. This study benefited from efficiency- measuring techniques and analysis of work values, on the basis of primary and secondary databases, regarding Cement Industries. According to findings; "The change in efficiency, which emerges depending on the property change in Public Economic Enterprises after privatization, has an effect on work values," which confirms the fundamental hypothesis.*

**Keywords:** Privatization, Efficiency, Values, Work values.

#### Özet

*Çalışmanın amacı, özelleştirmeye konu olan KİT'lerden seçilmiş çimento endüstrisi örneğinden hareketle, kaynak kullanım etkinliğini ölçmek ve etkinlik skorları ile çalışma değerleri arasındaki etkileşimi ortaya koymaktır. Çalışmada, Çimento Endüstrilerine ilişkin birincil ve ikincil veri tabanı esas alınarak, etkinlik ölçme tekniklerinden ve çalışma değerleri analizinden yararlanılmıştır. Elde edilen sonuçlara göre, "KİT'lerin özelleştirme sonrasındaki mülkiyet değişimine bağlı olarak ortaya çıkan etkinlik değişimi, çalışma değerleri üzerinde etkilidir" şeklindeki temel hipotez doğrulanmıştır.*

**Anahtar Sözcükler:** Özelleştirme, Etkinlik, Değerler, Çalışma Değerleri.

<sup>1</sup>An earlier version of this paper was presented at the 18th Annual AEPP (The Association on Employment Practices and Principles) International Conference in 2010, San Francisco, CA.

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## Introduction

During the period after the Second World War, under the influence of Keynesian policies, considerable increases were observed regarding the share of public enterprises in the economy in almost every country. But the stagflation crisis in the 1970s and the economic problems which emerged from this crisis caused the role of public enterprises in the economy to be questioned. As a result of these developments, from the 1980s, especially after Neo-liberal policies gained status, the opinion that Public Economic Enterprises could not use resources efficiently became prominent. In the literature, the discussion, on whether privatization actually increases efficiency or not, has been addressed in many empirical and theoretical studies. Today, the discussions on privatization continue, not only in an economic sense but also in a social sense.

Privatization is important not only in terms of the efficiency of public firms, but also in terms of the workers in these firms. The economic change, which emerges in the post-privatization period in privatized firms, also causes a change of workers, who constitute the social integrity of these firms. Feelings, thoughts, attitude, and behavior of each working individual are affected by this change. With this transformation, many work values, such as the individual's salary requirement, capacity, family, knowledge, education, sense of achievement, interests and pleasures, are changing.

Public Economic Enterprises have the motive of maximization of social utility in their essence, the gravitation of these enterprises towards the motive of profit maximization, together with privatization, causes the emergence of different priorities in the operation values of worker/manager sections. Property change, which emerges in relation to the privatization process, reveals the changes in the efficiency/productivity of these firms, while, on the other hand, it affects the value judgments of workers, due to the change in corporate identity. This study reveals the change in work values of managers and assistant managers in this sector, empirically with reference to the efficiency change prior to and after privatization, with the example of firms in the cement industry.

### 1. Literature: The Rationality of Privatization and Work Values

The word "privatization" was listed for the first time in 1983, in the ninth edition of Webster's New Collegiate Dictionary, and it was defined as "to make private, to transfer the inspection and property in either industrial or trade life from public sector to private sector". Simply put, the concept of privatization is the partial, or complete, sale of publicly -owned enterprises to private people or institutions. The concept of privatization can technically be expressed in three parts. Firstly, it is the denationalization of publicly owned assets. The second part is deregulation or liberalization. Deregulation means the restriction of private sector activities by laws and the removal of barriers to the sectors, where only the government carried out activities. The third part of the concept of privatization is concession-franchising. According to concession-franchising, the government partly, or completely, finances production in a specific field but the production of goods and services are undertaken by the private sector (Hurl and Bryan, 1988: 3).

The rationale of privatization is hidden in the inquiry of success in the implementation of government interference, and in the relationship between failure in the government sector and the degree of success of the market. In this context, the rationale of public administration is explained through the insufficiency of the market and its failure in implementation, depending on competitive conditions. On the other hand, the rationale of privatization removes the failure caused by the inefficiency (failure of public sector) of government interferences.

Privatization is presented as a competitive strategy aimed at the formation and improvement of a global competitive environment, in addition to providing publicly- owned firms with a sustainable regulation and competitive power. Here, the fundamental assumption is that public firms cannot gain a sustainable regulation power which can provide them a competitive superiority and thereby, public firms will be reduced to a structuring which lacks entrepreneurship and creativity; and which is not collaborative, cannot adapt to technological developments, and cannot gain bargaining power (Kök and Çoban, 2008: 26).

In the literature (Marchand et al., 1984; Ramanathan, 1986; Domberger and Piggott, 1986; Ramamurti, 1987; Perelman and Pestieau, 1988; Cremer et al., 1989; Zeckhauser and Horn, 1989; Vining and Boardman, 1992), while recoveries in short and mid-term financial indicators (profitability etc.) for private enterprises are being assessed, the basic aims for Public Economic Enterprises are listed as follows:

- Enabling efficient use of resources and increasing the competitive power of enterprises based on the coordination of economic activities,
- Reducing the inequality in income and prosperity; removing interregional instabilities, balancing social inequalities between social sectors by stimulating regional development,
- Creating employment, providing income for the government budget and constituting price stability,
- Contributing to the constitution of qualified labor forces directed at production; increasing the prosperity of workers by ameliorating working conditions, and encouraging the participation of workers,
- Enabling policy implementations that encourage import substitution,
- Realizing fundamental infrastructure investments, incentivizing social security, and providing public facilities,
- Improving foreign trade, orientating foreign exchange earnings towards productive fields which would reduce technological independence, and creating a self-sufficient national economy.

In this context, the general aims of public enterprises are to realize socio-economic objectives, which favor society, and to maximize net social utility. But in doing this, the main problem is to determine how, to what extent, and why do implementation results deviate from the designated targets, in addition to the clear determination of aims and objectives (Kök and Çoban, 2008: 64).

The first theories developed with regard to the dimensions of the relationship between property structure and efficiency are: the Property Rights theory, the Public Choice theory and the X - Efficiency theory. These theories are generally used to explain the inefficiencies claimed to exist in the public sector. The relationship between property structure and the efficiency of resource use which is explained by public choice and property right in neo-classical economic theories, is explained through the changes in the nature of the ownership, which causes efficiency differences between private and public sectors.

"Theory of Public Choice and Property Rights" takes the hypothesis that the change in property will create a greater economic residual, and resource allocation will be ameliorated (Alchian, 1977; Demsetz, 1967; Niskanen, 1971; Buchanan, 1972). According to the Public Choice Theory, behavioral patterns of parties, and in particular bureaucrats in the political decision-making process, are considered to create an unfavorable effect on the effective operation of the public economy and ensuring that the public interest is observed. As a matter of fact, it is claimed that the required incentivizing and rewarding mechanisms are not affective in Public Economic Enterprises due to the characteristic of public property, thus public enterprises would not be as efficient as private enterprises (Kök and Çoban, 2008: 62). Boardman and Vining (1989) test the Property Rights Theory in their study and accordingly compare the performances of public, private, and public-private enterprises among the 500 largest companies.

There are many studies which set forth the necessity of privatization and evaluate its results (Megginson et al., 1994; D'Souza and Megginson, 1999; Havrylyshyn and McGettigan, 1999; Djankov and Murrell, 2000, 2002; Megginson and Netter, 2001; Boubakri et al., 2005; Çoban and Seçme, 2005). In general, according to the public choice approach, the inefficiency which emerges as a result of public enterprises being less efficient than private sector enterprises, which carry out activities in the same field, is related to the bureaucratic structure that operates under weak competitive conditions, and control mechanisms which cannot be directly operated (Hayek, 1978: 45). Besides that, some fundamental reasons, such as the multi-dimensionality of the objectives of public enterprises, form of property, market structure, insufficient incentives in the administration of public enterprises, and bureaucratic and political relations based on self-interest, are considered as the causes of inefficiency (Demsetz, 1988; Boardman and Vining, 1989; Vickers and Yarrow, 1991; Laffont and Tirole, 1993; Kök, 1995; Shleifer, 1998; Havrylyshyn and McGettigan, 1999; Nellis, 1999, 2000; Djankov and Murrell, 2000, 2002; Shirley and Walsh, 2000; Sheshinski and Lopez-Calva, 2003). In some of the empirical studies carried out on countries/sectors, it was observed that public enterprises use resources more efficiently; whereas in other studies it was observed that private enterprises use resources more efficiently (Zaim and Taşkın 1997; Li and Simerly 1998). With reference to this, it can be said that there is no direct connection between property structure and the efficiency of resource usage in the theoretical sense (Saygılı and Taymaz, 1996 p. 405-408; Barberis et al., 1996; Kole and Mulherin 1997; Boubakri and Cosset, 1998, 2002; Lizal et al., 2001, Harper, 2002; Megginson et al., 2004).

Property, which changed with privatization, changes the efficiency/productivity levels of firms and in relation, the values of workers in the firm vary. Values, which emerge as a criterion in the individuals' structures of thought, attitude, and behavior, constitute an inseparable element of social integrity. Individuals accept the values of the group/firm they work at, and of

the society and culture they live in and use these as criteria in their evaluations and preferences. Thus, they come to general judgments, such as much better, more correct, more convenient, more beautiful and more important (Tolan, 1996: 233).

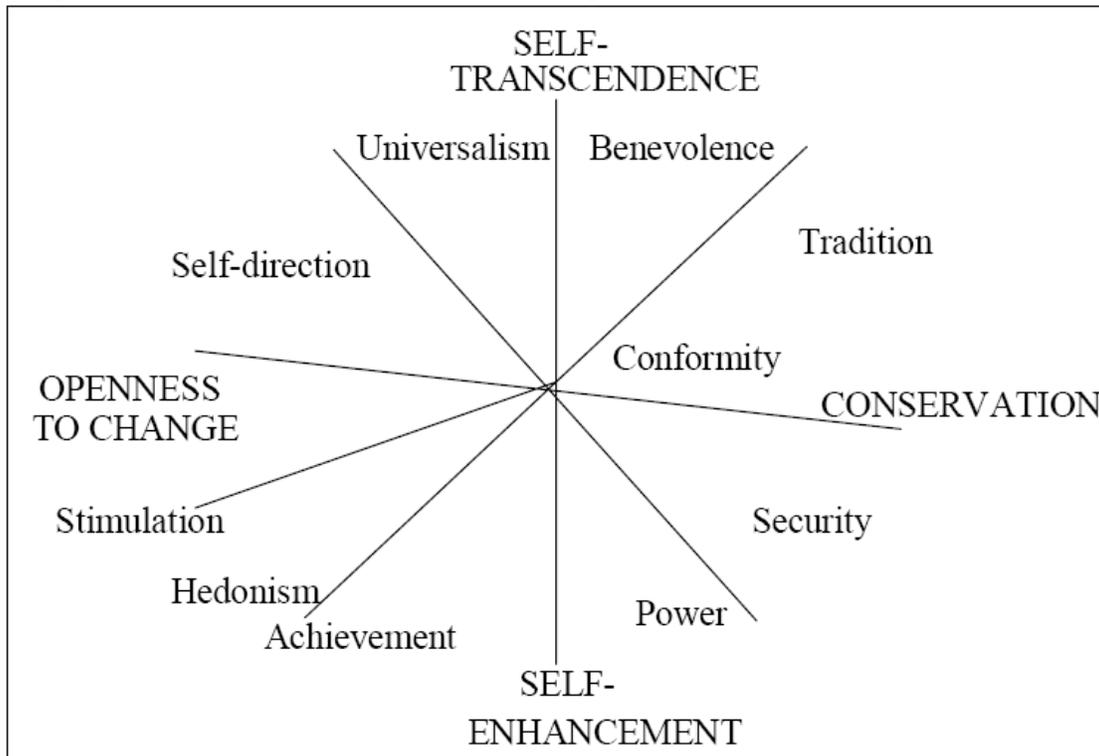
Values are cognitive structures which explain the individuals' preferences regarding their ideals, principles and priorities in behavior (Macionis, 2001: 67). Values affect the individual's decisions, the people they trusts, their time and energy (Licht, 1998: 170). In this context, values are "general tendencies which prefer specific aspects of the events to others" (Stewart and Glynn, 1985: 67). Values, which shape the individuals' point of view towards the elements around them, are the targets which are listed among themselves according to their degree of importance and desire to be achieved by the individuals (Henslin, 2004: 43).

A number of researchers from various disciplines have conducted studies on the nature and function of values (Brigham, 1986; Cochrane, Billig, and Hogg, 1979; Yankelovich, 1981). One of the earliest psychological researchers to develop a classification of human values was Allport (Allport, Vernon, and Lindzey, 1931). He categorized values into six different types or groups: theoretical, economic, aesthetic, social, political, and religious. Milton Rokeach, an American social psychologist, who is the most famous researcher regarding values and investigating values, has defined value as: "a specific behavior preferred individually or socially in response to a contrary/opposite form of behavior or objective of living, or a permanent belief in the objective of living". He has denoted the value system as: "the constant organization of preferable forms of behavior or objectives of living due to a continuous importance". So he has separated values into two parts as instrumental in relation to the form of behavior, and as teleological in relation to final objectives (Rokeach, 1973: 6).

Geert Hofstede, who conducts inter cultural studies on values, denotes that human behavior must follow a certain order for a social system to be able to preserve its existence. He claims that in order to be able to anticipate how an individual will behave within this system, the condition of the individual must also be considered, in addition to the individual himself. Hofstede, separates the values into four classes, consisting of: "power distance, avoiding ambiguity, individualism-collectivism, and male/female behavior" (Hofstede, 1980: 19).

Sholam H. Schwartz, who has carried out remarkable studies on values over recent years, describes value as "a social actor which generally helps selecting behaviors/actions, the evaluation of events and people, and the explanation of behaviors/actions", and he defines it as "desirable aims serving as guiding principles in people's lives with varying importance" (Schwartz, 1999: 24-25). Schwartz has detected ten different values which may be important in an individual's life. He has collected these values on the axis of four main values, such as self-transcendence, conservation, openness to change and self-enhancement.

Figure 1: The Structure of Values according to Schwartz



Source: Schwartz 1992-1994.

Schwartz defines these ten value groups, in terms of their fundamental objectives and what they mean, as follows (Schwartz 1992-1994):

1. Power: Social status and prestige, control or dominance over people and resources (social power, authority, wealth, preserving my public image)
2. Achievement: Personal success through demonstrating competence according to social standards (successful, capable, ambitious, influential)
3. Hedonism: Pleasure and sensuous gratification for oneself (pleasure, enjoying life)
4. Stimulation: Excitement, novelty, and challenge in life (daring, a varied life, an exciting life)
5. Self-direction: Independent thought and action choosing, creating, exploring (creativity, freedom, independent, curious, choosing own goals)
6. Universalism: Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature (broad-minded, wisdom, social justice, equality, a world at peace, a world of beauty, unity with nature, protecting die environment)
7. Benevolence: Preservation and enhancement of die welfare of people with whom one is in frequent personal contact (helpful, honest, forgiving, loyal, responsible)

8. Tradition: Respect, commitment, and acceptance of die customs and ideas that traditional culture or religion provide the self (humble, accepting my portion in life, devout, respect for tradition, moderate)
9. Conformity: Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms (politeness, obedient, self-discipline, honoring parents and elders)
10. Security: Safety, harmony, and stability of society, of relationships, and of self (family security, national security, social order, clean, reciprocation of favors, job security)

These value types, classified by Schwartz, enable the value systems to be understood and raise an awareness of the relationships between them. According to Schwartz, the key to describing the relationship structure between values is assuming that the actions, which follow the psychological, practical and social results each value has, will either be in conflict or in harmony with the behaviors which are comprised by monitoring other values (Schwartz, 1992: 12).

Perceiving work as a value is related to the way work is perceived in society or to the approach attributed to work in an ethical sense (Özkul, 1997: 9). Work values, which comprise the subset of the total values of an individual, are the quality, compensation and satisfaction sought or desired at work (Super, 1970: 56). According to another definition, work values are general and relatively stationary objectives which the individual tries to achieve at work (De Vos et al, 2005: 43). In line with other various definitions, work values have been described with terms such as social responsibility, honesty, being judicious, golden rules, religious beliefs, equal working, evident self-interests, comparison of good-bad, conscience, law, social justice, being honorable, what should be done, virtue, leadership, character, being mortal, God, privacy and, belonging to society (Lewis, 1985: 377).

Workers show interest in the values of the firm they are working for. Workers expect the organizations to have work values which expressly reflect their primal concerns. In this context, some of the reasons that render the values as important are as follows (Connock and Johns, 1995: 89-90):

- Describes action parameters for workers and constructs an ethical culture which has become a life style for the workforce in every aspect.
- Supports the strategic tendencies of the firm/institution.
- Harmonizes the vision and strategic plans of the firm/institution and leads it to success.
- Improves the image of the firm/institution regarding public opinion, and increases trust levels among customers.
- Work values are primary elements of motivation. For this reason, work values increase the competitive power of both the individual and the firm/institution.

Aside from this, ecologic intelligence, fundamental democracy, social justice, individual responsibility, acting legally, local administration, office democracy, quality of business life, and using ecologically- and socially- sensitive technologies are also expressed as future work values

(Petty and Hill, 2005: 5-6). It has been observed that, in a competitive market process, when workers' loyalty and trust for the company they work for increases, and when their areas of freedom regarding their authorization and work are expanded, and they are given sufficient chances and opportunities to improve their talents, workers' performance increases (Zaim, 2006: 605; Schwartz, 1992; 1994).

## 2. Purpose and Fundamental Hypothesis of the Study

With reference to the theoretical and methodological analyses discussed in the first sections of this study, the purpose of this application is;

- a. Examination of the efficiency of resource usage of Public Economic Enterprises which are the subject of privatization during pre- and post-privatization periods within the framework of a selected industry,
- b. To measure the work values of managers and manager candidates after privatization in those Public Economic Enterprises which are the subject of privatization,

Within the framework of the general purposes stated above, the fundamental hypothesis of this study has been determined as "The efficiency change, which appears in relation to the change of property after the privatization of Public Economic Enterprises, has an effect on work values." As much as the gains/losses in the enterprise scale, which arise from the corporate results of privatization (efficiency thesis); the changes caused in work values must also be considered. With reference to this fundamental principle, the following derivative hypotheses have been tested:

- An improvement in the firm's efficiency after privatization would provide an increase in the values of power, action-taking, achievement, and self-management of the managers and manager candidates within the firm. Encountering a decrease in the firm's efficiency after privatization would cause a decrease in the values of benevolence, security and peace, tradition, and conformity of the managers and manager candidates working at this firm.
- Even if the efficiency of the firm does not change after privatization, there would be a change (increase/decrease) in the values of hedonism, security and peace, achievement and stimulation of the managers and manager candidates within the firm due to the psychological effects caused by property change.

## 3. Method and Description of Variables of the Study

As a result of the privatization practices initiated in 1989 in the cement industry, all 24 cement companies with a public share of more than 51% have been privatized. A part of these cement companies were wound up, merged or changed their fields of activity. Efficiency and work values for 16 firms in the cement industry were analyzed, the privatization of which has been completed. A portion of the companies were left out of the analysis, due to a lack of data resulting from the unavailability of their activity reports. In the efficiency measurements carried out between 1991 and 2007, the total labor force (excluding sub-contractor employment) and total capital stock of the companies were used as input, while the production level variables were used as output. Capital stock variables have been acquired through the perpetual inventory method, referred to as the Harberger approach in literature. Monetary quantities used

in the calculation of capital stock have been calculated by using Gross Domestic Product deflator based on the year 1987.

In the analyses regarding work values, a primary database was used and questionnaires were carried out within the indicated firms. Some of the surveys were carried out face to face and others were filled in by the managers themselves. A total 102 questionnaires were distributed among the middle-level managers and manager candidates (assistant manager or chief) within the 16 firms. 81 filled-in questionnaires were received back with 80% response rate.

There are numerous studies in the literature on the cement industry for measuring the performance effects of privatization on the industry and its companies. In this study, Data Envelopment Analysis (DEA) has been used to calculate the efficiency levels of the industry from the sample of selected cement companies. In efficiency analyses, considering the specific production process, the changes in the productivity (in time) of some, or all, of the factors were calculated by making use of the total factor productivity (TFP) measurement literature (Malmquist-CRS<sup>2</sup> index). All efficiency and productivity calculations based on industry were made using the DEA Solver Pro 4.1 computer program.

In order to measure TFP with Malmquist productivity index, there must be at least two periods being analyzed. The result obtained from difference functions for both periods, explains the deviations from maximum average output. This index calculates the relative distance proportions of each data point, according to common technology, and measures the change in TFP (technological progress and technological change which form it) between two data points, and is expressed by the notation below:

$$m_0(y^t, x^t, y^{t+1}, x^{t+1}) = \left[ \left( \frac{d_0^t(y^{t+1}, x^{t+1})}{d_0^t(y^t, x^t)} \right) x \left( \frac{d_0^{t+1}(y^{t+1}, x^{t+1})}{d_0^t(y^t, x^t)} \right) \right]^{\frac{1}{2}}$$

In this index, base year is indicated with t period, and the subsequent year is indicated with t+1 period. In this equation, the notation  $d_0^t$  represents the distance to the technology in (t) period from (t+1) observations. This equation can be indicated using the following model:

$$\frac{d_0^{t+1}(y^{t+1}, x^{t+1})}{d_0^t(y^t, x^t)} \left[ \left( \frac{d_0^t(y^{t+1}, x^{t+1})}{d_0^{t+1}(y^{t+1}, x^{t+1})} \right) x \left( \frac{d_0^t(y^t, x^t)}{d_0^{t+1}(y^t, x^t)} \right) \right]^{\frac{1}{2}}$$

In the equation above, the proportional part outside of the square brackets is the part which measures the change in technical progress with output axis between (t) and (t+1) periods. In other words, efficiency change; the technical efficiency proportion considered by Farrell (Farrell, 1957) for (t+1) period is equal to the technical efficiency proportion determined in (t) period. The part in square brackets is the geometrical average of the two proportions and explains the change in technology between the two periods (xt+1 and xt).

<sup>2</sup> As the scale sizes of the indicated companies are close to one another, a constant return to scale (CRS) assumption was used in accordance with the scale.

If the value of M0 is bigger than 1, it means that TFP has increased from (t) period to (t+1) period. If this value is smaller than 1, it indicates that TFP has decreased from (t) period to (t+1) period (Kök and Deliktaş). When the change in TFP is separated into two parts, technological change and the change in efficiency can be indicated separately.

$$\text{Change in Technical Efficiency} = \frac{d_0^{t+1}(y^{t+1}, x^{t+1})}{d_0^t(y^t, x^t)}$$

$$\text{Change in Technology} = \left[ \left( \frac{d_0^t(y^{t+1}, x^{t+1})}{d_0^{t+1}(y^{t+1}, x^{t+1})} \right) \times \left( \frac{d_0^{t+1}(y^t, x^t)}{d_0^t(y^t, x^t)} \right) \right]^{\frac{1}{2}}$$

Decomposition of the Malmquist productivity index enables us to determine the contribution of the progress in technical efficiency (TE) and technological change (TC) in TFP. Here, TE is expressed as the catch-up effect of the production frontier, whereas TC is expressed as the shift in the production frontier curve. TE and TC constitute the main elements of change in TFP. In other words, the multiplication of TE and TC gives the change in TFP.

In the survey on the determination of work values, judgments were stated indicating the work values of managers and manager candidates. Work values in the survey were grouped from 1 to 7. 1 indicates that the work value is of no importance, whereas 7 indicates that the work value is of great importance. In order to determine the individual work values of managers and manager candidates, 41 different value judgments were used in the research. Multidimensional scaling analysis was performed on the matrix of correlations among the 41 single values (for the details about the way to carry out this analysis, see Schwartz, 1994). Each value shows the managers' point of view towards work. These values are shown in Figure 1. In order to determine work values, Schwartz's Value Survey (1992, 1994, 2001) was used in the research. As explained above, work values were separated into 10 value orientations. Factor analysis was applied to data obtained by Schwartz's Value Survey, and the reliability of these was tested. Besides that, the relationship between factors related to values was also calculated via correlation analysis.

#### 4. Results of the Study

In the methodological part of the study, the fundamental hypothesis stated: "The efficiency change, which emerges in relation to the property change in Public Economic Enterprises after privatization, has an effect on work values", this has been discussed using the indicated approaches in reference to the examples from firms in the cement industry, and the following results were obtained:

Efficiency results, regarding the cement industry, are indicated in Table 1.

**Table 1: TFP Results of Output Based Malmquist Index (CRS) for the Cement Industry**

Malmquist (TFP)	1991> 1992	1992> 1993	1993> 1994	1994> 1995	1995> 1996	1996> 1997	1997> 1998	1998> 1999	1999> 2000	2000> 2001	2001> 2002	2002> 2003	2003> 2004	2004> 2005	2005> 2006	2006> 2007	Average/ Period
<b>Afyon cement</b>	1,031	1,015	0,984	1,005	1,010	1,003	1,017	1,021	0,999	0,987	1,032	1,025	0,996	1,006	0,958	1,009	<b>1,006</b>
<b>Ankara cement</b>	1,051	1,007	1,002	1,008	1,015	1,057	1,025	0,983	1,021	0,993	1,016	1,022	1,010	1,029	0,992	0,991	<b>1,014</b>
<b>Aşkale cement</b>	1,024	1,037	1,007	1,020	1,012	1,020	1,022	0,937	1,006	1,012	0,998	0,997	1,006	0,964	1,003	0,994	<b>1,004</b>
<b>Balıkesir cement</b>	1,058	1,026	1,00	1,009	1,013	1,011	1,008	1,013	0,985	0,996	1,011	1,011	0,999	1,010	0,989	1,004	<b>1,009</b>
<b>Bartın cement</b>	1,012	1,054	1,016	1,003	1,016	0,963	0,981	1,048	0,942	0,908	1,135	1,005	0,990	1,013	1,025	1,013	<b>1,008</b>
<b>Çorum cement</b>	1,005	1,016	1,030	1,018	1,006	1,012	1,012	1,131	1,012	0,990	1,047	0,957	1,014	0,911	0,949	0,995	<b>1,007</b>
<b>Denizli cement</b>	1,012	1,101	1,007	1,015	0,964	0,990	0,993	0,993	1,007	1,007	1,002	1,022	1,006	0,999	1,015	0,996	<b>1,008</b>
<b>Elazığ cement</b>	1,003	1,009	0,995	0,999	1,037	1,031	1,004	1,019	1,016	1,027	1,00	1,011	0,982	0,975	1,006	0,985	<b>1,006</b>
<b>Gaziantep cement</b>	1,024	1,049	0,993	1,016	1,031	0,978	1,001	1,016	0,947	0,943	1,084	0,993	1,008	1,008	1,005	0,950	<b>1,003</b>
<b>Oysa cement</b>	0,999	1,039	1,005	1,002	0,991	1,027	1,007	0,964	1,029	0,976	1,036	0,999	0,994	1,006	0,999	1,026	<b>1,006</b>
<b>Kars cement</b>	1,022	1,001	1,004	1,003	0,994	1,005	0,996	0,980	1,102	1,010	0,993	0,996	1,022	1,005	0,980	0,978	<b>1,006</b>
<b>Lalapaşa cement</b>	0,971	1,073	1,00	0,994	1,014	1,024	0,993	1,066	0,875	0,926	1,219	0,982	1,028	0,979	1,008	0,993	<b>1,009</b>
<b>Pınarhisar cement</b>	1,059	1,017	1,016	1,010	1,015	1,010	1,010	0,995	1,010	0,967	0,995	0,998	0,997	1,037	1,007	0,986	<b>1,008</b>
<b>Sivas cement</b>	1,018	1,014	1,018	1,046	0,993	1,013	1,004	1,011	1,011	1,001	0,988	1,029	0,954	1,044	0,973	0,996	<b>1,007</b>
<b>Söke cement</b>	1,028	1,073	1,058	1,038	0,977	0,867	1,061	0,990	0,989	0,972	0,989	1,026	0,992	0,997	1,004	1,007	<b>1,004</b>
<b>Trabzon cement</b>	1,002	1,053	1,001	1,007	1,022	0,986	0,977	0,992	0,977	0,903	1,123	1,009	1,004	0,994	0,994	1,004	<b>1,003</b>
<b>Average/Year</b>	<b>1,020</b>	<b>1,036</b>	<b>1,00</b>	<b>1,01</b>	<b>1,007</b>	<b>1,00</b>	<b>1,007</b>	<b>1,010</b>	<b>0,996</b>	<b>0,976</b>	<b>1,042</b>	<b>1,005</b>	<b>1,00</b>	<b>0,998</b>	<b>0,994</b>	<b>0,995</b>	<b>1,007</b>
<b>Maximum</b>	1,059	1,101	1,058	1,046	1,037	1,057	1,061	1,131	1,102	1,027	1,219	1,029	1,028	1,044	1,025	1,026	<b>1,014</b>
<b>Minimum</b>	0,971	1,001	0,984	0,994	0,964	0,867	0,977	0,937	0,875	0,903	0,988	0,957	0,954	0,911	0,949	0,950	<b>1,003</b>
<b>SD</b>	0,023	0,028	0,016	0,013	0,019	0,041	0,019	0,044	0,048	0,037	0,066	0,018	0,017	0,031	0,020	0,016	<b>0,002</b>

Efficiency scores (TFV) obtained by the DEA Solver Pro 4.1 computer program have been tabulated.

When the results of the DEA analysis results, which cover pre- and post-privatization periods in relation to the cement industry, were assessed, the TFP of 16 companies was calculated as 1,007196 on average within the assessed period. When the components of the TFP are examined, it brings the realization that, in general, deterioration (industry average 0.99) is observed in the technical efficiency speed of the firms in the post-privatization period, whereas, amelioration (industry average is 1.008) is observed in their production technologies. When the sources of change in efficiency parameters are examined, the 1997 and 2001 crises (Çorum, Gaziantep, Niğde, Ankara ve Bartın) are seen as being influential. It is understood from the activity and sector reports that the adverse effects of crises on production and investment effect the use of resources within the sector. As a matter of fact, 115% average capacity usage rate for most firms declined to 80% in 1997, and to 16% in 2001. The total number of workers was 4,841 before privatization, whereas this number declined to 3,253 after privatization.

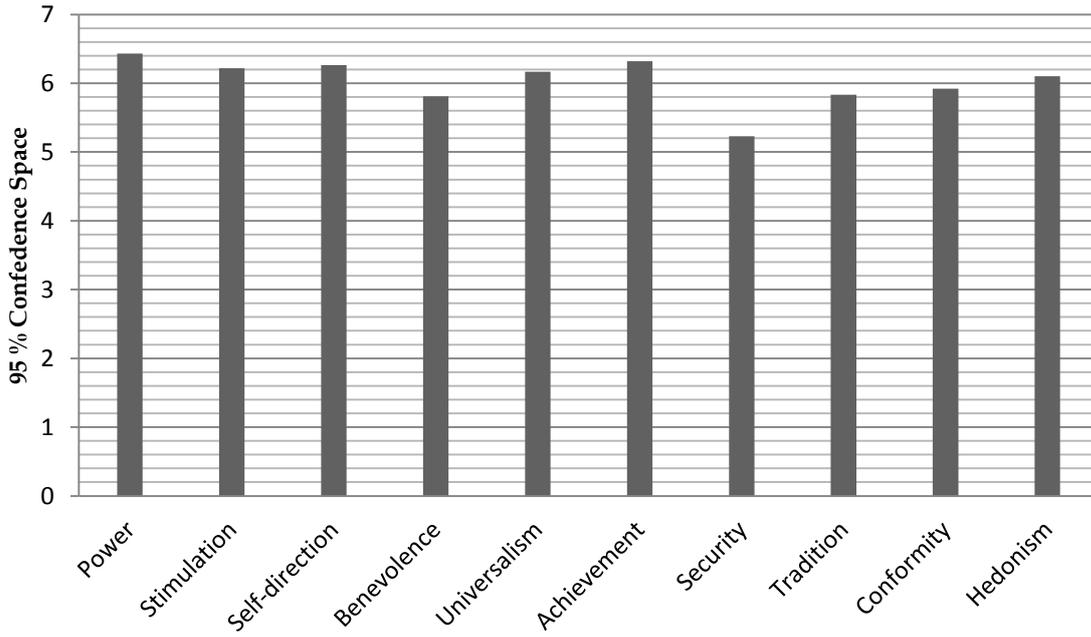
Alpha values, obtained according to the Schwartz Value Survey regarding the work values within the cement industry, are indicated on the table below:

**Table 2: Reliability Results According to Value Judgments**

Value	Alpha Value
Power	0.92
Achievement	0.88
Hedonism	0.76
Stimulation	0.86
Self-direction	0.79
Universalism	0.62
Benevolence	0.79
Tradition	0.70
Conformity	0.78
Security	0.82

According to Table 2, in which the results of reliability in work values are examined, though achievement, stimulation, and self-direction received a higher value, universalism and tradition received a lower reliability value.

Figure 2: Value Analysis of Managers in the Cement Industry



In Figure 2, where the importance of work values for managers and manager candidates are indicated, the value of power is the most important factor among the surveyed workers, whereas the least important value is security and peace. Power with 6,43, achievement with 6,318, self-direction with 6,265, stimulation with 6,219, universalism with 6,168 and hedonism with 6,104 were characterized as very important within the group of managers. Benevolence, tradition and conformity were of secondary importance, while security and peace represented the least importance in the ranking of values.

When the psycho-social dimension of the research on industry is evaluated with work values analysis, the values that are considered as important by managers and manager candidates are observed as being, power, achievement, self-direction, and stimulation respectively. The fact that the value of “power” is the most important value among managers can be related to the property change after privatization. Pressure which arises from privatization (efficiency, productivity, job security) forces individuals to be different and more productive. This point can be explained by the individual’s increase in working performance and their demand of power. The increase in the individual’s performance also increases the firm’s performance, as well as creating a conflict of interests caused by competition. According to the survey results, other values which were prominent among managers (achievement, self-direction and stimulation) also support efficiency and the increase of competition.

Security and peace were indicated as the lowest values among managers. The decrease in this value indicates that the trust those managers have in the firm they are working for decreases and they do not work peacefully. When the employment structures of the privatized cement firms are investigated, it is thought that the shrinkage in has an effect on the decrease of said values. According to the other results regarding work values, a decrease is seen in the values of benevolence, tradition and conformity of managers. It may be that, after privatization, the managers lose their loyalty to the firms they work for. As a

matter of fact, each individual desires a safe environment in their business life; however, the fear of inability to predict their own future is reflected in the values of loyalty.

## Conclusion and Evaluation

As the locomotive of economic growth, the cement industry, is characterized as a strategic industry, which is complementary of housing and infrastructure to a considerable extent due to population density, and therefore one of the fundamental inputs of the construction sector (Kök, 1995: 210-213). Privatization Master Plan, which was prepared by Morgan Bank of the The State Planning Organization (SPO) and The World Bank (WB) in 1986, is remarkable in terms of its impact, and the fact that it is an important study which orientates the field of privatization. In this report, privatization applications were accelerated, with priority given to the cement sector. Privatization studies within the cement sector in Turkey started in 1987, with the privatization of the 5 cement factories, which were subsidiaries of Türkiye Çimento ve Toprak Sanayii Ticaret AŞ (ÇİTOSAN), alongside privatization of the public shares of those 5 cement factories by the same establishment. As a result of the privatization applications, which continued until 1998, the entire industry was transferred to the private sector (Turkish Ministry of Industry and Commerce, A Sectoral Research on Cement Industry, 1998: 41).

Within the framework of the aim of this study, in relation to the database of Public Economic Enterprises, which are subject to privatization in pre- and post-privatization periods, application results regarding the private cement sector can be listed as follows:

Evaluation of the efficiency analysis results in the cement industry for the given period show that the level of change of TFP for 16 firms is 1,007196 on average. Here, while an increase level of 0,007 can be a sign of increasing returns according to the scale, when the sources of the change in efficiency level are investigated, an increase in technological change is observed, whereas there is deterioration in the level of technical efficiency. It is understood that the negative change in technical efficiency parameters (especially after the crisis in 2001) is caused by the sudden shrinkages in capacity usage rates.

In addition to the change in the efficiency level encountered by property change, as it has been mentioned in the theoretical part of this study, psychological and sociological dimensions of privatization on workers are also important. Thus, it would not be wrong to say that the companies operating in a competitive environment, depending on the change of property after privatization, elicits competition-supportive characteristics of managers, such as power, achievement, self-direction, and stimulation. The fact that the characteristic of security among managers is at its lowest level, supports the hypothesis mentioned in the study.

When the efficiency results and the analysis results of work values are evaluated as a whole, the main hypothesis of the research has been confirmed; *"The efficiency change, which emerges in relation to the property change in Public Economic Enterprises after privatization, has an effect on work values"*. Consequently, the judgment, which is the fundamental hypothesis of this study: *"The efficiency change which emerges in relation to the property change in Public Economic Enterprises after privatization has an effect on work values"* has been confirmed. The derivative hypothesis of this study, *"An amelioration in the firm's efficiency after privatization would cause an increase in the values of power, stimulation, achievement, and self-direction for firm managers' and manager candidates"* has also been confirmed in accordance with the results of

the work values analysis. In addition, another derivative hypothesis, “To encounter a decrease in a firm’s efficiency after privatization, would cause a decrease in the values of benevolence, security and peace, tradition and conformity for the firm managers’ and manager candidates” has also been confirmed in accordance with the obtained analysis results.

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