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Improving Public Enterprise Performance

Lessons from South Korea

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The performance evaluation system, successfully applied in Korean public enterprises, has four essential prerequisites: (1) parallel reforms to increase managerial autonomy and skills, (2) reliable and timely information, (3) adequate skills to supervise and evaluate, and (4) political will. The paper suggests ways to build up and compensate for the first three requirements; there is no substitute for the fourth.

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The impact of the reforms on operational efficiency can be measured for five of the GIEs, including two of the most important enterprises in the economy: the Korean Power Corporation (KEPCO) and the Korean Telecommunication Authority (KTA). This group of enterprises shows a sharp improvement in efficiency in the period after the reforms, well above their past trends in performance. While this paper was unable to attribute the efficiency gains conclu-

sively to the reforms, there is strong qualitative evidence that the changes were an important reason for the operational improvements.

A central feature of the Korean reforms is the performance evaluation system, which sets clear targets for management and provides bonuses on the basis of outcomes. The Korean system is similar to one operating in Pakistan, and both are based on systems used in large private companies to manage their subsidiaries, which should make the system adaptable to other country circumstances.

The system has four essential prerequisites for success: (1) parallel reforms to increase managerial autonomy and skills, (2) reliable and timely information, (3) adequate skills to supervise and evaluate, and (4) political will. The paper suggests ways to build up and compensate for the first three requirements; there is no substitute for the fourth.

This paper is a product of the Private Sector Development and Public Sector Management Division, Country Economics Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Rose Malcolm, room N9-053, extension 61708 (48 pages with graphs and tables).

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IMPROVING PUBLIC ENTERPRISE PERFORMANCE: LESSONS FROM SOUTH KOREA¹

Overview

1. In 1983 Korea dramatically changed the way it managed the largest and most important group of its public enterprises, the Government Invested Enterprises, or GIEs. The reforms increased enterprise autonomy, changed managerial selection procedures, and began systematically to evaluate performance and provide incentives on the basis of the evaluation. This paper assesses the results of these reforms, and suggests ways the Korean performance evaluation system might be adapted to circumstances in other countries.

2. The impact of the reforms on operational efficiency can be measured for five of the GIEs, including two of the most important enterprises in the economy: the Korean Power Corporation (KEPCO) and the Korean Telecommunication Authority (KTA). This group of enterprises shows a sharp improvement in efficiency in the period after the reforms, well above their past trends in performance. While this paper was unable to attribute the efficiency gains conclusively to the reforms, there is strong qualitative evidence that the changes were an important reason for the operational improvements.

¹/This paper was prepared with extensive assistance from Dr. Song, Dae Hee, Korea Development Institute, and Mari Iizuka, World Bank.

3. A central feature of the Korean reforms is the performance evaluation system, which sets clear targets for management and provides bonuses on the basis of outcomes. The Korean system is similar to one operating in Pakistan, and both are based on systems used in large private companies to manage their subsidiaries, which should make the system readily easily to adapt to other country circumstances. As the paper points out, the system has four essential prerequisites for success: (i) parallel reforms to increase managerial autonomy and skills; (ii) reliable and timely information; (iii) adequate skills to supervise and evaluate; and, (iv) political will. The paper suggests ways to build up and compensate for the first three requirements; there is no substitute for the last.

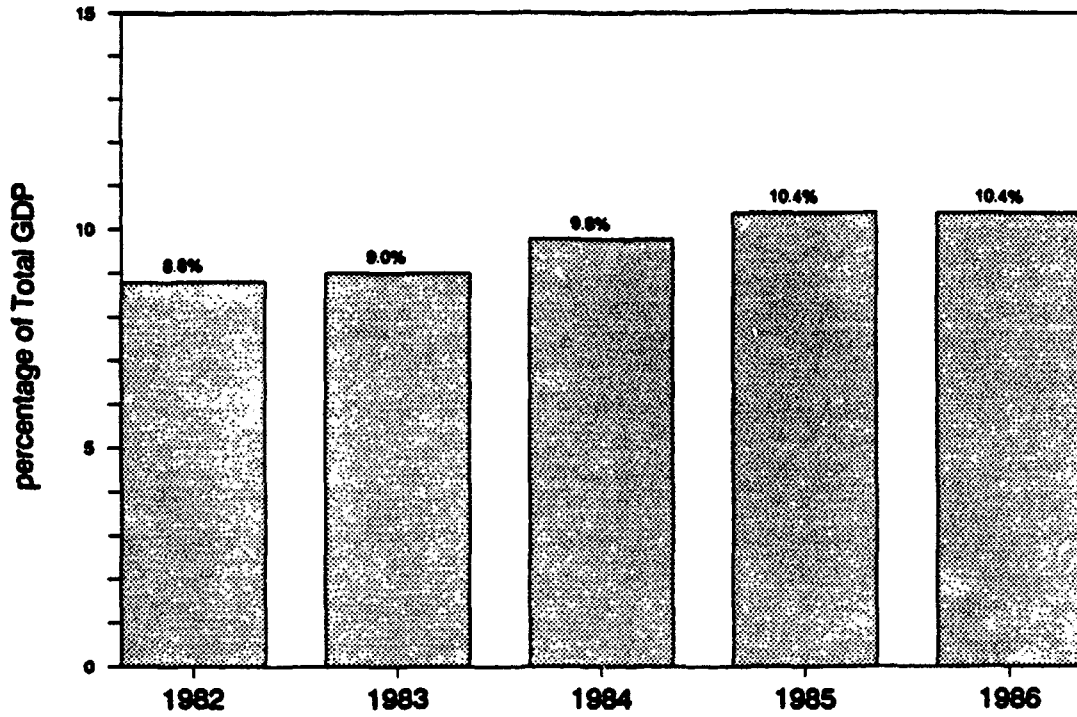
The Korean Public Enterprise Sector

4. Although the Korean public enterprise (PE) sector is relatively large, consisting of 90 enterprises which produce about 10.4% of GDP, the character has been changing (see Graph 1). Manufacturing, which was responsible for almost 47% of PE value added in 1975 and 38% in 1980, is now only about 16%. Financial services, another large sector in the past, dropped from 19% in 1980 to about 11% today. In contrast, electricity, gas, transport and communications have grown to 60% of PE value added. These shifts mean that the PE sector now largely provides supporting services to the private sector rather than acting as a competitor or substitute.

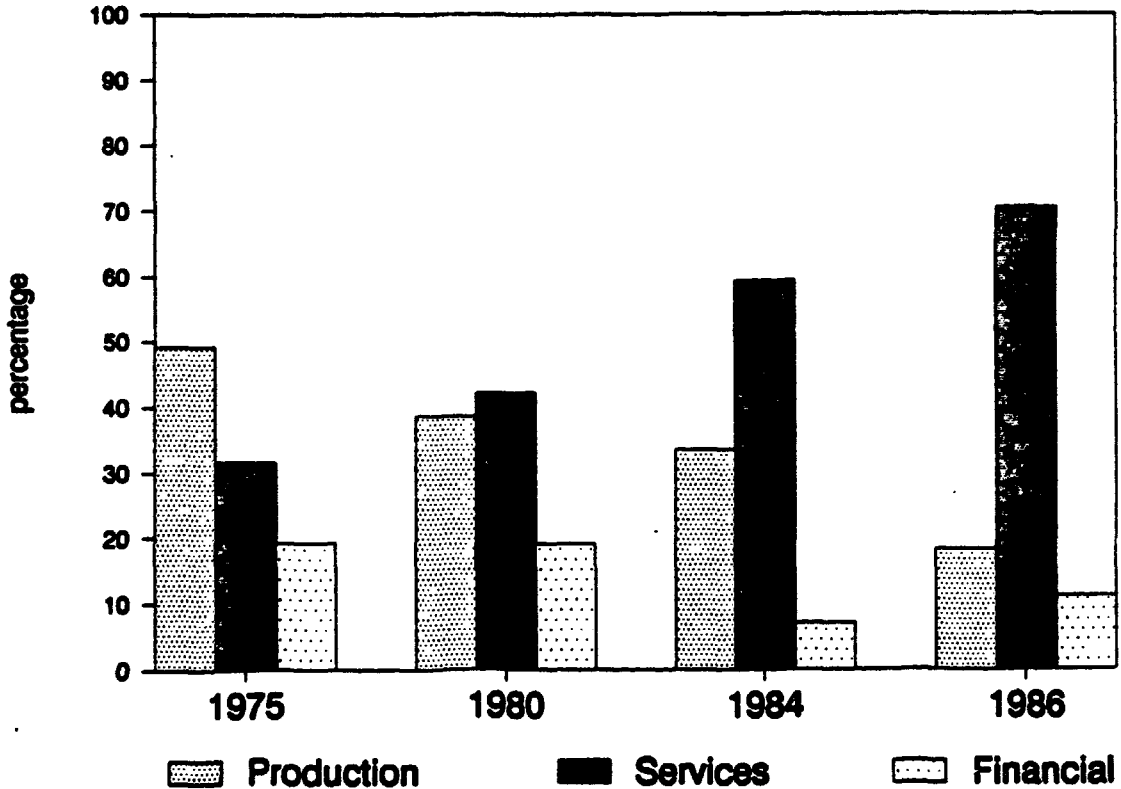
5. Furthermore, the PE sector's importance as an investor has been declining. In 1987 PEs were responsible for 15.6% of gross fixed capital formation, down from close to 48% in 1982 (see Graph 2). The sector has never

GRAPH 1

KOREA PE SECTOR: GDP SHARE

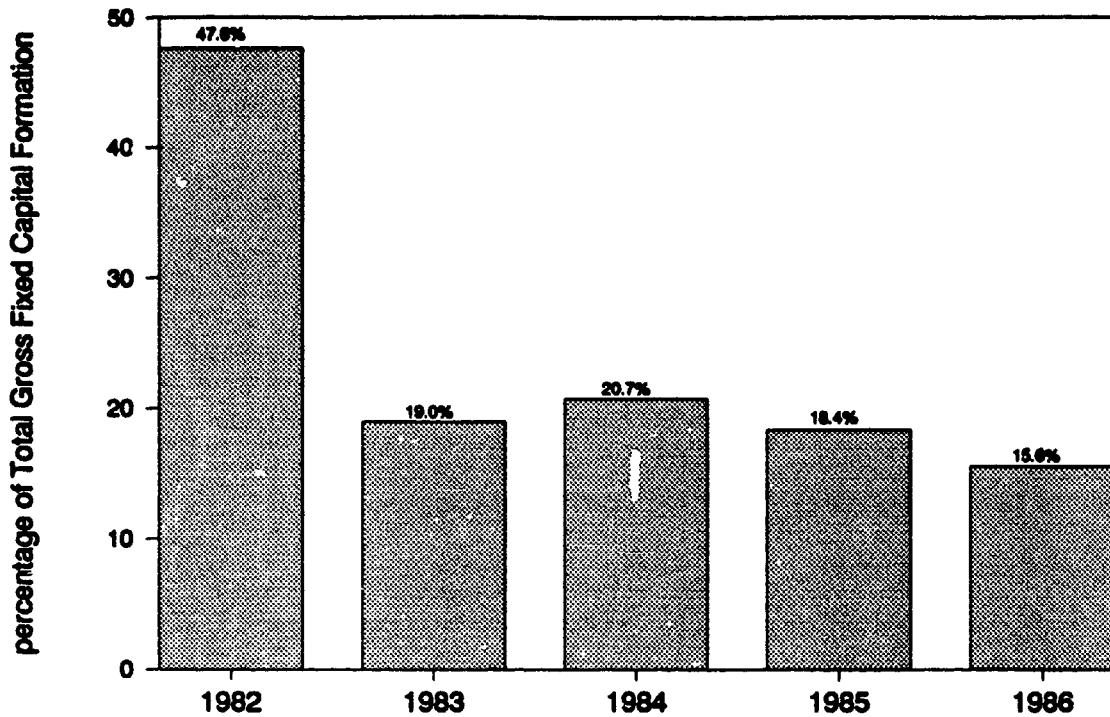


GDP Share Within PE Sector

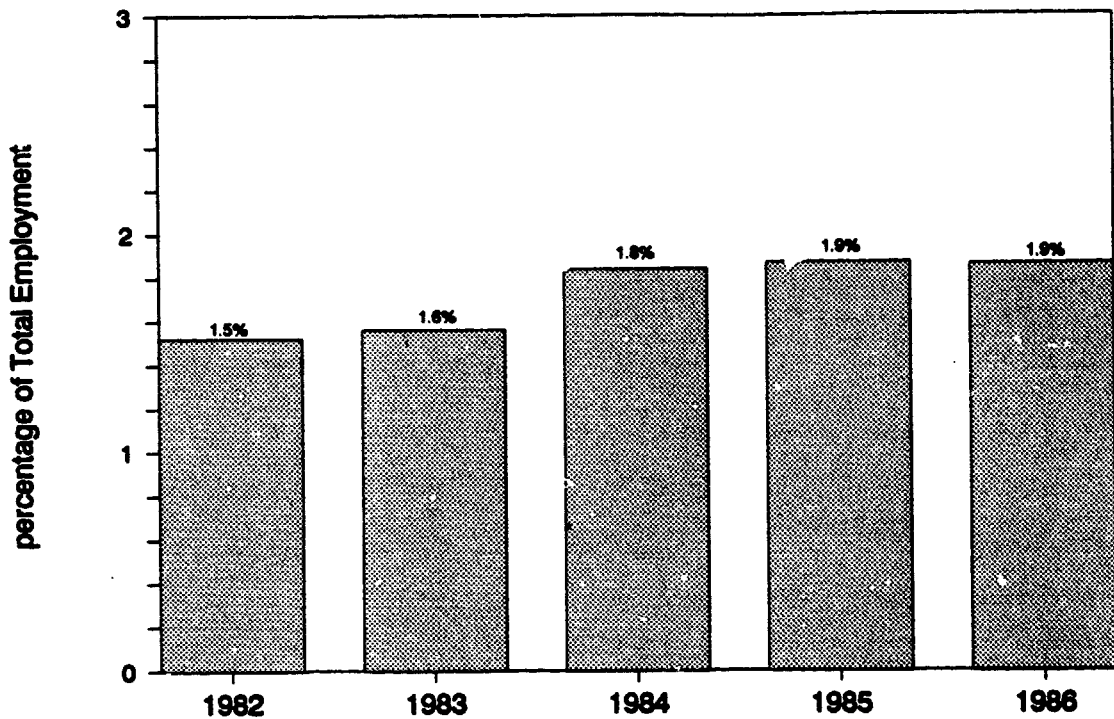


GRAPH 2

KOREA PE SECTOR: SHARE OF GROSS FIXED CAPITAL FORMATION



KOREA PE SECTOR: EMPLOYMENT SHARE



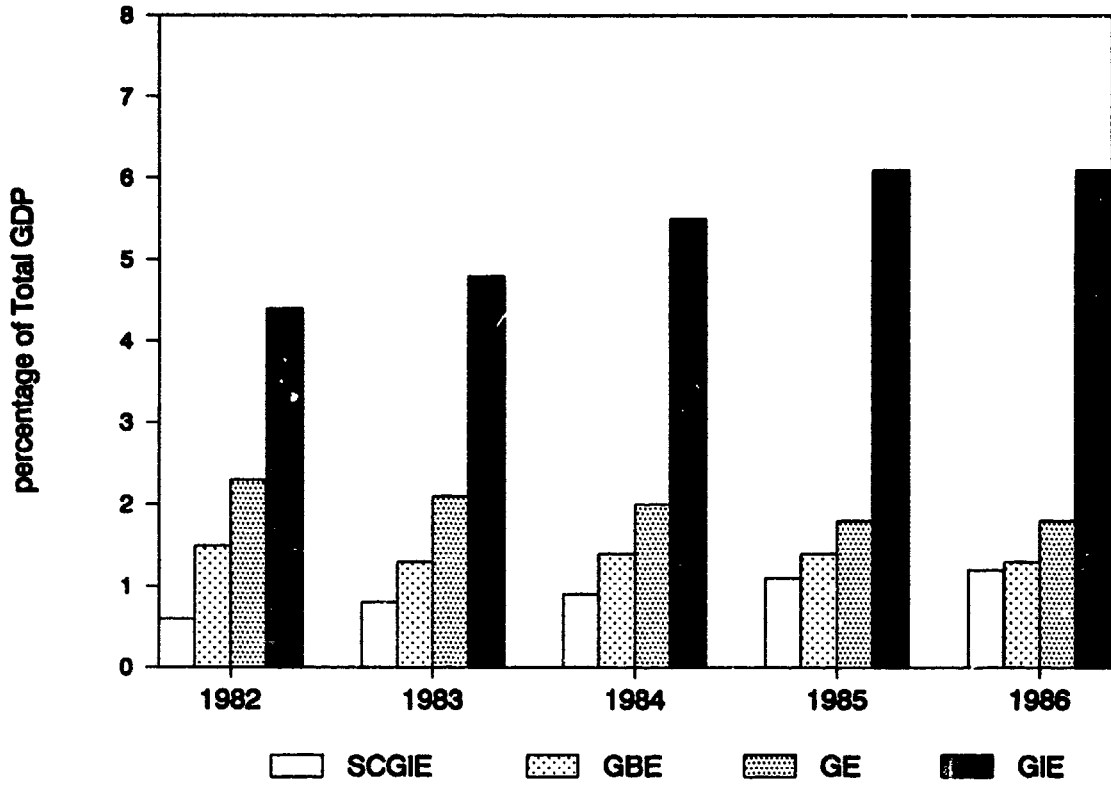
been a large employer: it is responsible for less than 2% of total employment.

6. The PEs are divided into four main categories:

- (i) Twenty six Government Invested Enterprises (GIEs), which are a diverse group of incorporated companies and include 5 financial companies, 8 promotional and 13 productive firms; this group is by far the largest in terms of value added (60%), employment (49%), investment (81%), and assets (57%) (see Graph 3 and Annex Table C);
- (ii) Four government enterprises (GEs), which are, in effect, government departments and include the railway, the post office (Ministry of Communication), the Office of Supply (a central procurement agency), and the Office of Grain Management (price support);
- (iii) Fifty-four Subsidiary Companies of the GIEs (SCGIEs), which include a large shipbuilding and heavy industry contractor as well as smaller equipment, financial, tourism, consulting, and service companies; and,
- (iv) Six Government Backed Enterprises (GBEs) where government owns less than 50% of the shares, which

GRAPH 3

KOREA PE SECTOR: GDP SHARE WITHIN SECTOR



include two large banks (Korean Exchange Bank and Ex-Im-Bank) and the Po-Hang Iron and Steel company and three smaller firms.^{2/}

7. These four groups are treated very differently by government. The treatment of the GIEs is the subject of the rest of this report. As for the rest, the GEs are virtually a part of the Central Government with minimal autonomy. The main avenue of reform for a GE is to incorporate as a GIE, and GEs must improve their performance to merit such a change. The Telecommunications Authority moved from GE to GIE in 1982; the Office of the Monopoly in 1987; and the Railway (KNR) will become a GIE in 1991. (The remaining three GEs -- Post Office, the Office of Supply (central procurement) and the Office of Grain Management (price stabilization) -- are unlikely to be incorporated in the near term). The management of KNR expects that the move to GIE will give them more freedom to close uneconomic lines, to introduce less bureaucratic personnel management, to diversify services (travel agent services, for example), and to price more flexibly.

8. The SCGIEs may be true subsidiaries, created by the parent GIE in a related field to carry out some specialized task (such as the Korean Telephone Directory or the Harbor Telephone). Some SCGIEs, however, are companies apparently kept alive by Government for social or political reasons. In these cases the "parent" company has been required by government to acquire the shares of its "subsidiary" (this appears to be the case with the electricity

^{2/}For a list of the companies in each group by asset size see Table C of the statistical appendix at the end of this annex.

company's purchase of shares in the Heavy Industry Company, for example). Often the SCGIE receives support from the GIE in the form of low interest loans or implicit subsidies (for example, the electricity company is required to treat Heavy Industry as its sole supplier for its products). There are no centralized data on these firms, most of which are relatively small. One exception is the Dae Woo Shipbuilding Company which represents 28% of the SCGIE assets and is the sixth largest PE in Korea (in terms of 1986 sales and employment). It made losses amounting to 20% of equity in 1986 and had a debt/equity ratio of 6.9.

9. Finally, the GBEs operate with considerable autonomy. Usually the private sector has a majority shareholding, and government does not have a seat on the board. An exception is Po Hang Steel which is in fact 100% public: government holds a minority share directly, but also owns the remaining shares through a publicly owned bank. Nevertheless, Po Hang Steel has been given the same independence as the GBEs with majority private shareholding.

The 1983 Reform Program for Government Invested Enterprises

10. There are financial, promotional and business GIEs (see Table 1), the later category including some very large firms (such as the electricity company, or the telecommunications authority). Most of the promotional GIEs receive regular subsidies to cover the costs of their noncommercial activities. Nevertheless, they have been generally expected to perform efficiently and the subsidies are, in effect, government payment for a

Table 1
KOREA: GIEs BY CATEGORIES

Financial GIEs	Promotional GIEs /1	Business GIEs
Korea Development Bank	Korea Mining Promotion Corp.	Korea Electric Power Corp.
Small & Medium Industry Bank	Petroleum Development Corp.	Korea Telecom. Authority
Citizens National Bank	Korea Trade Promotion Corp.	Government Mint
Korea Housing Bank	Agri. Promotion Corp.	Korea Housing Corp.
Korea Securities Exchange	Agri. & Fishery Mktg. Corp. /2	Industry Sites & Water Resource Dev. Corp.
	Korea Tourism Corp. /2	Korea Land Development Corp.
	Overseas Development Corp. /2	Korea Gas Corp.
	Labor Welfare Corp. /2	Korea Highway Corp.
		Korea Coal Corp.
		Korea Broadcasting System
		Korea Integrated Chemical Stock Comp.
		National Textbook Comp.
		Korea Monopoly Corp.

Source: Korea Development Institution

Notes: /1 Defined as GIEs whose main objective is promotional. Some also have business activities.
/2 Promotional GIEs with some business activities.

mandated social welfare activity rather than a transfer to allow an inefficient GIE to break even.

11. The performance of the GIEs deteriorated sharply in the late 1970 and early 1980s and by 1983 five companies were making losses of W36 billion (about \$45 million) compared to only two companies making losses of W4 billion in 1980. The remaining GIEs made profits of W484 billion in 1983, so the net performance of the sector was still positive. Nevertheless, by Korean standards the GIEs were weak performers; operating profits to business capital for GIEs was 3.7% compared to 10.1% for industry as a whole.

12. In response the government introduced a sweeping reform program for GIEs with the following major components:

- (i) Reform of GIE legal status. Prior to 1983 each enterprise was ruled by a host of laws and regulations: the GIE Budget and Accounts Act, the GIE Administration Act, the Board of Audit and Inspection Act, the Procurement Fund Act, individual company acts of establishment and a number of other acts and regulations affecting business supervision. The 1983 GIE Management Act repealed the first two acts and changed the way GIEs were governed by the other laws. The 1983 Act increases their autonomy, simplifies their relations with government, shifts from control of budgets to assessing management on the achievement of

agreed objectives and standardizes GIE rules and procedures.^{3/}

(ii) Changes in the Board of Directors. Previously the boards of GIEs were standing, executive boards. The new structure clearly separates the policy making function of boards from the implementation responsibility of management. The chairmen and directors of the GIEs used to be permanent appointments; they are now appointed for a three year term without pay (except for reimbursement of expenses). Furthermore Government representation on the boards is now limited to two directors, one from the supervisory ministry and one from the Economic Planning Bureau (EPB) with the other directors coming from the private sector (businessmen, accountants, university professors, and the like).

(iii) Managerial autonomy. GIE managers have been given greater freedom in decisions about budgeting, personnel, and procurement as follows:
Budgets which used to be prepared according to government guidelines and then reviewed by the supervising ministry, the EPB and the Cabinet, are now

^{3/}For more information see Korea, Economic Planning Board, "Introduction to the New Government-Invested Enterprise Administration System" (August, 1988).

prepared according to common guidelines from the Ministry of Economy and require approval only by the GIE board of directors.

Personnel decisions, which used to be made by the ministry in many cases, are usually made by the president of the GIE who frequently promote existing employees of the firm in order to reward good performance.

Procurement through the centralized Office of Supply has become voluntary instead of compulsory.

- (iv) Supervision. Previously many agencies could conduct inspections of the companies: the Korea Electric Company (KEPCO) underwent eight inspections lasting 108 days in 1981 alone. Policy decisions affecting GIEs were poorly coordinated and supervision was based on ex ante controls and detailed budget reviews. Now audits and inspections are limited to the Board of Audit and the principal mechanism for supervision has become the ex post performance evaluation system described below. A Management Evaluation Council has been created to coordinate major policy decisions, including: (a) guidelines for preparing management objectives; (b) guidelines for budget preparation; and, (c) performance evaluation. The Council is chaired by the Minister of the Economic Planning Board and includes the Minister

of Finance, ministers of other supervisory ministries, and non-standing commissioners with recognized experience and knowledge.

- (v) Managerial strengthening. Previously almost half of all senior appointments were made from outside the enterprise and frequently unqualified or inexperienced persons were chosen. Now preference is given to internal appointments and often a test or some other merit assessment is part of the selection process. Enterprises are developing systems to evaluate individual performance and assure merit based promotions. Senior staff work under a three year contract but can be dismissed for incompetency.

The GIE Performance Evaluation System

13. The performance evaluation system holds management accountable for achieving agreed objectives which have been calculated as annual targets. Initially, a number of criteria for assessing performance of each enterprise was devised by experts from the Korean Development Institute (KDI) working with government and the GIE staff. Each criterion was assigned a weight to reflect its priority, and the weighted scores were summed to calculate a single composite score for the enterprise. The process is as follows:

- (i) Indicators of performance are developed by the outside experts (notably staff of KDI) working with the Performance Evaluation Division of EPB;
- (ii) These are then discussed with the GIE and sometimes modified;
- (iii) At the end of the evaluation period the GIE submits an annual report on its performance;
- (iv) An ad hoc Management Evaluation Task Force composed of outside experts (from universities, research institutes, accounting firms and private business) evaluates the firm on the basis of its report and supporting documents, as well as visits to the GIE and interviews with staff;
- (v) The Management Evaluation Council deliberates on the Task Force report and decides on a score; and,
- (vi) The score is used to determine the GIE's grade and hence the annual bonus that its staff will receive. ^{4/}

14. Performance Indicators. The indicators assess management's performance, not the company's, by evaluating only those things management can control. For example, if the company makes losses because management

^{4/}For more information on the Korean System see: Young C. Park, A System for Evaluating the Performance of Government Invested Enterprises in the Republic of Korea (World Bank Discussion Paper #3, November, 1986). For details on the theory and design of the performance evaluation system see Leroy Jones, "Towards a Performance Evaluation Methodology for Public Enterprises with special reference to Pakistan", (paper presented to a Symposium sponsored by the Government of Pakistan and the United Nations, Islamabad, November 1981).

Inherited a poor capital stock then management is not penalized, rather if the losses are reduced through better cost control, then the system would reward the staff. All financial indicators are put into constant prices (using a Divisia index) so that managers are not penalized or rewarded because of changes in prices due to price controls^{5/}. The indicators also try to measure public rather than private benefits by excluding transfer payments, such as taxes.

15. Table D of the Appendix shows by way of illustration the indicators used in 1988 for one company (the National Housing Corporation or NHC). This example illustrates two notable features of the Korean performance evaluation system: the excessive number of very different indicators developed for each GIE (40 in the case of NHC) and the importance given to qualitative indicators (40% of the NHC score). (Table 2 shows that qualitative indicators were 40 to 50% of the GIE scores in 1987). Although the original design called for a simpler system with few indicators, practical considerations led to the present system. One reason for the number and variety of indicators is the diversity of enterprises being assessed. Unlike a similar system developed in Pakistan for manufacturing enterprises only, the Korean system is being applied to manufacturing, financial, marketing, and promotional firms and performance indicators had to be tailored to the very different characters of the GIEs. Some of the companies, such as the Agricultural Promotion Corporation (rural development and export promotion) or the Overseas

^{5/}The Divisia index uses two-year moving averages as weights (as opposed to Laspeyres, which uses the first year and Paasche which uses the last year).

Table 2
KOREA: BREAKDOWN BETWEEN QUANTITATIVE AND QUALITATIVE CRITERIA
(1984 - 1987)
(Percentage Weight)

NAMES OF GIEs	1984		1985		1986		1987	
	QUAN	QUAL	QUAN	QUAL	QUAN	QUAL	QUAN	QUAL
1. Korea Development Bank	70.0	30.0	56.0	44.0	60.0	40.0	60.0	40.0
2. Small and Medium Industry Bank	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
3. Citizens National Bank	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
4. Korea Housing Bank	70.0	30.0	58.0	42.0	60.0	40.0	60.0	40.0
5. Korea Securities Exchange /1	60.0	40.0	40.0	60.0	40.0	60.0	-	-
6. Government Mint	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
7. Korea Electric Power Corporation	70.0	30.0	60.0	40.0	65.0	35.0	60.0	40.0
8. Korea Coal Mining Corporation	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
9. Korea Mining Promotion Corporation	60.0	40.0	60.0	40.0	60.0	40.0	60.0	40.0
10. Petroleum Development Corporation	40.0	60.0	40.0	60.0	45.0	55.0	50.0	50.0
11. Korea General Chemical Corporation	60.0	40.0	42.0	58.0	45.0	55.0	50.0	50.0
12. Korea Trade Promotion Corporation	40.0	60.0	40.0	60.0	55.0	45.0	55.0	45.0
13. Korea Highway Corporation	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
14. Korea Housing Corporation	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
15. Industrial Site and Water Resource Development Corporation	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
16. Korea Land Development Corporation	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
17. Agriculture Promotion Corporation	70.0	30.0	58.0	42.0	60.0	40.0	60.0	40.0
18. Agriculture and Fishery Marketing Corp.	60.0	40.0	60.0	40.0	60.0	40.0	60.0	40.0
19. Korea Telecommunication Authority	60.0	40.0	60.0	40.0	57.0	43.0	60.0	40.0
20. Korea Tourism Corporation	40.0	60.0	50.0	50.0	55.0	45.0	55.0	45.0
21. Korea Broadcasting System /2	60.0	40.0	55.0	45.0	44.5	55.5	-	-
22. National Textbook Company	70.0	30.0	60.0	40.0	60.0	40.0	60.0	40.0
23. Korea Overseas Development Corporation	60.0	40.0	60.0	40.0	50.0	50.0	50.0	50.0
24. Labor Welfare Corporation	60.0	40.0	60.0	40.0	55.0	45.0	55.0	45.0
25. Korea Gas Corporation	40.0	60.0	40.0	60.0	40.0	60.0	50.0	50.0
26. Korea Monopoly Corporation /3	-	-	-	-	-	-	55.0	45.0

Source: Korea Development Institute.

Notes:

- /1. Korea Securities Exchange was out of the performance evaluation system since 1987.
- /2. Korea Broadcasting System was out of the performance evaluation system since 1987.
- /3. Korea Monopoly Corporation became a GIE in 1987.

Development Corporation (assistance to workers to find jobs and transfer overseas) have never been treated as profit maximizing firms and have proved very difficult to assess under a system originally designed for productive, commercially-oriented enterprises. Moreover, some of the GIEs are strongly influenced by political or social welfare objectives in ways that can prove hard to quantify in assessing performance (which partly explains why the Korean Broadcasting System was dropped from the system in 1987).

16. A second reason for the large number of indicators is that the system aims to evaluate the GIE's performance on all of its objectives, both short and long term, quantitative and qualitative. This despite the fact that qualitative indicators are very difficult to evaluate. Third, and perhaps most important, indicators were added in order to win managerial acceptance of the system. Managers wanted the criteria disaggregated so they could apply some of the targets to individual departments or offices and thus better mobilize staff toward achieving the general goals.

17. Finally, qualitative indicators have been used in part to give more weight to the outside experts' judgements vis-a-vis management. Most GIEs have created a Division for Performance Evaluation which is permanently assigned to monitor achievement of the targets and evaluate results. In contrast, the experts spend only three weeks on a part-time basis evaluating the results. Moreover, the information available to the enterprise necessarily always exceeds that of any outsider. To try to assure that management could not achieve a high score merely by manipulating the

quantitative results, an important part of the grade was therefore based on the subjective judgements of the experts.

18. Grading. Generally the C (expected or satisfactory) grade for quantitative target values is set on the basis of the last three to seven years' results (using either a five- to seven-year regression trend or a three-year Beta weighted distribution) or in some cases a target set in the enterprise's corporate plan. When the target is based on past trends the upper and lower grades are bounded by historic standard deviations. In other words, if the GIE does more or less than what it did in the past it gets a C grade; if it does better (or worse) by more than can be explained by random luck it gets a B (or D) grade.^{6/} Since 1986, targets can also be adjusted to take into account new factors that may have a drastic effect on projected trends. This has only been done once so far: in 1986 the KEPCO profitability target was adjusted downward to reflect a major increase in fixed assets with the addition of a large nuclear power plant.

19. All indicators are weighted and enterprises can receive a total score of up to 100. Grades and bonuses are assigned on the following basis:

^{6/}Leroy P. Jones, "Notes on Improving Korea's Public Enterprise Evaluation Effort," (Processed, December, 1985).

<u>-SCORE</u>	<u>GRADE</u>	<u>BONUS*</u>
95 - 100	Excellent (A)	300% monthly salary
90 - 94	Good (B)	250 - 290%
85 - 89	Expected (C)	200 - 240%
80 - 84	Poor (D)	150 - 190%
75 - 79	Deteriorating (E)	100 - 140%

*Since 1985 the bonus goes up by 10% for each 1 point increase in score. (For example, a score of 90 gives a 250% bonus, 91 gives 260%, etc.)

There is no logic to giving rewards for poor and deteriorating performance. Very few GIEs have been classified as D (see para. 24) and the existence of the bonus for D and E grades does not seem to counteract other pressures to improve performance. Nevertheless, this feature of the system seems ill-advised.

20. Incentives. Before the performance evaluation system was introduced, GIE employees received three months salary as a fixed bonus (in fact, it was treated as part of their salary) and usually two months salary as an incentive bonus. This incentive was determined on the basis of subjective judgements rather than any consistent or objective assessment. GIE staff still receive the three months' fixed bonus, since it is considered a salary supplement, but they now can also get up to three months incentive on the basis of the company's score in the performance evaluation system.

21. The incentive bonus is distributed to all staff. Most of the enterprises have introduced evaluation systems for their departments and divisions as well as for individual employees. In some cases an outstanding division or employee may receive a slightly larger bonus than the rest, but below average performers do not receive less. Nevertheless, the evaluations of departments and divisions serve the purpose of flagging to the rest of the company which departments are pulling up or down the performance of the GIE as a whole, while the assessments of individual performance form the basis for promotion.

22. The ranking of the GIEs is published in the press and has become the subject of intense competition, and for top level executives the ranking of the company is considered as, if not more, important than the bonus. Because the targets are based on an improvement over past performance, the top ranked enterprise may not be the most profitable or efficient firm, but rather the one showing the greatest progress. As a result, all firms have a shot at being first. Staff of good performing companies tend to believe that it is harder for them to achieve first place than for poor performers which have more room for improvement. Staff also complained about the so-called ratchet effect: each time the GIE improves its score the target becomes tougher even though the scope for further improvement may be low or nil. The only way to assess these criticisms would be to compare GIE performance with that of identical or closely similar enterprises elsewhere and try to judge whether further major improvements are possible. While such comparisons are difficult to do, they should receive more attention in the future to assure that goals

are realistic and absolute--as opposed to relative--performance is satisfactory.

23. Scores of the GIEs. Table E of the Appendix shows the scores and grades achieved by the enterprises from 1984 to 1987. If the expected level of the target is the mid point of grade C (87.5), then the average scores have been consistently about 3 basis points higher.^{7/} The scores have tended to cluster in the B grade: anywhere from 63% to 86% of the total scores given have been B's.

24. These results appear to indicate that the "expected" or satisfactory criteria are too soft. On the other hand, no enterprise has ever received an A grade (while every year one or two receive a D). What has happened is that most of the GIEs are competing fiercely over a much narrower range of scores - - between 90 and 94 -- than the 5 grades appears to imply. Since both the ranking and the bonus depend on these small differences, the system still has a strong incentive effect. Most of the GIEs are profitable, reasonably good performers, and this competition for marginal improvement probably makes sense in Korea. Moreover, the "ratchet effect" mentioned earlier should make the grades increasingly harder. In a country where public enterprises are losing

^{7/}The actual average scores and the difference from the expected score of 87.5 were as follows:

	AVERAGE SCORE	DIFFERENCE FROM EXPECTED 87.5
1984	90.3	2.8
1985	89.7	2.2
1986	91.2	3.7
1987	90.3	2.8

money or performing well below potential, however, targets based solely on past performance trends would usually be too lenient. Target setting would need to take into account international performance norms and benchmark indicators based on the performance of similar companies in other countries.

Assessment of the Performance Evaluation System

25. Overall, the financial picture of the GIEs has improved in the period since the system was introduced (Table 3). Profits net of government transfers grew by about 10% in real terms from 1983 (the first year of the reforms) to 1986.^{8/} The real profits net of transfers of GEs also increased by 10% from 1983 to 1986. The improvement of GEs profits is related to the GIE reforms since the transformation of a government enterprise to a government invested enterprise (or even the prospect of such a change) is a major force for GE performance improvements.

26. Financial profitability is not very informative about the actual impact of the performance evaluation system on efficiency, however. Taxes, depreciation, nonoperating income, price controls, government mandated costs (to achieve certain social goals for example), all affect profits in ways that may have no relation to efficiency changes. Financial profitability is not a

^{8/}While most of the transfers consist of operating subsidies, primarily to the largely non-profit agriculture, mining and tourism promotion companies, part (about 10% in 1986) is capital transfers.

Table 3
KOREA: FINANCIAL PERFORMANCE OF GIEs
(1982 - 1986)

	1982	1983	1984	1985	1986	AVE. ANN. CHANGE
PROFITS						
NUMBER OF GIEs	18	18	22	22	22	5.1%
PROFIT (BIL WON)						
- CURRENT	409	484	612	610	794	18.1%
- CONSTANT	409	468	579	563	713	14.9%
LOSSES						
NUMBER OF GIEs	6	6	3	3	3	-15.9%
LOSSES (BIL WON)						
- CURRENT	49	48	13	14	17	-23.4%
- CONSTANT	49	46	13	13	15	-25.5%
NET PROFIT (BIL WON)						
- CURRENT	360	436	599	596	778	21.2%
- CONSTANT	360	422	567	550	698	18.0%

Source: Korea Development Institute.

target in the system and, for some of the promotional companies, profit maximization is not an objective at all.

27. A more meaningful measurement of operational efficiency is public profitability in constant prices, which is the equivalent of a quantum index of outputs minus a quantum index of inputs. Public profit is an indicator that is intended to increase only when society as a whole is better off. Public profits are standard financial profits adjusted as follows:

Private Profits

- + Taxes
- + Interest
- + Depreciation
- Nonoperating income (financial income and rent, capital gains and transfers)
- Opportunity cost of working capital
- Public profits

Taxes are added back in since this is a return from government's point of view; this avoids giving managers a reward for reducing taxes. Depreciation is added back in order not to penalize newer plants vis-a-vis older ones or reward enterprises for underdepreciating or changing their accounting practices so as to reduce depreciation charges. Interest is added back because changes in interest payments do not reflect changes in internal operating efficiency but transfers from one part of society to another. Interest does represent the cost of capital to the firm. The system assumes,

however, that (enterprise investment and debt decision are best handled through separate control systems designed to assure the most efficient allocation of capital and not through a system designed to assess operating efficiency.) Nonoperating income is excluded since it does not reflect operating efficiency. And, finally, a charge is added for the opportunity cost of working capital (the charge was 10% in 1986). The GIEs are charged for fixed capital by including fixed operating assets in the denominator, thus adjusting for changes due to expansion.

28. Public profits are then converted to constant prices using a Divisia index^{9/}. Since the managers of GIEs cannot change their prices in most cases, constant-priced profits attempts to measure factors they can control. The Divisia index uses changing weights, so managers still have an incentive to seek lower costs or higher profits through prices changes where they have that option.

29. Some arguments can be raised against public profitability. One is that by, in effect, ignoring taxes, interest, depreciation and non-operating income, managers are not motivated to minimize their charges and maximize their income. While this is an important argument, in fact most public managers cannot control some of these items (debt and interest rates are often determined by government, for example). Others are easily manipulated to hide inefficiencies (depreciation or non-operating income, for instance). Public

^{9/}See Mary M. Shirley, "Evaluating the Performance of Public Enterprises in Pakistan" (World Bank, PPR Working Paper 160, March 1989) for an explanation of this index.

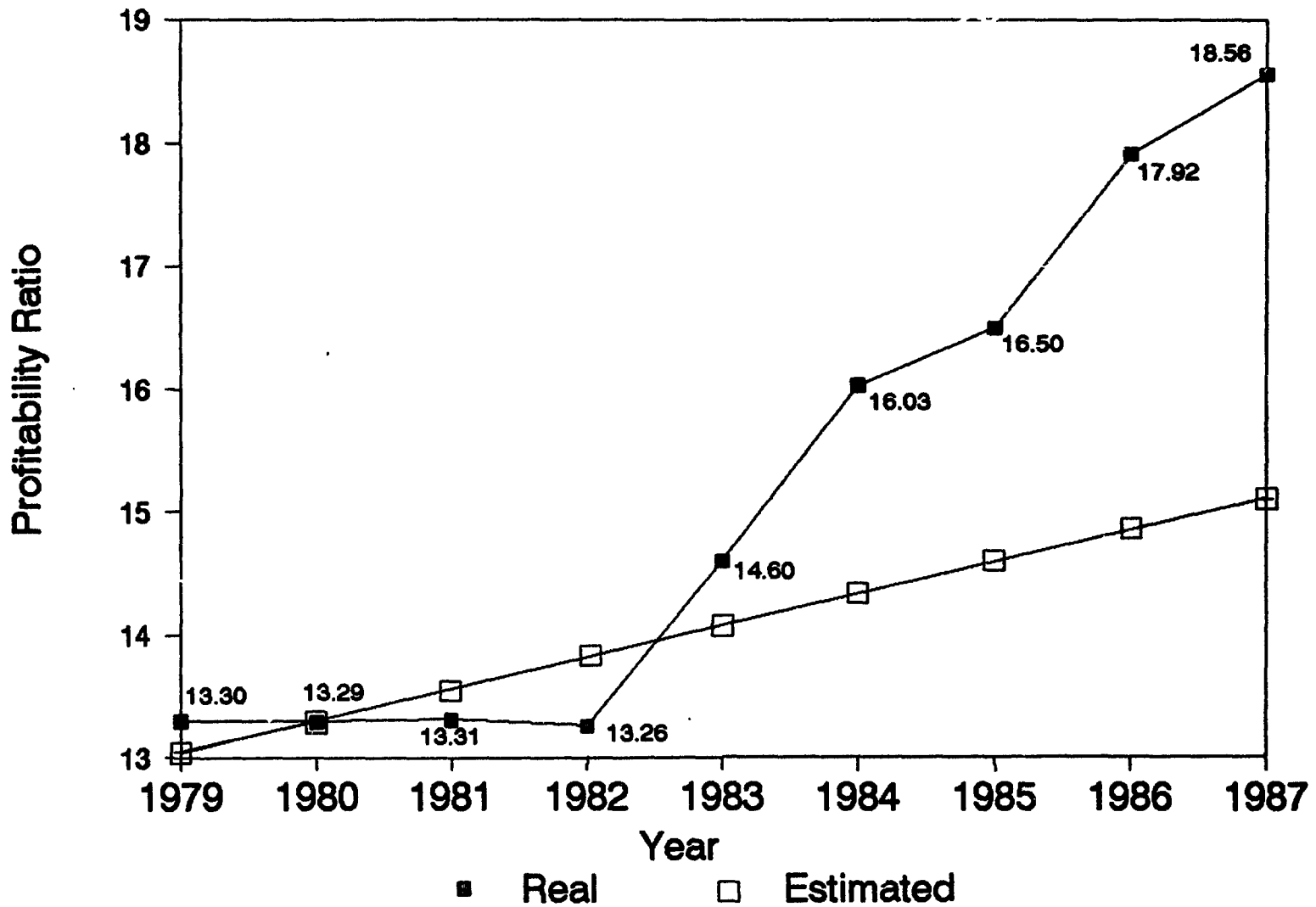
profitability is not an all inclusive measure and, other indicators, such as debt: equity, liquidity measures, or financial profitability where appropriate, can be added to assure that financial solvency is also improved.

30. Despite its drawbacks, the easiest way to assess the impact of the system on operational efficiency is to evaluate its effect on public profitability. The public profitability concept was originally designed for manufacturing firms and is not as easily applied to nonmanufacturing^{10/}. Since most of the GIEs are not in manufacturing, public profitability is currently used as a target for only five: Korean Power Corporation (KEPCO), Korea Telecommunication Authority (KTA), Korea Coal Mining Corporation (KCMC), Government Mint, and National Textbook Company (NTC). (Cost minimization and similar financial targets are used for most of the other GIEs.) This does not limit the sample as much as it might appear since these five companies are a significant part of the GIE group: they represent about one third of the total GIE assets and 45% of total GIE employment. Moreover, since they are the sort of firms most likely to be considered for performance evaluation schemes in other countries, their experience under performance evaluation is of particular interest.

31. Graph 4 compares the actual public profitability of the five firms with their trend in performance (extrapolated from their last five years' performance). The graph shows a dramatic improvement over the trend line in the period since the performance evaluation system was introduced in 1983.

^{10/} See Leroy Jones, "Towards a Performance Evaluation Methodology for Public Enterprises..." op. cit.

GRAPH 4
Korea: Public Profitability for 5 GIEs



This reflects major improvements in the two most important firms - KEPCO and KTA - which together control almost US\$ 32 billion in assets and employ 76 thousand people (compared to US\$ 763 million in assets and 18 thousand employees in the other three).

32. Two of the other firms, KCMC and the Mint, also initially improved their performance after the system was introduced but experienced a deterioration in public profitability in 1986 for reasons which have little to do with efficiency. (See Graphs One through Five of the statistical appendix to this annex for individual company performance). The Coal Mining Corporation's cost went up due to deeper mining as veins near the surface were depleted, labor unrest and higher than usual wage increases^{11/}. The Mint experienced a drop in sales because government reduced its demand for paper money, while expenses grew because the company shifted to a better quality paper. The Mint began to export in 1985/86 which should make it less vulnerable to government buying decisions. Finally, the fifth firm, NTC, is a small company (less than 500 employees) which was adversely affected by government's decision in 1985 to allow students to buy used textbooks.

33. The two critical questions are: (i) are the improvements in the manufacturing companies representative of the other GIEs and, (ii) were the GIE reforms and, in particular, the performance evaluation system, the reason for the improvements. On the first question there is no single measure of

^{11/}To calculate public profits in constant prices labor costs are deflated using the government approved wage increase to discourage above norm wage increases.

efficiency that can be applied to the other GIEs, but, as mentioned, all of the enterprises face some sort of cost minimization/revenue enhancement target. A study comparing the ratio of cost of sales to total revenues in constant prices found that the cost ratio was below expectations (based on past averages and trends) in the three years after the system was introduced (see Table 4). In 1986, for example, costs were 67.7% of revenues for all the GIEs versus an expected ratio of 73.1% based on past performance. This indicator has less meaning for some of the enterprises (such as the financial enterprises) than for others. Nevertheless, the consistency of the improvement in the different sectors is striking. Furthermore, the evidence of efficiency improvement is borne out by the performance of the enterprises on their individual efficiency targets. Even though the initial level of the targets based on past performance may have been soft, as mentioned above, the targets have become progressively harder as the enterprises have been required to better their past improvements. Despite this most of the GIEs are still earning a B grade.

34. The second question--whether these efficiency gains can be attributed to the reforms--cannot be systematically tested since there are few comparable enterprises outside the system.^{12/} There are factors other than managerial changes that could explain some of the efficiency gains. The year after the introduction of the system was a period of economy-wide recovery, which probably explains some of the initial buoyancy of the five sample enterprises, although not their sustained efficiency improvements.

^{12/} A similar assessment in Pakistan also found that the incompatibility of data between public and private enterprises prevented comparison.

TABLE 4
KOREA: COMPARISON OF ESTIMATED TO ACTUAL RATIO OF
COST OF SALES TO TOTAL REVENUE 1/

	Average 1981 - 83	1984	1985	1986
1. Financial PEs				
Actual Ratio	82.0	80.5	76.8	76.9
Estimated Ratio	-	82.3	83.1	84.0
Differences	-	1.8	6.3	7.1
2. Construction GIEs				
Actual Ratio	81.2	80.3	76.2	76.3
Estimated Ratio	-	81.7	82.0	82.6
Differences	-	1.4	5.8	6.3
3. Manufacturing GIEs				
Actual Ratio	79.3	93.4	79.0	74.5
Estimated Ratio	-	77.7	81.1	79.0
Differences	-	4.3	2.1	4.5
4. Service BIEs				
Actual Ratio	65.1	54.1	59.9	64.7
Estimated Ratio	-	70.1	70.0	70.3
Differences	-	16.0	10.8	5.6
5. Energy and Communications GIEs				
Actual Ratio	73.1	68.2	67.0	62.0
Estimated Ratio	-	70.9	69.4	66.5
Differences	-	2.7	2.4	4.5
6. All GIEs				
Actual Ratio	75.9	71.7	70.2	67.7
Estimated Ratio	-	74.7	74.3	73.1
Differences	-	3.0	4.1	5.4

Source: Song, Dae Hee, "Korea Public Enterprise Performance Evaluation System (Korea Development Institute, November 1988, Processed).

1/. Estimates based on projected trends using linear regressions for ten older GIEs and average of 1981-83 for all others.

Enterprises such as KEPCO and KTA were also expanding throughout this period, however, both KEPCO and KTA show improvements in efficiency indicators (a drop in transmission losses in KEPCO and in the failure rate of local and long distance calls for KTA) not positively affected by expansion. Furthermore, there is qualitative evidence that part of the improvements can be attributed to the reforms.

35. First, the reforms have had a distinct impact on the way the GIEs do business. Government intervention has been sharply curbed; managerial appointments are made from within the enterprise; and performance evaluation plays an important role in the GIE's own assessment of its plans and personnel. Most GIEs have created an office for performance evaluation to develop objectives, negotiate targets, monitor achievement and write evaluations of the results. Since the evaluation has internal as well as external significance, this office has become an important part of the enterprise's operations and recently several executive directors have been appointed from the performance evaluation office. Many GIEs consulted had developed detailed targets for departments, divisions and offices based on the performance evaluation targets. KTA, for example, has an evaluation system to check on the performance of its twelve branch offices which compete among themselves for a good score. Promotions take into account the results of these internal evaluations. KEPCO does the same for its 290 branch offices, which also receive awards, such as medals or ribbons, based on their performance.

36. Second, opinions of those affected strongly favor the reforms. The managers and government officials consulted five years after the system was introduced, agreed that the reforms had a positive effect on performance^{13/}. Furthermore, a 1987 opinion survey of 750 employees in all ranks of the GIEs 1987 shows that this positive view of the reforms is widespread. Ninety three percent of those consulted felt that there had been an improvement in management of the enterprise since the introduction of the reforms, about 55% saw a substantial improvement. Interestingly the confidence in the improvements increases with rank. About 94% of the executive directors surveyed saw substantial or significant improvements in management, versus 55% of the rank and file. (An additional 33% of the rank and file saw modest improvements, so a total of 88% were favorable).^{14/}

Applying the Reforms in Other Countries

37. Countries interested in applying a system like that of Korea would want to know: (i) whether there are features of the Korea system that make it hard or impossible to replicate; (ii) what are the prerequisites for a successful performance evaluation system; and, (iii) how should the system be adapted to circumstances in other countries.

^{13/} The GIEs consulted were: NHC, KEPCO, KTA, KMC and Small and Medium Industry Bank; the agencies were: KDI, EPB, Ministry of Finance, Ministry of Communications.

^{14/}Song, Dae Hee, op.cit.

38. Features of Korean System. The question of the uniqueness of the Korean case arises in part because some observers attribute Korea's economic success to aspects of culture and history that cannot be replicated elsewhere. This overlooks the fact that two decades ago Korea was not considered to have a particularly strong economy. Furthermore, a similar system is working well in Pakistan, a very different economy and culture. The Korean and Pakistani performance evaluation systems are based on systems used by large private conglomerates to judge the performance of their subsidiaries which have been adapted for use with state enterprises in developing countries. As such they are a transferable technology that can be altered and adapted to fit local needs.

39. This adaptation can be seen in the case of unionized labor. In Korea until recently labor unions were weak and strikes unknown. This made it easier to tie the incentive bonus to the performance of the company. In Pakistan, on the other hand, the unions are very powerful and opposed the bonus system. There the system is only applied to nonunionized staff which includes most white collar workers (unionized labor receive a bonus based only on traditional profits). Although this has weakened the incentive somewhat, it still has a positive impact because the managerial and white collar staff have an important influence on the workings of the entire firm.

40. There is no doubt that the economic environment in Korea favors the success of performance evaluation. Some of the GIEs face domestic competition and some export; moreover the vibrant private sector offers a role model and a contrast for the state enterprises. Pakistan has an

increasingly dynamic private sector and has begun to focus more on export and to remove barriers to competition with its state enterprises (the state monopoly on cement production was removed, for example). Yet performance evaluation can also work where competition is weak or nonexistent, in fact, it is especially useful where there are market failures. The targeting and assessment act as a market proxy, holding the enterprise to standards it might not strive for in a captive market.

41. Prerequisites for Success Successful performance evaluation depends on: (i) reforms in supervision and management; (ii) reliable and timely information; (iii) adequate skills to supervise and evaluate; and (iv) political will.

42. On the first prerequisite, the Korean performance evaluation system has been successful because it was accompanied by increases in managerial autonomy and improvements in the calibre of management. Changes in the budget process, depolitization of the selection of managers and boards, and reduction of ministerial oversight, were all a part of the reforms and the efficiency gains cannot be attributed to any one change alone. Performance evaluation only sets the targets and motivates management to achieve them. The other reforms assure that managers have the flexibility and the skills required to turn motivation into accomplishment. The situation is similar in Pakistan where ad hoc government intervention has been curbed and managerial selection and promotion is influenced by the results of the evaluation.

43. Second, most of the information required for performance evaluation is the same as that required to run any enterprise well, public or private. It relies principally on the audited accounts of the firm. The difficulties arise because government must clarify what is expected of the enterprises, in order to assign weights to the targets, and must account for any noncommercial objectives set for the firm. Not all noncommercial objectives have to be quantified, however, only those which affect the achievement of the targets. Take the case where the enterprise has been put in a remote location to promote regional development. If that company is judged on the basis of trends in profitability, there would be no need to calculate the additional costs due to its location since that reduces the absolute level of profits but does not affect the trend. Of course, ideally one should calculate this cost and eliminate it since it has a detrimental affect on economic efficiency. Performance evaluation is a second best solution, telling managers to maximize operating efficiency within the constraints they are given.

44. The information demands of the system increase if the indicators are put in constant prices, since that should be done with individual price deflators for each enterprise's main output and input prices, rather than with a general price index. Yet this information should also be easily available (a firm should know the price and quantity of the major items it buys and sells). The complexity arises when assigning proper weights for diversified product lines. There are two reasons to use constant prices: to account for the distortions caused by market failures and price controls and to develop a quantum index that measures efficiency gains apart from financial changes.

Other physical indicators could be used instead to simplify matters, although these indicators are partial and can distort firm behavior.^{15/}

45. Skills are required to set up the system, negotiate and monitor the targets and evaluate and grade performance. Korea used a consultant (the same consultant as Pakistan) and the KDI staff to set up the system. The system is now easier to install since new users can benefit from the learning that has taken place and assistance is available from consultants and the countries that have implemented it. The negotiation and monitoring should be done by a government agency; in most countries one or more such agencies are already supervising state enterprise performance. For this agency to do more systematic evaluations may require additional skills. In Pakistan, where civil service salaries made it difficult to attract adequate skills, the monitoring agency (the Expert Advisory Cell) is not part of the civil service and is funded by a levy on the enterprises. This has enabled the Cell to attract experts able, not only to monitor the enterprise, but also to do the evaluation. The Koreans have used ad hoc groups of experts from universities and business to help the Government staff evaluate the GIEs.

46. Political will is required to introduce the reforms in the face of possible opposition from complacent managers, entrenched bureaucrats, interested politicians and comfortable workers. Performance evaluation is not a threat to good managers. To the contrary, they welcome the chance to separate managerial performance from the costs and constraints imposed by

^{15/}For more on the choice of performance indicators see Leroy Jones, op. cit.

government. The bureaucracy may be unwilling to yield its power to intervene at whim, and politicians may not wish to see the merit system replace the spoils system in enterprise appointments. Government also finds it difficult to clarify objectives and treat enterprises in a commercial and transparent fashion. Workers may oppose the system if they fear that efficiency will lead to layoffs, lower wage increases and stricter personnel policies. If in the past state enterprises were run with redundant labor; wage increases were well above productivity gains; and discipline was lax; then such fears are probably justified. Even though the system can still function without worker participation (as in Pakistan), it works much better where labor is included. This means convincing workers that they will be better off in the long run in an efficiently run enterprise than in one where personnel policies are slack.

47. Adapting the System. The performance evaluation system is designed for firms producing goods and services for sale in the market and is much easier to apply to them. Other countries may choose not to apply the system to the sort of nonprofit and regulatory entities being evaluated in Korea. Since the large productive firms, especially the utilities and transport monopolies, are typically the most important of the state enterprises it makes sense to begin with them.

48. The Koreans introduced an excessive number of performance indicators for pragmatic reasons, but in most countries the number of indicators should be much fewer. While there is something to be said for having targets that can be equated to internal, departmental or divisional achievements, this very much complicates the weighting and evaluation process

and endangers managerial autonomy. The system is meant to signal management as to what government considers desirable behavior and to allow government to control enterprises on the basis of results, not their conformity to bureaucratic processes. The targets should therefore aim to give a clear indication of government's objectives and priorities. In cases where GIEs have targets with weights of less than one percent, the signal from government is far from clear. In addition qualitative indicators should be used sparingly: they further confuse the signals to management and are hard to evaluate.

49. With so many targets, some will duplicate others, which can have perverse effects on behavior. For example, an indicator such as profitability counts every cost once and every benefit once. If it is combined with, for example, a target to reduce raw material costs, then such costs are counted twice. An enterprise has a better chance of making a high grade if it focuses on reducing raw material costs even at the expense of higher administrative costs or greater revenues. In this case net benefits (efficiency, in other words) will not improve and may even decline. An alternative is to have fewer, nonduplicative targets at the level of the enterprise, and to encourage the firm to disaggregate these into targets for its various departments or offices through a separate, internal evaluation.

50. Other countries will also want to eliminate rewards for poor performance and use criteria that result in clearer grade differences. The in-grade competition peculiar to Korea is unlikely to transplant successfully.

51. As mentioned, performance evaluation can act as a market proxy; it can create pressures for efficiency that in other circumstances might be supplied by the market. But administrative arrangements prove a weak substitute for competitive pressures. Competition should be used to promote efficiency wherever possible through trade liberalization, removal of barriers to private entry, ending discrimination between public and private enterprise, promotion of exports, etc. This will greatly simplify the task of evaluating competitive enterprises, which can be held to a simple profit target, and allow the system to focus on the natural monopolies.

52. Finally, performance evaluation is designed to promote operational efficiency; allocative efficiency is not assured. In other words, it aims to assure that state enterprises make the best use of their assets; it cannot determine whether the investment in the enterprise represents the best use of resources. Some state enterprises tie up resources in activities with low, or even negative, economic returns that could be put to far more productive uses elsewhere. In some extreme cases improving an enterprise's operations may make matters worse: society is worse off economically the more the enterprise produces because the economic value of its output is less than the economic value of the inputs it consumes. Thus, performance evaluation is no substitute for an assessment of the economic and financial viability of the enterprise and the costs and benefits of new investments.

TABLE A
KOREA: IMPORTANCE OF PE SECTOR
1982 - 1986

GDP SHARE (%)

	1982	1983	1984	1985	1986
GE	2.3	2.1	2.0	1.8	1.8
GIE	4.4	4.8	5.5	6.1	6.1
SCGIE	0.6	0.8	0.9	1.1	1.2
GBE	1.5	1.3	1.4	1.4	1.3
TOTAL	8.8	9.0	9.8	10.4	10.4

EMPLOYMENT SHARE (%)

	1982	1983	1984	1985	1986
GE	0.5	0.5	0.5	0.5	0.5
GIE	0.8	0.9	0.9	0.9	0.9
SCGIE	N/A	N/A	0.3	0.3	0.3
GBE	0.2	0.2	0.2	0.2	0.2
TOTAL	1.5 /1	1.6 /1	1.8	1.9	1.9

SHARE OF GROSS FIXED CAPITAL FORMATION (%)

	1982	1983	1984	1985	1986
GE	1.4	1.0	0.9	0.9	0.9
GIE	41.2	17.2	15.7	14.5	12.7
SCGIE	N/A	N/A	2.5	N/A	0.8
GBE	5.0	0.8	1.6	3.0	1.2
TOTAL	47.6 /1	19.0 /1	20.7	18.4 /1	15.6

Source: Korea Development Institute (KDI)
Note: /1. Excluding SCGIEs.

Table B
KOREA: PE AND SECTORAL GDP SHARE
(1975 - 1986)
(Unit: %)

PE VALUE ADDED BY SECTOR

	1975	1980	1984	1986
Agri. forestry & fishery	0.10	0.30	0.10	0.00
Mining & quarrying	2.50	0.80	2.30	2.50
Manufacturing	46.60	37.60	31.20	15.80
Electricity, gas & water	12.10	19.50	24.90	31.10
Construction	3.30	4.60	4.10	5.90
Whole sale & retail	1.90	1.30	0.10	0.10
Trans., storage & comm.	13.10	15.60	26.20	28.90
Financing, insurance, real estate & business service	19.20	19.10	7.00	11.20
Community, social & personal service	1.20	1.20	4.10	4.50
TOTAL	100.00	100.00	100.00	100.00

PE SHARE OF TOTAL SECTOR VALUE ADDED

	1975	1980	1984	1986
Agri. forestry & fishery	0.03	0.20	0.05	0.00
Mining & quarrying	12.00	5.00	16.10	17.20
Manufacturing	16.60	15.50	10.50	4.80
Electricity, gas & water	83.00	96.90	86.30	89.20
Construction	0.50	5.30	4.80	6.80
Wholesale & retail	0.80	0.80	0.03	0.01
Trans., storage & comm.	16.90	21.00	30.30	32.60
Financing, insurance, real estate & business service	56.20	30.40	7.00	9.50
Community, social & personal service	0.70	10.40	9.70	10.40
TOTAL (PE/GDP)	8.30	10.40	9.70	10.40

Sources: Korea Development Institute & Bank of Korea.

Table C
KOREA: LIST OF PEs BY ORDER OF ASSET SIZE
(1986)

	ASSET		EMPLOYEES		SUPERVISING MINISTRIES/1
	BIL WON	% OF TOT.	#	% OF TOT.	
GOVERNMENT ENTERPRISE (GE)					
OFFICE OF RAILWAYS	3,298	3.34	28,653	9.72	MOT
MINISTRY OF COMMUNICATION	2,908	2.95	34,063	11.56	MOCN
OFFICE OF MONOPOLY /2	2,245	2.27	11,500	3.90	MOF
OFFICE OF SUPPLY	54	0.06	1,143	0.39	MOF
OFFICE OF GRAIN MANAGEMENT	1	0.00	1,160	0.39	MOAF
SUB-TOTAL	8,507	8.62	76,519	25.96	
MIL US\$	10,736.9				
GOVERNMENT INVESTED ENTERPRISE (GIE)					
KOREA (K.) DEVELOPMENT BANK	15,342	15.55	1,960	0.66	MOF
K. ELECTRIC POWER CORP.	12,570	12.74	25,215	8.56	MOER
K. TELECOM. AUTHORITY	5,594	5.67	51,432	17.45	MOCN
CITIZENS NATIONAL BANK	5,355	5.43	11,212	3.80	MOF
SMALL & MEDIUM INDUSTRY BANK	5,051	5.12	7,849	2.66	MOF
K. HOUSING BANK	3,440	3.49	7,824	2.65	MOF
K. HOUSING CORP.	2,340	2.37	2,506	0.85	MOCN
IND. SITE & WATER RESOURCE DEV.	1,582	1.60	1,687	0.57	MOCN
K. LAND DEVELOP. CORP.	1,290	1.31	1,213	0.41	MOCN
AGRI. PROMOTION CORP.	762	0.77	1,855	0.63	MOAF
K. GAS CORP.	480	0.49	658	0.22	MOER
K. HIGHWAY CORP.	463	0.47	2,718	0.92	MOCN
K. COAL CORP.	459	0.47	14,569	4.94	MOER
K. BROADCASTING SYSTEM	335	0.34	5,193	1.76	MOCI
AGRI. & FISHERY MKTG CORP.	203	0.21	652	0.22	MOAF
K. TOURISM CORP.	124	0.13	638	0.22	MOT
GOVERNMENT MINT	120	0.12	2,748	0.93	MOF
K. MINING PROMOTION CORP.	118	0.12	462	0.16	MOER
K. INTEGRATED CHEM. STOCK COM.	104	0.11	46	0.02	MOC
PETROLEUM DEVELOPMENT CORP.	101	0.10	428	0.15	MOER
LABOR WELFARE CORP.	67	0.07	1,425	0.48	MOL
K. SECURITIES EXCHANGE	29	0.03	344	0.12	MOF
NATIONAL TEXTBOOK COM.	25	0.03	487	0.17	MOE
K. TRADE PROMOTION CORP.	11	0.01	567	0.19	MOC
OVERSEAS DEVELOPMENT CORP.	4	0.00	197	0.07	MOL
SUB TOTAL	55,970	56.71	143,885	48.82	
MIL US\$	70,642.0				

Cont...

Notes:

MOF: Ministry of Finance
MOAF: Ministry of Agriculture & Fishery
MOER: Ministry of Energy & Resource
MOT: Ministry of Transportation
MOCN: Ministry of Communication
MOST: Ministry of Science & Technology

MOE: Ministry of Education
MOC: Ministry of Commerce & Industry
MOCN: Ministry of Construction
MOCI: Ministry of Culture & Information
MOL: Ministry of Labor

2/ Office of Monopoly became Korea Monopoly Corporation (GIE) IN 1987.

Table C
KOREA: LIST OF PEs BY ORDER OF ASSET SIZE
(1986)

No.	ASSET		EMPLOYEES		SUPERVISING MINISTRIES/1	
	BIL WON	% OF TOT.	#	% OF TOT.		
SUBSIDIARY OF GOVERNMENT INVESTED ENTERPRISE (SCGIE)						
1	DAE-WOO SHIPBUILDING	1,706	1.73	17,148	5.82	MOF
	K.HEAVY INDUSTRY	726	0.74	6,308	2.14	MOF
	K. INDUSTRIAL LEASE	471	0.48	140	0.05	MOF
4	K. SECURITIES FINANCING	449	0.45	272	0.09	MOF
5	HAN-EUI MERCHANT BANKING	372	0.38	111	0.04	MOF
6	SAE-HAN MERCHANT BANKING	334	0.34	127	0.04	MOF
7	DAE HAN INVEST. TRUST	229	0.23	1,128	0.38	MOF
8	K. MINING&REFINING	228	0.23	1,377	0.47	MOF
9	HYO-SUNG HEAVY INDUSTRY	228	0.23	3,526	1.20	MOF
0	KOOK-MIN LEASING	216	0.22	80	0.03	MOF
1	NAM HAE CHEMICAL	197	0.20	1,045	0.35	MOC
	K. READJUSTMENT	179	0.18	400	0.14	MOF
	K. COLD STORAGE	109	0.11	349	0.12	MOAF
	K. FERTILIZER	98	0.10	676	0.23	MOF
	BOO-KUK MUTUAL SAVINGS	86	0.09	231	0.08	MOF
	K. ENTERPRISE LEASE	81	0.08	61	0.02	MOF
7	MAE-IL DAIRY INDUSTRY	59	0.06	1,010	0.34	MOAF
8	DAE-KOO FIRST MUTUAL SAVINGS	52	0.05	76	0.03	MOF
9	K. DRILLING	49	0.05	33	0.01	MOER
0	YUNG-NAM CHEMICAL	48	0.05	634	0.22	MOC
1	BU-SAN KOOK-MIN MUTUAL SAV.	47	0.05	65	0.02	MOF
2	K. TECHNICAL FINANCING	46	0.05	40	0.01	MOF
	WON JIN RAYON	45	0.05	1,613	0.55	MOF
	KOOK-MIN MUTUAL SAVINGS	42	0.04	60	0.02	MOF
5	HAN-SUNG MUTUAL SAVINGS	38	0.04	62	0.02	MOF
6	YOUNG-NUM MUTUAL SAVINGS	38	0.04	61	0.02	MOF
7	JU-EUN MUTUAL SAVINGS	38	0.04	39	0.01	MOF
8	DONG-BOO OIL	31	0.03	232	0.08	MOF
	KYUNG-JU TOURISM	29	0.03	60	0.02	MOT
	K. NUCLEAR NERGY	22	0.02	161	0.05	MOER
1	DATA COMMUNICATION CORP OF K.	19	0.02	782	0.27	MOCH
2	K. ELECTRIC TECH.	18	0.02	1,155	0.39	MOER
3	JUN-NAM MUTUAL SAVINGS	17	0.02	44	0.01	MOF
	CHE-JU TOURISM	17	0.02	43	0.01	MOT
5	JIN-HAE CHEMICAL	16	0.02	380	0.13	MOC
6	K. ELECTRIC REPAIRMENT	15	0.01	2,583	0.88	MOER
7	K. TELEPHONE DIRECTORY	13	0.01	113	0.04	MOCH
8	HAN KUK TRADING	12	0.01	34	0.01	MOAF
	K. GENERAL TECH. DEV.	7	0.01	819	0.28	MOF
	SEOUL-AK TOURISM	7	0.01	141	0.05	MOT
1	KOOK-MIN TECH FIN.	6	0.01	28	0.01	MOF
42	K. ENTERPRISE DEV. FIN.	6	0.01	27	0.01	MOF
43	K. SECURITIES SETTLEMENT	6	0.01	220	0.07	MOF
44	HAJANG-SAN TOURISM	5	0.01	101	0.03	MOT
45	K. TELECOM. PROMOTION	5	0.00	45	0.02	MOCH
46	K. SECURITIES COMPUTING	4	0.00	151	0.05	MOF
47	KBS ENTERPRISE	4	0.00	136	0.05	MOCI
8	KUMOU-SAN TOURISM	3	0.00	73	0.02	MOT
9	K. TOURIST SERVICE	3	0.00	195	0.07	MOT
0	K. TELECOM. TECH.	2	0.00	59	0.02	MOCH
1	K. OIL PIPELINE	2	0.00	41	0.01	MOER
2	K. MANAGEMENT CONSULTING	1	0.00	54	0.02	MOF
3	K. MOVING TELECOM. SERVICE	1	0.00	70	0.02	MOCH
4	K. HARBOR TELEPHONE	0	0.00	4	0.00	MOCH
	SUB-TOTAL	6,482	6.57	44,423	15.07	
	MIL US\$	8,180.7				

Cont...

Table C
KOREA: LIST OF PEs BY ORDER OF ASSET SIZE
(1986)

No.		ASSET		EMPLOYEES		SUPERVISING MINISTRIES/1
		BIL WON	% OF TOT.	#	% OF TOT.	
GOVERNMENT BACKED ENTERPRISE (GBE)						
1	K. EXCHANGE BANK	19,217	19.47	7,460	2.53	MOF
	PO-HANG IRON&STEEL	4,480	4.54	18,926	6.42	MOC
	EX-IM BANK	3,954	4.01	463	0.16	MOF
4	K. TUNGSTEN MINING	53	0.05	1,989	0.67	MOF
5	K. APPRAISAL BOARD	20	0.02	983	0.33	MOF
6	K. TECH. DEV.	7	0.01	91	0.03	MOST
	SUB-TOTAL	27,730	28.10	29,912	10.15	
	MIL US\$	34,999.8				
	GRAND TOTAL	98,688	100.00	294,739	100.00	

Source: Korea Development Institute.

'88 Performance Evaluation Criteria

Korea National Housing Corporation

Index	Evaluation Criteria	Evaluation Method	Weight(%)
1. General Indicators			(20)
(1) Administration of Operating Expenses to Sales	Operating Expenses = f (Sales)	7 Year Trend Value	(15)
(2) General Management Efficiency		5 Grade Evaluation	(5)
	o Efforts for Responsible Management and Enhancing Public Welfare :		3
	o Reasonableness of Wage Management		2
2. Criteria for Carrying Out Establishment Purpose			(41)
(1) Construction of Public Housing			(23)
o Housing Construction Units	For Sale : 15,000 Units	Target vs. Performance	1
	For Rent : 25,000 Units	"	2
o Total Floor Area of Housing Construction	Target : 2,430,000 m ²	"	3
o Cost Administration of Rental Housing Construction	Rental Housing Construction Cost ----- Rental Housing Construction Area	6 Year Trend Value	7
o Ratio of Investment to Rental Housing Construction	Rental Housing = f (Total Assets)	5 Year Trend Value	4
o Land Procurement Administration		5 Grade Evaluation	2
o Improvement of Housing Construction		"	4
(2) Supply of Public Housing			(13)
o Housing Supply Units	For Sale : 16,590 Units	Target vs. Performance	1
	For Rent : 20,670 Units	"	1
o Administration of Housing Sales	Housing Units Sold Out ----- Housing Units for Sales	Target Assignment	5
o Housing Prices Stabilization Effects	Total Housing Sales Price = f (Total Floor Area for Sales)	7 Year Trend Value	6

TABLE D (cont'd)

Index	Evaluation Criteria	Evaluation Method	Weight(%)
(3) Housing Maintenance Administration			(5)
o Housing Maintenance Assignment		5 Grade Evaluation	3
o Numbers of Housing Management Right's Turnover to the Occupants etc.	Target : 38.400 Units	Target vs.Performance	2
3. Business Administration Criteria			(39)
(1) Efficiency Evaluation			(13)
o Administrative Expenses	The Rising Ratio of Administrative Expenses	Target Assignment	5
o Administration of Labour Cost	Labour Cost = f (Administrative Assets + Costs of Sales)	7 Year Trend Value	5
o Efficiency of Fund Administration	Interest Received = f (Monetary Assets)	7 Year Trend Value	3
(2) Long-Term Business Administration		5 Grade Evaluation	(5)
	o Management Plan Modification Considering Changing Business Environments		1
	o The Efforts to Operate Long-Term Plan		2
	o Connection with Short-Term Plan and Sectoral Management Plan		1
	o The Reasonableness of Planning and Execution for Investment		1
(3) Improvement in Administration System		5 Grade Evaluation	(10)
	o The Efficient Operation of the Board of Directors		1
	o The Reasonableness of Personnel Administration and Organization Control		2
	o Reasonableness of Wage System		2
	o Efficiency of Budget System		3
	o Efficiency of MIS		1
	o Improvement on Energy Administration System		1

TABLE D (cont'd)

Index	Evaluation Criteria	Evaluation Method	Weight(%)
(4) Substantiality in Internal Evaluation		5 Grade Evaluation	(3)
	o Reasonableness of Setting Up Internal Evaluation Index		1
	o Appropriateness of Measurement Method and Application		1
	o Feedback and Application by Performance Evaluation		1
(5) Service Improvement		5 Grade Evaluation	(4)
	o Efforts for Enhancing the Quality of Service to Execute Establishment Purpose		1
	o Efforts for Development of New Service According to the Changing Demand Style		1
	o Efficiency of Management on Civil Service		1
(6) R & D		5 Grade Evaluation	(4)
	o Efforts for R & D		2
	o Application or New Materials for Construction and Moderateness of Materials Test		1
	o Efforts for Enhancing Productivity		1
Quantitative			40
Non-Quantitative			60
Total			100

Table E
Performance Score and Grade of 25 GIEs
(1984 - 1987)

Names of GIEs	1984		1985		1986		1987	
	Score	Grade	Score	Grade	Score	Grade	Score	Grade
1. Korea Development Bank	91.58	B	89.01	C	90.46	B	89.26	C
2. Small and Medium Industry Bank	91.59	B	90.11	B	90.87	B	92.33	B
3. Citizens National Bank	90.22	B	91.57	B	90.93	B	91.50	B
4. Korea Housing Bank	92.31	B	86.02	C	92.85	B	90.91	B
5. Korea Securities Exchange	92.15	B	88.23	C	89.15	C	-	-
6. Government Mint	90.28	B	90.25	B	93.58	B	87.25	C
7. Korea Electric Power Corporation	90.92	B	90.12	B	93.95	B	92.27	B
8. Korea Coal Mining Corporation	91.15	B	90.13	B	91.11	B	87.54	C
9. Korea Mining Promotion Corporation	90.47	B	90.06	B	90.65	B	91.29	B
10. Petroleum Development Corporation	92.48	B	88.66	C	90.99	B	89.84	C
11. Korea General Chemical Corporation	93.55	B	91.31	B	90.94	B	91.34	B
12. Korea Trade Promotion Corporation	89.60	C	92.53	B	94.36	B	94.48	B
13. Korea Highway Corporation	91.24	B	90.40	B	89.77	C	90.20	B
14. Korea Housing Corporation	83.55	D	90.30	B	93.53	B	94.63	B
15. Industrial Site and Water Resource Development Corporation	90.74	B	92.56	B	91.36	B	93.38	B
16. Korea Land Development Corporation	94.35	B	93.00	B	84.14	D	88.28	C
17. Agriculture Promotion Corporation	90.94	B	92.09	B	92.97	B	92.34	B
18. Agriculture and Fishery Marketing Corp.	88.78	C	86.92	C	91.37	B	90.06	B
19. Korea Telecommunication Authority	91.20	B	90.97	B	94.43	B	91.84	B
20. Korea Tourism Corporation	89.13	C	89.14	C	92.7	B	89.63	C
21. Korea Broadcasting System	90.44	B	88.07	C	90.12	B	-	-
22. National Textbook Company	89.67	C	89.77	C	88.06	C	87.12	C
23. Korea Overseas Development Corporation	85.37	C	86.17	C	91.09	B	84.01	C
24. Labor Welfare Corporation	92.72	B	91.58	B	90.28	B	86.27	C
25. Korea Gas Corporation	82.13	D	82.94	D	89.78	C	91.98	B
Average	90.26	B	89.68	B/C	91.18	B	90.34	B

Source: Korea Development Institute.

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