THE PHILIPPINE CEMENT INDUSTRY
A PROPOSAL FOR REHABILITATION AND VIABILITY

By

Magdaleno B. Albarracin, Jr.*

Introduction

In the past seven years, the Philippine cement industry has been a distressed industry and as such has been a problem to the national economy and more particularly to the Development Bank of the Philippines (DBP), the suppliers to the industry, and the majority of the stockholders. The problem has long been crying for a solution, but unfortunately, no practical and reasonable solution has been brought forward explicitly and seriously enough.

This paper advocates rationalization of the industry as a practical and reasonable solution. It can result in an annual savings of about P64 million at the minimum, enough to put the industry into the black. It is also expected to result in fewer but bigger, stronger, and better-managed companies able to repay debts and capable of expanding at the appropriate time to meet the growing demand for its products.

This paper also presents three feasible schemes for effecting rationalization and proposes the adoption of a practical and less arbitrary approach which can be implemented within one year.

But first let us look at a few significant realities in the industry before proceeding to the economics of rationalization and finally its implementation.

The Significant Realities

Based on general observation and the consolidated industry figures shown in Appendix A and Appendix B, the following are some of the

---

*IBM Professor of Business Administration, University of the Philippines. This paper is based on the author's professorial chair lecture given on September 1, 1978 at the College of Business Administration.

salient facts which argue for an immediate rationalization:

1. The industry owes more than ₱1 billion from the DBP, a large portion of which is long overdue. The prospect of ever paying up this debt is very dim.

2. The deficit in working capital was ₱283 million as of the end of 1975. With further losses in 1976 and with more of the long term debt becoming current, the deficit can be expected to increase. This was further aggravated by higher receivables in 1976 resulting from a weaker market compared to 1975.

3. The stockholders equity as of the end of 1975 was ₱689 million versus a debt of ₱2 billion. Furthermore, ₱540 million of the ₱689 million of equity represented appraisal surplus, hence, the unadjusted equity was only about ₱150 million — a very minimal amount of equity compared with the debt of ₱2 billion. The industry therefore is owned by the DBP and its bankers for practical purposes. Note that the financial charges in 1975 was ₱97 million versus an income from operations of only ₱54 million.

4. The industry lost ₱70 million in the two year period of 1974-75 with ₱45 million as the loss in 1975. With the 1976 capacity utilization of 55 per cent versus 60 per cent in 1975, the picture in 1976 will likely be worse.

5. Aside from the burden of financial charges which in turn results in the deteriorating condition of most plants in view of the inability to make the necessary repairs, the industry is plagued with basic inefficiencies on top of the undercapacity utilization such as:

   (a) only 11 out of 18 plants have a capacity exceeding 1,000 metric tons per day, considered the minimum economic size.

   (b) only 12 out of 18 plants use the dry or semi-dry process, the more modern process which uses less fuel.

   (c) only 11 out of 18 plants are 10 years old or less.

   (d) partly because of its distressed condition the industry has difficulty attracting talented manpower. In fact, it is

observed to be losing its talent to other industries and to the skilled labor market abroad.

The above are some of the serious handicaps facing the industry. To make it viable and thus protect the interests of the DBP, perhaps, only the bold alternative of rationalization can save it.

Let us now look at the economics of rationalization. Let us see what efficiencies and cost savings can be expected.

The Economics of Rationalization

In carrying out rationalization, the idea is to operate only about ten plants at near full capacity and mothball the remaining eight for later use when demand catches-up with industry capacity. However, if the export volume increases, which seems to be the case, then less than eight plants will be mothballed. The following benefits can then be realized from rationalization.

A. Benefits to the industry

1. *Fuel.* Presumably, the ten operating plants will be mostly dry process plants, which are also bigger, and relatively new plants. There will likely be exceptions such as the Bacnotan Cement Plant which through a net process plant uses coal and is in fact more efficient than some of the dry process plants. It is possible that some plants chosen to operate may have to undergo rehabilitation first in order to restore their inherent efficiency. At about 60 per cent of capacity utilization in 1975, about 1.3 million tons of cement out of the total production of 4.3 million tons were produced in wet process and probably less efficient plants while 3 million tons were produced from the dry process plants. If this 1.3 million tons are produced in the more efficient and mostly dry process plants, industry experience indicates that about 32 million liters (1.1 liters/bag of 94 lb.) would be saved. In addition, because of the continuous and full-capacity operation of the ten or so remaining operating plants, the 3 million tons of cement will then be produced with 22 million liters less fuel (7.2 liters less per ton.) The total fuel savings therefore amount to 54 million liters or ₱42 million per year at ₱0.77 per liter. At the most recent price of ₱0.80 per liter, the savings amount to ₱43 million.

2. *Power*. The 4.3 million tons of cement, if produced in fewer and more efficient plants at 100 per cent capacity utilization, instead of in 18 plants each at 60 per cent of capacity, will probably use 15 killowatt-hours less electric energy per ton of cement or 0.7 killowatt-hours per 94 pound bag. This is because equipment like raw mills and finish mills use practically the same power regardless of load. This means a savings of about 64 million killowatt-hours or ₱12 million at ₱0.18 per killowatt hour.

3. *Firebricks and Grinding Balls*. The ₱21 million expenses for these items in 1975 per the SGV study of 1976, would probably be reduced by 15 per cent or about ₱3 million if fewer plants operated at full capacity. With full capacity operation, kiln operation is more uniform and therefore the usage of fire bricks is less.

4. *Repairs and Maintenance*. The ₱27 million spent for repairs and maintenance on the 18 plants in 1975 would probably be an adequate figure for the 10 operating plants after they shall have been first rehabilitated. In any case, let us put a more conservative figure at ₱30 million for the 10 plants or ₱3 million per plant versus ₱1.5 million each in 1975. This means an additional expenditure of ₱3 million per year.

5. *Inventories*. The inventories amounting to ₱200 million in 1975 could probably be reduced by ₱50 million as a result of a reduction in the number of plants. The resulting inventory per plant becomes very reasonable at ₱15 million versus ₱11 million each in 1975. The carrying cost at 18 per cent is about ₱9 million/year. The five items of savings are summarized as follows:

Fuel	. . . .	₱43 million
Power	. . . .	12 million
Firebricks/Grinding Balls	. . . .	3 million
Repairs/Maintenance	. . . .	(3) million
Inventory carrying cost	. . . .	9 million
	Total	₱64 million

The savings of ₱64 million compares favorably with the ₱44 million loss in 1975. Also, the above savings excludes likely savings in

56

labor, overhead and selling expenses which savings should perhaps be used to increase salaries in order to hold and attract competent personnel.

Finally, the eight or so plants on mothball will stop deteriorating and should even be slowly rehabilitated in preparation for the time when demand catches up with industry capacity.

Meanwhile, for the ten or so plants to operate at full capacity, about P75 million would probably be needed for rehabilitation as opposed to the P136 million for the 18 plants indicated in the SGV study. In view of the abovementioned potential savings of P64 million per year, the following financing package is suggested for the P75 million needed for the rehabilitation.

P25 million	-	one to two-year loan from private sources and guaranteed by DBP
P25 million	-	three-year loan from the DBP
P25 million	-	local suppliers credit as a result of their increased confidence in the industry.

Most likely, rationalization will mean also better management, thus bankers and suppliers will have more confidence in the surviving companies.

Finally, and perhaps the more important in the long run, rationalization will make available to the industry the few competent technical people and managers now concentrated in few cement companies. Also, competent personnel from outside the industry and superior graduates from schools will be more easily attracted. When necessary, the large size of the operations of the surviving plants will enable them to afford foreign expertise. All these will place the industry in a stronger position to meet the anticipated expansion needed in the 1980's and to cope with the increasing difficulties in the business environment.

B. Benefits to the Economy

The benefits to the economy are as follows:

1. *Foreign Exchange Savings*

(a) Fuel — 54 million liters or 446,000 barrels. $12/barrel, this amounts to $5.4 million a year.

(b) Power — Assuming that 60 per cent of the P12 milli savings is foreign exchange cost, the amount is P7 million or $900,000.

(c) Firebricks — Assuming 85 per cent of the P3 milli savings is the foreign exchange component, then th saving on foreign exchange is $340,000.

The combined foreign exchange savings from the above th items is $6.6 million per year.

The above savings appear to be conservative because further pla efficiencies are likely to occur with better management. In additi to the above direct savings in foreign exchange, the propo rationalization will likely result in a more rational product distri tion which will in turn save significant foreign exchange from th savings in fuel, tires and spare parts of transport vehicles.

2. *Improved Collection of Debts and Taxes*

With the rationalized industry expected to operate in th black, a significant portion of the industry debt of about billion can be collected with more certainty and in turn can loaned to other development projects of higher priority. Al more taxes can be collected since the ten remaining plants w probably be operating profitably instead of the present plants almost all of which are operating at a loss.

3. *Higher Wages*

With the expected higher productivity in the industry, hig but non-inflationary wages can be justified thereby increa the living standards of the employees in the industry.

In the computation for savings from rationalization, lay of personnel was not taken into account because, presuma the plants to be mothballed will still require maintenan that they can be operable when the industry demand war In any case, attrition of excess personnel can be taken car

by retirement and gradual resignations. Furthermore, the industry itself can undertake a job relocation program for its excess personnel. This can reasonably be done because the top management of all the surviving companies are most likely to be also connected with other industries. Finally, since cement plants are not labor intensive, the eight plants to be mothballed will probably have about 350 employees each or a total of 2800 employees. If 70 per cent of these will be used for continued maintenance, then only 840 will be relocated.

4. Improved Capability to Deal with Pollution

The resulting strong companies will be more capable of minimizing pollution by way of improved operations and installing anti-pollution devices. Initially, at least, only 10 plants instead of 18 will upgrade their anti-pollution equipment.

5. Beneficial Effect on Suppliers

In the past several years, the cement industry has had difficulty paying on time its suppliers such as the oil and paper companies, the foundries and engineering shops, as well as mill supply traders. No doubt this situation has posed operating and financial problems to the suppliers. With rationalization and the expected strengthening of the cement companies, the above problems will be reduced and in turn the suppliers might become a source of working capital thru the expanded availability of suppliers' credits.

Schemes of Rationalizaion

Considering martial law, the price control and the government owning practically the entire industry in view of the existing loans, it will be relatively easy for the government to implement any reasonable rationalization scheme. This possibility is further strengthened by P.D. 94 which established the Cement Industry Authority (CIA) in order to effect rationalization in the industry.

The possible schemes are presented below and each will require comparable financial and other forms of assistance from the government:

1. One scheme is to give incentives to certain plants to shut down so that the remaining plants can operate at full capacity. In

turn, the operating plants will assume the funding of the in centives. By way, of example, suppose that total demand is only 100 million bags compared to industry rated capacity of 180 million bags or a capacity utilization of 56 per cent. If we assume for the sake of simplicity that debt service (principal plus interest) is P2 per bag, which is the DBP formula, then total debt service for the year is P200 million, the bulk of which is applied to interest or say P180 million versus only P20 million for principal. Using averages for simplicity again, each of the 18 plants pays DBP or his bank an average of P2 x 5.55 million bags/year or P11.1 million per year for debt service. This is broken down into P10 million for interest and P1.1 for principal. Now if only 10 plants produce the 100 million bags, then the total industry debt service will still be P200 million, but now each operating plant will be paying an average of P2 x 10 million bags/per year or P20 million per year to its bank. However, in order to give incentives to the eight plants to shut down, the interest expense of P80 million which the eight plants would have paid if they were operating, will be condoned by the banks. On the other hand, of the P200 million which will be paid by the 10 operating plants, P80 million will be applied to the condoned payments of the 8 non-operating plants. The balance of P120 million or P12 million per operating plant will be credited to the plant concerned. The amount of P10 million will apply to interest and P2 million to principal. This compares to the P11.1 million annual payment per plant, broken down into P10 million against interest and P1.1 million against principal, if all the 18 plants were operating. Each operating plant therefore will accelerate the payment of principal by P0.9 million per year in order to compensate for the moratorium on principal payments by the non-operating plants.

Although the operating plants appear to subsidize the non operating plants by P8 million for each operating plant, plus P0.9 per year in accelerated principal payments, the increased volume per plant from 5.6 million bags to 10 million bags will result in an additional income before tax of at least P11 million (4.4 million bags x P2.50/bag). In addition, the total industry savings from rationalization amounting to P64 million as mentioned earlier will accrue to the operating plants. This means P6.4 million for each plant. The total additional profit before subsidy payments of P8 million per operating plant therefore is P17.4 million which compares favorably to the P8

million annual payment as so-called subsidy to the non-operating plants. The net increase in profits therefore will be ₱9.4 million per operating plant or an increase in cash flow of ₱8.5 million per year.

In recognition of the fact that the non-operating plants will incur fixed costs in addition to interest payments, it might be reasonable for the operating plants to pay to a fund an additional ₱0.10 per bag or ₱1 million on 100 million bags which will in turn be distributed to the non-operating plants in proportion to their rated capacity.

To implement this proposed scheme, the CIA and the DBP may have to get a foreign consultant as an independent adviser in working out the details and in determining which plants to shutdown. At the same time, DBP will have to develop a working arrangement with the other creditor banks. This should be possible since the banks will not be worse off in the proposed scheme.

It is understood as part of this scheme that DBP will lend to the operating plants the necessary funds for their rehabilitation.

2. Another scheme involves Consolidation of Management or forced mergers. The scheme can be accomplished using any of the following approaches:

(a) One approach is for the government thru the DBP and/or CIA to manage all the cement companies by appointing a management company as general manager of all the companies with the instruction to operate only the optimum combination of plants and to supply the entire market from them. The determination of the optimum combination of plants can be done with the use of a linear programming model such as the one discussed in Appendix C.

(b) Another approach is to have two or three management companies each manage a group of cement plants. This will foster some competition and perhaps achieve better efficiency. The management companies can be all local or a combination of local and foreign, and they should be chosen on the basis of their track record particularly in the cement industry.

(c) A third approach is to "persuade" all the companies to merge into about five surviving companies with weaker ones merging into the stronger ones. Each group perhaps should have its share of inefficient plants which can be mothballed while demand has not yet caught up with supply. Also, each group should be relatively strong in one particular region so that transportation can be somewhat optimized.

Scheme number two with its three approaches discussed above is in a way only a variation of the first scheme also proposed above. Some plants will be made to operate at full capacity and some plants will be mothballed. In this instance, however, the management company/companies or the surviving groups will determine which plants to operate and shutdown. They will also determine the incentives or compensation to be given to the mothballed plants in their group. In this regard, scheme number one provides a framework or formula to follow or to improve upon.

The fact that most plants have defaulted in varying degrees in the payment of their debt gives DBP a strong leverage in effecting scheme number two. For example, the DBP can convert its preferred shares of a company into common shares so that it can exercise control and merge the company or have it managed by a firm of DBP's choice. DBP may also exercise its voting rights to achieve the same end. Additionally, CIA has broad powers vested on it by P.D. 94 thereby giving CIA strong persuasive powers.

Finally, the incentives/compensation to be given to the mothballed plants should probably include the existing salaries/ remuneration to their principal officers and members of the Board. This will soften their resistance to this scheme.

3. A third rationalization scheme which is perhaps less arbitrary and more democratic is to encourage voluntary mergers within a period of about one year. The encouragement may consist of the following:

(a) Half of the debt to the DBP of the merged company shall be converted into cumulative convertible preferred shares. This will improve considerably the debt to equity structure of the merged company.

62

(b) DBP will grant a three-year loan to the merged company amounting to one-third of the amount required for rehabilitation.

(c) DBP will guarantee, up to two years, commercial bank loans amounting to one-third of that required for rehabilitation. It is intended that the remaining one-third will be fresh equity capital inputs into the merged company.

(d) Only a merged company will be allowed to expand by the Board of Investments within the next seven years. This is important because a need for expansion is anticipated by 1981.

There will of course be certain conditions to be met which will include the following:

(a) The merged company will have at least 1 million tons per year of rated capacity with at least half of the tonnage being in dry or semi-dry process plants.

(b) The technical and management competence of the merged company shall meet the approval of Philippine Cement Industry Authority which shall issue certain guidelines.

(c) The merged company shall present to DBP for approval an operational and financial plan indicating the expected benefits from the merger and a ten-year repayment schedule of outstanding debts plus a redemption schedule for the preferred shares from the eleventh to the fifteenth year. The financial plan should include an infusion of fresh capital by the existing or new owners of the merged company. The amount should equal in the least the loan to be obtained from DBP for one-third of the rehabilitation cost. The infusion of capital shall be made at the same rate as the DBP loan and the DBP guaranteed loan and shall be completed within two years of the merger.

The Choice of Plants to Continue Operation

A key task in any of the rationalization schemes discussed above is the choice of the plants to be allowed to continue operation versus

those to be mothballed. Depending on the scheme to be adopted, this task will fall on the shoulders of the government, or the management company/companies to be employed or to the management of the surviving companies in case of the merger alternative.

From the technical point of view, the relevant factors to consider are the variable cost of production and the transport cost from the plant concerned to its principal markets. Fixed costs including interest are irrelevant to the analysis since they will continue to be incurred whether or not the plant will operate. A linear programming approach is the most precise and convenient method to be used. This is explained in Appendix C. In this connection, several linear programming packages are available from any computer installation.

For practical purposes however, certain modifications should be made. First, the variable cost should be adjusted to reflect anticipated increase or decreases which might result from improvements after rehabilitation is completed. For example, the fuel and power consumption might decrease substantially in a certain plant after rehabilitation is made. In this case, the reduced variable cost is the more relevant cost to use. A second modification might be to choose a plant with a slightly higher variable cost plus transport cost than another if the former has a much better financial position than the latter. The financing for its rehabilitation will be more speedily obtained. A third modification is to recognize product superiority of certain plants as opposed to others. Last but not least is the quality of management.

Conclusion

The benefits of rationalization to the industry and the nation as a whole are clearly significant and attractive as shown in this paper. Rationalization promises to bring about an annual savings of P98 million which is enough to put the industry in the black based on the 1975 industry figures. Stronger companies are expected to emerge which will then be better able to meet the challenge of expansion and environmental controls in the 1980's. As shown in the SGV study of 1976, cement shortage is anticipated starting 1981. In fact, as indicated in Appendix D, the author believes that expansion is called for by 1980. To the financial institutions, particularly the Development Bank of the Philippines, the prospects of collecting from P1 to P2 billion of debts will be brighter even if it has to initially grant a three-year loan of P25 million and guarantee another

₱25 million loan for 2 years, both amounts being very minimal compared with the benefits. There is also a significant foreign exchange savings estimated at $6.6 million per year. This will certainly be an accomplishment of the cement industry as a whole and the CIA particularly.

Meanwhile, the proposed rationalization scheme number 3 suggested in this paper appears to be practical and implementable. It draws from the experience of the increased capitalization of the banking industry and from the rationalization experience brought about by the Progressive Manufacturing Programs of the Board of Investments. It is also in line with the government's announced efforts at rationalizing industries in this country. The scheme is feasible because aside from the fact that the CIA has the power to rationalize the industry, the DBP can exercise its voting rights or convert its preferred shares into common shares in order to exercise control.

A salient feature in the proposed scheme is the attempt to take the point of view of the cement companies and also that of the government institutions. The scheme is not one-sided and therefore seems to be fair. It is not easy either because some companies have to give way to others and the financial institutions have to initially grant loans. But rationalization is never easy and the issue perhaps is not merely a question of whether it is worth it or not, but a question of rationalizing now. The Cement Industry Authority and the Development Bank of the Philippines can start immediately by conducting hearings with interested groups followed by an announcement of the implementing rules all within a period of three months. At the same time, individual cement companies should take the initiative of identifying merger partners and go to the government for the right "encouragement" such as those proposed above.

Enough studies have been made on the industry and more than enough data are available. It is no longer a time for study but a time for action.

Appendix A
PHILIPPINE CEMENT INDUSTRY
CONSOLIDATED STATEMENTS OF INCOME DEFICIT
1974-1975
(In Thousand Pesos)

	1975	1974
Net sales	₱1,002,529	₱738,252
Cost of sales	863,345	613,668
Gross profit on sales	139,184	124,584
Operating expenses	84,801	72,739
Income from operations	54,383	51,845
Financial and other expenses (Net of other income)	97,164	75,237
Loss before income tax	42,781	23,392
Provision for income tax	2,148	1,783
Net loss	₱ 44,929	25,175

Source: Sycip, Gorres and Velayo study of 1976.

Appendix B
PHILIPPINE CEMENT INDUSTRY
CONSOLIDATED BALANCE SHEET
1974-1975
(In Thousand Pesos)

Assets	1975	1974
Current Assets	₱ 404,829	₱ 386,118
Investments	12,234	11,160
Property Plant and Equipment		
At cost, net of accumulated depreciation	1,484,879	1,453,682
Appraisal increase, net of accumulated depreciation	554,504	363,855
Net	₱2,039,383	₱1,817,537
Other Assets	214,938	143,220
Total Assets	₱2,671,384	₱2,358,050

Liabilities and Stockholders Equity

Current Liabilities	₱ 683,741	₱ 764,116
Long Term Liabilities	1,251,722	969,162
Reserves and Deferred Credits	40,217	50,323
Stockholders' Equity		
Paid-in Capital	401,125	427,370
Appraisal increment	540,646	343,936
Deficit	(201,788)	(146,578)
Treasury stock	(50,279)	(50,279)
Net	₱ 689,704	₱ 574,449
Total Liabilities and Stockholders' Equity	₱2,671,384	₱2,358,050

Appendix C
DETERMINATION OF THE OPTIMUM COMBINATION OF CEMENT PLANTS

Let P_1, P_2, P_3 .... P_{18} represent the 18 cement plants in the country.

Let C_1, C_2, C_3 .... C_{18} represent their respective annual rated capacities say in bags.

Let us subdivide the country into market areas M_1, M_2, M_3, ... M_n with their respective annual cement requirements in bags represented by m_1, m_2, m_3, ... m_n

Let A_{11} = the variable cost of producing a bag in P_1 plus the transportation cost of a bag from P_1 to M_1.

A_{12} = the variable cost of producing a bag in P_2 plus the transportation cost of a bag from P_2 to M_2.

A_{22} = the variable cost of producing a bag in P_2 plus the transportation cost of a bag from P_2 to M_2.

A_{18} = the variable cost of producing a bag in P_{18} plus the transportation cost of a bag from P_{18} to M_n.

The idea is to determine from which cement plants to supply the requirements of each market area M such that the total variable cost plus transportation cost is minimized.

The problem is portrayed in the following table and its solution by a computer using a linear programming model is recommended.

	M_1 $m_1 =$	M_2 $m_2 =$	M_3 $m_3 =$	M_4 $m_4 =$	M_n $m_n =$
$C_1 =$ P_1	A_{11}	A_{12}	A_{13}	A_{14}	A_{1n}
$C_2 =$ P_2	A_{21}	A_{22}	A_{23}	A_{24}	A_{2n}
$C_3 =$ P_3	A_{31}				
$C_{18} =$ P_{18}	$A_{18,1}$	$A_{18,2}$	$A_{18,3}$	$A_{18,4}$	$A_{18,n}$

Luzon:	Actual Demand 1975	- 3,158
	Projected Demand 1980:	
	Domestic	- 4,230
	Export	- 408
		4,638

Capacity	Year	Effective Capacity Factor*	Rated Dry/SD	Effective Capacity	Rated Wet	Effective Capacity
1. Rizal	1914	.8	640	512	358	285
2. BCI	1954	1.			256	256
3. Republic	1957	.8	640	512		
4. Filipinas	1964	.7	563	394		
5. MMIC	1967	.8	383	306	383	306
6. III	1968	.9	384	346		
7. Luzon	1968	.9	154	138		
8. Northern	1970	.9	640	576		
9. Fortune	1970	.9	384	346		
10. Continental	1972	.8	448	358		
11. Midland	1974	.8			512	410
			3,596	2,976	1,509	1,257

*Opinion of the author

Effective Capacity:

• Dry/SD Process Plants	-	2,976 MT
• Wet Process Plants	-	1,257
Total	-	4,233 MT

Effective Capacity Utilization 1973-75 per cent

Projected Demand in 1980	-	4.638 MT
Deficit	-	405 MT

II. Visayas-Mindanao		
	Actual Demand 1975	- 1,193
	Projected Demand 1980	
	Domestic	- 1,579
	Export	- 392
	Total	- 1,971