The Abdication of Big Steel

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Outmoded plants, domestic minimills, and growing imports have forced U.S. Steel to retreat in a stagnant market. Government policies have only slowed the needed transition to a smaller, lower-cost industry.

Last August, President Reagan established a task force to recommend assistance for the domestic steel industry. But for the telling avoidance of the name, Reagan's action revived Jimmy Carter's Steel Tripartite Committee, an ineffective panel of labor, management, and government representatives. The tripartite concept is a favorite theme of industrial-policy advocates, so that its endorsement by the Reagan Administration seems odd, as does the revival of a Carter program with a lackluster record. Such paradoxes provide political evidence of the desperate conditions that now prevail in the American steel industry.

The year 1982 was far and away the worst for American steel producers since the Great Depression, and 1983 brought only slight improvement. Intense competition and colossal financial losses—$3.3 billion industrywide in 1982—have generated severe pressures, and these in turn are forcing the industry to restructure. Yet public perceptions of the industry, steel firms' own strategies, and the goals of the steelworkers' union are largely based on a view of the industry that is seriously out of date.

The industry giant: U.S. Steel

The key to understanding the industry's future, like its past, is the role played by the United States Steel Corporation. Known within the industry as "Big Steel" or simply "the Corporation," U.S. Steel has been more or less synonymous with the American steel industry since it was assembled by J. P. Morgan in 1901. At that time it controlled 65 percent of the American steel market. It was the first billion-dollar corporation, the largest company in the world. For at least the next sixty years, the behavior and performance of every firm connected with the steel business were built around U.S. Steel's unique status. That era is now over.

Because of its immense size and the strategic importance of its product, U.S. Steel's importance has always extended beyond its industry. In several instances the boundary between public and private power has been defined for the country as a whole by confrontations between the government and this one company. In 1952, Harry Truman announced that the government would nationalize the industry, led by U.S. Steel, rather than risk a strike, a move that was blocked by the Supreme Court. Ten years later, John Kennedy mobilized the power of the presidency to block a U.S. Steel price increase. Since the Corporation was founded, government intervention, especially on antitrust grounds, has been a greater threat than its much smaller competitors. This realization has guided U.S. Steel's strategy for most of this century, with profound implications for the entire industry.

The first government effort to break up the company came in an antitrust suit filed in 1911. In 1920, the Supreme Court, by one vote, accepted the company's defense that it had acted as a "good monopolist," not seeking to drive its competitors out of business or to charge exorbitant prices. This case, a land-

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Table 1 **Growth in Apparent Steel Consumption, 1950-81 (compound annual percentage rates)**[a]

Period	U.S.	Japan	Canada	U.K.	EEC[b]
1950-60	0.4	17.3	2.5	3.3	8.3
1960-69	4.3	13.1	6.8	2.5	5.6
1969-81	—0.9	1.3	1.6	—3.5	—0.9
1950-81	1.0	9.8	3.1	0.3	3.6

Source: Barnett and Schorsch, *Steel: Upheaval in a Basic Industry* (Cambridge, Mass.: Ballinger, 1983), p. 23.

[a]Calculated on a crude steel equivalent basis from three-year averages.
[b]Original six (Benelux, Germany, Italy, France).

mark in antitrust interpretation, established that size alone is no violation of the statutes.

The Court's decision sanctioned the patterns of behavior that prevailed within the industry until well into the 1970s. As the good monopolist, U.S. Steel provided an umbrella under which its competitors could thrive. It set the industry's prices, never deviating from list for the sake of an extra sale. It set the pattern for the industry's wages and established the performance standards by which other firms were measured. Despite its size, U.S. Steel was inefficient enough to allow smaller firms to prosper at its expense. With one eye on the government, the Corporation sought to maintain stability and price discipline within its market, even though its policies also defined the conditions for its competitors' success. This was the status quo in the American steel industry through most of the twentieth century.

Market prospects and minimills

This system began to totter early in the 1960s, although the seeds of the decline can be discerned earlier. Since World War II, three fundamental forces have shaped the changing prospects of the American steel industry; much of the industry's current predicament can be laid to the traditional firms' failure to grasp the significance and inexorability of these trends.

The first and most important factor in the industry's decline is the fact that its market is relatively stagnant. Since 1950, U.S. steel consumption has grown at a compound annual rate of only 1 percent, far below the average for other developed countries—with the suggestive exception of Great Britain (see Table 1). At that rate of growth, the U.S. market doubles roughly every seventy years. Japan's home market has doubled every *seven* years. This means that Japanese steelmakers must sustain a very high rate of investment to supply their domestic market. New facilities are continually being built, the technological state of the art is constantly being redefined, and mistaken investment decisions are quickly overcome. The U.S. industry, by contrast, enjoyed none of these advantages, so that its poor investment choices exact a very heavy price.

Egged on by their own hopes and the willingness of outside observers to forecast steel shortages, American steel firms have tended to view periods of weak demand as deviations from the natural tendencies of their market. Stagnant demand should not be surprising, however. In a mature economy such as ours, the share of steel production in GNP (steel intensity) declines. The steel-intensive infrastructure is largely complete, technological progress creates competing materials that replace an all-purpose product like steel, and tastes shift toward less steel-intensive consumer goods—videocassette recorders replace household appliances, for instance. Declining steel intensity is a well-established feature of mature economies. Steel intensity has been declining in other developed countries since the 1960s—a problem exacerbated by the energy crisis, which in turn ushered in the crisis that has gripped the world steel industry since 1975.

The second trend that has shaped the prospects of the American industry is the internationalization of steel production and consumption. The proportion of steel output involved in world trade grew from 10.7 percent in 1950 to 25 percent in 1980. Moreover, new producers and consumers have entered this market. Whereas Western Europe and North America produced 82 percent of the western world's steel in 1961, their share in 1982 was 57 percent. Developing countries produced 4.1 percent of the western nations' total in 1961, 15.1 percent in 1982.

This internationalization stems from differences in market prospects, which in turn are based on steel-intensity trends. Given certain conditions (e.g., the availability of technology and raw materials), steelmaking should shift toward regions where steel intensity is rising. This trend may be accelerated by political interventions such as subsidies, but it is driven by economics. For U.S. producers, internationalization appears as "the import problem," yet that problem is a result of more fundamental global trends that cannot be stayed by import barriers, however strong.

Finally, technological trends have also undermined the prospects of traditional American steel firms. Over

Table 2 **Estimated Costs of New Versus Current (1981) Plants Producing Wire Rods ($/net ton, at 90-percent operating rate)**

	Current plants		New plants	
	Integrated	Minimill	Integrated[a]	Minimill[b]
Labor	127	59	73	35
Iron ore	61	—	60	—
Scrap	14	93	14	92
Coal or coke	51	—	39	—
Other energy	45	45	35	40
Other costs	65	65	55	58
Operating costs	363	262	276	225
Depreciation[c]	10	10	48	21
Interest[d]	4	7	38	18
Taxes	4	3	8	4
Total costs[e]	381	282	370	268
List price	419	419	419	419

Source: Barnett and Schorsch, *op. cit.*, p. 178.

[a]Four-million ton, light-product plant (0.75-million-ton wire rod).
[b]0.75-million-ton plant, all wire rod.
[c]New plant costs amortized over 15 years. Five-year construction period for integrated plants, two-year period for minimills.
[d]50 percent debt at 12 percent interest, 50 percent equity.
[e]Excluding any return on equity.

the past twenty-five years, technological progress has produced a strong domestic rival to the traditional integrated (mine-to-market) steel industry. The refinement of the electric furnace and the introduction of continuous casting made it possible to produce low-cost steel without the massive facilities found in integrated plants. The result was the emergence of the so-called minimills. Largely based in the southern United States, minimills typically make simple products like bars and rods by melting down scrap. They now dominate those product lines and are continually expanding the geographic and product markets in which they are competitive.

The traditional firms have consistently underestimated the significance of the minimill phenomenon. Integrated companies have dismissed the minimills as junk dealers, claimed that they would never make anything but simple, inexpensive products, and ascribed the minimills' success to their generally nonunion status. Such criticisms miss the point. Minimills are successful because they are the market's response to the problems that plague the integrated sector. The American steel industry must devise a strategy that permits it to maintain technological momentum in a slow-growth market. This challenge confronts the industry's managers as a capital shortfall: constrained by demand, investment funds are not adequate for modernizing integrated facilities. The minimills represent a less capital-intensive method of making steel, and this is the underlying source of their success.

Table 2 provides cost estimates for minimill and integrated production of wire rods (as part of a broader product mix in the integrated case). It shows the massive advantage that minimills currently enjoy. More significantly, it shows that even a brand-new integrated plant would be uncompetitive, largely because of capital costs. For new wire rod facilities (including preceding steps), capital costs amount to about $625 per ton for integrated techniques and only $300 per ton for minimills (in 1981 dollars).

While minimills benefit from a more entrepreneurial management and a more pliant work force, their chief advantage is more basic: they embody a better technology for making steel. The market has recognized this even if the traditional firms have not. Minimills are far more profitable than their domestic rivals (Table 3), and they have pushed both domestic and foreign producers out of their markets. From 1960 to 1982, their share of the domestic market grew from 1 percent to 18 percent. During the same period, imports made similar gains, even in the face of the various barriers that have been in place since the late 1960s. Together, foreign producers and American minimills sold over 40 percent of the steel consumed in the United States in 1982—up from about 5 percent in 1960.

The abdication: from Big Steel to Medium Oil

The entry of new suppliers drastically altered competitive conditions in the American steel industry. After 1960, the integrated oligopoly was no longer identical with the steel market. Since then, the integrated firms' traditional patterns of behavior, built around U.S. Steel, have proven extremely debilitating, and U.S. Steel itself has been one of the foremost casualties. As the industry's leading firm, it was accustomed to being a price maker, and its preferred strategy for maximizing profits was to boost prices, given costs, rather than to cut costs, given prices. Cost controls were therefore lax. Moreover, U.S. Steel had traditionally maintained a "tons mentality": profits were made by pushing product out the door in boom times

and letting the booms compensate for the busts. This mentality made it unimportant to assess the profit margins on specific products at specific plants. Without strict cost controls, investment funds tended to be dispersed throughout the Corporation, each plant getting its share. As the competitive pressures on U.S. Steel intensified, the funds available for investment declined. Yet few facilities were closed, and few products were abandoned. Each plant had a smaller capital budget, so that new facilities were increasingly linked with outmoded operations rather than concentrated at a few plants to maximize the effects of modernization.

As its market share fell, U.S. Steel lost its status as the industry's price maker. Yet its traditional accounting procedures, tons mentality, and investment strategy left it ill-equipped to compete on the basis of costs. By the late 1970s, the Corporation basically comprised a far-flung network of raw-materials properties, ore carriers, railroads, and steel plants. Three of its plants—Geneva (in Utah), Fairless (outside Philadelphia), and Homestead (outside Pittsburgh)—were still basically open-hearth shops, relying on a technology that had become outmoded before 1960. Even its flagship plant, the Gary Works in Indiana, was notoriously inefficient compared to its main rivals in the Chicago area. In terms of operating performance, then, the traditional industry leader was bringing up the rear, although its size still gave it significant financial resources.

To a great extent, the inroads made by foreign producers have been won at the expense of U.S. Steel (Table 4). The company's share of the American steel market fell from almost 30 percent in 1950 to 20 percent in 1970; the process continued throughout the 1970s. By 1982, when U.S. Steel controlled less than 18 percent of the market, its shrinkage had reached the point where not only its status within the industry but its very survival was at stake. Last December, the firm announced that it would cut its total capacity by about 18 percent, reducing peak employment by roughly 15,000. Several smaller facilities had been cut in the late 1970s, but this announcement affected sites such as Homestead and South Chicago Works, which as recently as five years ago had been viewed as core operations. Even triage of this magnitude may not be enough to reverse the firm's decline, however, since serious competitive problems still plague the remaining plants.

Table 3 **Return on Equity, Minimill versus Integrated (yearly average, in percentages)**

	1972-76	1977-81
Minimill composite[a]	15.8	17.0
Integrated composite[b]	9.1	5.6
Total industry	9.4	7.2

Source: Barnett and Schorsch, *op. cit.*, p. 97.

[a]Nucor, Northwestern Steel and Wire, Florida Steel, and Cascade Steel Rolling Mills, weighted by total sales.
[b]U.S. Steel, Bethlehem Steel, Inland Steel, and Republic Steel, weighted by raw steel production.

Table 4 **Estimated Market Share, 1950-82**

	1950	1960	1970	1982
U.S. Steel[a]	28.0	25.2	20.2	13.2
Other traditional firms[a]	70.2	69.7	60.7	48.0
Minimills[a]	0.5	0.8	6.3	18.3
Imports[b]	1.4	4.7	13.8	21.8

Sources: American Iron and Steel Institute, *Annual Statistical Report* (New York and Washington, various years) and company annual reports.

[a]Percentage share of shipments by domestic firms (including exports) plus imports.
[b]Percentage share of domestic consumption, i.e., U.S. shipments minus exports plus imports.

Diversification has been a more promising strategy for U.S. Steel's management. Internal restructuring in the late 1960s had shown that other operations, particularly chemicals, were more profitable than steel. With the death in 1979 of Chairman Edgar Speer, a traditional "steel man," and his replacement by David Roderick, who had come up through the financial ranks, diversification became a top priority. Raw-materials properties were sold off, providing the company with a cash reserve of about $3 billion; a like amount was lined up from major banks. In late 1981, U.S. Steel was approached to play white knight for Marathon Oil in its effort to fend off acquisition by Mobil. On January 1, 1982, Big Steel became Medium Oil.

The effects of the 1982 recession on the industry as a whole have overshadowed the Marathon purchase, yet U.S. Steel's strategic reorientation is the more significant event. The Corporation is now a diversified oil company. In 1982, oil provided almost 60 percent of its revenues, with steel accounting for only 31 percent. Although steel's weight within the firm may rebound when its market recovers, the rate of return on oil operations is almost certain to outstrip the rate of return on steel. Investment priorities are likely to be

ranked accordingly, weakening U.S. Steel's commitment to steel. The Marathon purchase is thus a seminal event. After having provided the American steel industry with an insular coherence for eighty years, the industry leader is bailing out.

The fallout

The Corporation's decline has tainted the prospects of other integrated companies as well. Lacking the financial resources of U.S. Steel, the smaller integrated firms have tended to seek their own advantage in superior operating performance. Nevertheless, these firms have built their strategies around the opportunities provided by the U.S. Steel umbrella, and this implies that price-making behavior and a tons mentality have been characteristic of the industry as a whole. By the 1970s, being more efficient than U.S. Steel became an irrelevant advantage in a market where competitive standards were increasingly set by foreign producers and domestic minimills.

Faced with this dilemma, the smaller integrated firms have pursued various strategies in recent years. Armco and National have followed the same diversification course as U.S. Steel. They are gradually shedding even profitable steel operations, such as National's Weirton plant in West Virginia, which was recently purchased by its workers. Jones & Laughlin (J&L), now the industry's third-largest firm, is a division of the LTV conglomerate, so that diversification is a moot issue in its case. Once a relatively inefficient producer, J&L has sought to improve its prospects by acquiring large but weak competitors: Youngstown in 1978 and now Republic, the fourth-largest steel producer in the United States, in the merger that was proposed last September. If this merger is approved, J&L, renamed LTV Steel, will be the industry's second-largest firm.

Of the major firms, only Inland and Bethlehem have remained firmly committed to the steel business and invested accordingly. Inland, traditionally the most profitable integrated firm, has only one plant, so that it has been able to concentrate its investments and closely monitor its costs. Bethlehem, now the industry's second-largest firm, can claim what is probably the country's most efficient integrated plant, its Burns Harbor Works in Indiana. This is the newest plant in the United States, though its construction was begun over twenty years ago. In the late 1970s, Inland and Bethlehem each spent roughly $1 billion to construct world-class blast furnaces, but weak demand has made these investments more of a burden than an advantage.

This diversity of corporate strategies reflects the fragmentation of what had been a relatively monolithic industry. Even the most well-conceived strategies, however, are being challenged by current market conditions. The steel crisis of 1982-1983 has increased the likelihood that the changes in the industry will be far more fundamental and occur far more rapidly than would have been thought possible only a few months ago.

The most obvious change involves retrenchment and consolidation. Several major facilities, such as Bethlehem's Lackawanna plant outside Buffalo, have already been shut down. More are sure to follow. The proposed merger between J&L and Republic is the foremost example of consolidation to date, although others have been rumored.

Despite the potential for further mergers, however, the strongest forces acting on the industry are centrifugal, and these have been greatly accelerated by U.S. Steel's abdication. Minimills have been the principal evidence of the market's fragmentation, but this process is now far advanced within the integrated sector as well. The traditional firms are beginning to shed product lines in which they are uncompetitive. Major customers such as General Motors are demanding competitive bidding rather than doling out orders according to traditional market shares. Most tellingly, the united front that the old-line firms normally present to the outside world has been shattered by U.S. Steel's effort to import subsidized British slabs for processing at its Fairless Works, which would have been upgraded with money committed by British Steel. This plan, announced in March 1983, provoked other firms and the United Steelworkers to unprecedented public denunciation of U.S. Steel. While the Fairless plan has now been dropped, it has encouraged other firms to seek similar arrangements, and there is no dearth of foreign producers willing to provide semi-finished steel for processing by American producers. Besides boosting imports, such arrangements, should they become widespread, would tend to split the integrated sector into steel-producing and steel-processing segments.

Traditional labor relations are also fragmenting. As in other industries, new competition has embroiled the labor force in the struggle among firms. Years ago, when the industry could more or less be identified with the old-line integrated firms, the union contract was a

given for steel companies, so that firms did not compete on the basis of which paid the lowest wage. Now, however, marginal plants are successfully demanding wage concessions above and beyond those granted by the master contract. This has already occurred at medium-sized operations such as McLouth, Wheeling-Pitt, Rouge, and Weirton. Such concessions keep relatively inefficient operations in the market, perpetuating the crisis of excess capacity within the industry and increasing the pressure for wage concessions at other plants. A cascading pattern of wage concessions now threatens the union's position, and industrywide bargaining may be a thing of the past.

What role for the government?

Faced with the breakup of the industry's traditional structure, the natural tendency for both union and management is to lie low and hope for stronger market conditions. Unfortunately, low operating rates and high unemployment have outlasted several predicted recoveries. If the restructuring process is in fact nearer its beginning than its end, the political pressures for government intervention are sure to mount. Based on past performance, however, the types of policies that will emerge are unlikely to improve the industry's performance.

Federal policies toward the steel industry, like the strategies of the integrated firms, are still enmeshed in the industry's traditional structure. Despite celebrated confrontations, for most of this century relations between the industry and the government have been built around an uneasy alliance. The government has generally tolerated the industry's oligopolistic structure and the dominance of U.S. Steel. Such tolerance had a price, however. The industry's structure legitimized government interference in steel firms' pricing and investment decisions, and U.S. Steel's leadership ensured that government concerns would be balanced against the industry's more parochial interests. As a result, a pattern of collusion and confrontation has characterized relations between the government and the steel industry since the formation of U.S. Steel. Judge Gary, U.S. Steel's first chairman, provided the most succinct description of the arrangement that both parties found advantageous:

"I believe we must come to enforced publicity and governmental control, even as to price, and so far as I am concerned, speaking for our company, so far as I have the right, I would be very glad if we had some place where we could go, to a responsible governmental authority, and say to them, 'Here are our facts and figures, here is our property, here our cost of production; now you tell us what we have the right to do and what prices we have the right to charge.' "

Since the late 1960s, the government's view of the industry has changed. Once wary of the industry's strength, policymakers are now concerned with its weakness. Nevertheless, steel policies still depend on patterns of behavior that developed during the Corporation's reign. The government has been enlisted in defense of a disintegrating status quo, and this is the underlying reason for the ineffectiveness of steel policies.

Most significantly, the government has largely accepted the industry's view, supported by the union, that the import problem is the key to the steel industry's difficulties. Beginning in 1968, steel imports have been controlled by a long series of programs, from Voluntary Restraint Agreements to the Trigger-Price Mechanism to "Arrangements Concerning Trade in Certain Steel Products"—the euphemism for the import quota negotiated with the European Community in late 1982. The traditional steel producers' obsession with the import problem is based on the view that, were imports controlled, the American steel market could once again be identified with the domestic industry, which could thereby recapture the pricing power that has traditionally been U.S. Steel's prerogative. Yet even complete protection from imports would not save the traditional producers from stagnating demand and minimill competition. Import controls have done little to revitalize the industry. Their principal impact has been to raise U.S. prices above international levels, taxing consumers and spreading the steel industry's competitive problems to the industries that purchase its product.

Recent government initiatives, especially the Steel Tripartite Committee, have also accepted the industry's claim that it suffers from a capital shortage provoked by unfair foreign competition, unfavorable tax policies, and excessive environmental regulation. The industry has claimed that it needs to invest about $8 billion a year—roughly three times the amount it now invests annually—and that government action is needed to establish the conditions under which it can raise such sums. This begs the truly significant question: why can't the industry raise the amounts it says it requires? The problem lies not in the lack of funds but in the choice of investments. The steel industry's most

pressing need is to find ways of conserving capital, yet it continues to define its investment strategy in terms of the massive integrated facilities found in Japan. Minimills have had no problem raising capital, yet they were not represented on the Steel Tripartite Committee. As a result, the committee endorsed the industry's position on its capital needs, with a token reduction in the dollar amounts.

Toward a smaller, healthier industry

Steel policies will continue to be ineffective until the government develops its own perspective on the industry's predicament—a perspective that must be based on a clear understanding of the forces that have led to the abdication of U.S. Steel. The traditional companies and the union have no incentive to propose a program that is realistic, since this would involve substantial retrenchment and reduced employment. In the long run, a smaller, more competitive industry—with a much larger minimill sector—is the only outcome compatible with market conditions. Poor government policies slow the transition and increase its costs. Yet, until the government recognizes that what the industry wants is not what it needs, poor policies, centered around the import problem, are likely to be the norm.

If government policies are based on a realistic assessment of the industry's predicament, steel producers' prospects may not be as bleak as they now seem. The minimill sector provides a model for the kinds of adjustments that are needed to revitalize the integrated sector, and the government could provide incentives to ensure that the right lessons are drawn from the minimill experience. Such an approach would make it possible to transform many of the industry's current weaknesses into strengths. For instance, high import penetration also implies that the domestic industry, unlike its foreign rivals, is not dependent on volatile and politicized export markets. In addition, outmoded facilities are easier to abandon in favor of new technologies—a potential advantage that may be particularly relevant if minimill techniques represent a more promising option than the integrated facilities in which Japan and Europe have invested heavily in recent years. These considerations suggest that continued decline is not a foregone conclusion, although the restructuring process will be difficult. Regardless of the anguish that restructuring may bring, however, neither corporate yearnings nor government intervention can revive the era of Big Steel.