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# THE NORTH AMERICAN STEEL INDUSTRY AND THE GLOBAL ECONOMY: CHANGE AND CHALLENGE*

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## Introduction

In many ways steel has been the foundation of modern industrial development. For more than a century steel was the key to industrial expansion and progress. However, during the present "post-industrial" age it seems to epitomize the sunset or mature industries. Like textiles and shipbuilding, it continues to be organized nationally while production is increasingly organized internationally. The steel industry in the advanced industrial countries (AICs), particularly the United States, faces "not only discouraging market trends but a complex of economic, financial and technological problems."[1] It must cope with aging and inadequate facilities, uncompetitive labour costs, decreasing global demand, competition from more efficient technologies, and, perhaps most important, increasing vulnerability to global economic conditions and the reality of mounting competition from low-cost imports.

This paper examines the impact of structural change in the world economy on the steel industry in North America. It argues that the internationalization of production, the changing international division of labour, global surplus capacity, declining comparative advantage, and the shift to post-industrial society are all operating to challenge the long-term viability of the industry in North America. Further, it argues that governments in the United States have (for the moment) resisted the overwhelming protectionist pressures from special interests in favour of a more comprehensive, state-led economic strategy which involves the pursuit of freer trade and economic management.[2] However, it

suggests that the United States steel industry, like most nationally organized labour-intensive mature industries, will continue to promote protectionist solutions to its problems and to offer strong opposition to freer trade in North America. Indeed, there is every reason to believe that the U.S. industry will exert considerable influence on Congress and that steel may very well be one of the areas where automatic cuts in imports are mandated as a means of reducing the U.S. trade deficit. By contrast, while the Canadian industry has been no more successful in directing government policy, it envisages North America as its natural market and seeks support for a continentally defined industry. Because its primary goals are greater access to the United States market and protection from unfairly traded low-cost imports its views are more consistent with its government's current trade policy. Finally, the paper argues that the best possible future for the industry lies in industrial restructuring along continental lines. Mergers will have to take place, facilities will have to be abandoned, and new technologies will have to be sought out. It is in this way that global challenges can best be met. However, both industry and government must be realistic with respect to what kind of steel industry North America will have in the future. It will necessarily be a smaller one, it will likely not be restricted to the northeastern United States and central Canada, and it cannot possibly provide the employment it once did.

While the greatest opportunity for established industrial economies, like Canada and the United States, lies in the development of high-technology, knowledge-intensive, skilled labour-intensive production, the rationalization and restructuring of mature basic industries can help these economies meet the changes presented by a fundamentally altered global economy and the competitive challenges of the newly industrializing countries (NICs). Moreover,

at least for the present, steel continues to play an important role in both the Canadian and the American economies. In addition to its important impact on employment, it is fundamental to many other parts of the manufacturing and capital goods sectors - especially automotive vehicles. Finally, from a Canadian perspective, it plays a critical role in the pursuit of freer trade with the United States. To quote a senior official with the United States division of the Department of External Affairs: "Steel ... continues to be the key item on the bilateral trade agenda, particularly at a time of strong protectionist pressures in the United States and in the context of a national debate now under way in Canada on the future direction of our trade relations with the United States."[3]

To explore the relationship between global structural change and the future of the North American steel industry, this analysis begins with a review of structural change in the world economy, focussing on those aspects that have characterized the post-Bretton Woods international system--the internationalization of production, changing international division of labour, and rise of protectionism--and then offers a brief evaluation of the state of the steel industry in Canada and the United States. The principal offshore challenges to the North American industry are assessed and national responses to these changes are examined--responses differentiated between private and public and between Canadian and American ones. Finally, the paper offers some suggestions about the future of the industry and the implications for contemporary Canadian-American trade relations.

## Structural Change in the World Economy

The world economy has undergone pervasive and fundamental changes during the 1970s and 1980s. Moreover, these changes have been structural not

cyclical.[4] Thus, any discussion of national trade policy has to be understood within the context of a significant global struggle for productive advantage, markets, and employment.[5]

In the decades following World War II the world economy was both prosperous and stable. At Bretton Woods in 1944 western governments had arranged a set of rules and institutions that effectively regulated the global economy, controlled conflict, and encouraged growth. The postwar period was characterized by stable exchange rates under the auspices of the International Monetary Fund (IMF), and increasing trade liberalization through the General Agreement on Tariffs and Trade (GATT). Annual growth-rates in the member-countries of the Organization for Economic Co-operation and Development (OECD) averaged a healthy 5 percent per annum, while world trade was growing at roughly 7 percent a year. In fact, the system functioned very well as long as economic power remained concentrated in a small number of states, and as long as the United States was willing and able to maintain its leadership role.

The collapse of the Bretton Woods system of trade and payments is normally thought to have been precipitated by two events. The first was the announcement on 15 August 1971 of President Richard Nixon's New Economic Policy. Faced with depleted gold stocks, massive outstanding foreign dollar holdings, a trade deficit, and increasing unemployment and inflation, Nixon chose (unilaterally) to bring the Bretton Woods system to an end, by abolishing the practice of freely converting the dollar into gold and by imposing a 10-per-cent surcharge on all United States imports. The second event was the oil embargo imposed by the Organization of the Arab Petroleum-Exporting Countries (OAPEC) in 1973 and the subsequent, much more significant,

quadrupling of OPEC oil prices (reinforced by the oil shock of 1979). It is exceedingly difficult to determine at what point the system actually "fractured" or at what point the ideological consensus that characterized Bretton Woods broke down.[6] What is important is the idea that the end of Bretton Woods translated into significant structural change in the world economy.

The world economy in the 1970s was characterized by a general economic malaise that could be traced to a lack of confidence in the system and the absence of stable international monetary, trade, and energy régimes. In particular, energy price increases fostered stagnation and inflation (especially in the advanced industrial countries), which led to increasing levels of protectionism, excess liquidity, decreasing competitiveness and productivity, and increasing economic uncertainty and instability.

By the end of the decade it was clear that the Bretton Woods system was not to be resurrected and that the economic changes and challenges of the 1970s were anything but transitory. It was equally clear, especially during the "great recession" of 1981-82, that a new international economic order was taking shape. The central features of the world economy in the 1980s are:

- the volatility of the international financial structure;
- the increasing internationalization of production;
- the dramatic rise of protectionism, especially in advanced industrial countries;
- the evolution of a new international division of labour, involving a significant shift in standard-technology manufacturing from the AICs to the newly industrializing countries; and
- the persistence of economic uncertainty and instability throughout the system.

While change in the international monetary structure is fundamental to a thorough understanding of the evolution of the world economy, my concern in this is primarily with the trade question, in particular the changing patterns of production and protection and the implications of structural uncertainty.

Susan Strange has recently argued that the most fundamental transformation of all has occurred in the production structure.[7] The world economy is no longer simply a collection of economically autonomous national producers who engage in mutually beneficial trade. Rather, the concentration of large sums of capital in the hands of multinational business enterprises, their increasing ability to transfer that money from market to market, dramatic improvements in technology and communications, the increasing use of synthetics and substitutes for various resources, and gains in the technology of production have all led to the genuine internationalization of production. When Judd Polk coined the term in 1968 he estimated that roughly 30 percent of the world's industrial output could be understood in terms of international production. Strange suggests that by 1985 this figure had reached 50 percent. Moreover, as production has become increasingly international, there has been an important shift in the source of foreign direct investment and in the nationality of multinational enterprises. Before 1970 more than two-thirds of all foreign direct investment originated in the United States. By the end of the decade that figure had dropped below 50 percent. At the same time a surprisingly large number of Japanese, German, and South Korean multinationals entered the scene. Moreover, as most such firms obtain at least some of their capital locally, it is reasonable to believe that this trend is more widespread than these figures indicate.

Among other things, this increasing internationalization of production has been seen to exacerbate the conflict between national capital and international

capital. Many students of world politics have argued that it has significantly reduced the ability of national governments to respond to mounting economic interdependence and has left them vulnerable to forces beyond their control. By contrast, more recent neo-mercantilist analysis has argued that the state has reasserted itself in the face of these transnational challenges.[8]

Perhaps the most significant implication of the internationalization of production is that it has provided the context for changes in the international division of labour. Over the past fifteen years or so, there have been fundamental shifts in the international competitive positions of both the developed countries and the less developed countries. In the first place, the virtual monopoly the United States once had on technology-intensive industrial production is no longer a reality. In fact, owing largely to the maturing of the Japanese and West German economies, competitiveness among the advanced industrial countries has begun to level out. Second, there has been a dramatic growth in the competitive position of East Asian and Latin American NICs (particularly Korea, Singapore, Hong Kong, Brazil, and Mexico) in standard-technology, labour-intensive manufactured goods such as clothing and in industrial materials such as steel and copper. Finally, another group of NICS has emerged to pursue standard-technology industrial production while the original NICs follow Japan into more capital-intensive industries.[9]

An examination of relative factor endowments demonstrates these claims quite dramatically. For example, given the nature of capital-intensive high-technology production in the United States, it is not surprising that in 1980 the United States had 33.6 percent of the world's capital and some 50.7 percent of the world's scientists engaged in research and development. These seem pretty impressive figures. However, when compared to the 1963 figures of 41.9

percent and 62.5 percent, respectively, it is clear that the United States is losing its preeminence. Japan has been the most obvious cause, as well as beneficiary, of this shift. Its share of world capital rose from 7.1 percent in 1963 to 15.5 percent in 1980, while its share of scientists rose from 16.2 percent to 23.0 percent over the same period. The figures for the NICs are also instructive. They experienced significant shifts in their share of the world's capital (from 6.2 percent in 1963 to 10.1 percent in 1980). These NICs also experienced significant increases in their share of the world's semi-skilled labour (from 24.8 percent to 30.5 percent during the period in question) and a more modest but equally significant increase in their share of skilled labour (from 19.3 percent to 22.0 percent).[10]

The growth of capital in the NICs has slowed down considerably since the debt crisis and global recession of the early 1980s. However, while the recent drop in the price of oil will likely exacerbate the debt position of some of these NICs, the growth of capital should continue in the Southeast Asian group and will undoubtedly strengthen and expand the steel and automotive industries there. The significant growth of semi-skilled labour is also important because it contributes to the comparative advantage of NIC labour-intensive industrial production in its competition with the outdated high-wage industries in the advanced industrial countries. To quote Susan Strange, "the new international division of labor appears to be unstoppable. The move of manufacturing industry to the Third World is structural, not cyclical."[11]

The political, economic, and social consequences of this shift in the international division of labour have been far-reaching in the advanced industrial countries. The employment implications alone have served to heighten

the fiscal crisis in the modern welfare state. In short, this shift in comparative advantage toward the NICs poses a serious challenge to all the AICs.

These changes in the production structure and the international division of labour have prompted the AICs, especially the United States, to take steps to avoid or mitigate their domestic consequences. Quite simply, this has translated into a significant increase in the use and promotion of protectionist policies. In particular, the AICs have increasingly turned to the use of non-tariff barriers (NTBs) such as anti-dumping action, countervailing duties, and voluntary export restrictions (VERs) or voluntary restraint agreements (VRAs).

Fuelled by the recession of the early 1980s, rising structural unemployment in the AICs, the staggering trade deficit of the United States (which reached $150 billion by 1985), and mounting global surplus capacity in most of the standard-technology industries, protectionism has increased quite dramatically in the 1980s. In the Western world, unemployment has been at the heart of rising demands for protection. By 1983 unemployment had reached troublesome proportions. The unemployment rate was 9.6 percent in the United States, 11.5 percent in the United Kingdom, and 11.9 percent in Canada. Not surprisingly, unemployment was highest in those industries that were most susceptible to foreign competition. For instance, at the height of the recession, when total United States unemployment had reached some 10.6 percent, unemployment in the steel and auto industries stood at 29.2 percent and 23.2 percent respectively. While unemployment is today down somewhat in the AICs,[12] employment has replaced inflation as the key political issue of the decade. And, as Joan Spero points out, "a growing public awareness of the impact of foreign competition on import competing industries [has] increased the pressure for protectionist solutions."[13]

To a large extent the recent rise in protectionism can be traced to the United States. In particular, it can be linked to four developments. First, the overvalued dollar, combined with high wages and poorer productivity, tended to make American goods and services less competitive through 1985 and into 1986. Second, the United States has (perhaps justifiably) reacted strongly to trade restrictions imposed by its developed country trading partners. This perception is heightened by the realization that while the U.S. had a $170 billion trade deficit in 1986, Japan had a trade surplus of more than $85 billion. Third, there is a growing feeling in the United States that a great many low-cost imports from the NICs are being subsidized by their national governments and are therefore being traded "unfairly" into the United States. Finally, it can be linked to a fundamental underlying division within the United States between the administration and international capital on the one hand and some groups in Congress and domestic capital (nationally organized industry) on the other. Charles Maier has argued that the resolution of this internal conflict in favour of the international interests was the foundation for the Bretton Woods system.[14] This being the case, it is hardly surprising that as productivity and economic growth have declined the conflict over the appropriate direction of foreign economic policy has resurfaced.

Protectionist pressures in the United States have led to friction between it and its major trading partners, particularly Japan and the European Community (EC), and this, in turn, has promoted a spiral of protectionism. The continuing reliance on non-tariff barriers negotiated outside the framework of the GATT has contributed to a global trading system characterized less and less by market forces, and increasingly by "managed trade." In manufactures, which account for roughly 40 percent of total world trade, the ratio of managed trade to total

trade has risen from 13 percent in 1974 to 30 percent in 1982. Moreover, this movement toward managed trade does not appear to be abating in any way as larger political considerations continue to play a significant role in the trading policies of both developed and developing countries.

In sum, the breakdown of the Bretton Woods system precipitated a series of significant changes in the global economy. Attempts at rebuilding the system or "adjusting" to new realities in the 1970s have given way in the 1980s to the realization that a new order is emerging. It is, however, an order characterized by uncertainty and instability. It is a system in which economic management is lacking and unresolved economic crises are commonplace. This uncertainty is pervasive. It exists in all the primary structures (the security, production, monetary, and knowledge structures) and in the secondary structures such as trade as well. To quote Denis Stairs and G. R. Winham, "the general sense of uncertainty and loss of control is a worldwide problem."[15]

## The State of the North American Industry: United States

The steel sectors in the United States and Canada are in some ways very different and in others extremely similar. Like its American counterpart, the Canadian industry is privately owned, it obtains all of its coal and most of its iron ore from the continent, its labour force is organized by the United Steelworkers of America, and its principal market is the United States. Both are oligopolistic, and both are commonly regarded as symbols of big business and special interests. The United States industry is split. Primarily it is composed of huge integrated producers (such as USX, Bethlehem, LTV, Inland, and Republic), which have become increasingly inefficient, uncompetitive, and unprofitable. However, a small but growing share of United States steel production is

accounted for by smaller, more efficient producers known as minimills. By contrast, the Canadian industry is made up mainly of medium-sized integrated producers that have, in relative terms, managed to maintain their competitive position. The key to the relationship lies in the fact that the Canadian industry is dependent on United States markets and that both are increasingly vulnerable to external economic influences and low-cost imports from the newly industrializing countries.

The steel industry in the United States has undergone a crisis in recent years.[16] The work force has been cut back from more than 450,000 to 216,000 people. The industry is operating at less than two-thirds capacity. It lost more than $6 billion between 1983 and 1986. Underinvestment in the industry has reached the critical stage, and virtually all new capital projects have been either put off or abandoned. In fact, many major US firms have reached the point of near-collapse. LTV, the second largest producer in the country, filed for reorganization in July of 1986, Wheeling Pittsburgh took similar action in April of 1985, and Kaiser Steel filed for Chapter 11 protection in US Bankruptcy Court in January of 1987. Domestic steel shipments in the United States dropped to about 70 million tons in 1985, down from more than 100 million tons in 1979.[17] In short, the integrated steel producers in the United States are simply not recovering in any meaningful way from the recession of 1981-82.

However, the problems in the United States steel industry go back well before this recession. In fact, it can be argued that the current crisis would not be nearly so acute if different decisions had been taken in the past quarter-century with respect to labour costs, investment opportunities, plant design, and pricing policy. While the industry cannot be held accountable for

declining demand or the overvalued United States dollar, developments in the industry itself have clearly made it more vulnerable to external pressures than might otherwise have been the case.

The decline in the United States industry can be traced to the late 1950s and early 1960s. At that time the major integrated producers made two far-reaching but shortsighted decisions. First, they opted not to make significant investments in new integrated works or in the modernization of existing facilities. And, second, they chose to rely almost exclusively on the expanding domestic market - relinquishing their role as the world's foremost steel exporters and isolating themselves from the global competitive environment. The result was a de facto shift in production to more competitive and outward-looking facilities in the EC, Japan, and the Third World.[18] Ironically, these new producers were not only export-oriented, but they were aiming specifically to invade the United States market.[19]

More important, perhaps, the American integrated producers were unwilling or unable in the 1970s to fundamentally alter their strategy. The comfortable domestic market continued to be the focus of their activities. Prices remained high in a bid to maximize profits. Reinvestment was minimal, allowing facilities to become old and inefficient.[20] And, unwilling to risk further labour disruption and possibly lose their market share, the industry allowed wages to rise from $5.68 an hour in 1970 to $23.78 an hour in 1982. Overall, as inflation rose at less than half this rate, this represented an extremely large increase in real wages. From a comparative point of view, the wage rate in the steel industry in 1982 was almost double the average hourly compensation in what is the world's most highly paid manufacturing sector.[21] This dramatic increase in real wages in the industry is particularly important in accounting for the decreasing

comparative advantage of the American integrated producers. Moreover, while wage rates in the industry have since moderated somewhat,[22] it seems improbable that any real progress can be made with respect to realigning the cost of labour.

These investment, price, and wage decisions have led to a situation in which the integrated producers are actually losing their monopoly over the domestic industry. This internal challenge comes from the so-called minimills. Minimills are simply smaller steel companies that produce a more modest range of products, use scrap as their metal base, and employ more efficient electric furnaces to produce steel. Generally speaking, minimills such as Nucor Steel and Florida Steel have been quite profitable, even during the height of the recent recession, largely because of their lower initial capital requirements, lower raw materials costs, lower production costs, and--as most are not organized by the United Steelworkers of America--lower labour costs. These minimills have been quite competitive, even given the recent overvalued dollar and the low cost of Third World imports. However, they still account for a relatively small share of the United States market.

## The State of the North American Industry: Canada

The history of the Canadian steel industry over the past few decades has been markedly different from that of its American counterpart. Beginning with a small base in the early 1950s, the industry capitalized on the boom years in world steel (between 1955 and 1974) to increase its share of the domestic market, to make cautious but technologically advanced capital-goods investments, and to increase overall capacity. The profitability of the industry during this period allowed it to install and maintain state-of-the-art facilities.[23]

Even after 1974, when global demand for steel plummeted and offshore production expanded, the Canadian industry remained relatively healthy. The energy crisis of 1973 promoted the idea that domestic demand for steel would be sustained (and perhaps even improved) by the increasing exploration for oil and gas. The federal government's 1977 decision to allow the Canadian dollar to seek its own (lower) level against the United States dollar was also a big plus for Canadian steel producers. By 1980 Canadian steel prices were among the lowest in the world,[24] making it much easier for the Canadian industry to find alternative markets when the bottom dropped out of the North American market in the early 1980s.

In the past decade, with the exception of the recession years, the Canadian industry has been quite profitable. Canadian mills have maintained their competitive position in the North American market and have managed to remain competitive with some offshore producers. Prudent reinvestment and modernization programmes have allowed the industry to avoid the serious internal crisis that has plagued the United States industry. It has goals that are broadly coincident with the Canadian state's overall economic strategy. It has had a less troublesome labour history (although there were major strikes in 1946, 1958, 1969, and 1981), as Canadian labour costs are quite high by international standards. And the integrated producers have managed to maintain control over production, with Stelco of Toronto, Dofasco of Hamilton, and Algoma of Sault Ste Marie producing more than 80 percent of Canada's steel.[25] Together, these factors have made it possible for the Canadian industry to bounce back from its dismal performance in 1982 and 1983.

However, despite its relatively good historical record on investment and modernization and its overall profitability, the recent crisis in the United States

steel industry has had a dramatic impact on Canadian producers. Since the recession, Canada has become more and more dependent on the American market, both in terms of overall exports and with respect to steel. Decreasing domestic demand in the United States is having a very significant dampening effect on Canadian suppliers. Mounting protectionist pressures, aimed mainly at unfairly traded Third World imports, are spilling over into Canadian-American trade relations. And while the Canadian dollar has declined relative to the United States dollar, it was following the American dollar up in relation to other major currencies, prior to the recent fall in the latter's value.

In short, despite a healthy domestic industry, the fundamental challenges that have come to characterize the global steel industry in the 1980s are threatening to derail the engine of growth in the Canadian steel industry. Moreover, there is every reason to believe that the Canadian industry is even more vulnerable to these external shocks as it lacks a sizable domestic market to fall back on. It is to these external challenges which we now turn.

## Global Challenges to the North American Industry

The global challenge to the North American steel industry has taken three basic forms. First, it has involved a dramatic shift in the international division of labour in the industry, with major productive capabilities moving initially from the United States to Europe and Japan and, more recently, from the AICs to the NICs. This shift is to be understood primarily in terms of changing comparative advantage, the role of governments in subsidizing domestic steel production, and exchange-rate realignments. Second, it has involved a significant increase in global surplus capacity, a result of both the introduction of additional productive capacity and the drastic downturn in demand. And,

finally, it has to do with increasing protectionism and the fact that managed trade has come to characterize the global industry.

The changing international division of labour began with the diffusion of competitive advantage among the principal OECD countries in the mid 1960s. As Webb and Zacher note:

> Many commentators have remarked on the loss by the United States of its status as the undisputed world leader in industrial technology and innovation. Western Europe and Japan reduced this gap during the 1960s with the help of foreign direct investment by U.S. transnational corporations (TNCs), imported and licensed U.S. technology and, especially in the case of Japan, supportive government policies. Since the 1970s, Japan has increasingly become the world's industrial pacesetter as a result of government industrial strategies aimed at developing international pre-eminence in selected advanced manufacturing sectors.[26]

The comparative advantage of the United States in technology and capital-intensive production has clearly declined relative to that of other AICs. This "levelling out" should not be interpreted to suggest that American comparative advantage in these areas has disappeared. The proper reading is that it has been significantly weakened.

Changes in the international division of labour continued through the 1970s as a group of newly industrializing countries emerged as significant producers and exporters of standard-technology, labour-intensive manufactured goods. Among others, these sectors included clothing, textiles, and footwear. More recently, there has been yet another shift in the international division of labour as the original NICs move "up market" (into the steel, automotive, and consumer electronics industries) and a second wave of NICs emerges to take their place. This challenge from the NICs is expected to increase in the 1980s and 1990s as these countries improve their positions with respect to capital, technology, and skilled labour.

Alterations in the division of labour in the global steel industry tend to confirm this overall pattern. Prior to 1960 the industry was composed of a number of non-competing national industries, the largest of which was in the United States. The big shift in production came in the early 1960s as Japan began to formulate an overall industrial strategy which called for a large ensured supply of low-cost steel and an expanding steel-export programme to cover the costs of importing large quantities of iron and coal.[28] Japan's share of total world steel production climbed from 8 percent (34.7 million tons) in 1963 to 16 percent (130 million tons) in 1973.[29] Japanese exports to the United States expanded steadily, and by 1973 accounted for nearly 50 percent of all imported steel in the United States.[30]

The next decade, between 1973 and 1983, began with the quadrupling of oil prices and ended with the most severe recession since the 1930s. For the global steel industry it was a decade of zero growth. In keeping with its economic strategy, Japan moved "up market." Japanese comparative advantage was increasingly to be found in higher technology, more capital-intensive industrial production. By 1983 Japan's total production had dropped to 107 million tons, shrinking by nearly 20 percent since 1973, while its share of the United States market had decreased to roughly 25 percent.[31] During this period steel production began moving into the NICs. Brazil increased its total production from 8 million tons in 1973 to more than 18 million tons in 1983, a growth rate of some 125 percent. South Korea expanded its production from just over a million tons in 1973 to more than 13 million tons in 1983, at a time when total global production was constantly falling. The NICs also increased their share of the United States import market, from 8.7 percent in 1975 to approximately 37 percent in 1983.[32]

These shifts in division of labour in the global steel industry can largely be explained by five interrelated factors: government involvement in the national industries, shifting comparative advantage, mounting global surplus capacity, exchange-rate fluctuations, and increasing protectionism. Together, these factors create a framework within which to assess the recent behaviour of the North American steel industry and come to terms with the future of the industry.

The primary explanation for shifting competitive advantage seems to lie with government involvement in the steel industry. Beginning with the EC and Japan, and including virtually all of the Third World producers, governments have increasingly either owned or maintained administrative control over their national steel industries. The archetype is the European Coal and Steel Community (ECSC). Established through the Treaty of Paris in 1952, the ECSC has the authority to fix maximum and minimum prices, to set production quotas, and, if necessary, to subsidize the reduction of capacity.[33] A subtler, more sophisticated version of administrative control exists within the context of corporatist relations in Japan, although direct ownership seems to be both more manageable and more desirable.[34] In Europe and the Third World, state ownership increased markedly in the period between 1965 and 1981. While there was little government ownership in the European steel industry in 1965, by 1981 the Belgian industry was 57 percent government-owned, the French industry was 70 percent government-owned, and the British industry (nationalized under the British Steel Corporation in one fell swoop in 1967) was fully 80 percent government-owned.[35] Most Third World producers are also state-owned.

The perception in North America is that government-owned facilities have a hidden agenda that ultimately amounts to unfair trading practices. Most of the

North American industry believes that these industries are subsidized and are dumping their product into the North American market. In the words of the chief legislative assistant to Senator John Heinz, who chaired the United States Senate steel caucus until the Democrats gained control of the Senate in November of 1986: "capacity is being subsidized and maintained at current production levels for reasons that have more to do with social and political goals than they do with facing economic realities." These sentiments were echoed by a senior Canadian official with the Department of Regional Industrial Expansion (DRIE), who noted that "we all know that many people run steel companies not as a profit base but more as a social program."[36]

While government support for national steel industries was undoubtedly critical in the shift in the international division of labour in the industry, there were equally important real changes in comparative advantage in favour of the Japanese at first and the NICs more recently. Wages, raw materials costs, and access to capital are the most important areas of shifting comparative advantage.

Comparative advantage very clearly shifted in favour of the Japanese producers during the 1960s. Falling prices for raw materials, coupled with increasing labour productivity and lower wages, provided the basis for Japan's success as a steel producer and exporter. The cost of basic materials[37] for Japanese steel declined steadily throughout the 1960s, while costs for the United States remained constant. In 1957 the basic material cost to produce a ton of Japanese steel was $96.54; the comparable figure in the United States was $45.14. By 1968 the Japanese cost had dropped to $42.59 while the American cost remained steady at $44.50. Although less dramatic, the figures for labour costs tell a similar story. Japanese labour costs declined steadily,

from $24.31 per ton in 1957 to $18.90 per ton in 1968, while United States costs edged upward from $54.65 per ton in 1957 to $63.87 per ton in 1968. Moreover, as is apparent from these figures, Japanese labour costs have traditionally been much lower than those in North America.[38]

After 1973 the Japanese comparative advantage in steel began to erode, especially in relation to the Third World producers. The downward trend in labour costs was reversed in 1968, with quite significant increases occurring after 1973. Basic material cost decreases also came to an end. In 1973 the basic material cost to produce a ton of Japanese steel was $59.56. In 1974 (following the oil price increases) it skyrocketed to $94.98, and this cost continued to move upward, although not so dramatically, throughout the 1970s and into the 1980s.[39] By contrast, all factor prices were decreasing for the NICs during the 1970s. Building their new facilities near deepwater ports, the NICs were able to keep transportation costs low while ensuring access to inexpensive international sources of raw materials. However, the main source of comparative advantage for Third World producers was lower labour costs (both in the construction of facilities and in the production of steel). In 1984 wages for steel workers in developing countries averaged roughly $3.00 per hour, whereas the average hourly compensation for an American steelworker was $21.30.[40] Labour costs are perhaps the most critical factor in explaining the shift in comparative advantage in the 1970s and 1980s. For example, the average hourly wage rate of an American manufacturing worker in 1984 was $12.59. The comparable figures for Canadian, Japanese, and South Korean workers were $11.00, $6.35, and $1.36 respectively.[41]

These trends have been exacerbated by the twin forces of increases in productive capabilities and decreases in overall demand. Commonly known as

surplus capacity, in this situation "demand is insufficient to absorb production at prices high enough both to maintain employment and to maintain profitability for all the enterprises engaged [in the industry]."[42] Basic industries in general, and the steel industry in particular, have been plagued by global surplus capacity in the 1970s and 1980s. Decreasing demand for steel can be traced to many factors including the slowdown of economic growth in the developed world following the oil shock of 1973, the shift to post-industrial forms of production, and the recent global debt crisis. Specific features of declining demand intensity include the trend to smaller automobiles and the growing use of plastics, synthetics, and alloys in the place of steel. Increasing productivity can be understood primarily in terms of significant advances in technology and low raw materials prices.

The extent and the persistence of surplus capacity in the steel industry is especially troubling to the governments of countries that are losing comparative advantage and are disadvantaged by exchange-rate considerations. It is difficult to measure the exact level of surplus capacity in the industry. However, we do know that demand continues to decrease while capacity continues to grow, even though most developed country producers have shed many tons of capacity over the past decade. The appearance of global surplus capacity in the steel industry, along with significant changes in the international division of labour in the industry, has produced serious conflicts of interests between states. These conflicts have led to increasing protectionism, to global economic instability, and to uncertainty, especially between the United States and its major trading partners.

National Responses in North America: The U.S.

These offshore challenges have provided much ammunition for the North American steel producers in their battle for greater protection. In the United States, although the integrated producers have failed to get legislated import quotas, there have been a number of specific policy responses, which have included: voluntary restraint agreements (VRAs) with the Europeans and Japanese in 1968-69; the introduction of a trigger-price mechanism in 1977; and a presidential initiative involving new VRAs in 1984 following a spate of countervail and anti-dumping cases. Overall, official United States government responses have been organized around an attempt to avoid major protectionist moves. In Canada, where the industry has taken basically the same view with respect to unfairly traded low-cost imports, the major thrust of activities has been centred on maintaining access to the United States market. There has been a continuing fear that United States protectionist policies aimed at European and Third World steel producers would spill over into Canadian-American trade relations. As a consequence, the Canadian industry has been supportive of the government of Canada's bid for freer trade with the United States, whether from a sectoral standpoint or within the context of a comprehensive agreement.

The recent history of import policy in the United States with respect to the steel industry is a story of persistent conflict between the parochial interests of the major steel producers, the union, and some elements in Congress on the one hand, and the broader interests of the administration and relevant congressional actors on the other. The pattern of conflict, resolution, and renewed conflict is now a familiar one. The industry responds to offshore challenges by initiating unfair trade petitions (countervail and anti-dumping actions) or by launching a trade action against imports under the so-called

escape provision (section 201) of the United States Trade Act of 1974. These actions invariably have the support of particular congressional actors, especially those with constituents who have been adversely affected by the decline in the industry. The administration responds by negotiating new VRAs with the offending importers and/or providing other programmes aimed at apapeasing angry steel producers and displaced workers while maintaining a commitment to the broader economic strategy of the state. Within a relatively short time the domestic producers realize that their problems are not being resolved and begin the process all over again. A brief discussion of major industry actions and governmental responses in the United States will demonstrate this pattern.[43]

Following the recession of 1975, the depressed American steel market was flooded with inexpensive imports from both the low-cost Japanese industry and the state-owned European exporters. Unable to compete, the United States speciality steel industry initiated a complaint under section 201 of the Trade Act of 1974, arguing that increased imports were having an injurious effect on the sector. The United States International Trade Commission (ITC), which is charged with adjudicating such disputes under the trade law and making recommendations to the president, ruled that the domestic industry was indeed being injured. It recommended that quotas be imposed on steel imports beginning in June 1976 and lasting for three years. The ITC ruling specifically included Canada in the quotas. In support of the ITC recommendation, and in response to pressures from an increasingly frustrated steel industry, a bipartisan steel caucus was formed in Congress in 1977, with over 150 members in the House and the Senate. Shortly thereafter public hearings were organized.

In an attempt to diffuse the situation President Carter appointed a task force to assess the situation and make recommendations. The Solomon

Commission report of December 1977 proposed various measures to restructure the industry and provide aid to unemployed steelworkers.[44] Its principal recommendation was the introduction of a trigger-price mechanism (TPM). The TPM amounted to a set of minimum prices for selected steel products (based on Japanese costs). If an import entered below this minimum price it would "trigger" an anti-dumping suit and extra duties could be imposed. The main advantage of the TPM was to identify and respond to dumped imports in a more expeditious fashion. Initially, this mechanism appeared to satisfy both the industry and Congress. It gave the impression that effective minimum import prices existed and that protection for American producers was in place. The real goal of the TPM, however, was to placate the steel industry while maintaining a commitment to the administration's central economic policy goals (which were, at the time, trade liberalization and inflation reduction). This was made abundantly clear by the administration's insistence that the industry would have to forgo all pending unfair trade cases in exchange for the programme.

The programme was quickly circumvented by offshore producers, and by March 1980 American integrated producers were launching a large number of new anti-dumping and countervailing duty complaints, automatically suspending the TPM. In response, the administration re-introduced the programme with 12-percent higher trigger prices. However, as American interest rates climbed through 1980 and 1981, and other currencies devalued relative to the U.S. dollar, the TPM once again became irrelevant. In 1982 it was finally abandoned.

The integrated producers, the union, and their representatives moved into a new, more militant stance characterized by massive anti-dumping and countervailing duty petitions, by intensive lobbying efforts in Congress, and by a new resolve. The attack was two-pronged. On one front, two new section 201

cases were initiated, one by the speciality steel industry in early 1983 and another, larger action, by Bethlehem Steel and the United Steelworkers of America in January 1984. On the other front, the steel caucus introduced the Fair Trade in Steel Act of 1983 (later 1984), which would limit both steel and iron-ore imports to 15 percent of apparent United States consumption. This act never passed the House, suggesting that the steel caucus could not easily overturn the state's goals of aggregate economic management. The 201 cases were, however, quite a different matter. In both cases the ITC ruled that the domestic industry had been injured. In its 11 July 1984 recommendation to the president, the commission proposed that a mixture of tariffs and quotas applying to roughly 70 percent of steel imports be imposed over a period of five years.[45]

On 18 September 1984 the Reagan administration rejected the ITC recommendations in favour of a plan calling for the negotiation of new VRAs with steel importers and a programme that would reduce steel imports to 18.5 percent. In announcing the programme, Reagan made clear his administration's distaste for protectionism: "Quotas," he said, "would do more harm than good to the economy and not be in the national interest even though they might temporarily save some jobs in steel."[46] The steel programme might have been even less conciliatory had it not coincided with the 1984 presidential election campaign. After some initial posturing, the industry came out in favour of the programme, calling it "comprehensive and enforceable."[47] The Canadian industry was also favourably disposed to the programme at the outset because it specifically excluded Canada.

Within a year virtually all domestic support for the programme had dried up. It simply was not providing the kind of protection that the industry was looking for. Brazil sidestepped its VRA obligations by shipping "forward supply" for the

All-American pipeline project. Imports from Europe rose more than 30 percent in the first six months of 1985.[48] Overall, imports accounted for roughly 26 percent of market share in 1985, a long way from the 18.5 percent set out in the president's programme. In an open letter to the president, Senator Heinz expressed the frustration of the industry over the failure of the programme:

> ...our experience in the last few months suggests that the program has not been working as effectively as had been hoped. Imports have increased ... prices remain low, and capacity utilization in the domestic industry is beginning to decline. This rapidly deteriorating situation is reflected in the recent bankruptcy of Wheeling-Pittsburgh Steel and the major restructuring of LTV Steel, including the closing of a major facility in Pennsylvania. In view of these developments, it is particularly important that your steel program be fully and aggressively implemented.[49]

In response to this letter, the United States special trade representative, Clayton Yeutter, acknowledged the difficulties with the programme, pledged the administration's continued support for the steel industry, and advised Senator Heinz that an interagency working group under his leadership had been set up to look into the steel problem.[50] In short, the process has begun anew. And, for the immediate future at least, it is clear that the pattern will be somewhat the same. The industry and its representatives will continue to battle for more effective protection (as Senator Heinz suggests) while the administration will stick to its commitment to the broader economic interests of the state, as it perceives them. What has changed, however, is the relative strength of the Congress (with both Houses in the 100th Congress being controlled by the Democrats) and the declining influence of the Reagan administration. Not only has the powerful Senate Finance Committee, under chairman Lloyd Bentsen (D-Texas), introduced a tough new trade bill, the Administration, in a dramatic reversal of existing strategy, now seems to be willing to negotiate trade policy with the Congress.

National Responses in North America: Canada

There are three main differences between Canadian and American responses to problems in the steel industry: first, Canadian steelmakers have focussed their efforts on securing access to the United States market, as opposed to a programme solely geared to maintaining control of the domestic market; second, the crisis in the Canadian industry has been less acute and more recent than that in the United States (in fact, until 1981 the Canadian steel industry was one of the most competitive and profitable in the world); and third, the Canadian industry has been far less aggressive in the promotion of its own interests. Moreover, the primary interests of the producers seem to be coincident with the overall strategy of the state. There has been no apparent discrepancy with respect to policy responses, especially since 1983, as both the producers and the federal government have appeared to be obsessed with the idea of securing greater access to foreign (i.e. United States) markets.[51] Moreover, unlike the situation in the United States, there does not seem to be any significant fragmentation within the government over either the appropriate import policy or the most desirable export strategy. All of this is not to say that Canada has been invulnerable to the challenges posed by low-cost imports. Rather, it suggests that the Canadian industry was substantially less vulnerable than its United States counterpart before 1981 and increasingly more sensitive to external (including United States) challenges after that date.

This interpretation of Canadian responses to changes in the global steel industry is supported by recent Canadian policies and by the behaviour of the Canadian industry. Three features of the Canadian situation are instructive in this regard: the persistent and successful use of anti-dumping and countervail

cases to alert the world to Canada's commitment to fair trading practices; the concerted effort to acquire and maintain exemptions from American protectionist measures; and the choice of steel as a lead sector in the recent sectoral free trade negotiations.

Import pressures were not significant in the Canadian steel market until global demand for steel dropped off sharply after the 1975 recession. At that point, events in Canada began to mirror those in the United States. The depressed Canadian market was flooded with low-cost imports. The integrated producers launched a large number of successful anti-dumping and countervailing duty suits. And, in February 1978, following the introduction of the TPM in the United States, the minister of national revenue announced the creation of a special task force to study the problems of the steel industry and the introduction of a benchmark price system.[52] This system was put in place primarily to avoid the potential spillover of low-cost imports that would be denied access to the United States market under the TPM scheme or to the EC under its basic price system. While new anti-dumping and countervail cases were initiated in 1982, the Canadian government did not play a major role in these actions. In fact, unlike the American experience in which the administration was constantly trying to blunt protectionist impulses, the Canadian government made no real effort to negotiate import restrictions with foreign steel producers. Canadian trade with Japanese and Third World producers was in any case small, and Canada was still a net exporter of steel and steel products. The steel industry did not press the federal government to take action, and the government clearly felt that other areas of the economy had greater claim to government support.

Moreover, given the increasingly inward-looking mood in the United States industry, and the fact that most Canadian steel exports went to the American market,[53] Canadian efforts after 1981 were directed primarily at avoiding U.S. protectionism. Throughout 1983 and 1984 business and government in Canada united to lobby Washington. The strategy was to pursue two paths simultaneously. The first was to promote the principle of full prosecution of United States trade laws, thereby driving unfairly traded imports out of the American market and freeing up market share for Canadian products. The second path was to seek out more clearly defined institutional relations with the American government, through free or freer trade in the sector. Both paths are still being pursued, one with the administration through the idea of a comprehensive Canadian-American free-trade area, and the other through informal discussions with Congress and the United States steel industry.

The Canadian steel industry found itself in what it perceived to be a very advantageous situation when the Canadian government announced in its August 1983 green paper on trade policy that it would be interested in pursuing sectoral free-trade arrangements with the United States.[54] Indeed, as the sectoral negotiations proceeded, it was clear that the Canadian government had "given top priority to the steel sector in its negotiations with the United States."[55] Not surprisingly, the president and the special trade representative were very favourably disposed toward a steel agreement, while Congress and the United States industry were sceptical at best. Steel, which was identified along with urban mass transit equipment, agricultural equipment, and informatics as possible sectors for negotiation, was singled out by Canadian negotiators because of the urgency associated with mounting United States protectionism.[56] However, as the prospects of successful sectoral negotiations faded, so did the

hopes of the Canadian steel industry. A comprehensive free-trade agreement, such as Prime Minister Mulroney suggested in September 1985, is perceived by the steel industry as being less likely to be achieved and less desirable if reached.

## Conclusion

This analysis of the North American steel industry in the global context suggests a number of important conclusions.

First, it supports the thesis that global structural change has provided a significant challenge to the future of the North American political economy. The global steel industry has, in recent years, been characterized by shifting competitive advantage, the emergence of new steel industries in the developing world, decreasing global demand, the persistence of surplus capacity, and a dramatic rise in protectionism. These changes have led to substantial structural adjustments in the markets of most AICs. Moreover, the inability of the North American and European industries to adjust, coupled with the national and historical significance of the steel industry, has created and sustained protectionist forces which have (in some cases) transcended the postwar commitment to a liberal, multilateral world order. In short, to quote Susan Strange, these fundamental changes in the economic system "suggest that contemporary protectionism is not merely a passing phase, but a reflection of widespread resistance to deep-seated structural change."[57]

Second, it suggests that both the Canadian and the American steel industries will have to rationalize and restructure if they are going to remain competitive in the global economy. Both must attempt to drop some excess capacity through continued rationalization of their work force, existing

facilities, and production process. North American industry has no choice but to move "up market," concentrating on more technology-intensive, higher-dollar-value products if it is to remain competitive. However, differences in the approaches the two countries take towards structural adjustment could easily cause serious bilateral conflict. It is not unrealistic to imagine that as competition for production sites and jobs continues Canadian solutions to such things as regional disparity could easily be interpreted as subsidization and lead to further countervailing duty petitions.[58] The implication here is that restructuring along continental rather than national lines would ultimately be more beneficial to both industries - but especially to the Canadian industry. The U.S. industry is unlikely, however, to come to this realization.

Third, it suggests that the federal administration in both countries and the industry in Canada will continue to press for free or freer trade while the United States industry and its congressional representatives will remain committed to the need for greater protection in the domestic market. It was clear when President Reagan presented his annual legislative wish list to Congress, on 7 February 1986, that his administration was committed to negotiating some sort of free trade deal with Canada--a commitment the president reconfirmed in his 1987 State of the Union Address. The 1986 document stated clearly, if not prominently, that the administration "hopes to bring discussions with Canada ... to enhance freedom of trade between our two countries."[59] It is equally clear, however, that the protectionist forces in the United States are in the process of launching a new offensive in Congress. The Trade Act of 1987 could easily emerge as early as the summer of 1987. Moreover, the Senate is currently examining individual bills that would call for

automatic reductions in imports (particularly steel) should the U.S. trade deficit not abate.

Finally, it cautions that while freer trade may be in the best interests of some sectors of the North American political economy such as steel, it is extremely difficult to apply sectoral experiences to a more comprehensive framework. The important political/sovereignty questions simply do not emerge in the context of this sectoral analysis. We must still ask what are the implications for Canadian federalism? Would the industrial and political adjustments be mutual? Could Canada survive a free-trade agreement without sacrificing its political identity? While a free-trade agreement would clearly benefit the Canadian steel industry, what would it cost?

## Notes

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[1]Louis L. Ortmayer, "Conflict in Steel: Transatlantic Responses to an Industry in Crisis," a paper presented to the annual meeting of the International Studies Association, Washington, 5-9 March 1985, p. 5.

[2]This theme is addressed in Andrew J. Stritch, "Steel and the State: Import Policy and the Steel Industry in Canada and the United States," a paper presented to the annual meeting of the Canadian Political Science Association, Montreal, 2 June 1985.

[3]Doug Waddell, remarks made at the Canada-United States Trade in Steel Products Workshop, Toronto, 9 September 1985.

[4]I premise my analysis on the assumption that the Bretton Woods era has ended. The main debate now centres on the extent of the decline of United States hegemony and on the composition, character, and stability of a non-hegemonic world economy. The literature on structural change in the world economy and hegemonic decline is enormous. For a useful introduction, see: David P. Calleo, The Imperious Economy (Princeton, N.J.: Princeton University Press, 1982); Susan Strange, "Still an Extraordinary Power: America's Role in a Global Monetary System," in Political Economy of International and Domestic Monetary Relations, ed. R. Lombra and W. Witte (Ames: Iowa State University Press, 1982), pp. 73-93; and Robert O. Keohane, After Hegemony: Cooperation and Discord in the World Political Economy (Princeton, N.J.: Princeton University Press, 1984).

[5]Peter Morici, The Global Competitive Struggle: Challenges to the United States and Canada (Washington and Toronto: Canadian-American Committee, 1984).

[6]For a detailed treatment of the collapse of the Bretton Woods system, see Michael Hudson, Global Fracture: The New International Economic Order (New York: Harper and Row, 1977). Some students of international political economy argue that the Bretton Woods system depended very heavily on the notion of consensus (or ideological hegemony). See, in particular, Robert W. Cox, "Gramsci, Hegemony, and International Relations: An Essay in Method," Millennium: Journal of International Studies 12 (Summer 1983):162-75; and Arthur Stein, "The Hegemon's Dilemma: Great Britain, the United States, and the International Economic Order," International Organization 38 (Spring 1984):335-86.

[7]Susan Strange, "The Global Political Economy," International Journal 39 (Spring 1984):273.

[8]The classic statement on the "sovereignty at bay" thesis is Raymond Vernon, Sovereignty at Bay (New York: Basic Books, 1971). On the current state of the debate, see David Leyton-Brown, "The Nation-State and Multinational Enterprise: Erosion or Assertion?", Behind the Headlines 60 (September 1982). For a summary of implications of internationalized production and capital dependence in the Canadian context, see Michael K. Hawes, Principal Power, Middle Power, or Satellite?: Competing Perspectives in the Study of Canadian Foreign Policy (Toronto: York Research Programme in Strategic Studies, 1984), pp. 22-23

[9]See Morici, The Global Competitive Struggle, pp. vii-viii.

[10]Ibid., 13. The NICs concerned are Argentina, Brazil, Mexico, India, Hong Kong, and Korea.

[11]Susan Strange, "Protectionism and World Politics," International Organization 39 (Spring 1985):248.

[12]Year-end unemployment figures (1985) for Canada and the United States stood at 9.8 per cent and 6.9 per cent respectively, Globe and Mail (Toronto), 10 February 1986, p. B2. While these figures represent relatively significant progress in dealing with unemployment, it is important to remember that they are extremely high by historical standards and that (following two years of strong economic growth) most of this is structural unemployment.

[13]Joan Edelman Spero, The Politics of International Economic Relations (3rd ed., New York: St Martin's Press, 1985), p. 118.

[14]Charles S. Maier, "The Politics of Productivity: Foundations of American International Economic Policy after World War II," in Between Power and Plenty: Foreign Economic Policies of Advanced Industrial Countries, ed. Peter J. Katzenstein (Madison: University of Wisconsin Press, 1978), pp. 23-50.

[15]Denis Stairs and Gilbert R. Winham, "Canada and the International Political/Economic Environment: An Introduction," in Canada and the International Political/Economic Environment, ed. Denis Stairs and Gilbert R. Winham (Toronto: University of Toronto Press for Supply and Services Canada, 1985), p. 2.

[16]For a more thorough and critical assessment of developments in the United States industry, see W. T. Hogan, World Steel in the 1980s: A Case of Survival (Lexington: Lexington Books, 1983); Idem, Steel in the United States: Restructuring to Compete (Lexington: Lexington Books, 1984); Robert W. Crandall, The U.S. Steel Industry in Recurrent Crisis (Washington: Brookings, 1981); A. W. Harris, U.S. Trade Problems in Steel (New York: Praeger, 1983); and D. F. Barnett and L. Schorsch, Steel: Upheaval in a Basic Industry (Cambridge, Mass: Ballinger, 1983).

[17]These figures are from James Collins, vice president, American Iron and Steel Institute, remarks made at the Canada-United States Trade in Steel Products Workshop, Toronto, 9 September 1985.

[18]Ortmayer, "Conflict in Steel," p. 4.

[19]Robert S. Walters, "The Steel Crisis in America: National Policies and International Trade," in The Emerging International Economic Order, ed. H. Jacobson and D. Sidjanski (Beverly Hills, Calif.: Sage, 1982), pp. 101-27; Ingo Walter, "Structural Adjustment and Trade Policy in the International Steel Industry," in Trade Policy in the 1980s, ed. William R. Cline (Washington: Institute for International Economics, 1983).

[20]For a detailed discussion, see Crandall, The U.S. Steel Industry in Recurrent Crisis.

[21]Wage figures from American Iron and Steel Institute. The average 1982 wage rate was $11.79 (Bureau of Labor statistics).

[22]In 1984 the average wage rate in the integrated steel industry had dropped to $21.30 (American Iron and Steel Institute).

[23]For example, in 1954 Dofasco installed the second basic oxygen furnace in the world and the first in North America. Canadian companies also took the lead in introducing continuous casting technology to North America. Atlas Steel introduced the continent's first billet caster in 1954 and its first slab caster in 1965.

[24]See Don Belch, "The Canadian Industry in the Eye of the U.S. Steel Trade Storm," a paper presented to the Canada-United States Trade in Steel Products Workshop, Toronto, 9 September 1985, p. 3.

[25]While Stelco is the largest producer, Dofasco continues to be the model for the Canadian industry. It remained profitable even at the trough of the recession. Stelco, which had significant losses in 1982 and 1983, recovered quite substantially in 1984 and 1985. By contrast, Algoma Steel continues to be financially troubled. John Partridge, "Change in Stelco's Attitude is Beginning to Pay Off," Globe and Mail, 3 February 1983, p. B12.

[26]Michael C. Webb and Mark W. Zacher, "Canadian export trade in a changing international environment," in Canada and the International Political/Economic Environment, ed. Stairs and Winham, p. 94.

[27]John Mutti and Peter Morici, Changing Patterns of U.S. Industrial Activity and Comparative Advantage (Washington: National Planning Association, 1983).

[28]See T. J. Pemple, "Japanese Foreign Economic Policy: The Domestic Basis for International Behavior," in Between Power and Plenty, ed. Katzenstein, pp. 139-90; and Kiyoshi Kojima, Japan and a New World Economic Order (London: Croom Helm, 1977).

[29]Derived from figures on pp. 24 and 26 of Crandall, The U.S. Steel Industry in Recurrent Crisis.

[30]American Iron and Steel Institute figures, in Financial Times (May 1984).

[31]Ibid., New York Times, 11 October 1984.

[32]Ibid. Most of these imports are from Korea, Brazil, Mexico, Argentina, and Taiwan.

[33]See Hugo Dicke and Hans H. Glisman, "Adjustment in the German Steel Industry," unpublished mimeo, Institute for International Economics, 1985.

[34]Pemple, "Japanese Foreign Economic Policy"; Michele Schmiegelow, "Cutting across Doctrines: Positive Adjustment in Japan," International Organization 39 (Spring 1985):261-98.

[35]Hogan, Steel in the United States, p. 101.

[36]Remarks by Bill Reinsch and Bill Black, respectively, at the Canada-United States Trade in Steel Products Workshop, 9 September 1985.

[37]Basic materials include iron ore, scrap, coal, oil, natural gas, and electricity.

[38]All figures in this paragraph are from Crandall, The U.S. Steel Industry in Recurrent Crisis, p. 48.

[39]Ibid.

[40]Hufbauer, "Steel in Decline," pp. 4-8.

[41]"The Battle over Barriers," Time, 7 October 1985, p. 42.

[42]Susan Strange, "The Management of Surplus Capacity: Or How Does Theory Stand up to Protectionism 1970s Style?" International Organization 33 (Summer 1979):304fn. See also Susan Strange and Roger Tooze, eds., The International Politics of Surplus Capacity: Competition for Market Shares in the World Recession (London: Allen and Unwin, 1981).

[43]This discussion is derived mainly from the following sources: Canada, Department of Regional Industrial Expansion (DRIE), "The Canadian Steel Industry: Past, Present and Future," a paper presented to the Canadian Steel Trade Conference, Sault Ste Marie, 5, 6, and 7 May 1985; Harris, U.S. Trade Problems in Steel; Ortmayer, "Conflict in Steel"; and Barnett and Schorsch, Steel: Upheaval in a Basic Industry.

[44]Anthony M. Solomon, Report to the President, "A Comprehensive Program for the Steel Industry," 6 December 1977.

[45]Globe and Mail, 24 July 1984, p. B9.

[46]Time, 1 October 1984, p. 57.

[47]Ibid.

[48]Belch, "The Canadian Steel Industry in the Eye of the U.S. Steel Trade Storm," p. 1.

[49]Open letter to the president of the United States, from Senator John Heinz, chairman, Senate Steel Caucus, 28 May 1985.

[50]Letter to Senator Heinz, from Clayton Yeutter, United States special trade representative, 7 August 1985.

[51]See, for example, the discussion paper of the minister of international trade, James Kelleher, How to Secure and Enhance Canadian Export Markets, ca. 1985.

[52]DRIE, "The Canadian Steel Industry," p. 19.

[53]Canadian producers export more than $1 billion a year in steel and steel products to the United States market, accounting for more than 80% of Canada's steel exports.

[54]Canadian Trade Policy for the 1980s (Ottawa: Supply and Services for Department of External Affairs, August 1983).

[55]Confidential interview with senior External Affairs official, 24 May 1984.

[56]Gerald Regan, "Sectoral Free Trade with the United States," International Perspectives (May/June 1984):15-16.

[57]Strange, "The Management of Surplus Capacity," p. 309.

[58]Morici, The Global Competitive Struggle, p. 95.

[59]Globe and Mail, 7 February 1986, p. A4.