OECD

Follow-up to Special Meeting at High-Level on Steel Issues

U.S. Government Report

December 17th

Paris

I. EXECUTIVE SUMMARY

The high-level meeting on steel convened at the OECD on September 17th and 18th of this year identified global excess steel manufacturing capacity as the principal problem affecting the near-term conditions of the steel industry worldwide. The participants in that meeting also recognized the potential benefits of negotiating expanded disciplines on state practices that encourage investment in or maintenance of excess steelmaking capacity.

The results of that meeting reflected an extraordinary consensus among 39 major steel-producing countries not only in recognizing that inefficient excess steel production capacity is a global problem for the steel industry, but also that governments should aggressively encourage the elimination of inefficient excess capacity. As a next step, the participating countries agreed in September to consult with their respective steel industries and to conduct a self-examination that will define and identify inefficient capacity, along with the social, economic and regulatory issues that might impede the closure or reduction of excess capacity. The governments agreed to then present the findings of their self-assessments, including projections of potential future changes in capacity and potential policies in the short-term to encourage the reduction of inefficient excess capacity, at a high-level meeting at the OECD on December 17th and 18th.

In response to the September high-level meeting, this report provides an examination and analysis of the U.S. steel industry, and follows the suggested outline promulgated by the OECD Steel Unit on November 15th. This report first reviews the current state of the U.S. steel industry and the significant changes that the industry has made in response to the changing world steel market. Market forces already have caused the U.S. steel industry to greatly reduce its capacity and to increase its competitiveness. These forces are particularly the result of the disciplining effect of U.S. capital and lending markets and the relatively high level of market penetration by foreign steel imports. Over a quarter of U.S. steel companies are currently in bankruptcy and, in the past year and a half, almost 15 percent of U.S. steel capacity has ceased operations or will likely cease operating in the very near future (Table 1-A). The accompanying decrease in employment in the U.S. industry from those firms alone demonstrates that these changes have inflicted significant economic and social costs on the affected companies, employees and communities.

As one of the first steel-producing nations to undergo substantial restructuring, the U.S. steel industry is extremely familiar with large steelmaking capacity closures. Throughout the 1980s and early 1990s, the industry removed more than 50 million metric tons[1] of ***net*** steelmaking capacity, while at the same time adopting modern steel-making technologies to

[1]Weight references throughout are in metric tons. References to ***net*** reductions or ***net*** steelmaking capacity refer to the final figure once relevant adjustments are made, not to the U.S. unit of measure equivalent to short tons (2000 pounds).

TABLE 1-A: U.S. STEEL INDUSTRY BANKRUPTCY FILINGS
1998 - 2001

Company	Location	Steelmaking Capacity (000 metric tons)	Employees	Products	Current Status
Acme Metals		1,032	1,700	Flat products	Ceased Operations
Al Tech Specialty Steel	NY	91	790	Stainless products	Ceased Operations
Bethlehem Steel	PA, IN, NY, OH, MD	10,251	13,000	Flat products, rail, pipe & tube	Still Operating.
CSC Ltd	OH	333	1,225	Carbon & alloy steel bar	Ceased Operations.
Edgewater Steel	PA	33	140		Ceased Operations.
Erie Forge & Steel	PA	91	300	Large forgings and forged bars	Still Operating.
Excalibur Holdings	MO	0	800	Tubes	Still Operating.
Freedom Forge Corporation	PA	131	1,120	Railway products, forged products	Still Operating.
GalvPro	IN	0	60	Galvanized products	Still Operating.
Geneva Steel	UT	2,033	2,600	Flat products, pipe & tube	Emerged from Bankruptcy. Now in Indefinite Temporary Shutdown.
Great Lakes Metals	IN	0	40	Corrosion-resistant sheet	Ceased Operations
GS Industries, Inc.	MO, SC, MN, AZ	1,014	1,750	Wire rod, bars	MO Facility Ceased Operations
Gulf States Steel	AL	991	1,906	Flat products	Ceased Operations.
Heartland Steel	IN	993	175	Cold-rolled sheet	Sale Pending – Still Operating.
J&L Structural Steel	PA	0	275	Light structural shapes	Sale Pending – Still Operating.
Laclede Steel	IL, MO, PA	907	1,475	Bar, pipe, welded chain	Ceased Operations.
LTV Corporation	OH, IN, IL, PA, MI, TN, GA	6,803	18,000	Flat products, pipe & tube	Ceased Operations – Hot End.
Northwestern Steel & Wire	IL	2,177	1,600	Structural steel, wire rod, wire	Ceased Operations.
Precision Specialty Metals	CA	0	200	Specialty steel products	Still Operating.
Qualitech Steel SBQ	IN, TX	544	350	Round bars	Ceased Operations.
Republic Technologies	OH, MD, PA, GA, IL, IN, CT, NY	1,993	4,600	Carbon & alloy steel bar	Still Operating.
Riverview Steel	PA	0	60	Rebar	Still Operating.
Sheffield Steel	OK, IL, MO	544	610	Bar, Rebar	Still Operating.
Trico Steel	AL	1,995	320	Hot rolled sheet	Ceased Operations But Recently Purchased by Nucor.
Vision Metals	MI, TX	0	670	Seamless pipe & tube	Still Operating.
Wheeling-Pittsburgh	WV, PA, OH	1,995	4,800	Flat products	Still Operating.
Worldclass Processing	PA	363	80	Pickled and oiled sheet	Emerged from Bankruptcy
TOTAL – Bankrupt Firms		**35,689**	**58,586**		
TOTAL – Ceased Operations*		**18,361**	**31,027**		
TOTAL – U.S. INDUSTRY (2000)		**124,298**	**220,000**		
% of Industry Affected by Bankruptcy		**28.7%**	**26.6%**		
% of Ceased Operations		**14.8%**	**14.1%**		

Source: USWA, AISI, World Steel Dynamics
*Includes Geneva Steel and LTV.

increase efficiency, manufacture new products and become more productive.[2] This decrease is significant relative to the current U.S. steelmaking capacity of 124 million metric tons. As a result, the U.S. steel industry has changed substantially compared to the 1970s.

Nonetheless, looking at current market conditions, we estimate that between **[ ]**[3] million metric tons of U.S. steelmaking capacity in 2000 could be described as "inefficient excess capacity." This capacity was identified by examining a number of factors, including relative cost of production, productivity rates, long-term capacity utilization, and production technology. However, in the United States, the market is the prime identifier of relative inefficient excess capacity. The U.S. steel industry is almost exclusively reliant on capital and lending markets to obtain financing and these markets by their nature will not provide funding to maintain inefficient capacity. This reliance on capital and lending markets for funding is an intrinsic indicator of the efficiency of the U.S. industry. The markets simply do not allow inefficient capacity to exist long-term and this capacity is winnowed out through the bankruptcy process when markets deny further funding.[4] Unfortunately, not all steel markets in the global steel industry operate along the same lines. As subsidies and other market-distorting practices prevent inefficient excess capacity from being removed in these markets, the global steel market seeks to correct itself by exerting further pressure on those steel producing nations with greater market orientation, such as the United States, resulting in the elimination of efficient steelmaking capacity as well.

In light of the primacy of market forces in shaping the U.S. steel industry, there currently are limited government impediments to the closure of excess inefficient steelmaking capacity in the United States. The U.S. government does not provide significant subsidies or similar assistance to the U.S. steel industry. The most visible federal program directed toward the steel industry, the Emergency Steel Loan Guarantee Program, adopted in 1999, is limited in scope and, to date, has resulted in the disbursement of a single loan by a private lender under the guarantee program – $110 million to Geneva Steel last year. Although there has been assistance to certain steel producers at the state and local level, such assistance by itself, is unlikely to result in the creation of new capacity. Generally, such assistance only affects a company's decision where, within a select group of locales, to ultimately locate – the decision to undertake the investment in the first place was already made based on the company's analysis of the market. This type of assistance is usually a one-time event and also tends to be relatively small in scope. Federal research and state training grants were also provided during the 1980s and 1990s. Finally, the U.S. government's actions toward unfair trade and import surges have the ultimate

---

[2]OECD, World Steel Dynamics. The 50 million metric ton ***net*** reduction figure includes minimill capacity added between 1980 and 1994. Even with the addition of new minimill capacity in the late 1990s, ***net*** U.S. steelmaking capacity in 2000 was still approximately 35 million metric tons below what it had been in the late 1970s.

[3]Information in brackets is not for public distribution.

[4]Bankruptcy, alone, is not necessarily a precise indicator of inefficient excess capacity. A company may enter bankruptcy for a variety of reasons other than the relative efficiency of its steel operations.

aim of restoring market forces in the face of imports that reflect market inconsistent behavior by other governments.

Despite the limited government impediments to capacity reduction, there is a possible structural impediment to the reduction of excess inefficient capacity in the United States – legacy costs. Industry experts have identified legacy costs – pension costs and retiree health care benefits – as a serious problem for the competitiveness of the U.S. steel industry both in terms of cost competitiveness and as a barrier to needed consolidation within the U.S. industry. The legacy cost problem is greatest for the integrated sector of the steel industry which downsized considerably during the last 20 years and now has considerably more retirees than active employees. The steel workers in the integrated sector also tend to have generous retirement benefits, particularly with respect to retiree health care, which unlike pensions, have neither been funded by the companies, nor are they protected under the Pension Benefit Guarantee Corporation (PBGC). Legacy costs act as a barrier to both capacity reduction and industry consolidation. Many companies are unable to afford to shut down facilities because of the additional legacy costs they would incur in downsizing. In addition, the large unfunded liabilities make target companies unattractive to purchasers.

As in the past, the U.S. government's primary policy for improving the U.S. steel industry is to continue to allow market forces to freely identify and close excess capacity. The U.S. government has also implemented and is considering market-based policies to further encourage the reduction of inefficient excess capacity. The most significant of these policies is the requirement for the U.S. industry to rationalize and restructure itself if the industry is granted remedies against imports under Section 201 of the Trade Act of 1974. In addition, the criteria for receiving a loan guarantee under the Emergency Steel Loan Guarantee Program were recently amended so that the Board could consider a company's intention to reduce inefficient capacity in its analysis of the loan request. The U.S. government has also heard requests for assistance with legacy costs. It is evaluating proposals on such assistance, which some in the industry argue could remove an impediment to further consolidation and rationalization. A decision has not yet been made.

Based on the analysis described above and in further detail in the report, *net* U.S. steel production capacity is projected to decline by **[ ]**[5] metric tons by the end of 2002 compared to its 2000 level.[6] This projection is based on current market conditions and primarily reflects an examination of current and announced closure of steelmaking capacity that has been identified by the market as inefficient, as well as announced plans for the addition of new steelmaking capacity. These projected additional capacity reductions would significantly contribute to addressing the world-wide problem of excess inefficient capacity. The U.S. government is committed to further

[5]Information in brackets is not for public distribution.

[6]Includes planned capacity additions and the projected reopening of a portion of the facilities which have currently ceased operating or which have been announced to cease operating in the near future.

encouraging the reduction of excess capacity through market-based policies. However, solving the problem of excess capacity world-wide depends on all governments of steel-producing countries making a commensurate commitment to encourage the market-based reduction of such capacity. The OECD work-plan provides an opportunity for all governments to make this commitment.

II. LONG-TERM ECONOMIC VIABILITY OF THE STEEL INDUSTRY

During the late 1990s, the U.S. steel industry continued to undertake measures to improve its competitiveness. Higher domestic demand and new technologies encouraged some producers to increase their capacity. Restructuring and the adoption of such technologies have boosted productivity, yield, and energy efficiency. As a result, the U.S. industry is among the world's most productive and is a supplier of high-quality products. However, the high import levels and the persistently low market prices of the last few years, often below the production costs of many producers, have helped undermine the viability of many companies. Some have been forced to shut down completely this year while others are closing their marginal plants.

Capacity

The United States was one of the first steel-producing nations to undergo significant capacity rationalizations. Despite gains in steelmaking capacity from modernization efforts and the increase in low cost minimill facilities, more than 50 million metric tons of ***net*** steelmaking capacity was removed from the U.S. steel industry during the 1980s and early 1990s (Table 2-A).

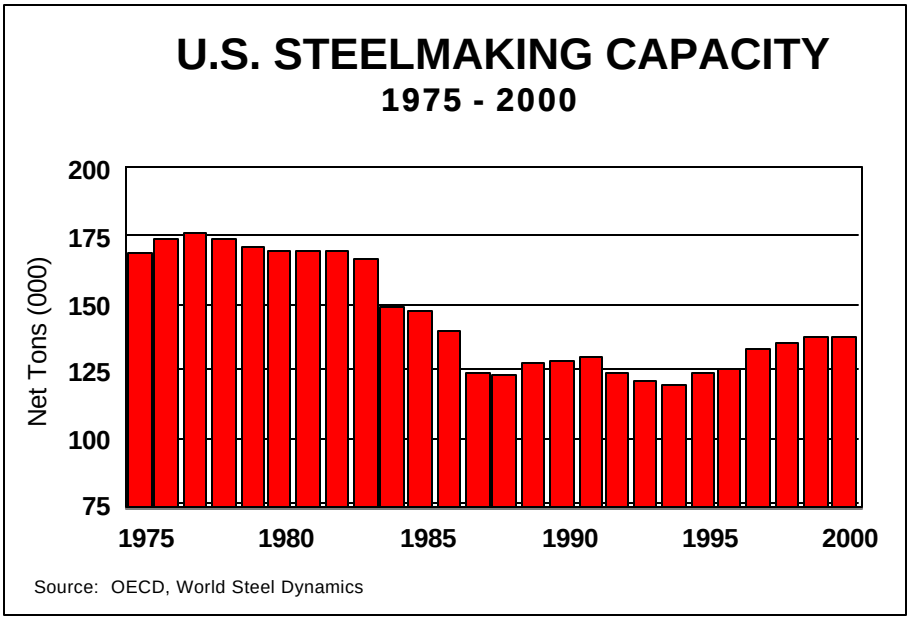

Table 2-A

During the 1995-2000 period, U.S. apparent consumption[7] grew by approximately 22 million metric tons as a result of the strong economy and new steel applications. Over this same period, U.S.

[7]Apparent consumption equals domestic consumption less exports plus imports (excluding semifinished steel).

gross crude steelmaking capacity rose by 16 million tons to 124 million metric tons, an increase of 15 percent. Minimills, in particular, took advantage of the market growth and new technologies to expand their capacity. Nearly all of the roughly 16 million tons of crude steelmaking capacity added during this period were to minimill electric furnace-based operations, much of it tied to new hot strip mills using the recently developed thin slab process. The capacity at thin slab flat rolling minimills jumped by 9 million metric tons during this same period.

The deepening crisis in 2001 has forced the industry to make large reductions in capacity. With financing no longer available and demand and prices depressed, companies are shutting their most inefficient mills. These factors are also curtailing new investments. By the first week of December 2001, crude steelmaking capacity had dropped by roughly 10 million metric tons compared to the start of the year.[8]

Capacity utilization (a measure of crude steel production as a percent of effective capability) generally slipped over the 1995-2000 period as the increase in capacity outpaced the rise in U.S. production, which was affected by surging import levels, particularly during the 1998 through 2000 period. From a solid 93.3 percent rate in 1995, annual capacity utilization rates fell to a low of 83.8 percent in 1999 before partially rebounding to 86.1 percent in 2000 (Table 2-B).

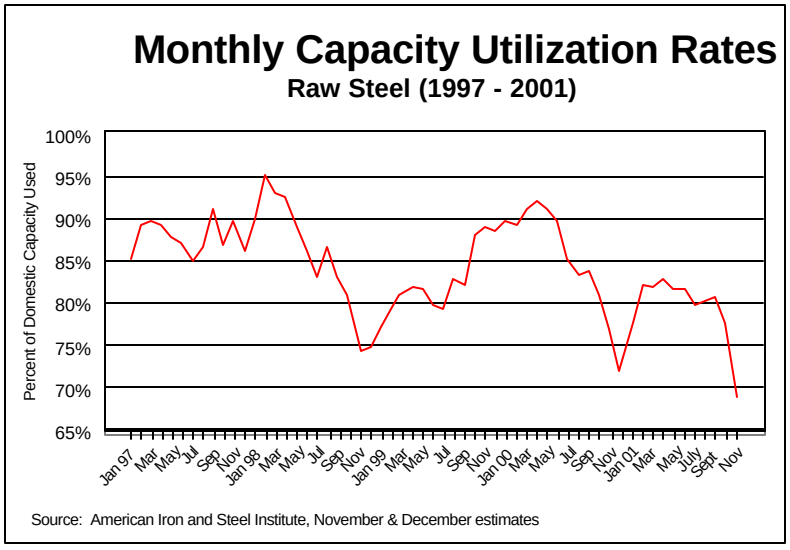

Table 2-B

However, in 2001, with the slowdown in the economy and the collapse of the domestic steel market, capacity utilization rates have continued to drop and the declines have been particularly severe

[8]AISI. Based on a comparison of production/capacity utilization figures for the week ending January 6, 2001 and the week ending December 1, 2001. Because these are changes in effective capacity, they may be slightly different than changes in gross crude steelmaking capacity.

since September. The average capacity utilization rate for the first eleven months of 2001 was 78.4 percent but the weekly rates have averaged below 70 percent since late October, despite the fourth-quarter reduction in capacity. These rates are the lowest levels recorded since the 1990-91 recession.

Widespread bankruptcies have placed many mills at risk. Since 1998, 26 companies have declared bankruptcy affecting approximately 36 million metric tons of steelmaking capacity.[9] In the past year, bankrupt firms have shut down 8 million metric tons of capacity, either through partial shutdowns or the shuttering of entire companies. In addition, in November 2001, LTV, the fourth largest U.S. steel company with a capacity of almost 7 million metric tons, petitioned the bankruptcy courts to allow it to close nearly all of its facilities, in preparation for liquidation. Added to this, Geneva Steel, a smaller integrated mill with a capacity of slightly over 2 million metric tons, announced an indefinite temporary shutdown of its facilities.

Some of these capacity reductions have been offset by major new minimill investments that have come on line in the past two years. These investments have added about 2.5 million tons of crude steelmaking capacity, most of which is tied to sheet and plate production.

Employment

The capacity rationalizations in the 1980s and 1990s, coupled with dramatic gains in worker productivity resulted in dramatic cuts in steel employment. The long-term decline in employment accelerated in recent years. Between 1995 and 2000, total employment dropped by more than 17,000 workers to 224,500. The decline for non-production workers was far more precipitous (14 percent) than for production workers (5 percent). By November 2001, total employment had fallen by an additional 9 percent to 204,000 workers, 64 percent below the employment levels of the late 1970s (Tables 2-C and 2-D).

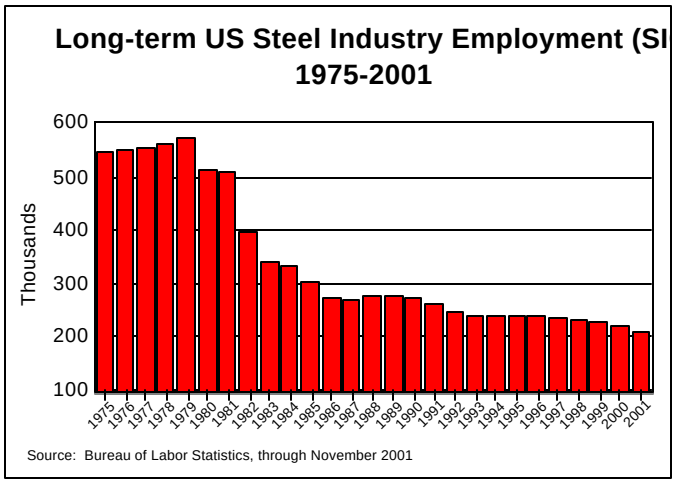

Table 2-C

[9]Al-tech, Geneva Steel, Laclede Steel and World Class Processing emerged from bankruptcy. Al-tech emerged as Empire Specialty Steel but ceased operation in June 2001. Laclede reentered bankruptcy and ceased operations in August 2001. Geneva Steel is in default and has announced an indefinite temporary shutdown of its operations.

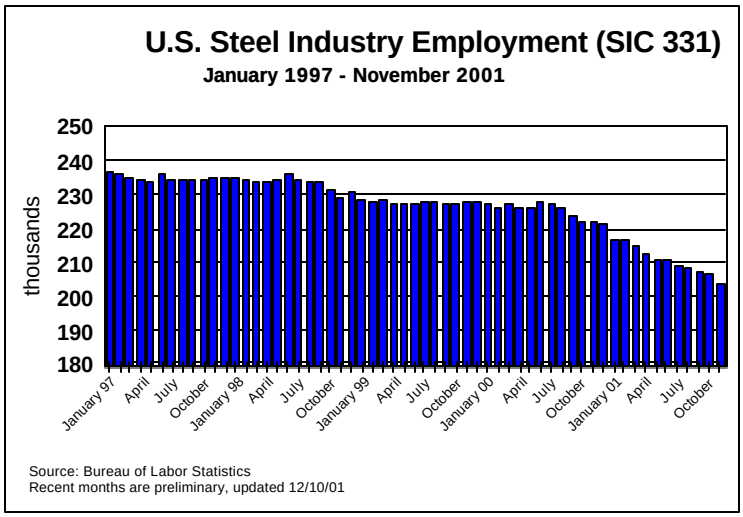

Table 2-D

Technology Review

The U.S. steel industry has invested heavily to improve its competitiveness and to conform to U.S. environmental regulations. Total capital expenditures averaged $3.2 billion over the 1995-1999 period. Aside from the sizeable investment in electric furnaces and hot strip mills mentioned above, the industry has converted almost totally to continuous casting (96.4 percent of total production as of 2000). Other investments have been geared to improving product quality.

The changing structure of the industry and new technologies suggest that the percentage of U.S. steel output produced by basic oxygen furnaces will decline over the long-term as output produced by electric furnaces increases. A considerable number of blast furnaces and coke ovens are likely to be closed in the not too distant future as integrated mills reduce their reliance on these facilities because of their high costs and environmental liability. Nearly all blast furnaces and coke ovens are more than 25 years old; only one coke oven has been built in the last decade. As these older furnaces come up for relining, a number of the smaller furnaces are likely to be retired because of the prohibitive expense of relining. Over the past 20 years, capital markets in the United States have shifted their emphasis from investments in heavily capital-intensive integrated facilities to less-capital intensive, lower-cost minimills. This has greatly changed the face of the U.S. steel industry which is now almost evenly split between blast furnace and electric arc furnace production – a market-driven result that, despite its considerable recognized advantages, oddly does not appear to have been replicated in much of the global steel industry (Table 2-E).

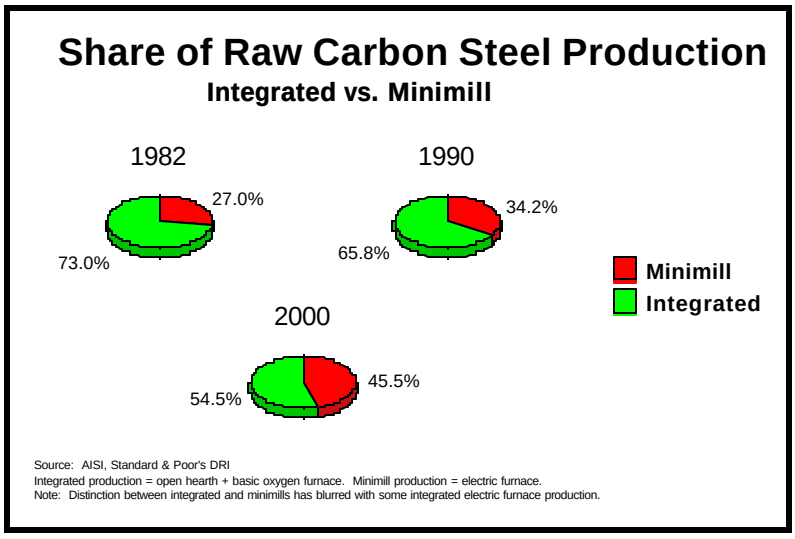

Table 2-E

New technologies, a shift to EAF and continuous production, and the shutdown of inefficient mills over the past two decades have boosted the overall energy efficiency of the steel industry. The improvement has been particularly significant for integrated mills. These efforts have also made the U.S. industry one of the leaders in labor productivity. For example, according to World Steel Dynamics, the U.S. integrated sector is as labor-efficient as the industries of many major producing countries, and much more efficient that those of other countries (Table 3-A).[10] In addition, the U.S. minimill sector uses much fewer man-hours to produce a ton of finished product than either the U.S. integrated sector or the other industries of the world. It is widely believed that the U.S. minimill sector in general, and certain dominant firms in particular (*e.g.*, Nucor), are among the most labor-efficient in the world (Table 2-F).[11]

[10] World Steel Dynamics uses carbon cold-rolled flat products as the base product upon which to make these comparisons.

[11] Although a helpful tool in measuring relative efficiency on an aggregate level, the usefulness of labor productivity as a standard measure of efficiency, particularly on a company-specific basis, is limited. Differences in production processes, input mixes, the quality and mix of finished products and the extent to which labor is outsourced greatly complicate the analysis and limit the conclusions that can be drawn from such analysis.

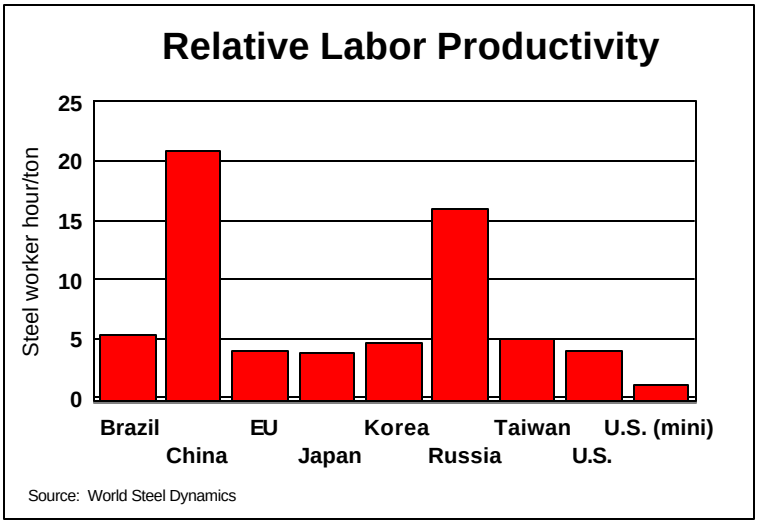

Table 2-F

Current Challenges Facing the Industry and Prospects for Long-Term Viability

There are a number of challenges facing the U.S. steel industry. Some of these factors, such as access to capital, are immediate, and could have serious short and long-term consequences for the industry. Others, such as industry fragmentation and legacy costs, could hamper the industry's viability over the long-run.

Access to Capital

One of the most critical issues facing U.S. steelmakers at the moment is a lack of access to capital. The industry's reliance on mature private capital markets that function on risk-based analysis makes it much more difficult for U.S. companies to weather downturns in the market than it does for those companies with access to government funds or government-directed lending. Extremely depressed stock prices prevent access to capital markets and banks will not lend because of perceived risk. Owing to a lack of liquidity, the weakest companies financially have already closed. Other companies have curtailed the capital spending required to modernize and restructure. Some companies, such as Acme Steel and Northwestern Steel and Wire, were in the process of large scale modernization in the late 1990s and saw their access to the capital markets dry up with the weakening of steel prices in 1998. Both companies were unable to complete their modernization efforts, filed for bankruptcy and, in 2001, ceased operations.

Depressed Prices

With the exception of a short recovery in the first half of 2000, prices for most major steel products have been depressed globally since late 1998. At that time, large increases in low-priced steel imports, particularly hot-rolled steel, cut-to-length plate, and heavy structurals, led to a downturn in the U.S. market which was further exacerbated in some product areas with the opening of new minimill capacity. Prices began to increase again in late 1999 and early 2000 following the imposition of antidumping and countervailing duties on some products but an increase in import competition from new suppliers coupled with a downturn in the market – in late 2000, U.S. demand for steel dropped for the first time since 1992 – led to a collapse in steel prices which has continued throughout 2001 (Tables 2-G through 2-I).

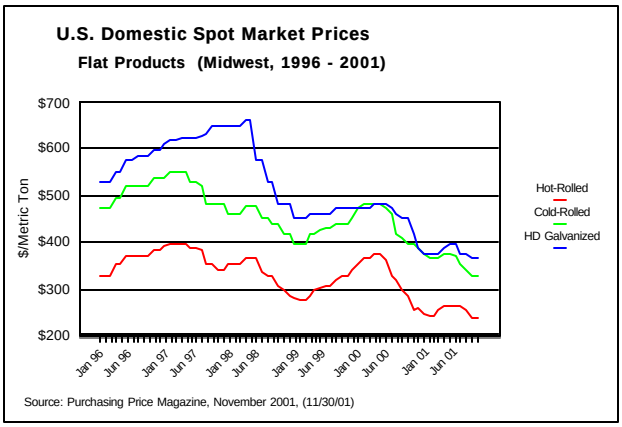

Table 2-G

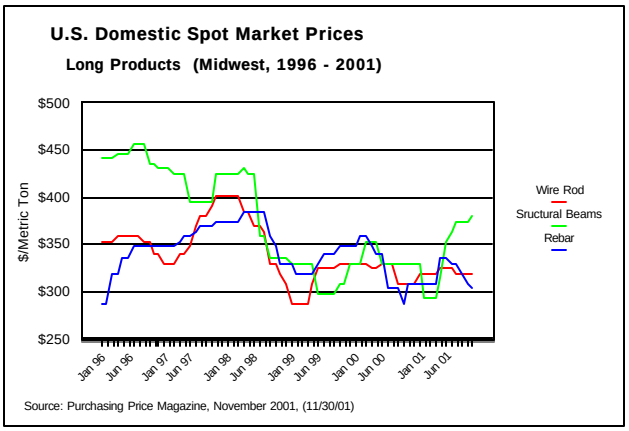

Table 2-H

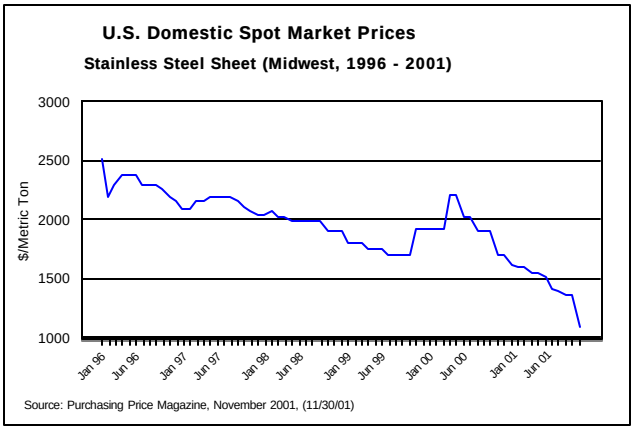

Table 2-I

Production Costs

High production costs are another factor affecting the U.S. mills. According to independent analysis, the relative production costs of integrated mills increased in 2000, owing to the strong dollar and higher energy costs, making them some of the highest cost producers among the 13 countries examined. However, some of the costs included in the analysis, particular energy costs, have fallen

dramatically in 2001. Similarly, a relative cost curve constructed by one industry analyst places several U.S. integrated producers at the high end of the cost curve along with Japanese producers. Although both models are informative, they do suffer from several serious limitations including the failure to address:

- quality differences between national industries;
- the segments of the markets that such industries supply;
- transportation costs to major markets, including export markets; and
- questionable cost data from industries in non-market or transitional economies.

Additionally, some industry analysts argue that the competitiveness of the U.S. integrated sector, in particular, is disadvantaged by high labor costs and restrictive labor contracts. These analysts argue that uneconomic work rules and business practices, prohibitions on contracting out, and uncapped health care costs reduce the long-term competitiveness of these firms. However, although labor costs in the U.S. steel industry are high, as is the case with many mature steel industries, these costs must be evaluated within the context of high and ever improving, worker productivity in the United States. Over the past 25 years, worker productivity in the U.S. steel industry has increased dramatically, and, as discussed previously, the U.S. industry now ranks as one of the most labor-efficient industries in the world (Table 2-J).

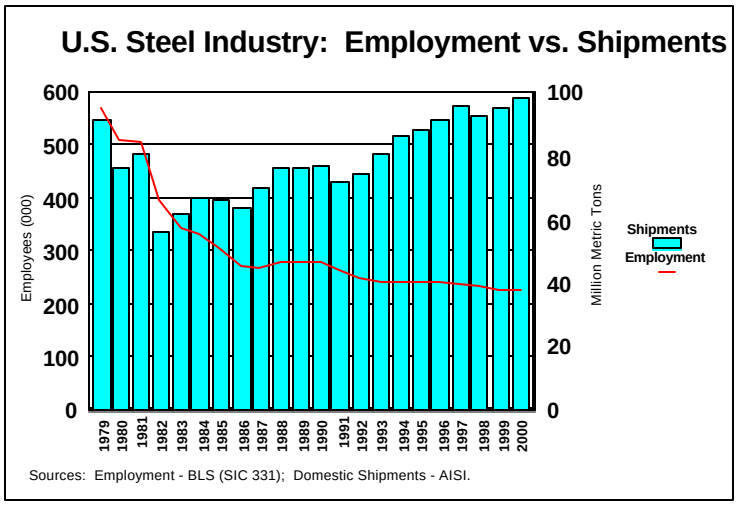

Table 2-J

Imports

The United States is a net importer of steel and a certain level of steel imports is necessary for the health of both the U.S. economy and the steel industry itself. Indeed, U.S. integrated steel producers often turn to semifinished steel imports during furnace relines while other segments of the U.S. steel industry have fashioned their long-term business strategy around total or partial reliance upon

imported steel feedstock for further finishing at their U.S. facilities. Such companies include AK Steel, California Steel Industries, Oregon Steel and USS-Posco.

However, the size and relative openness of the U.S. market has often led to it becoming a market of last resort, particularly during financial or market disruptions. During the 1998 financial crises in Asia, Russia and Brazil, the U.S. market was subject to import surges in a number of major product lines – hot-rolled steel imports were up 74 percent compared to the previous year and imports of heavy structurals increased 170 percent. Import volumes in 1998, 1999 and 2000 were at record levels but import volumes and import penetration fell considerably in 2001 in response to a weakened market and pending trade relief investigations (Table 2-K).

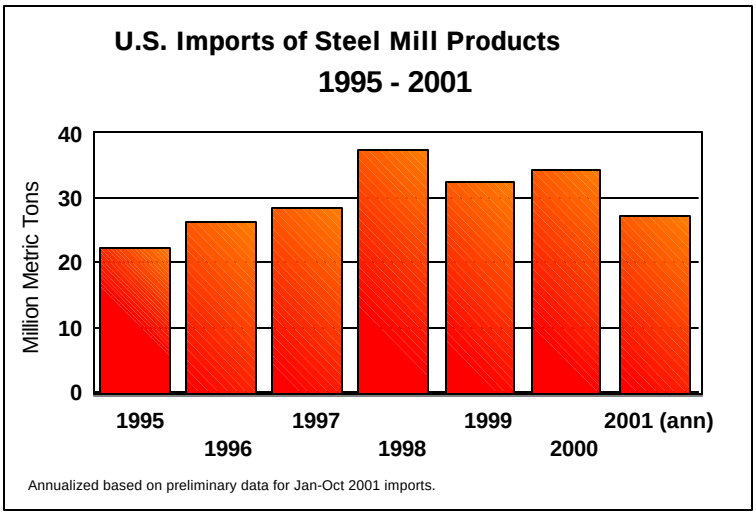

Table 2-K

Imports not only increased in volume, they also increased in terms of U.S. market share. Import penetration for finished steel products, which had been around 20 percent in 1997 and the first few months of the year climbed to 33 percent by November 1998 – the height of the import surge (Table 2-L).

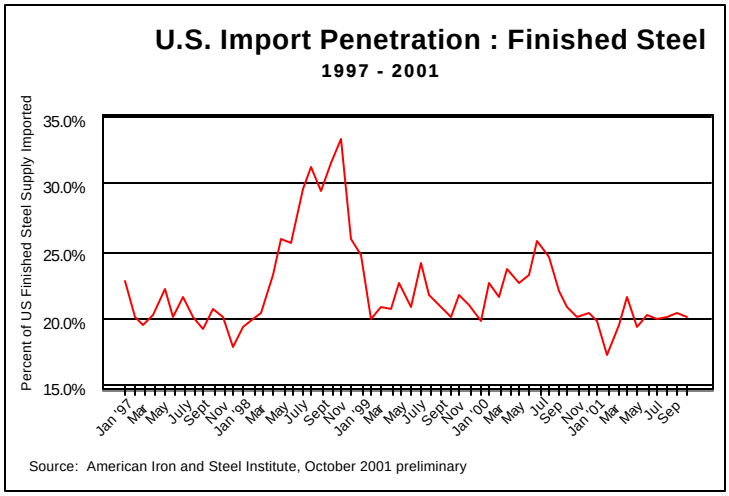

Table 2-L

Industry Fragmentation and Legacy Costs

The fragmentation of the U.S. steel industry—particularly its integrated segment – is viewed as a longstanding structural impediment by many analysts. Even the largest U.S. producer has less than a 10 percent share of the domestic market. The small size of producers limits purchasing and pricing power, particularly as suppliers and customers consolidate and globalize. Among the other disadvantages associated with small integrated mills is high overhead costs.

Many industry analysts believe that consolidation is necessary to restore the long-term health of the industry but recognize that domestic producers do not have the resources to bring it about. The major barriers to consolidation are primarily financial: weak balance sheets, low equity values, large pension and other liabilities, and a lack of capital.

Exit barriers have retarded consolidation in the past. For a variety of social, political, and economic factors, antiquated plants that actually were closed or would likely have been, were "reconstituted" through new financing and other means. When market conditions weaken, these inefficient mills can undermine the stronger companies. The reluctance of bankers to provide any financing may limit such developments this time.

Some industry analysts have suggested that the fragmented industry structure fosters a vicious circle for the steel companies. Low industry concentration and limited control over distribution channels encourage companies to overproduce to cover high fixed costs in periods of weak demand. This in turn causes prices to weaken, resulting in volatile or depressed earnings. Investor reaction cuts off access to capital which prevents firms from undertaking the necessary restructuring.

Compliance with environmental regulations is a major cost to steelmakers. In a typical year about 15 percent of capital expenditures are devoted to environmental projects. About 65 percent of total environmental outlays mitigate air pollution, primarily a result of operating coke ovens in compliance with the Clean Air Act. Costs for operating and maintaining pollution equipment average about $10-20 per ton of steel produced, according to the American Iron and Steel Institute. New provisions of the Clean Air Act are adding significant costs to steelmakers. Rules regarding toxic air pollutants from coke ovens have resulted in the closure of some coke ovens and additional shutdowns are likely to occur.

Estimate of U.S. Inefficient Excess Capacity

We considered a number of factors in determining our estimate of U.S. inefficient excess capacity in existence as of 2000, including production technology, long-term capacity utilization, access to inputs, relative costs of production including transportation costs, and access to capital (a further elaboration of these factors follows in the next section). Based on recent historical and current market conditions, as well as our discussions with outside industry analysts and industry and union representatives, we estimate such capacity in the United States to range between **[ ]**[12] metric tons.

[12]Information in brackets is not for public distribution.

III. IDENTIFYING INEFFICIENT STEEL CAPACITY

To calculate our estimate of U.S. inefficient excess capacity, we examined the industry on both an aggregate and company-specific basis.[13] Categorizing certain capacity as "efficient" or "inefficient" involves judgments about relative differences between firms. Some of the factors that we considered were:

- production technology;
- long-term capacity utilization;
- relative costs both nationally and globally;
- compliance with current and future environmental standards; and
- reliance on private capital markets.

The conditions associated with such factors are often difficult to gauge, and may be constantly in flux (*e.g.*, sharp swings in exchange rates may have major effects on relative competitiveness). Nevertheless, for some of these indicators, the U.S. industry in general, and some of its firms in particular, are among the most "efficient" in the world. For others, there is some basis for considering parts of the U.S. industry as relatively less efficient.

In any case, our analysis considers current conditions facing the U.S. steel industry, which reflect a prolonged period of very depressed steel prices characterized by very high (though recently declining) levels of steel imports, recent additions to capacity in the United States, and major planned additions to capacity in numerous other countries. The United States has remained by far the largest net importer of steel products, so it is not obvious that the U.S. steel industry accounts for a considerable portion of global "excess capacity" that might exist, and by various standards the U.S. industry is amongst the most efficient in the world. However, review of various indicators associated with efficiency, given current market conditions, suggests the existence of relative inefficiencies in certain situations or within certain parts of the industry.

Indicators That Were Examined to Determine Estimated Inefficient Capacity

Production Technology

[13]As to what constitutes "excess" capacity, today's "excess" may be tomorrow's "shortage,"if, for example, a sustained boom in steel demand were to occur. Other major shifts in the market, such as the onset or cessation of unfair trade, may also have a significant impact upon the long-term prospects of industries in particular countries. Also, new and technologically advanced capacity may increase overall "excess" capacity, and cause other existing plants to become more relatively "inefficient." Such new plants, even if closed by owners unable to cover the financing of construction and startup costs in particularly depressed markets, might be re-opened in the future.

The U.S. steel industry is a modern, highly efficient industry. As discussed earlier, the U.S. integrated sector is one of the most labor-efficient producers in the world, while leading U.S. minimills are generally recognized as some of the most efficient steel producers in the world. Nevertheless, the cost of U.S. labor per man-hour is relatively high, as is the cost of pension and health benefits. These relatively high costs affect the overall cost competitiveness of the U.S. industry.

Other potentially relevant indicators of inefficient excess capacity involve the extent to which relatively modern production practices are used relative to slower, more resource-dependent, and costly practices. Examples of the latter are open hearth production of crude steel, and ingot casting and ingot-rolling. These inefficient practices were largely abandoned by the U.S. industry years ago.[14]

Another indicator of relative efficiency is energy consumption.[15] Like other production inputs, energy consumption is very dependent upon a broad range of factors specific to companies and their own specialized production processes. Nevertheless, an International Iron and Steel Institute study of energy consumption per ton of crude steel produced in fifteen advanced steelmaking countries in the early 1990's indicated that U.S. energy consumption per ton of output was close to or below those of almost all of the other countries.

Capacity Utilization

Differences in capacity utilization over time may suggest that some firms have not been able to take advantage of the economies of scale that exist for themselves within their own production constraints.[16] In evaluating this factor, we examined long-term capacity utilization rates on both on industry basis and a company-specific basis.

Relative Costs

As noted above, estimates of costs can vary significantly over time based on market conditions, changes in the cost of inputs, or changes in exchange rates. Nevertheless, we not only examined relative aggregate cost data between steel producing nations in our analysis, we also looked at a variety

---

[14] Very small volumes of ingots are cast and rolled by a few producers, where such a process is required to produce the specialized types and grades of product in question.

[15] Defining "energy consumption" can be contentious; although minimill producers use very large amounts of electricity relative to integrated producers, integrated firms use large volumes of inputs that have measurable energy potential (*e.g.*, coal, coke, natural gas).

[16] It is worth noting, however, that to the extent many firms have focused on maximizing production with the goal of lowering per unit costs, such activities have collectively contributed to what have been characterized as "gluts" of steel. To the extent such "gluts" have existed, they no doubt have put downward pressure on prices throughout the world.

of cost factors on an aggregate and company-specific basis for steel producers in the United States. Such factors included:

- *Variable Costs (Availability of Major Inputs)*. Integrated producers rely on a combination of blast furnaces and basic oxygen furnaces to produce steel which primarily use iron ore and coke as inputs. However, there are few and declining iron ore facilities in the United States, offering an advantage for minimill producers.[17] Recent consolidation of iron ore producers elsewhere in the world has probably reduced the relative bargaining position of iron ore buyers. While many U.S. integrated producers can still source iron ore domestically, they still need to deal with the associated transport costs. Such costs are often significant, relative to the overall production costs of the ore itself.

  Minimill steel producers rely on electric furnaces for producing steel which primarily utilizes scrap as an input. Scrap is relatively abundant in the United States and scrap prices generally tend to be very pro-cyclical, mirroring the movements in steel prices, while prices of major inputs used by integrated producers (*e.g.*, iron ore, coal, etc.) have tended to move much less sharply. Consequently, in prolonged downturns, such as in recent years, minimills are better able to absorb the shock of reduced prices for their finished goods because of the subsequent decline in their input prices.

- *Variable Costs (Labor)* . Many minimills are non-union operations, and a greater share of worker compensation tends to be tied to profitability or other measures of company performance. Many integrated firms, on the other hand, deal with unionized workforces with contracts focused upon job security and greater stability in compensation levels. Consequently, in periods of prolonged downturns, such as in recent years, many minimills have more flexibility with respect to labor costs than integrated firms. This could affect the long-term viability of the integrated firms, particularly if current market conditions continue.

- *Fixed Costs (Economies of Scale)*. Typically, firms with bigger furnaces are capable of achieving lower per unit costs due to economies of scale.[18] There are significant differences in capacities of blast furnaces and BOFs across different integrated facilities.

---

[17] U.S. specialty steel producers also use electric furnaces and are heavily reliant on scrap. These producers are not typically classified as "minimills." Transportation costs are less relevant for specialty steel production than for carbon steel production, as the costs of the major physical inputs used for producing specialty steels – unlike those used for producing carbon steels – dwarf the transportation costs for those inputs.

[18] While there may be variation across specialty steel producers as well, both at the electric furnace stage and in subsequent secondary ladle furnaces, in which the crude steel is further processed, the volumes of production associated with these firms tends to be significantly smaller than those involving carbon steel products.

- *Fixed Costs (Sunk Costs vs. Recurring/Persistent Fixed Costs)*. Some of the U.S. firms that have experienced bankruptcy filings and even shutdown of operations, have incurred huge costs associated with construction and/or startup of facilities which could not be shouldered through production and sales in the current depressed market.[19] Some of these facilities are likely to be modern, up-to-date, "efficient" operations, which could very well be acquired and operated by other companies. On the other hand, the large legacy costs of many integrated producers reflect the fact that numerous retirees are being supported by a single active employee. Capacity in the firms most affected by this problem, in the absence of measures to address such costs, appear less likely to remain in operation than capacity in other firms.[20]

- *Transportation Expenses*. U.S. producers generally maintain an advantage over many foreign mills in that the U.S. mills tend to be closer to their markets.[21] This is especially true of a number of minimills, but, with relatively few exceptions, most U.S. integrated producers are also not located very far from many of their major customers.

- *Overall Profitability*. Numerous factors affect profitability, including but not limited to the cost items listed above and the state of the actual markets for the products in question. While steel prices have been seriously depressed across all major product lines, certain product lines have experienced greater price suppression than others, due at least in part to high levels of imports. Regardless of the causes, persistently low levels of profitability and repeated use of bankruptcy filings may indicate the existence of some relatively inefficient operations.[22]

Compliance with Environmental Standards

The costs of current and future compliance with environmental requirements were examined as part of our analysis. With respect to differences among U.S. firms, the already scheduled tightening of environmental standards is likely to increase costs for those coke-producing integrated producers with older coke furnaces. This will result in additional costs for such producers, as a result of required modernization and/or shutdown.

---

[19] Some companies that fall in this category could include TRICO (which Nucor reportedly plans to acquire and re-open); North Star's Kingman, Arizona bar and wire rod mill; and Qualitech's Special Bar Quality (SBQ) mill.

[20] Note, however, that equipment may often be dismantled and moved to other facilities, and even shipped overseas.

[21] As indicated earlier, freight costs for specialty steel products are small relative to total costs for such products and, hence, movement costs are less relevant for producers of those products.

[22] Of course, such factors may also occur as a result of injury resulting from dumped and or subsidized imports.

Reliance on Private Capital Markets

The U.S. steel industry has been highly dependent on private capital markets. Generally, the relatively few instances of direct U.S. government support for operations have not contributed to increases in capacity but, rather to the location of the facility (*e.g.*, incentives to build in one locale versus another).[23] To the extent that existing firms express a need to rely upon additional non-private financing or assistance, such reliance may be an indicator of relative inefficiency. The United States has a well-developed, functioning bankruptcy process, which often results in eventual shutdown of facilities; the absence of such a real bankruptcy process in some other countries may encourage the continued operation of plants that are not viable over the long-term, often with some form of government support.

[23] Discussion of government regulations that may hinder closure of inefficient excess capacity appears below.

IV. ACTIONS THAT HINDER THE CLOSURE OF UNECONOMIC CAPACITY

Because market forces are the primary factor shaping the U.S. steel industry, government impediments to the closure of excess inefficient steelmaking capacity are not significant in the United States. As demonstrated below, government intervention in the U.S. steel market has either been of limited scope or has been with the aim of promoting market forces.

National/Federal laws and regulations

Some have argued that the Emergency Steel Loan Guarantee Program may affect the closure of uneconomic capacity. In 1999, the U.S. Congress passed the Emergency Steel Loan Guarantee Act which established a temporary program to guarantee loans for steel companies engaged in restructuring and modernization. The program authorizes federal loan guarantees of up to $1 billion, with a maximum of $250 million per company. In 2001, Congress amended the loan guarantee program by extending the maturity date for loans guaranteed under the program to the year 2015. The amendment also provides that the portion of a loan covered by a guarantee may be increased from the previous level of 85%, up to 90% or 95%, provided that no more than $100 million in total loans may be outstanding at any one time under program guarantees at each of the higher guarantee rates, nor may any single loan at each higher rate be greater than $50 million.

The Emergency Steel Loan Guarantee Act requires the program administrator to take into account the prospective earning power of the borrower together with the nature and character of the security pledged in making a determination that there is a reasonable assurance of repayment of the loan sought to be guaranteed. In compliance with the law, the Board has always evaluated the Borrower's prospective earning power in making a determination whether there is a reasonable assurance of repayment of the loan sought to be guaranteed.

In practice, the steel loan guarantee program has had virtually no effect on the structure of the steel industry in the United States. Only one steel company, Geneva Steel of Utah, has obtained a loan from a financial institution under the loan guarantee program. In June, 2000, the Emergency Steel Loan Guarantee Board approved a partial guarantee for a loan of $110 million for Geneva Steel. On November 14, 2001, Geneva Steel announced that it was temporarily shutting down its steelmaking operations and was contemplating the filing of a petition for bankruptcy if business conditions did not improve and satisfactory arrangements for financial restructuring of the firm could not be negotiated with its creditors. The Emergency Steel Loan Guarantee Board has approved six other loan guarantees for steel companies, but none of those companies have been able to obtain private financing under the terms of the guarantees.

Another area in which the United States government has intervened in the market is through its trade remedy laws. While the United States is not alone in its use of antidumping and countervailing duty measures, it has been argued that such instruments insulate U.S. companies from imports and

thereby inhibit restructuring. That would arguably be the case if today's steel markets were free of subsidized production (or excess capacity left on world markets as a result of previous subsidies or government intervention) and if steel industries in other countries faced the same pressure from capital markets as do the steel makers in the United States. However, this is not always the case.

The U.S. government's enforcement of its antidumping and countervailing duty laws, as allowed under World Trade Organization and other multilateral rules, is designed to address government or industry practices that distort steel markets worldwide and undermine the value of tariff concessions agreed to in previous multilateral trade negotiations. Rather than inhibiting adjustment, these mechanisms encourage rationalization in markets where market forces do not otherwise prevail. Dumping would not be possible absent market distortions that prevent market-driven price arbitrage in the exporting country. Similarly, offsetting government subsidies represents an attempt to restore market conditions that would have prevailed in the absence of government intervention in the market, as well as assuring that the reasonable expectations of parties to prior tariff negotiations are fully met.

Thus, while antidumping and countervailing duty laws inhibit imports, this does not necessarily imply (nor is it clearly empirical) that the application of such measures prevent market-driven adjustment by the U.S. steel industry. It is the United States' strong expectation that restoring market forces to the global steel trade should result in the decreasing application of trade remedies, both in the United States and elsewhere.

Similarly, with respect to U.S. safeguard actions under section 201 of the Trade Act of 1974, while the law authorizes the President to intervene on behalf of U.S. industries substantially injured by a surge in imports, it is not clear that such measures necessarily inhibit restructuring. First, the contrary argument ignores that such import surges are often the result of previous government interventions in the market. Second, safeguard measures, in a WTO context, are undertaken for a limited period of time for the express purpose of allowing the industry facing a surge of imports to adjust to those circumstances. Lastly, the U.S. safeguard law, section 201, is expressly designed to condition any U.S. government action on the development of an industry plan for adjustment. Thus, implemented in a manner consistent with a WTO member's obligations, safeguard actions can encourage, rather than inhibit adjustment, despite the interim effect on imports.

State and Local laws and regulations

In the past twenty years, there have been a number of programs at the state and local level to attract investment by steel companies in certain communities. However, these programs have not resulted in the creation of excess capacity because they were aimed at attracting investment to a specific location after a company has already committed to make the investment. None of these programs fund the continued operations of inefficient capacity. In comparison to the overall capital investment made in U.S. steelmaking capacity, these programs are relatively small in scope.

Like many regional and municipal governments around the world, many U.S. state and local governments provide various benefits to companies in an effort to generate economic activity in their region. The principle forms of state and local incentives include the following:

- **Tax abatements**, in which states and localities agree not to levy property, income, and other forms of taxes for a designated period.
- **Land**, provided on favorable terms, commonly in designated industrial zones.
- **Training assistance**, designed to provide new or existing manufacturers with an expanded pool of skilled labor.
- **Infrastructure**, including road, rail, and port facilities, as well as water and sewer lines.
- **Financing**, in the form of loans and development bond issues.

With few exceptions, these incentives have been made broadly available to all types of industry. They have also been made available regardless of the nationality of the company ownership. A number of steel companies that have received state and local incentives have international ownership, including Nucor-Yamato (U.S.-Japanese ownership) , IPSCO, and Dofasco (Canadian ownership), BHP-North Star (Australia-U.S. ownership), as well as Trico (U.S.-Japanese-European ownership).

In 1999, the United States provided the OECD Steel Committee with information on economic incentive programs that 6 states had provided to steel companies between 1994 and 1999.[24] One example included in that notification was a package of incentives provided by the State of Iowa to Ipsco for the construction of a new plate mill with a total cost of $360 million. The incentives included a direct cash outlay by the State of Iowa of $3 million and additional tax incentives of $70 million over a period of 20 years. Many state and local government leaders have begun to urge the elimination or reduction of economic incentive packages.

Legacy costs

One potential impediment to the further reduction of excess inefficient capacity in the United States is the current and potential health and pension liabilities for retired workers incurred by certain U.S. producers. Commonly known as legacy costs, many believe that these expenses have prevented further rationalization and consolidation in the U.S. industry.

Legacy costs are a significant burden to many integrated steel producers in the United States that reduced the number of their employees in the past twenty years as the companies restructured. As a result, these companies are now responsible for pension and healthcare benefits of retirees who outnumber the number of active employees by more than a 4 to 1 ratio. Of these costs, retiree healthcare costs are the largest financial burden to the companies. These costs pay for health care

[24]See OECD Document DSTI/SU/SC(99)30/ADD6.

costs of retirees not yet eligible for current federal government health insurance programs (*i.e.*, Medicare), as well as for supplemental benefits for those who are covered by these current federal government health insurance programs.

U.S. steel companies have reported liabilities for retiree healthcare benefits on their balance sheets in excess of $8 billion dollars for approximately 400,000 retirees. Representatives of the U.S. integrated steel industry have stressed the importance of legacy costs as a major impediment to both consolidation and capacity closure. In the case of acquisition, legacy costs may be a large liability for potential targets. In the case of capacity closure, union contracts often contain provisions for early retirement that are triggered upon closure, thereby increasing an already large legacy-cost burden.

V. PROPOSALS TO ENCOURAGE CLOSURE OF INEFFICIENT CAPACITY

As demonstrated above, the U.S. steel industry has undergone significant adjustment and rationalization due to market forces. This reflects the U.S. government's general policy that the market should be the ultimate arbiter in determining how the U.S. steel industry adjusts to become more competitive and reacts to the ever changing steel market. In light of the overall success of this approach, the U.S. government's primary policy for encouraging the further reduction of any excess capacity is to continue to allow market forces, including the bankruptcy process, to freely act upon the U.S. steel industry and to not interfere in the operation of the market. The commitment of the U.S. government to carry on this policy constitutes a significant contribution to reducing excess capacity because of the past effectiveness of market forces in rationalizing the U.S. steel industry.

To complement this policy, the U.S. government has adopted and is considering other policy proposals which some argue would further encourage capacity reductions. The most notable of these polices is the U.S. government's call for the U.S. steel industry to readjust and rationalize itself if remedies are granted in the ongoing investigation of certain steel imports under Section 201 of the Trade Act of 1974. The purpose of granting import relief under Section 201 is to facilitate efforts by a domestic industry to make a positive adjustment to import competition. Accordingly, the U.S. government has requested the U.S. steel industry to provide detailed adjustment plans to show how it intends to become more competitive if relief is granted. These plans have been and continue to be carefully reviewed by numerous U.S. government agencies for their adequacy in restructuring the U.S. industry.

Another policy initiative to encourage the closure of excess capacity concerns the Emergency Steel Loan Guarantee Program. This program is administered by the Emergency Steel Guarantee Loan Board, which has promulgated regulations establishing the criteria that must be examined in determining whether to grant a loan guarantee. On October 19, 2001, the Emergency Steel Guarantee Loan Board amended these regulations to require the Board to consider the commitment of an applicant to "eliminate or reduce economically unviable capacity."[25] By linking the ability of a steel company to obtain a loan guarantee to its commitment to reduce excess capacity, this amendment constitutes another policy aimed at shrinking excess capacity

The U.S. government is also actively considering other policy proposals to further encourage the reduction of excess capacity. As discussed above, the "legacy costs" carried by several U.S. steel producers are recognized by many industry observers as a severe impediment to the further consolidation of the U.S. steel industry. Companies that carry these expenses are unattractive for merger or acquisition because the amounts of their legacy costs greatly offset the values of their

[25] Emergency Steel Guarantee Loan Program; Third-party Enhancement of Guarantees; Refinancing and Transfer Restrictions, 66 Fed. Reg. 53078, 53080 (Oct. 19, 2001).

underlying assets. For example, the legacy costs for LTV and Bethlehem Steel have been estimated to be as high as $1.5 billion and $3 billion, respectively.

In order to remove the impediment of legacy costs to further rationalization, some U.S. steel producers have proposed that the U.S. government should assume at least a portion of their legacy costs. These producers and industry observers assert that the assumption of legacy costs by the U.S. government would significantly promote consolidation and an attendant decrease in excess capacity. The U.S. government is closely examining this proposal and there are several policy issues that must be considered before a decision can be made. Furthermore, legislation would most likely be necessary to implement a decision to assume legacy costs. The assumption of legacy costs by the U.S. government has been included in several proposed bills before Congress.[26]

The above policies demonstrate the U.S. government's commitment to promoting the reduction of excess capacity. The combination of allowing market forces to shape the U.S. steel industry and adopting policies aimed at encouraging such reductions is a significant contribution to solving the world-wide problem of excess capacity. Moreover, the U.S. government will continue to consider additional market-based policies that will further contribute to solving this problem.

[26]See Steel Revitalization Act of 2001, S. 957, 107th Cong. (2001); Save the American Steel Industry Act of 2001, S. 910, 107th Cong. (2001); Steel Revitalization Act of 2001, H.R. 808, 107th Cong. (2001).

VI. ESTIMATE OF PROJECTED CHANGES IN NET STEELMAKING CAPACITY

Based on our examination of recent historical and current market conditions in the U.S. steel industry, information contained in the ITC staff report from the section 201 investigation, responses to our two industry questionnaires issued as part of this analysis[27] and discussions with outside industry analysts and industry and union representatives, we conservatively estimate that ***net*** U.S. steelmaking capacity is likely to decline between **[ ]**[28] metric tons through 2002 compared to its 2000 level. This translates into a net reduction of **[ ]**[29] percent. While this estimate was based on our own internal proprietary analysis, it was checked against, and corresponded to estimates of net capacity reductions by private industry analysts.

In calculating our estimate, we considered both actual and announced plant closures. We also factored in planned capacity additions, announced purchases of closed facilities and the projected reopening of some portion of the steelmaking capacity that is currently not operating. In evaluating whether certain facilities that have ceased operations might reopen, we looked at a variety of factors including the age and layout of the facility, technology used, access to raw materials, needed maintenance and modernization and the current conditions in the market segment the facility or company served. However, should these projected reopenings or capacity additions fail to materialize, or if further steelmaking capacity is shut down beyond current or announced plant closures, the net reduction in U.S. steelmaking capacity could be much larger.

These projections are not commitments by the U.S. government, or its producers, individually or otherwise. Instead, they are the U.S. government's aggregate prediction, based on a compilation of information from numerous public sources, of what individual firms are doing or are expected to do for their own commercial reasons.

---

[27]The list of companies to which the questionnaire was sent is included in Appendix A.

[28]Information in brackets is not for public distribution.

[29]Information in brackets is not for public distribution.

APPENDIX A
Steel Capacity Questionnaire Recipients

Questionnaire Recipients

A Finkl & Sons
A.B. Steel Mill, Inc.
Acme Metals Inc.
AK Steel
Allegheny Technology
AmeriSteel Corp
Arkansas Steel Associates
Auburn Steel Company, Inc.
Bayou Steel Corporation
Berg Steel
Beta Steel Corporation
Bethlehem Steel Corporation
Birmingham Steel Corporation
Border Steel, Inc.
California Steel Industries
Calumet Steel Co.
Carpenter Technology
Cascade Steel Rolling Mills, Inc
Charter Manufacturing Co., Inc
Chicago Heights Steel
CitiSteel USA Inc
Commercial Metals Steel Group
Connecticut Steel Corporation
Corus Tuscaloosa
Crucible Specialty Metals
CSC Ltd
Duferco-Farrell
First Miss Steel
Franklin Industries
Gallatin Steel
Geneva Steel Corporation
GS Industries
Gulf States Steel Inc. – Gulf States Reorganization Group
IPSCO Steel Inc.
IRI International Corp – Specialty Steel Division
Ispat Inland Inc
J & L Specialty Steel Inc
J&L Structural, Inc.
Jersey Shore Steel Co.
Jindal United Steel Corp.

Kentucky Electric Steel, Inc
Keystone Consolidated Industries
Laclede Steel Co.
LeTourneau Inc - Steel Group
Lone Star Steel
LTV Steel Corporation
MacSteel
Marion Steel Company
McDonald Steel Corp.
National Steel Corporation
North American Stainless LP
North Star Steel Inc. (a division of Cargill)
North Star BHP Steel Ltd
Northwestern Steel and Wire Co.
NS Group, Inc.
Nucor Corporation
Nucor-Yamato Steel Co
Oregon Steel Mills, Inc.
Qualitech Steel Corp
Republic Technologies
Riverview Steel Corp.
Roanoke Electric Steel Corp.
Rouge Steel Company
Sheffield Steel Corporation
Steel Dynamics Inc
Steel of West Virginia, Inc
TAMCO
The Timken Co.
Trico Steel Co
TXI (Chapparral Steel Corp,)
USS-Posco
USX Corporation
Vision Metals
W. Silver, Inc.
WCI Steel Inc
Weirton Steel Corporation
Wheeling-Pittsburgh Corporation