

## **Risk Assessment of Ferrous Metallurgy Exports**

### **I. The importance of metallurgy for Ukraine**

#### ***I.1. Contribution to growth and exports<sup>1</sup>***

With about 33 m tons of steel production Ukraine belongs to the group of the ten largest steel producers in the world. Ferrous metallurgy was the first branch of Ukrainian industry to regain growth after the start of transformation. Steel production grew continuously since 1995. After the record growth in 2000, growth of production declined to about 5% in 2001.

The share of the steel industry production in total industrial gross production increased from 11% in 1990 to 27.4% in 2000. However, these data, as often used in the press, overestimate the importance of metallurgy to the economy. More informative are data on value added, which better reflects the contribution to the welfare of the economy. By this measure, metallurgy's share in industry was slightly more than 11% in 2000, while only 5% of GDP is created in the steel industry. From this one might estimate that in 2000 metallurgy contributed to the growth of GDP about one percentage point, which accounted for 18% of total GDP growth of 5.8%. However, in 2001 only about 0.25 percentage points or 3% of the 9% GDP-growth can be attributed to the steel and iron production.

More than 60% of total production was exported in the last years. Ukraine is the 4<sup>th</sup> biggest steel exporter in the world after Japan, Russia and Germany. Over 6 billion US-\$, almost half of total export earnings, are generated in the metallurgy sector. However, the net contribution of the steel industry to Ukrainian foreign earnings is somewhat lower. Although the imports of ferrous metals amount to only 5% of domestic production, the branch needs imports for production, in particular energy. About 30% of the gross production has to be spent on energy inputs, which partly have to be imported.

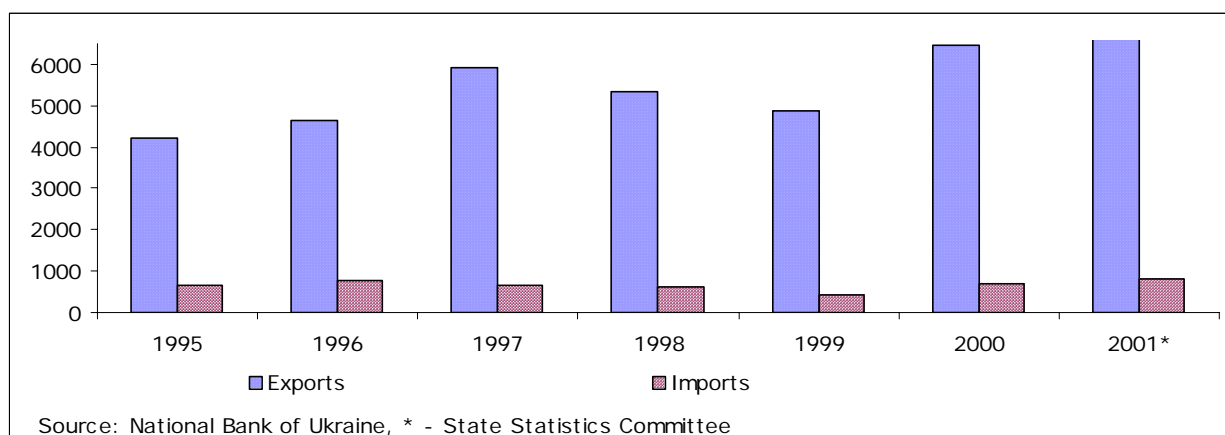
Although the trend of ferrous metal exports in the last 5 years was clearly upward, there was a significant volatility in the exports (see Figure 1). Export earnings in the past changed as much as 0.5 to 1 billion \$ from year to year.

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<sup>1</sup> The classification of industrial branches changed in 2000, therefore, the numbers might be not always comparable. The new classification metallurgy and metalworking is broader than the former category of ferrous metallurgy. In this paper we use the terms metallurgy and steel industry interchangeable.

**Figure 1**

Exports and imports of Ukrainian ferrous and non-ferrous metallurgy, USD m



### ***1.2. Employment and social aspect***

In ferrous metallurgy about 428 thousand people were employed in 2000, of which 220 thousand worked in steel production. In contrast to most other branches, employment in steel industry increased since 1995. The production and thereby the employment is highly concentrated in some regions which makes the issue of layoffs even more complicated. In several towns the steel industry is by far the biggest employer and taxpayer. Thus, any changes will meet strong resistance from a part of the population as well as the local governments. In addition, metallurgy is an important consumer of the troubled coal industry. A noticeable shedding of labour or the reorientation towards different (foreign) suppliers would directly affect the mining industry. This intensifies the problems surrounding reorganisation and restructuring of ferrous metallurgy.

Already for this reason, the local and central government will carefully watch the development in this industry. Moreover, the state still holds significant shares in the metallurgical enterprises and used in the past many other channels to influence business plans and day-to-day operations of the steel producers. A strong political lobby from the heartland of the Ukrainian steel industry has considerable power in Parliament.

## **II. An efficiency puzzle**

Despite the better than average performance of metallurgy compared to total industry in the last couple of years, there remains the question whether this development is sustainable. Many facts raise doubts that the financial results of the industry truly reflect the economic value for the development of the Ukrainian economy. In particular puzzling are the question how an industry, which by many economic indicators is lagging far behind its international competitors, can be a successful exporter and producer. Notwithstanding the quantitative importance for the Ukrainian economy as outlined above, the final answer on the value of this industry depends on its contribution to value added after the financial results are corrected for all types of distortions (subsidies).

### ***II.1 Outdated technology***

While in the West already in the eighties the production of raw steel by open-hearth furnace was completely abolished, this production method holds in Ukraine still a share of 50%. Even developing countries like China phased out this production method in the last years. Moreover, the share of production by the outmoded open-hearth method in total raw steel production did not decrease over the years (See Table 1). Although the use of other modern production methods as continuous casting gained a little since 1990, its application still lags far behind the world practice, which use this energy saving mode by more than 80%. Even the CIS countries have almost a twice as high share than Ukraine. Besides, in recent years the average age of the capital stock in use increased further. At the end of 1999 the depreciation rate of the existing total capital stock for ferrous metallurgy made up 57% and 63% for machinery and equipment.

Due to the old technologies and the decaying capital stock the production is extremely energy intensive. The direct costs of electricity in ferrous metallurgy increased in the last five years by 28%. The direct costs of all types of energy, however, declined by 7% during the 1996 –1999 period. But in comparison to the advances of energy saving in international steel production, the Ukrainian reduction is still small.

**Table 1**

Share of production technologies in total steel/rolled steel production, %

	1990	1995	1997	1999	2000
Oxygen furnace	40.5	42.6	47.6	47.4	46.2
Electric arc furnace	6.8	5.8	4.7	4.0	4.1
Continuous casting	7.8		19.8	19.5	

Source: Statistical Yearbook 2000, pp. 110, 463; Петракова, Т., О. Юзов. Суверенная сталь, производство и потребление металлопродукции в странах СНГ. Металл 6/2000

## **II.2 Costs and profitability**

Ukraine can rely on a strong raw material basis with respect to iron ore and coal. In addition, labour is very cheap compared to the industrialised competitors, wages amount only to 6.3% of total cost in metallurgy. But there are also several indications of low efficiency of the sector.

In an international perspective, labour productivity in the Ukrainian steel industry is extremely low. For example, Brazil with almost identical steel output as Ukraine employs only 15% of the Ukrainian workforce in this sector. While in the EU one worker produces between 50 – 60 metric tons of crude steel per year, the corresponding figure for Ukraine is less than 15 metric tons.

There is some confusion about the capacity utilisation in steel industry because of different data of the existing capacities. On the basis of a production-possibility frontier for 1996 – 1998, we estimated for the 60 largest enterprises of ferrous metallurgy an average capacity utilisation of 67% in value terms. The State Statistics Committee reported the following data (See Table 2):

**Table 2**

Capacity and capacity utilisation

	Capacity, m tons		Capacity utilization, %
	1.1.1999	1.1.2000	1999
Iron ore	77.6	77.5	61.5
Manganese ore	47.1	47.1	42.1
Pig iron	41.8	42.2	59.8
Crude steel	42.4	42.0	65.3
Rolled metal	34.2	34.0	58.6
Tubes	72.6	72.3	21.2

Source: State Statistics Committee

But even according to the Ministry of Industrial Policy, which reports a higher utilisation of 66 – 80%, the usage of capacity is below the optimal one, which is about 80%. Thus, it is very likely that the Ukrainian metallurgy could only partially recover the fixed costs at the current production level. A distinctive feature of Ukrainian metallurgy seems to be that it works at the downward sloping part of the average cost curve. This means on the one hand, that any increase in output, e.g., due to favourable demand, leads to declining unit costs and, thus,

higher competitiveness. On the other hand, reductions of production are associated with increasing average costs and lower profitability.

This is due to high fixed costs, which largely consist of energy, because furnaces have to be heated continuously, largely independent from production. Due to this scale effect we observed in the second half of the nineties expanding output with decreasing consumption of energy per ton of steel. The exact magnitude of this non-linearity cannot be assessed given the few data. However, a glance on the data of pipe production clearly shows the effect of high fixed energy costs. Consumption of energy per unit is inversely correlated with the total output, as Table 3 shows.

**Table 3**

Total production of steel tubes and energy consumption per unit of output

	1996	1998	1999	2000
Production, m tons	2.0	1.5	1.2	1.7
Consumption of equivalent fuel, kg	158.6	200.0	217.9	172.3
Consumption of electricity, kWh-hour	231.7	266.3	294.3	236.3

Source: Statistical Yearbook 2000. p. 95, 110.

Another distinguished feature of the Ukrainian metallurgy is its cost structure. As has been said above, Ukrainian steel production is extremely energy intensive. The use of energy amounts to almost 30% of total production. In Western countries the portion of energy in total production is significantly less than 10%. In general, the Ukrainian metallurgy is highly material-intensive and the share of value added in gross production is less than 20%.

Given the underutilisation and the outmoded technology, the profitability of this branch is not expected to be high. According to official data, this was true in the mid-nineties but changed to the better in 1999 and 2000. However, steel production by open-hearth furnaces was highly loss making in 2000. Nevertheless, the top four steel plants belonged to the top 10 profit makers of the Ukrainian economy. In addition, those steel producers generated the highest export revenues of all enterprises. However, after the record year of 2000 the financial results before taxation are estimated to fall in 2001 by 20% or more.

However, data on profits are plagued by several problems and were not very reliable in the past. Except for deficiencies from the (old) bookkeeping methods, profits are highly influenced by subsidies as well as by the problems of accounting for amortization.

### **11.3. Subsidisation and market forces**

In various ways metallurgy was supported by preferential treatment in the last years. In particular, the economic experiment provided for reduced tax rates on profit, which were 9% in 2000 and 15% in 2001 instead of 30%. This amounted to UAH 2.6 bn of tax gifts during the experiment (from the 2<sup>nd</sup> half of 1999 to 2001). In addition, about UAH 2.5 bn debts were written off or restructured. These tax privileges were partly compensated by the failure of the government to refund VAT to the exporters. As of 01.10.2001, the VAT refund debt to the metallurgical industry amounted to UAH 845 m. To settle the question of government tax debts, the industry was allowed to conduct mutual settlements with the budget and energy companies. At the start of 2002, the Government also allowed VAT reimbursement through gas and electricity that were seized by the STA as tax mortgage.

To sum up, the industry was supported by significant amounts of state money and, worse, the practice of non-monetary transactions was again introduced, which already in the past proved to be inefficient with far reaching, negative effects on transparency, risks and rent-seeking.

The results of the experiment are widely regarded as positive; production increased, the financial situation improved. Due to write-offs, payables against the budget decreased significantly. In addition, firms strived to pay the (reduced) taxes in time, because otherwise they were threatened to be excluded from the experiment.

At the same time receivables from the budget increased because VAT was not refunded. The relation to the budget explains most of the change of total payables and receivables of metallurgy in the last 4 years (See Table A2 in Appendix). However, in comparison to total industry receivables of metallurgy from goods and services increased in 2000 and 2001 while payables remained more constant. Data are insufficient to clarify the reasons for that. One might conjecture that this reflects the low ability for payment of the domestic customers of the metallurgy industry. However, no corresponding increase in payables in branches as machinery or construction could be detected. Another explanation rests on the policy of traders, which are heavily interlinked with the steel sector. They might try to extract more money from the industry by running up payables against the firms that they are dealing with. But one should be reminded, that because of the export earnings and therefore the relatively good liquidity position of metallurgy, the sector can be expected to give more trade credits than it receives from the domestic industry. However, in 2000 and 2001 metallurgy was a net debtor of the economy<sup>2</sup>, which absorbs rather than contributes to the liquidity of the other sectors of the economy.

Due to the non-transparency of prices and costs of energy, there might be an implicit subsidisation through energy prices. The debt ridden Ukrainian coalmines provide still a substantial part of inputs (coking coal), the supply of electricity is still highly administered, and gas prices seem to be clearly below world market prices.

The state still holds high stakes in the metallurgical enterprises, which probably reduces the intensity of competition in the industry. At least, till now none of the big producers had to leave the market, as it was observed in Europe as well as the US in the last decade. "Regulated collusion" rather than competition is also natured by the quotas and voluntary agreements imposed by the foreign trading partners. Quotas and production assignments are likely to be allocated by government to the single firms, which impedes competition and fosters non-market mechanisms. The proposal of a government-administered allocation of the "modernisation money" from tax preferences, as it is now envisaged, might also interfere with the forces of competition.

#### ***II.4 The scope and sustainability of exports***

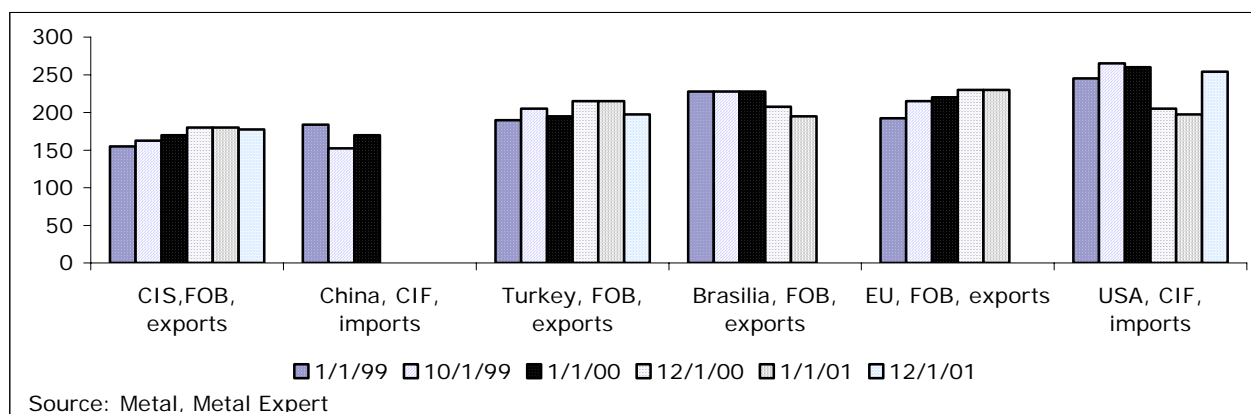
The growth of exports as seen in Figure 1 was volatile but showed an upward trend. The unit export prices for various steel products declined rapidly till 1999, which coincided with the loss making in crude steel production during this period. The recovery of prices in 2000 was probably due to a recovery of world market prices, which also led to an increase of profitability of most steel products. As Figure 2 shows, export prices for reinforced steel in the CIS and presumably in Ukraine, who is an important exporter of these steel products, were clearly below the prices most of its competitors. Chinese prices were similar to Ukrainian ones, because China produces a similar product range as Ukraine, namely raw materials and semi-finished goods. A similar picture arises if different products are considered. First of all, this is explained by the lower quality (less sophisticated steel products) of Ukrainian goods, which reflects in lower prices. In addition, it might show that CIS countries undercut the competitors' prices in order to gain access to new markets.

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<sup>2</sup> See Legeida, N. (2001): Implicit Subsidies in Ukraine: Estimation, developments and Policy Implications, IER Working paper no. 10, October 2001, p.27.

**Figure 2**

Export and import prices (fob, cif) of different countries for reinforced steel, USD/mt



### III. External risks

#### III.1. Foreign demand

The most important markets for Ukrainian steel products are the Middle East (30% of exports) and South East Asia (about 30% of exports). Half of steel exports go to 7 countries: China, Russia, Turkey, Taiwan, USA, Italy and Bulgaria. As a newcomer to the world steel market, Ukraine won market shares in the above-mentioned regions in the last couple of years. Accordingly the exports were driven by the growth of the importing countries. The worldwide slowdown of growth in 2001 also affected Ukrainian steel exports, which declined by 1.5% in 2001. Low growth is projected to continue in 2002. USA and Europe are expected to grow only slightly. Also, growth in Middle East will not pick up next year. Only the advanced countries in Asia might show a better growth performance than in 2001. Especially the market of China seems to be robust, and Taiwan is expected to grow again in this year. But, the main importers of Ukrainian steel products in these regions (China, Taiwan and Turkey) also belong to the world biggest producers of steel. Thus, a reduction of internal demand in these countries may result in a decline in Ukrainian exports, because those countries will in first case rely on domestic products and only excess demand will be satisfied from outside sources. Yet according to the projections of demand in different regions, a small growth of Ukrainian steel exports in 2002 seems possible. If worldwide growth will pick up in the second half of 2003 a clear stimulus for Ukrainian exports can be expected.

#### III.2. Losing competitiveness

But the outlook for the Ukrainian steel industry in medium term does not only depend on the worldwide growth prospects. The Ukrainian steel industry also succeeded in last years to win market shares abroad from former suppliers. However, Ukraine was not the only country that emerged strongly on the world market. Russia, China, and India are also new competitors on the world market. Ukraine has to prove himself in competition against the new as well as the established steel suppliers in the world market. This will likely be a competition over productivity. There is an oversupply of steel capacities in the world and international endeavours strive to reduce the worldwide capacities. Price competition, which currently is backed by plenty of capacities, will in future be much more governed by advances in productivity. Actually, Ukraine is competing on the markets for simple steel products. These products could be exported to the US as well as EU because the domestic production in these regions concentrates on more sophisticated products. This is different to the Ukrainian exports to developing countries, e.g., China, which mainly produce the same product range as the Ukrainian steel firms. Thus, the competition is mainly among the producers of lower quality products.

In addition, internal issues of Ukraine might weaken the competitiveness of metallurgy. Firstly, there is the issue of rising prices of energy and energy tariffs. In the medium term, these costs will definitely increase and hurt the metallurgy as it stays as energy-intensive as it is now. Secondly, there is a constant real appreciation of the exchange rate, which reduces the export earnings.

### ***III.3. Anti-dumping and tariffs***

Another important factor is the development of the rules of world steel trade, which is characterised by variety of non-competitive practices and state interventions. Governments rightly or wrongly attempt to protect domestic production. Anti-dumping procedures occurred more often with respect to steel products than for any other goods. Newcomers on the world market are in particular the target of such import-restricting measures. Given that the adherence to strict market rules of Ukrainian metallurgy production can be doubted, the worldwide over-capacity in steel, and the non-membership of Ukraine to WTO, the exclusion of Ukrainian steel exports from some local markets is a real threat, which the policy should account for.

In spring 2002 USA introduced an 8-30% tariff on steel imports, except from the NAFTA countries Canada and Mexico. According to the experts' estimations, this may cause several millions of steel that are now imported by US to go to other world markets. The EU as well as other steel producers are prepared to block a surge of imports from the former suppliers of the USA. These trade restrictions will also hurt Ukraine, although its main export markets are outside the US and EU. Competition in the other regions of the world will drastically increase and profit margins will fall if former exports to EU or US are redirected to the remaining open markets.

Unsurprisingly, Ukraine already had to experience in the last years strong measures against its exports. So far antidumping investigations have been or are being conducted in the USA, Canada, EU, Venezuela, China, India, Mexico, Turkey, Thailand, Indonesia, etc. The major accusations during the antidumping procedures comprise dumping<sup>3</sup> (e.g., average steel price at US market in 2000 was \$ 300, while the average steel price of the Ukrainian steel was \$ 230), government subsidies and other factors mentioned above. The following gives a brief account of the import restricting regulations with respect to Ukrainian steel imports.

#### *North America:*

Ukraine's steel exports are likely to be restricted by the antidumping procedures and growing state support to the US producers and import restrictions for all producers<sup>4</sup>. There was a substantial decrease in the Ukrainian steel exports to the USA in 2001. Exports dropped by 80% due to quotas, which Ukraine had to agree in face of looming anti-dumping procedures. The vulnerability of export earnings became also apparent in the struggle over the American demand for enacting a copyright legislation on CDs, which among others was backed by the threat of prohibitive tariffs on metal imports from Ukraine.

#### *EU:*

EU set quotas for Ukrainian steel of 1.7% of the total Ukrainian steel exports or about 272 thousand tons per year in 2001. The EU-Ukraine agreement on the trade of some steel products was prolonged (Brussels, December 5-7). EU agreed to expand steel quota for Ukraine by 34.7% in 2002 with an annual growth by 2.5% in the coming years. EU will not use antidumping measures against the agreed goods and quantities.

In October 2000, the EU directive became effective, according to which Ukraine was excluded from the list of the countries with a non-market economy in the boundaries of antidumping

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<sup>3</sup> In previous years antidumping investigations could be explained by a poor marketing system of the producers and intermediaries. Foreign traders lowered the prices and could re-export the products to other countries than specified in the contracts. The managers of the enterprises justified this policy from the social point of view (high employment level at the metallurgical enterprises). By dumping in such a way, metallurgical enterprises were guilty themselves of the investigations. Very often the production, priced lower than the cost value, was exported illegally. This was also regarded as an indication of money laundering by the firm-intermediaries.

<sup>4</sup>The USA far exceeds other countries in the number of special and antidumping investigations carried out against Ukrainian steel producers. Nevertheless it conducts the investigation, as a result of which Ukraine may be admitted to be a country with a market economy. Canada and EU have already done that.

legislation of EU. Antidumping investigations will be conducted against particular Ukrainian enterprises, not using anymore third markets as a reference.

On December 18 2001, the Cabinet of Ministers approved an act "On the list of goods, exports and imports of which are subjected to quotas and licensing in 2002", which describes some quotas for metallurgical products according to the corresponding international agreements. According to the act, the following categories of metal production are subjected to licensing: ferrosilicomanganese to the EU members, separate kinds of flat rolled metal to the USA and Indonesia, steel rope to the EU members. Besides, different kinds of flat rolled metal are subjected to quotas: USA – 139106 metric tones, Indonesia – 15432. The quota on certain types of seamless pipes from ferrous metals to the members of the European Community was preserved in the amount of 30000 tons. Antidumping procedures in the USA and EU can be most harmful due to the relative stability of these markets, high prices and lower price volatility.

### CIS countries

In December 2001 Russia and Ukraine prolonged an agreement on the supply of Ukrainian pipes to the Russian market as of May 2001 on the yearly quota in the amount of 620 thousand tons, which is about 150 thousand tons less than exports in 2000.

The volume of exports to EU, USA and Russia are constrained by an upper bound but at the same time they are less vulnerable to discretionary actions of these countries. Uncertainty about trade restrictions remains with respect to other main importers of Ukrainian steel.

### **III.4 Effects of changing metallurgy exports on the trade balance**

To get an idea of the impact of a decline of ferrous metallurgy exports on the economy, we present some rough estimates that are also intended to remind about the basic linkages of this sector to the whole economy. Assuming a hypothetical change (decline or increase) in ferrous metallurgy exports of UAH 100 m, the following effects<sup>5</sup> are expected:

If all energy needed to produce the additional export would be imported, then out of the 100 additional exports 47 units has to be spent for additional imports. Thus, the net effect of a change of the ferrous metal export on the trade balance is much smaller than the original change in metal exports. If in contrast it were assumed that no additional imports are generated by the metal exports, this would mean that the domestic energy has to increase production by about UAH 65 m. Most likely, the truth is in between these scenarios. Changes of net exports earnings resulting from a 100 m UAH decrease or increase of exports will be about UAH 60 – 70 m.

These calculations are based on the assumption that energy and other inputs to ferrous metallurgy are always a constant portion of output. However, as said before, in Ukraine one must assume that the inputs per unit of output decrease with the increase of production. If the steel production declines, energy consumption per unit will increase. This means that a decline of ferrous metallurgy exports will negatively affect the trade balance of more than the above estimated UAH 60 – 70 m.

### **IV. A risk-reducing strategy: The coincidence of internal and external risk**

In assessing the external risks for Ukrainian steel companies, one has to keep in mind, what is a likely strategy for a prosperous steel industry in Ukraine. The basic point of such a strategy is that reducing the risk of export shortfalls is intrinsically linked to the progress of domestic production. Most probably, a risk reducing strategy consists of the following items:

1. Capacity has to be adjusted downwards by scrapping outmoded production technologies. This means to find solutions for financing closures because the exit costs (reduction of employment) will be not negligible as stated in the first chapter.
2. There is a trade-off between capacity reduction and internal demand. The higher the internal demand, i.e., growth of the Ukrainian economy, the slower or less reduction of

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<sup>5</sup> The effects are calculated for the branch "metallurgy and metalworking" using the I/O table of 2000. We thank Ms. Kryuchkova and Mr. Bogdan from the Institute for Economic Forecasting in Kiev for their help.



capacity is necessary. Domestic growth and consumption of steel will be crucial for the international negotiations on capacity reduction which targets mainly export capacities.

3. World steel trade is characterised by a variety of non-competitive practices and state interventions. International attempts to reduce these practices are under way and will result in more pressure on the countries to abstain from subsidies, state assistance and anti-competitive behaviour. To avoid measures of deterrence from potential importers, Ukraine has to comply with the rules of the game, which, however, will strongly influence the current practice of support of Ukrainian metallurgy.
4. The less state interventions are tolerated internationally, the more the competition at the world market will be governed by advances in productivity. Advantages in competition will be linked to the successful upgrading of the production profile (more final products, better quality) as well as issues of standardization.

An economic strategy of Ukraine to reduce the vulnerability of its steel exports and enhance the outlook for the domestic production has to find the adequate mix from the above components. Obviously there are several trade offs among those elements of the economic strategy. The basic component of the strategy would be to bring in line capacity and output, which would reduce the unit costs significantly. However, striving for an increase of production (with declining unit costs) on the basis of the existing overcapacities through aggressive exports at low prices will significantly increase the risk of countervailing actions of importers, given the increasing international awareness against unfair trade. A combination of capacity reduction and upgrading production quality would aim for a higher value added content of production and can also lower the high social costs of downsizing the industry.

#### ***IV.1. Improving cost efficiency***

Achieving higher efficiency can conceptually be dissolved into two steps: first, adjusting capacity (downward) to production in order to achieve minimum average costs and secondly, by improving the technology. Although in practice both processes are interlinked, they will be discussed separately. In both cases the unit costs of production will be reduced, which is not only important to stay competitive in the world market but also to increase the demand at home. It has to be reminded, that the recovery of Ukrainian metallurgy is likely to depend to a large extent on a growing domestic market.

##### *IV.1.1. Reducing capacity and managing exit*

Adjusting the capacity downwards is indeed a formidable task, because it will involve the lay-off of a quite large number of workers. But at the same time it will also greatly reduce the fixed costs and, thereby, improve the profitability of the industry. For this end, any programme of downsizing has to be accompanied by a strategy of exit, which supports the laid-off workers. This process is likely to be costly and to take several years. However, at the OECD High-Level Meeting on Steel it was expressed that international institutions may be requested to consider the feasibility of providing financial assistance in this process. Ukraine can point out that support for financing closures will result not only in big energy savings but in addition in a reduction of pollution.

Ukraine finally agreed at the OECD in participation in the worldwide reduction of capacity. According to the State programme, capacities will be reduced by 5.75 m t for pig iron and 5.91 m tons for steel till 2010. This reduction should definitely be concentrated on the outmoded technologies and will, thereby, improve the average efficiency of the industry.

##### *IV.1.2. Restructuring*

The arguments for improving the technology are similar, namely, energy saving and reduction of pollution. By scrapping the most outmoded types of production, the technological level of the industry will be automatically enhanced. In addition, in the long run risks against shortfalls in export are best countered by enhancing the quality of products. This would also increase the share of value added in production as well as decrease the vulnerability against volatility of prices of low end products. However, for some time Ukraine will stay a producer of more simple products, as raw materials and semi-finished products.

Up to now the Ukrainian metallurgy could only attract very few foreign investments. But new management and money can produce a turnaround even of old Soviet-type metallurgy

enterprises as has been shown by Ispat-Karmet, a steel plant in Kazakhstan. Foreign investment will be attracted from the prospects of the domestic Ukrainian steel market. If domestic demand from sectors, as construction, continues to grow, foreign investors will come, while foreign investments into exports from Ukraine are less likely.

Except for foreign money, financial means from Ukraine are of course necessary. In recent years the firms themselves financed by far the majority of investments. This is likely to be also the case in the next years. The regulations about the continuation of the economic experiment will provide some state funds for modernisation. Important will be, however, the mechanism of allocating this money. Past experience sorrowfully demonstrated that the Ukrainian administration is not very successful in restructuring and governing large industrial enterprises. A downsizing of the industry by restructuring and consolidation will leave more money for the survivors of this process. Market forces and the industry itself - with minimum intervention of the state - should largely gear such consolidation process. Voluntary agreements including the control of adherence to it can be reached by the enterprises of the industry themselves. This scheme that worked well in several western countries tries to reduce the state involvement even in times of major structural changes.

Unfortunately, the worldwide attempts to tackle overcapacity by agreements on the state level (rather than via the markets) are not helpful for the transition of Ukrainian steel industry to more competition. Allocation of quotas as well as assigning capacity reductions to firms will likely strengthen the role of the state. The major task will be to introduce as much as possible market forces in the process of consolidation and increase transparency in the financial transactions of the sector.

#### ***IV.2. Multilateral agreements and co-operation***

Given the dependence of the metallurgy sector on exports, any plans to restructure and support this sector has to be co-ordinated with the international community. Only with such a co-ordination Ukraine can itself protect from measures against its exports. The international community of steel-makers seems to be prepared to accept country specific measures of support if they are internationally agreed. On the other hand, the possibilities of restricting steel imports are vast, given the strong involvement of the Ukrainian state in the industry and the low transparency of the business in this area. The handling of the steel industry is certainly also a major yardstick for the accession to WTO. In addition, the rules of the game as codified in the PCA have to be honoured. In addition to these organisations that cover trade issues in general there should be a close co-ordination with the international steel associations. It is the national steel association that in each country lobbies strongly for safeguards against foreign competition, and, therefore, their arguments and interests should be incorporated in the Ukrainian strategy. It has to be kept in mind that the new entrants on the steel market, as Ukraine, are probably the biggest loser if tendencies towards "trade wars" prevail. Thus, the government should play a leading role that Ukrainian producers take part in joint internationally co-ordinated moves to secure free trade in this sector. It is in the very own interest of Ukraine to limit state intervention as well as non-transparent dealings in the business of the Ukrainian metallurgy in order to secure the access to the world market as well as to avoid the waste of state money.

V.V., N.L.

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## Appendix

**Table A1**

Summary statistics of Ukrainian metallurgy, based on I/O tables

<b>Ferrous metallurgy 1999</b>	Actual, UAH bn	Share in gross production, %
Gross production	31.8	100
Value added	5.7	17.9
Export	19.4	61.0
Import	1.7	5.3
<b>Metallurgy &amp; metal working 2000</b>		
Gross production	44.4	100
Value added	10.7	24.1
Export	32.3	72.7
Import	5.7	12.8

Source: Input-output tables, State Statistics Committee

**Table A2**

Ukrainian export prices, \$/ton

	1997	1998	1999	2000	2001
Pig iron	152.5	122.5	90.4	110.8	102.3
Ferroalloys	502.9	483.9	430.6	419.0	410.0
Scrap	121.6	100.2	65.2	84.5	71.7
Pig iron granules and powder	359.5	363.2	357.1	364.8	377.1
Plain iron and steel	326.3	335.9	68.0	466.7	378.8
Half-finished products from plain iron and steel	233.9	175.8	136.1	149.8	154.2
Flat section, hot-rolled	243.4	228.3	161.3	187.5	160.9
Cold-rolled mill products	315.5	273.6	218.1	251.4	213.4
Flat section, not less than 600 mm, clad	539.2	487.4	426.8	429.1	369.4
Flat section, less than 600 mm, not clad	322.2	270.3	181.5	227.5	189.3
Flat section, less than 600 mm, clad	725.9	494.7	470.2	780.1	507.3

Source: State Statistics Committee

**Table A3**

Payables and receivables of ferrous metallurgy

	1.1.99	1.1.00	1.1.01	12.1.01
<b>Actual, UAH m</b>				
Receivables				
Enterprise	5026.2	7003.5	7967.8	10236.2
Overdue	2574.8	2666.9	2815.9	4152.5
Goods	3497.4	3950.6	3984.4	6276.7
Overdue	2036.5	1800.5	2057.1	3238.6
Budget	140.6	262.9	699.6	1128.5
Overdue	57.6	66.2	273.5	361.3
<i>Payables</i>				
Enterprises	13381.6	13608.2	12831.9	13363.4
Overdue	8138.8	6001.6	4927.8	5019.6
Goods	7620.3	7149.5	6988.8	7268.6
Overdue	5119.6	4292.8	3691.6	3385.3
Budget	1415.8	459	460.0	160.8
<b>Share in total industry</b>				
<i>Receivables</i>				
Enterprise	0.117	0.106	0.138	0.151
Overdue	0.110	0.070	0.092	0.118
Goods	0.112	0.085	0.097	0.133
Overdue	0.113	0.060	0.079	0.115
Budget	0.181	0.257	0.347	0.375
Overdue	0.209	0.247	0.580	0.527
<i>Payables</i>				
Enterprises	0.205	0.151	0.145	0.156
Overdue	0.192	0.108	0.100	0.114
Goods	0.204	0.142	0.152	0.143
Overdue	0.198	0.125	0.130	0.114
Budget	0.185	0.043	0.036	0.029
Overdue	0.196	0.035	0.026	0.011

Source: State Statistics Committee