RESTRUCTURING OF INDUSTRIAL ECONOMIES IN COUNTRIES IN TRANSITION: EXPERIENCE OF UKRAINE

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The necessity of restructuring in the Ukrainian industrial sector is caused by a number strategic social and economic problems to be resolve, namely:

- overcoming deep economic crisis;
- transition the economy to the state of stable growth:
- implementation of a concept for socially oriented economy;
- achievement proper place in the international cooperation and labor division that correspond the Ukrainian economic potential.

The achievement structurally balanced economy and its integration in the world economy is one of the main goals of the transition to the market. Under the condition that economic structure of Ukraine deeply distorted by extremely high concentration of basic industries with technical and technological level lagging behind the needs of modern economic and social development pattern, there should be made deep and sound structural changes in the industrial sector of the country.

Ways of transition to the market are greatly predetermine by the initial state of the economy, its sectorial structure, effectiveness territorial labor division, trade, system of economic and social priorities, political situation as well as the readiness of the population to adopt principles of market relationships.

Given extremely based heavy industry structure the restructuring over the transitional period in Ukraine should be oriented primarily on the development of consumer goods sector with the emphasis energy conservation technologies, demonopolization and strengthening competition.

Basic structural changes in countries with well developed market economy are determined by the objective economic situation with due influence of state policy on the process. Under the previous practice of management in the former socialist countries structural changes were accomplished either through the adoption some major investment projects at the highest political level or through some ministerial decisions on capacity growth for operating enterprises as well as new constructions without due attention paid to innovation and deep restructuring of the existing capacities. In both cases the state declared structural policy was implemented in the way as it was favorable ministries and departments. Regardless of the formally expressed priorities for the planned economy its structure was practically developed through so called “from achieved on” method. There was no explicit mechanism that would allow to build structural policy for different levels of management with due emphasis to the economic and social criteria of the development.

The development of centrally planned system of management with its growing scope of production and complexity of economic relationships brought finally the loss of any rational economic strategy on the side of institutions for central planning. It was manifested in chaotic pattern of economic and social development, emergence numerous distortions among and within the sectors, morally and physically aging of industrial apparatus, chaotic, ineffective and prolonged its renovation, appearance in some cases excessive jobs on the one hand and unemployment on the other, legging behind the world scientific and technical level of production, week development of social infrastructure, imbalances in existing volume of money in turnover and goods in the market, inflation and standard of living decline.

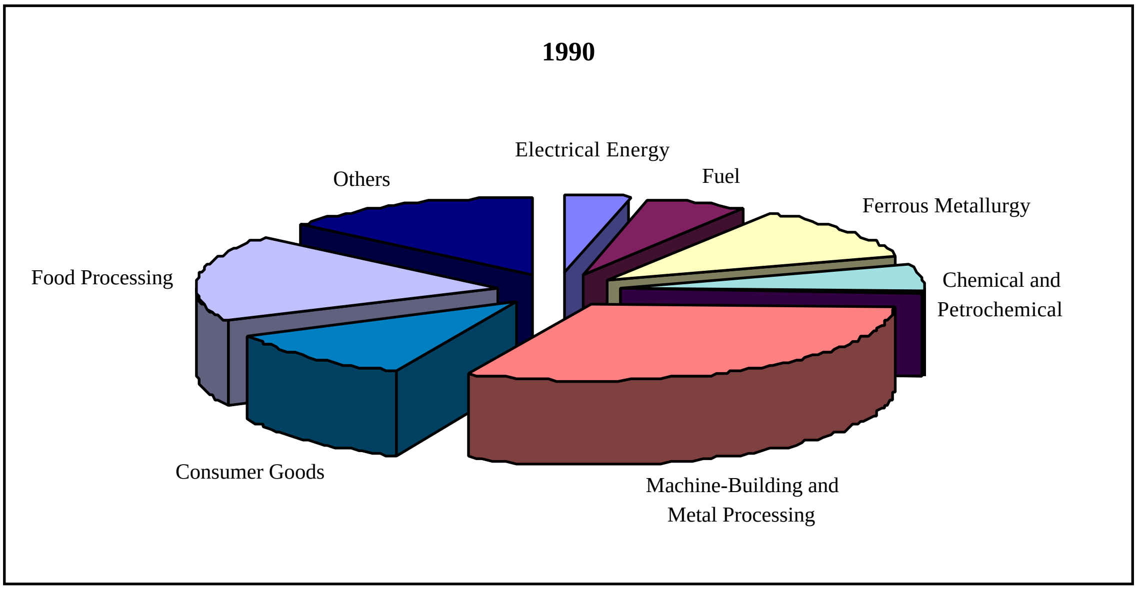
After proclaiming its independence Ukraine have not gotten read of such state of affairs in the economy, on the contrary they has been aggravated by the brake of economic cooperation with other republics of the Soviet Union as well as by the general growth of national and political problems.

The situation is being deep because of instability in transitional period and loses of manageability in the economy with lack of market tools for stabilization in the Ukrainian economy which is still strongly tied to the economy of other republics of the former Soviet Union.Chaotic structural changes brought some serious loses for the industrial potential of the country and aggravated its social problems.

The major structural factor with its deep and severe influence on the proportions of the Ukrainian economy is the economic crisis which is currently in progress in the country. The crisis is manifested mainly in a deep decline of output. The slump is caused by numerous factors and does not improve but on the contrary brings growing distortions in the structure of the Ukrainian economy (Table 1; Chart 1).

Table 1: Structure of Industrial Sector of Ukraine, per cent

	1990	1991	1992	1993	1994	1995	1996	1997
Industry - total	100	100	100	100	100	100	100	100
Electrical Energy	3,2	3,6	6,4	9,4	11,5	11,0	12,7	12,6
Fuel	5,7	3,8	14,3	8,5	11,2	13,2	12,1	11,1
Ferrous Metallurgy	11,0	9,9	22,7	16,8	19,9	21,8	21,9	23,4
Chemical and Petrochemical	6,0	5,9	6,7	6,0	6,9	7,4	7,6	6,7
Machine-Building and Metal Processing	30,7	26,4	18,6	19,8	17,0	16,1	14,7	15,4
Consumer Goods	10,8	12,3	6,7	6,1	4,3	2,8	2,1	1,7
Food Processing	18,6	24,4	13,6	19,7	17,1	15,1	16,1	17,2
Others	14,0	13,7	11,0	13,7	16,1	12,6	12,8	11,9



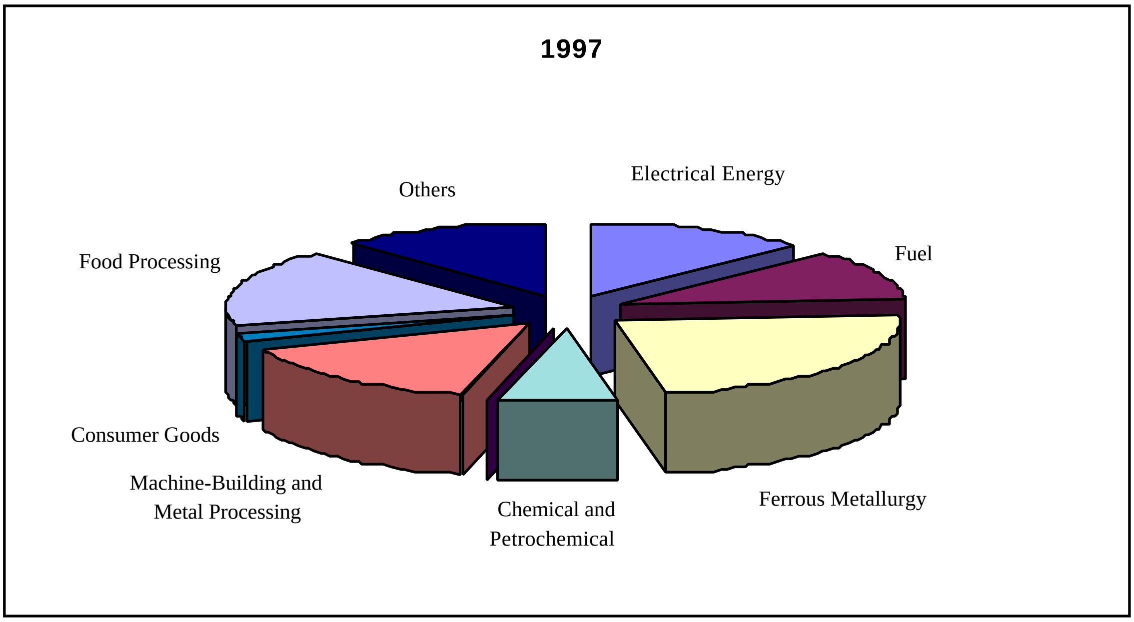


Chart 1: Structure of Industrial Sector of Ukraine

From 1991 till now the slump has practically touched all the industrial sectors. The most severe decline one could observe in the consumer good sector (47 per cent in 1994, 33 per cent in 1995, 25 per cent in 1996), building materials (36 per cent in 1994, 28 per cent in 1995, 34 per cent in 1996), wood and wood processing sector (35 per cent in 1994, 17 per cent in 1995, 19 per cent in 1996), ferrous metallurgy (24 per cent in 1993, 29 per cent in 1994, 12 per cent in 1996). A quite specific situation was in the machine-building industry that in 1993 was a slide growth (6 per cent) with the dramatic change in the dynamic to the deep slump of 43 per cent in 1994 and its continuation in 1995 - 24 per cent and in 1996 - 29 per cent (Tables 2, 3). In 1994 the industrial output of Ukraine became practically equal to the one of 1975, compared in stable prices.

Table 1: Industrial Output of Ukraine by Sectors

(increase (+), decrease (-), per cent to previous year)

	1990	1991	1992	1993	1994	1995	1996	1997
Industry - total	-0,1	-5,0	-6,0	-8,0	-28,2	-12,0	-5,1	-1,8
Electrical Energy	0,7	-4,0	-6,0	-6,0	-12,5	-6,0	-7,0	-2,6
Fuel	-5,0	-11,0	-14,0	-23,0	-17,2	-10,0	-7,0	4,5
Ferrous Metallurgy	-4,0	-12,0	-10,0	-24,0	-28,8	-5,0	12,0	7,7
Machine-Building and Metal Processing	1,0	4,0	-4,0	6,0	-42,9	-24,0	-29,0	-3,6
Chemical and Petrochemical	-1,0	-7,0	-13,0	-25,0	-26,4	-9,0	-3,4	-0,6
Wood and Wood Processing	2,0	2,0	1,0	-3,0	-34,9	-17,0	-19,0	-5,1
Building Materials	-2,0	1,0	-4,0	-15,0	-36	-28,0	-34,0	-7,9
Consumer Goods	0,4	-3,0	5,0	-13,0	-47,4	-33,0	-25,0	-5,2
Food Processing	0,7	-13,0	-15,0	-12,0	-19,7	-13,0	-7,0	-14,6

Table 3: Industrial Output of Ukraine by Sectors

(per cent to previous year)

	1990	1991	1992	1993	1994	1995	1996	1997
Industry - total	99,9	95,0	94,0	92,0	71,8	88,0	94,9	98,2
Electrical Energy	100,7	96,0	94,0	94,0	87,5	94,0	93,0	97,4
Fuel	95,0	89,0	86,0	77,0	82,8	90,0	93,0	104,5
Ferrous Metallurgy	96,0	88,0	90,0	76,0	71,2	95,0	112,0	107,7
Machine-Building and Metal Processing	101,0	104,0	96,0	106,0	57,1	76,0	71,0	96,4
Chemical and Petrochemical	99,0	93,0	87,0	75,0	73,6	91,0	96,6	99,4
Wood and Wood Processing	102,0	102,0	101,0	97,0	65,1	83,0	81,0	94,9
Building Materials	98,0	101,0	96,0	85,0	64,0	72,0	66,0	92,1
Consumer Goods	100,4	97,0	105,0	87,0	52,6	67,0	75,0	94,8
Food Processing	100,7	87,0	85,0	88,0	80,3	87,0	93,0	85,4

As it was declared by the Deputy-Ministry of Economy of Ukraine Leonid Minin we had not just a decline but a catastrophic reduction of output in the final goods production over the last few years. There are left in the chemical industry 37 per cent, wood processing - 33 per cent, consumer goods - 22 per cent, machine-building - about 20 per cent, machine-tool construction - only 7 per cent that of the level of 1990.

According to the official statistics the industrial output in 1997 was only 48 per cent that of the one in 1990. Neither of the industrial sector, except for electrical generation, did not achieve the 50 per cent that of the level of 1990. The greatest slump was registered in the consumer goods industry, 22 per cent of the level of 1990, construction materials - 23 per cent, machine- building - 31 per cent, foodstuff - 36 per cent operating capacities. (Table 4; Chart 2).

Table 4: Industrial Output of Ukraine by Sectors

(per cent to 1990)

	1990	1991	1992	1993	1994	1995	1996	1997
Industry - total	100	95,0	89,3	82,2	59,0	51,9	49,3	48,4
Electrical Energy	100	96,0	90,2	84,8	74,2	69,8	64,9	63,2
Fuel	100	89,0	76,5	58,9	48,8	43,9	40,8	42,7
Ferrous Metallurgy	100	88,0	79,2	60,2	42,9	40,7	45,6	49,1
Machine-Building and Metal Processing	100	104,0	99,8	105,8	60,4	45,9	32,6	31,4
Chemical and Petrochemical	100	93,0	80,9	60,7	44,7	40,6	39,3	39,0
Wood and Wood Processing	100	102,0	103,0	99,9	65,1	54,0	43,7	41,5
Building Materials	100	101,0	97,0	82,4	52,7	38,0	25,1	23,1
Consumer Goods	100	97,0	101,9	88,6	46,6	31,2	23,4	22,2
Food Processing	100	87,0	74,0	65,1	52,3	45,5	42,3	36,1

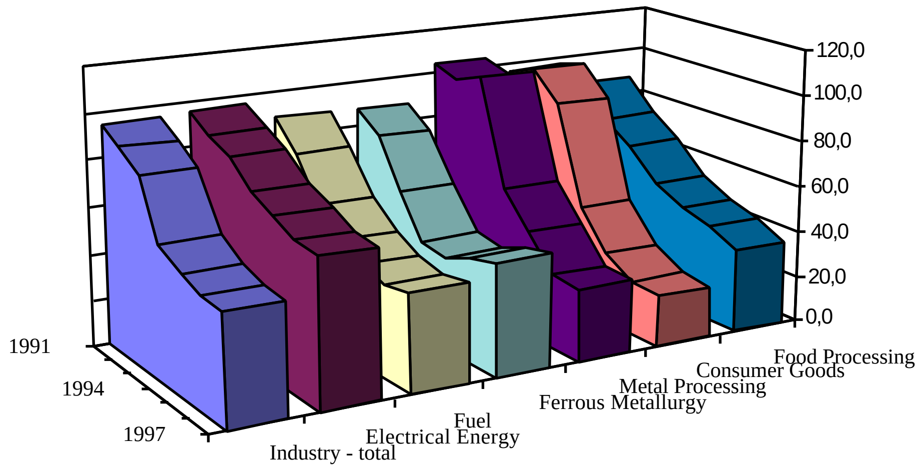


Chart 2. Industrial Output of Ukraine by Sectors, per cent to 1990

The decline in the Ukrainian industry is stipulated by the compound complex of economic and political factors in which problems of structural changes are not the last ones. One has to indicate that the general trend in growth rates decline was appeared even at the end of 1970-s and the beginning of 1980-s. In different sectors of industry the evidence of the decline was different and depended on a number of factors such as the obsoleteness of fix capital, investment, subsidies and financial support. By 1989 the decline of output in the fuel industry had reached 2 per cent, ferrous metallurgy - 0.8 per cent, electric power generation - 0.6 per cent. Those negative trends in the economy objectively showed the necessity of effective structural policy which would be in the consent with the current economic needs.

The reduction of output has not brought any positive changes in the Ukrainian economic structure and high-tech industries as well as the ones producing consumer goods have suffered more then the other sectors of the Ukrainian economy.

Changes in sectorial proportions of capital that happened over the last years can not be assess as the great ones and they caused mostly by physical obsoleteness of fix capital rather then any goal oriented measures to form an optimal structure of the Ukrainian economy. For example, at the moment that consumer goods and foodstuff processing industries suffer from a deep decline the share of fixed capital of the industries is being consciously reduced without obvious attempt to restore the production with the obvious domestic market. At the same time one can observe the growth of the share for the heavy industries that aggravates the raw material orientation of the Ukrainian economy. Among the sectors of basic industries we can see the growing percentage of the fuel and power generating industries (from 13.4 per cent in 1989 to 18.5 per cent in 1996). The reduction of fixed capital in other sectors, in the machine-building for instance, is caused by conversion of military industrial complex (from 27.6 per cent in 1989 to 22.3 per cent in 1996). The similar picture is in the metallurgical sector, chemical and petrochemical (by 0.2 per cent and 0.7 per cent correspondingly).

Investment in the Ukrainian economy (Tables 5, 6, 7) has reduced more than in fife times, compared to the one in 1990 (similar prices). The same investment slump has happened for the government investment.

Table 5: Main Indicators of Ukrainian Economy

(increase(+), decrease(-), per cent to previous year)

	1990	1991	1992	1993	1994	1995	1996	1997
GDP	-4,0	-8,7	-9,9	-4,2	-23,0	-11,8	-10,0	-3,2
Industrial Output	-0,1	-4,8	-6,4	-8,0	-27,3	-12,0	-5,1	-1,8
Consumer Goods Output	5,8	-5,1	-9,4	-15,9	-25,0	-17,8	-20,2	-21,7
Investment	1,9	-7,1	-36,9	-10,3	-22,5	-35,1	-22,0	-7,5
House Building	-10,6	-17,2	-2,3	-12,8	-18,0	-14,2	-22,0	
Retail Trade	11,5	-9,7	-18,0	-35,4	-13,6	-13,9	-5,1	5,9
Services	7,6	-20,7	-20,2	-22,9	-3,3	-32,3	-14,2	-5,8

Table 6: Main Indicators of Ukrainian Economy

(per cent to previous year)

	1990	1991	1992	1993	1994	1995	1996	1997
GDP	96,0	91,3	90,1	95,8	77,0	88,2	90,0	96,8
Industrial Output	99,9	95,2	93,6	92,0	72,7	88,0	94,9	98,2
Consumer Goods Output	105,8	94,9	90,6	84,1	75,0	82,2	79,8	78,3
Investment	101,9	92,9	63,1	89,7	77,5	64,9	78,0	92,5
House Building	89,4	82,8	97,7	87,2	82,0	85,8	78,0	
Retail Trade	111,5	90,3	82,0	64,6	86,4	86,1	94,9	105,9
Services	107,6	79,3	79,8	77,1	96,7	67,7	85,8	94,2

Table 7: Main Indicators of Ukrainian Economy

(per cent to 1990)

	1990	1991	1992	1993	1994	1995	1996	1997
GDP	100	91,3	82,3	70,6	54,3	47,9	43,1	41,7
Industrial Output	100	95,2	89,1	82,0	59,6	52,4	49,8	48,9
Consumer Goods Output	100	94,9	86,0	72,3	54,2	44,6	35,6	27,9
Investment	100	92,9	58,6	52,6	40,8	26,4	20,6	19,1
House Building	100	82,8	80,9	70,5	57,8	49,6	38,7	
Retail Trade	100	90,3	74,0	47,8	41,3	35,6	33,8	35,8
Services	100	79,3	63,3	48,8	47,2	31,9	27,4	25,8

Simultaneous to general investment reduction there is a reduction of budget appropriations for the development of the Ukrainian economy. The dynamic for share of budget appropriations for the economy was as following:

in 1990 - 49.3 per cent, in 1991 - 45.7, in 1992 - 37.2, in 1993 - 19.3, in 1994 - 32.9, in 1995 - 9.6, in 1996 - 10.1, in 1997 - 11.7 per cent.

Investment distribution by industrial sectors of Ukraine are illustrated in Tables 8, 9, 10 and Chart 3.

Table 8: Industrial Investment in Ukraine by Sectors
(compared in stable prices, million. griven)

	1990	1991	1992	1993	1994	1995	1996	1997
Industry - total	18450	15159	11149	9681	8953	6121	5055	
Electrical Energy	1540	1021	700	1072	667	969	776	
Coal Industry	2592	2958	2965	1509	1328	1179	1009	
Oil Industry	396	335	243	581	831	326	280	
Gas Industry	1125	644	199	701	548	288	475	
Peat Industry	9	5	3	2	2	2	1	
Ferrous Metallurgy	1650	1575	1449	1248	1198	1035	792	
Nonferrous Metallurgy	174	148	95	84	68	66	61	
Chemical and Petrochemical	1034	856	660	689	1440	700	280	
Machine-Building and Metal Processing	5405	3340	1828	895	687	351	269	
Wood and Wood Processing	360	305	137	81	76	74	52	
Building Materials	884	965	520	298	202	114	97	
Glass and Clay	60	68	53	18	28	16	18	
Consumer Goods	879	561	510	424	429	73	65	
Food Processing	1101	1158	925	970	1449	533	487	

Table 9: Industrial Investment in Ukraine by Sectors
(per cent to previous year)

	1991	1992	1993	1994	1995	1996	1997
Industry - total	82,2	73,5	86,8	92,5	68,4	82,6	
Electrical Energy	66,3	68,6	153,1	62,2	145,3	80,1	
Coal Industry	114,1	100,2	50,9	88,0	88,8	85,6	
Oil Industry	84,6	72,5	239,1	143,0	39,2	85,9	
Gas Industry	57,2	30,9	352,3	78,2	52,6	164,9	
Peat Industry	55,6	60,0	66,7	100,0	100,0	50,0	
Ferrous Metallurgy	95,5	92,0	86,1	96,0	86,4	76,5	
Nonferrous Metallurgy	85,1	64,2	88,4	81,0	97,1	92,4	
Chemical and Petrochemical	82,8	77,1	104,4	209,0	48,6	40,0	
Machine-Building and Metal Processing	61,8	54,7	49,0	76,8	51,1	76,6	
Wood and Wood Processing	84,7	44,9	59,1	93,8	97,4	70,3	
Building Materials	109,2	53,9	57,3	67,8	56,4	85,1	
Glass and Clay	113,3	77,9	34,0	155,6	57,1	112,5	
Consumer Goods	63,8	90,9	83,1	101,2	17,0	89,0	
Food Processing	105,2	79,9	104,9	149,4	36,8	91,4	

Table 10: Industrial Investment in Ukraine by Sectors
(per cent to 1990)

	1991	1992	1993	1994	1995	1996	1997
Industry - total	82,2	60,4	52,5	48,5	33,2	27,4	
Electrical Energy	66,3	45,5	69,6	43,3	62,9	50,4	
Coal Industry	114,1	114,4	58,2	51,2	45,5	38,9	
Oil Industry	84,6	61,4	146,7	209,8	82,3	70,7	
Gas Industry	57,2	17,7	62,3	48,7	25,6	42,2	
Peat Industry	55,6	33,3	22,2	22,2	22,2	11,1	
Ferrous Metallurgy	95,5	87,8	75,6	72,6	62,7	48,0	
Nonferrous Metallurgy	85,1	54,6	48,3	39,1	37,9	35,1	
Chemical and Petrochemical	82,8	63,8	66,6	139,3	67,7	27,1	
Machine-Building and Metal Processing	61,8	33,8	16,6	12,7	6,5	5,0	
Wood and Wood Processing	84,7	38,1	22,5	21,1	20,6	14,4	
Building Materials	109,2	58,8	33,7	22,9	12,9	11,0	
Glass and Clay	113,3	88,3	30,0	46,7	26,7	30,0	
Consumer Goods	63,8	58,0	48,2	48,8	8,3	7,4	
Food Processing	105,2	84,0	88,1	131,6	48,4	44,2	

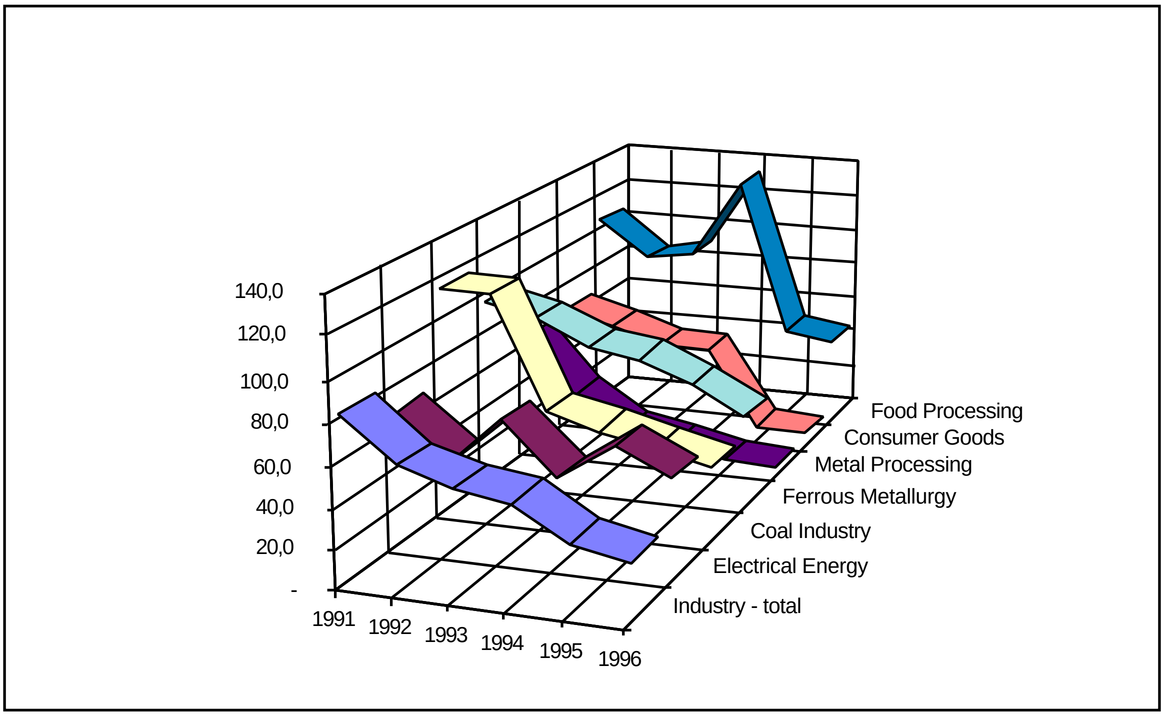


Chart 3. Industrial Investment in Ukraine by Sectors, per cent to 1990

Gross Domestic Product, the main indicator for economic development of the country which describes the output of goods and services for the final consumption of the society was estimated for Ukraine in the volume of 92.5 billion griven in 1997. In comparison with 1996 it was reduced by 3.2 per cent i.e. 68 per cent that of the one in 1990. The value added was reduced to the same extend. In 1997 per capita GDP in Ukraine was equal to 1825 griven, that is approximately 980 US dollars according the Ukrainian National Bank exchange rate. The parity of consuming capacity for the per capita GDP in Ukraine is equal, by some expert assessment, to 1.2 - 1.8 thousands US dollars. The decline of GDP growth rate considerably diminished lately (in comparison with 1996 in 3.1 times) and now it is the lowest from the beginning of economic crisis in Ukraine. It might be ascribed to the serious progress in the reduction of inflation as a factor of economic stabilization.

Regardless of some reduction in the decline it has not been overcame entirely. There are some proofs of that. By 1997 consumer goods output dropped to 28 per cent that of the level of 1990, house construction to 39 per cent, retail trade to 36 per cent, services to 26 per cent.

There has been different rate of decline for different sectors of the economy. The degree of the decline in machine-building in 1.5 times greater than the total average for the industry. Machine-building sector has been a hostage of inflation and price growth in raw material, energy producing sectors, constantly landing them major part of its circulating capital, forced lose so needed resources for its own production. The share of energy in total costs of machine-building output equals 25 to 35 per cent. Because the machine-building industry is one of the main sectors which creates scientific and industrial potential of the country the decline of its output, especially high-tech products, gives a negative trend in structural changes in Ukrainian economy and accompanied by a general growth of share for heavy industries.

The output of metallurgical sector has dropped by 50.9 per cent over the crisis period. This decline is the result of the slump along the whole technological circle of production in the sector. From 1990 by now the output of main products in the ferrous metallurgy has been reduced more than by half, steel pipes by more than three quarters. The major factors determined the slump were as the following:

- fuel and energy deficit;
- lack of circulating capital;
- coal output reduction, especially coke types of coal.

The main consumer for the ferrous metallurgy products is the domestic machine-building but the consumer suffers from the lake of circulating capital and high prices for the metal products. Currently the cost of metal products for some enterprises considerably exceeds the average world prices. For example, the cost of pig iron achieved the level of 180-200 US dollars per ton while the world price equals 100-120 US dollars, the price for slab of Enakievo Steel Meal reached 262 US dollars whereas the world price for the same products is 205-215 US dollars per ton.

Given the general reduction of output in the metallurgical industry over the last few years one can admit some improvement of quality structure of the metallurgical products. The share of advanced steel producing technologies such as electric and oxigance methods exceeded 50 per cent in the total steel output that is much greater than it used to be before the restructuring. It may be assessed as a positive trend on the hand of market tools. Under the condition of total reduction of output in the sector there is a comparative growth of high quality and competitive types. Nonetheless according to the world experience one can not rely entirely on spontaneous positive influence of the factors and account on automatic achievement the optimal result. This is completely true as far as Ukrainian metallurgical industry is concerned. Measures for overcoming the crisis have to be base on a deep and comprehensive restructuring the entire industry rather then on monitoring positive shifts in the output structure while the decrease in the industry is being in progress.

Main directions of structural changes in the ferrous metallurgy, being traditional on the nature, are determined, first of all, the needs and the potential of domestic and foreign markets. They are as following:

- raising the share of electric furnace method of steel production (currently its share is less than 3 per cent), continued casting (in Ukraine it makes only 2 per cent of the total output, while the world average is 24 per cent);
- expansion the output of cold-rolled plate, first of all for carriage-building and car production;
- output of various types of steel plates and nonferrous metal plates, pipes of small diameter, compound profile rolled iron, precise casting products.

The directions called above determine improvement the structure of output for metal products and raise their quality. In addition, measures of restructuring for the ferrous metallurgy may resolve some other problems as well, first of all, the improvement of ecological state in regions with well developed metallurgical industry, the reduction of fuel and energy consumption. The reduction of coke consumption at the expense of closing down some obsolete blast furnaces for instance will make useless the number of coke and chemical plants with the reduction capacities of those in operation. The main stream for the ferrous metallurgy industry restructuring remains to be the reconstruction and technical renovation of currently operating capacities. The main cause of such a choice for the restructuring is the critical state of productive capacities, which are warned out at some enterprises by 60-70 per cent, and backward technological level of productive circles, especially blast furnace and steel melting processes.

One of the serious problems of the development of metallurgical complex is the deficiency of circulating capital that cause the problem of mutual payments. Unprofitability of the most of enterprises does not allow them to renovate their circulating capital at the expense of their own sources. Short-run loans, as the experience of few last years show, do not make any radical improvement of the financial situation at the enterprises. Because of that, the reduction of production costs, first of all those associated with energy consumption, which make up to 45-48 per cent of the total costs, is the most actual problem to be resolved. The reduction of energy consumption in its turn is directly predetermined by the restructuring of the branch of industry itself.

There is a trend of stability for the share of high energy consuming technologies producing primarily intermediate not final goods. The share of fuel industry has grown from 3.8 per cent in 1991 to 11.1 per cent in 1997, the ferrous metallurgy - from 9.9 to 23.4 per cent. At the same time the machine-building has dropped from 26.4 to 15.4 per cent.

The biggest slump has happened in manufacturing sector and those branches of industries which are working for consumer goods and foodstuff markets. The domestic machine-building industry has stopped its production almost completely that caused the distraction of domestic market for electrical appliances and other household machines.

Assessing the situation in the machine-building industry of Ukraine one can say that one of its peculiarities remains to be the distortion of its production circle, and the commodity-money turnover. As before there are big structural disparities, the decline of efficiency and the growing instability at the most of the enterprises.

According to the data of the Ministry of Statistics of Ukraine the output of machine-building and metal processing in 1996 was 49 per cent, and in 1997 - 48 per cent that of 1990’s. The share of machine-building and metal processing industry in the total industrial output has dropped from 30.7 per cent to 15.4 per cent, that is in two times, over the 1990-97 period. Especially sharp reduction of output has happened in such industries as metal-cutting equipment production, 8.1 per cent that of the level of 1990, blacksmith’s and press equipment production - 12.8 per cent, cars - 4.4 per cent (Tables 11, 12, 13).

Table 11: Machine-Building Sector Output, thousands pieces of equipment

	1990	1991	1992	1993	1994	1995	1996	1997
Electrical Units	10,200	8,800	5,500	4,500	2,700	2,800	2,000	
Metal-Cutting Machines	37,000	37,700	33,900	27,500	9,200	6,000	3,000	
Blacksmith's Machines	10,900	10,800	7,900	6,100	2,500	1,400	1,400	
Shaft-sinking and Tunneling Machines:								
Tunneling Machines	0,847	0,757	0,647	0,535	0,311	0,213	0,187	
Elevating Machines	0,242	0,189	0,168	0,880	0,004	0,200	0,500	
Loaders	0,790	0,650	0,420	0,100	0,017	0,320	0,260	
Electric Locomotives	0,703	0,384	0,336	0,285	0,183	0,146	0,171	
Cars	156,000	156,000	135,000	140,000	93,590	58,700	6,900	

Table 12: Machine-Building Sector Output, percents to previous year

	1990	1991	1992	1993	1994	1995	1996	1997
Electrical Units		86,3	62,5	81,8	60,0	103,7	71,4	
Metal-Cutting Machines		101,9	89,9	81,1	33,5	65,2	50,0	
Blacksmith's Machines		99,1	73,1	77,2	41,0	56,0	100,0	
Shaft-sinking and Tunneling Machines:								
Tunneling Machines		89,4	85,5	82,7	58,1	68,5	87,8	
Elevating Machines		78,1	88,9	523,8	0,5	5 000	250,0	
Loaders		82,3	64,6	23,8	17,0	1 882	81,3	
Electric Locomotives		54,6	87,5	84,8	64,2	79,8	117,1	
Cars		100,0	86,5	103,7	66,9	62,7	11,8	

Table 13: Machine-Building Sector Output, percent to 1990

	1990	1991	1992	1993	1994	1995	1996	1997
Electrical Units		86,3	53,9	44,1	26,5	27,5	19,6	
Metal-Cutting Machines		101,9	91,6	74,3	24,9	16,2	8,1	
Blacksmith's Machines		99,1	72,5	56,0	22,9	12,8	12,8	
Shaft-sinking and Tunneling Machines:								
Tunneling Machines		89,4	76,4	63,2	36,7	25,1	22,1	
Elevating Machines		78,1	69,4	363,6	1,7	82,6	206,6	
Loaders		82,3	53,2	12,7	2,2	40,5	32,9	
Electric Locomotives		54,6	47,8	40,5	26,0	20,8	24,3	
Cars		100,0	86,5	89,7	60,0	37,6	4,4	

Among the main reasons causing the slump in manufacturing sector may be called the following:

- liberalization of prices and, as the result, their rapid growth for energy resources;
- payments crisis, which creates the situation of severe deficit for money in turnover curbing the production process as a whole;
- sharp reduction of the demand in the shrank Ukrainian market;
- difficulties in acquiring imported raw materials that had especially severe consequences for cotton and textile industries.

The most dramatic developments have happened in high-tech branches of industry that actually supposed to be the core for economic growth. The growing deindustrialization of the country and the threat of irreversible destruction of the country's scientific and technological potential become apparent exactly in the high-tech industries. The output of the sector has practically dropped for all the types of products with the reduction of major ones from 25 to 50 per cent that of the level of the early 1990s, that is the reduction for more than one third. For some types of products the slump in output is just catastrophic. For example, the production of robots was 1.8 per cent in 1996 that of the level of 1990. And for the most high-tech industries the slump means really irreversible degradation of technological processes. The domestic producers intensively lose their market positions under the severe competition in the world market.

Owing to a short-sighted conversion concept one can witness grave consequences in the military-industrial complex development which actually concentrates scientific potential and high-tech technologies.

The decline output of durable goods output has been reduced beginning in 1991 and has embraced practically the complete list of goods produced (Tables 14, 15, 16; Chart 4).

Table 14: Durable Goods Output in Ukraine, thousands units

	1990	1991	1992	1993	1994	1995	1996	1997
TVs	3774	3616	2569	1919	821	315	118	
Radios	777	892	812	797	302	125	47	
Refrigerators	903	883	838	757	653	562	431	
Washing machines	788	830	805	643	422	213	149	
Vacuum cleaners	1073	1044	868	920	405	285	114	

Table 15: Durable Goods Output in Ukraine

(per cent to previous year)

	1990	1991	1992	1993	1994	1995	1996	1997
TVs	105,0	95,8	71,0	74,7	42,8	38,4	37,5	
Radios	135,0	114,8	91,0	98,2	37,9	41,4	37,6	
Refrigerators	102,0	97,8	94,9	90,3	86,3	86,1	76,7	
Washing machines	121,0	105,3	97,0	79,9	65,6	50,5	70,0	
Vacuum cleaners	119,0	97,3	83,1	106,0	44,0	70,4	40,0	

Table 16: Durable Goods Output in Ukraine

(per cent to 1990)

	1990	1991	1992	1993	1994	1995	1996	1997
TVs	100,0	95,8	68,1	50,8	21,8	8,3	3,1	
Radios	100,0	114,8	104,5	102,6	38,9	16,1	6,0	
Refrigerators	100,0	97,8	92,8	83,8	72,3	62,2	47,7	
Washing machines	100,0	105,3	102,2	81,6	53,6	27,0	18,9	
Vacuum cleaners	100,0	97,3	80,9	85,7	37,7	26,6	10,6	

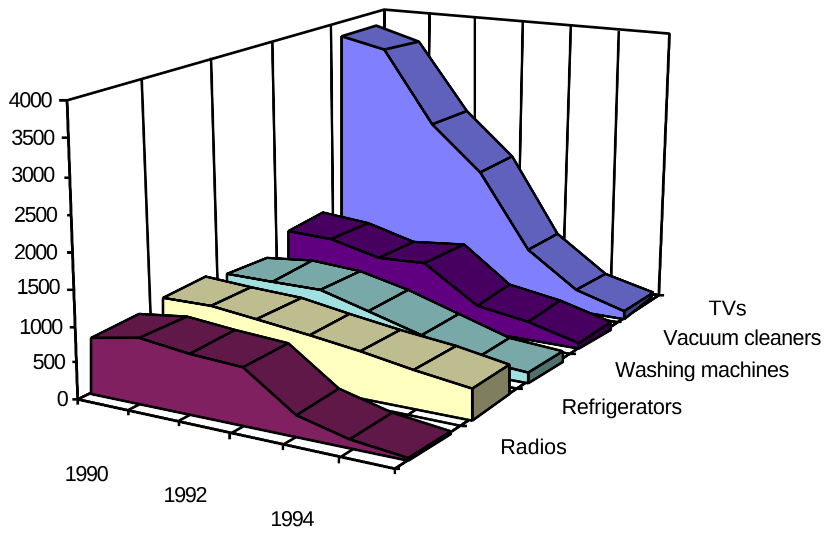


Chart 4. Durable Goods Output in Ukraine, thousands units

The reduction of output is going on in the parallel with mass filling the Ukrainian market with imported goods similar to the domestically produced ones. The process of displacement of home industry from the domestic market of durable goods is occurring currently under the severe competition and the absence of state assistance to local producers. The sharp reduction of solvency of those section of population which is the consumer of domestically produced goods even in the market saturated with imported goods market may also be regarded as a negative factor of influence on the process.

The poll made among the consumers of technologically complex consumer goods has given the major trends for the consumers’ behavior. About 70 per cent polled are intended to acquire the imported goods exclusively, at least these produced in Russia or Belorus. Each third polled would not buy any goods than to acquire Ukrainian produced ones.

The situation in the refrigerator market may be regarded as a typical example.

Under the Soviet Union refrigerators used to be goods in deficit and there were chronic imbalances in this segment of market of durable goods which manifested through disparities in the quantity and the quality of demand and supply. Nowadays the situation is being changed. Numerous companies, seven of which are domestic producers, supply the Ukrainian consumer with their products that can not be absorb because of the law population solvency.

It is paradoxical but instead of the decline in prices one can observe their growth in 1997 at 30-35 per cent in the average. The assessments made show that in case of price reduction at the level of 10 per cent the total sales for these goods would grow in Ukraine at least up to 42,000 units, and with the reduction of prices at 20 per cent it would come to more than 110,000. However, producers prefer to make strategy on possible growth of the population income instead of relying on the price reduction concept. The production costs have grown in 15,000-17,000 times from 1990 while the retail prices for the goods have raised in 18,000-22,000 times over the same period. This, in the line with rapid decline of solvency of the Ukrainian population greatly reduced the capacity of the domestic market. Because of this, the saturation with refrigerators has dropped from 88 units per 100 households in 1991 to 72 in 1997. More over, each forth refrigerator which is currently used by Ukrainian households needs replacement or should be repaired. It means that the age of refrigerators in use will shortly reach a critical level and is gradually approaching the complete worn-out steek. Most of the domestically produced brands of refrigerators can not satisfy consumers neither with their quality nor with their design. For example, the NORD Company produced refrigerators are placed at the seventh position of their quality among the similar goods produced in the CIS countries.

The sharp reduction of refrigerators supply by domestic producers in the early 1990s gave foreign companies a possibility to strengthen their positions in the Ukrainian market and to win a considerable its part comparatively easy. The population more and more prefers high quality imported appliances. Thus, given the absence of any state support for home producers and the absence of really competitive home producers in Ukraine western companies are fighting each other for the Ukrainian market.