JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
BUDAPEST CAPITAL CITY GOVERNMENT
THE REPUBLIC OF HUNGARY

THE STUDY ON THE MUNICIPAL SOLID WASTE MANAGEMENT IN BUDAPEST

FINAL REPORT
DATA BOOK

SEPTEMBER 1993

ENVIRONMENTAL TECHNOLOGIC CONSULTANT CO., LTD.
(ETC)

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I. Waste Generation and Treatment in the Capital City from 1991 through 2005

WASTE GENERATION AND TREATMENT

IN THE CAPITAL

from 1991 through 2005

Date for diagram

Base Year 1991
Waste Amount in 1991: 4,246,000 m^3 /incompact/
deposited thereof: 2,631,108 m^3
incinerated: 1,614,651 m^3

Waste Amounts from 1992 through the end of 2005

/Annex I/

Growth from 1992 through the end of 1994: 0%
Waste amount: 3 x 4,246,000 = 12,738,000 m^3
Growth from 1995 through the end of 2005: 2%
Waste amount: 52,711,000 m^3

Total from 1992 through
the end of 2005: 65,449,000 m^3 /incompact/

Treatment capacities

a/ Waste Recovery Plant No.1.

from 1992 through the end of 2005: 2,000,000 m^3/year
Total: 28,000,000 m^3

b/ Existing Sites at the date of Jan 1, 1992
/Annex II./

Pit volume of existing sites: 2,728,000 m^3
The capacity /for the wastes/
of the sites is as much as twice than the volume
of the pit.
Capacity of existing sites 5,456,000 m^3

c/ Potencial Sites

/Annex III/

Pit volume of the sites: 11,450,000 m^3

Capacity: 22,900,000 m^3

Probabily 60% of the sites which have been taken into account are available.

The capacity of those places: 13,740,000 m^3

Remaining slag after incineration

10% of the incinerated waste volume is slag.

Annex I.

Waste amounts from 1992 through the end of 2005

Base year: 1991: waste amount: 4,246,000 m^3 /incompact/

From 1992 through the end of 1994

Growth of waste amount: 0%

Year	
1992	4,246,000 m^3
1993	- " -
1994	- " -
Total:	12,738,000 m^3

From 1995 through the end of 2005

Growth of waste amount is 2% per annum

Year 1995	4,331,000 m^3
96	4,418,000 m^3
97	4,506,000 m^3
98	4,596,000 m^3
99	4,688,000 m^3
Year 2000	4,782,000 m^3
01	4,878,000 m^3
02	4,976,000 m^3
03	5,076,000 m^3
04	5,178,000 m^3
05	5,282,000 m^3
Total:	52,711,000 m^3

Total waste generated between
1992 and the end of 2005: 65,449,000 m^3 /incompact/

Annex 2.

FKFV's sites in operation on Jan 1,1992

Number	Description	Pit volume /thousand m^3/	Full-up-year to be expected
Within the boundaries of the capital:			
1./	X. Akna str.	140	1992
2./	XVII. Micsurin road	580	1994
3./	XX. Péteri farm	270	1994
4./	XXII. Tétény /inorganic/	small amount	
Within Pest county:			
5./	Csomád	small amount	
6./	Kerepestarcsa	75	1993
7./	Dunakeszi I-II.	1,663	1995
Total:		2,728,000 m^3	

Annex 3.

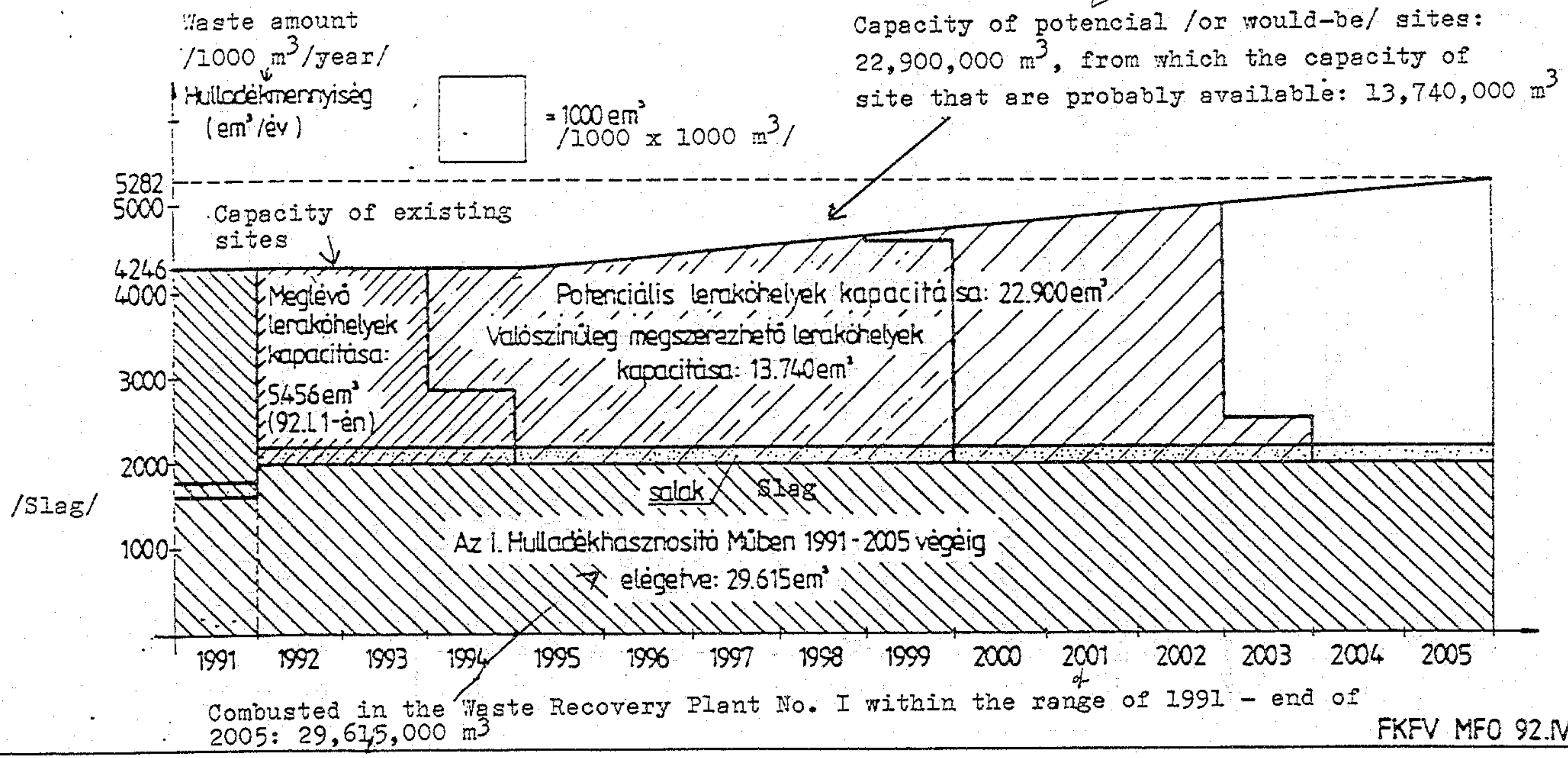
Would be final deposit sites

Area description	Pit Volume /1000 m^3/
- XVII. Orgoványi str. /Betonútép's pit/	800
- XVII. Micsurin str. /Rákosmezeje Cooperative/	500
- XX. Péteri farm II.	200
- X. Akna str. /cultivated area 600,000 m^3 / + water reservoire 400,000 m^3	1,000
- X. Száraz str. /cultivated pit/	600
- XVIII. Cséri site /Municipal Public Service Enterprise/	970
- Pest county Kerepestarcsa /Szilasmenti Cooperative mines/	1,000
- Pest county Kerepestarcsa /Municipal deposit site/	200
- Pest county Érd tectonic trench	1,000
- Pest county Sóskút moraine trench	980
- Tétény highland Military Zone	400
- Solymár brickwork's cavity	800
- Solymár /Rozália brickwork/	2,000
- Pilisborosjenő brickwork's claymine	1,000
Total:	11,450

Note: The purchase value of these territories depends on the current market value which increases gradually so the estimated price for these areas will probably be 1 billion /1 x 10^9/ Ft. /100 Ft/m^3/

Hulladékkeletkezés és ártalmatlanítás a fővárosban 1991-2005 között

Waste generation and treatment in the capital /1991-2005/



FKFV MFO 92.IV.

II. Metropolitan Data Relating to the Study dealing with the MSW Disposal

1. Population and area in the capital

1.1 Number of flats and inhabitants of the capital in the years of 198o-88 based on the data ofthe Statistical Year-book

Budapest	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. of flats	739.046	754.200	766.000	783.810	788.450	800.636	808,470	816.513	823.296
No. of in-habitants	2.059.347	2.060.644	2.063.745	2.064.307	2.064.374	2.071.484	2.075.990	2.093.487	2.104.700

1.2 Population of the area included in collection between 198o-88.

The data are the same as per 1.1. because the number of flats included in waste collection amounts to 99,8%.

1.3 Number of the tourist in Hungary in the years of 198o-87.

	1980	1981	1982	1983	1984	1985	1986	1987
Persons	9.413.000	10.450.000	6.473.000	6.764.000	8.731.000	9.724.000	10.613.000	11.826.000

1.4 Area of the capital: 525 km^2

The confines of the collection area in the capital are shown on Map No.1.

2.2. Organization of the Municipal Public Services Enterprise

1. GENERAL MANAGER

 1.1. Department of personal and education
 1.2. Legal and administrative department
 1.3. Department of internal control
 1.4. Department of organization
 1.5. Department of maintaining order
 1.6. Office of public relations and publicity

2. Technical Deputy General Manager

 2.1. Communal management

  2.1.1. Division of public roads, squares, etc.

   2.1.1.1. Department of road cleansing
   2.1.1.2. Communal workshop No.1.
   2.1.1.3. Communal workshop No.2.
   2.1.1.4. Communal workshop No.3.
   2.1.1.5. Communal workshop No.4.

  2.1.2. Division of transport and disposal of waste

   2.1.2.1. Department of waste transport
   2.1.2.2. Department of waste disposal
   2.1.2.3. Unit of transportation

  2.1.3. Chief Engineering Office of the waste incineration plant

   2.1.3.1. Thermal workshop
   2.1.3.2. Electrical workshop
   2.1.3.3. Workshop of thermal control
   2.1.3.4. Water softening workshop
   2.1.3.5. Workshop of maintenance

 2.2. Management of maintenance of public roads

  2.2.1. Deep-structural engineering division

   2.2.1.1. Department of contracting and preparation
   2.2.1.3. Department of road construction
   2.2.1.4. Department of material manufacturing
   2.2.1.5. Traffic-technical management of construction

  2.2.2. Department of bridges and other objects

  2.2.3. Technological department

2.3. Technical management

2.3.1. Division of developments and investments

2.3.1.1. Department of technical developments

2.3.1.2. Department of investments

2.3.1.3. Department of buildings' maintenance

2.3.2. Division of maintaining vehicles and equipments

2.3.2.1. Department of vehicle maintenance

2.3.2.2. Repairing department of building machinery

2.3.2.3. Department of component reconditioning

2.3.2.4. Department of maintenance of operation

2.3.2.5. Group of technical recording and documentation

2.3.3. Department of environmental protection

2.4. Department of labour safety

2.5. Department of energetics

2.6. Department of quality control

3. Economical Deputy General Manager

3.1. Manager of commerce and business administration

3.1.1. Purchasing division

3.2. Chief accountant

3.3. Department of planning and statistics

3.4. Department of labour

2.3 Budget plan regarding to the municipal solid waste treatment /collection, neutralization/ for 1991 — 8o7 million Fts

Full-time staff of the Municipal Public Services Enterprise:	32o7 persons
Employed totally: /including pensioners and opportunity workers/	4258 persons
Full-time staff in charge of solid waste treatment: /collection, transport, neutralization, maintenance, direction/	1o7o persons
Full-time staff in charge of public areas cleansing:	51o persons

2.4. The establishing authority of the Municipal Public Services Enterprise has been the Capital Council, Executive Commitee, at present the Chief Mayor's Office. According to the decision of the establishing authority theEnterprise is responsible for the waste collection from the population. In case of industry, institutes, public bodies this service is undertaken by the Enterprise on the basis of individual contracts.

The Municipal Public Services Enterprise is performing the duties on the basis of the ruling decree No. 1./1987. relating to Public Cleansing.

3. Quantity of the settlement solid waste in m^3 in the capital in the years of 198o-199o.

year / from	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
population	1.866.913	1.934.559	2.043.440	2.067.084	2.077.511	2.138.048	2.137.082	2.127.339	2.167.425	2.185.893	2.241.859
public areas	78.185	96.460	104.050	135.805	129.700	103.150	93.676	124.079	130.953	111.964	98.081
industry-commerce	1.301.267	1.332.295	1.392.449	1.394.426	1.406.400	1.465.906	1.521.920	1.567.102	1.583.442	1.613.129	1.622.465
total	3.246.365	3.363.314	3.539.939	3.597.315	3.613.611	3.707.104	3.752.678	3.818.520	3.881.820	3.910.986	3.962.405

4.2. Number of vehicles per type

of 11o litre with filling in mechanism	1o3
of 24o litre with filling in mechanism	7o
of 1,1 m^3 with filling in mechanism	38
of 5-6 m^3 with container	53
of 1o m^3 with container	2

4.3. Location of the waste transporting units according to map No.2.

4.4. Number of workers per waste collecting routes:

1 car driver

2 loaders

Total number of workers:

23o car drivers

36o loaders

4.5. Daily performance of a collecting motor-car in km:

7o km averagely

Daily performance of a collecting motor-car in turns:

2,2 turns averagely

4.6.

of 11o litre	226.374 pcs.
of 24o litre	68.6o9 "
of 1,1 m^3 /metal/	1o.679 "
of 1,1 m^3 /plastic material/	1.64o "
of 5 m^3	296 "
of 6 m^3	28o "

4.7. We are not undertaking selective collection. Our experiences in the course of more than ten years are unfavourable. This task must be accomplished in a complex way. The critical point is the recycling, further the interest of the population.

5. Incineration / in view of the existing incinerator/

5.1. Installed performance of the incinerator:

number of boilers:	4 pcs
waste incinerating capacity per boiler	15 t/h
steam output per boiler	4o t/h
output of the turbine generator unit	24 MW

5.2. Quantity of the yearly incinerated waste:
- before the reconstruction of the boilers /1982-87/ 21o.ooo-27o.ooo t/year
- after the reconstruction of the boilers /from 1992/ 31o.ooo t/year

5.3. Year of the starting up of the incinerator: 1981.

5.4. Total cost of the investment: 2,o milliard Ft.
The technological equipments were delivered by Skodaexport Czechoslovakian Foreign Trade Company.
Reconstruction costs of the boilers in the years 1988-91:
about 1,7 milliard Ft.
Prime contractor of the reconstruction works:
Deutsche Babcock Anlagen AG German company.

5.5. The technologic plans of the incinerator were prepared by Czechoslovakian firms. The Czechoslovakian company bought the licence of roller grate functioning as firing equipment from Deutsche Babcock Anlagen AG. The cross-sectional plan and the thermo-coupling plan of the incinerator are shown in the enclosed illustrations.

5.6. Working hours of the boilers up to the beginning of the reconstruction:

boiler No.1.	24.148 hours
boiler No.2.	29.461 hours
boiler No.3.	28.299 hours
boiler No.4.	27.267 hours.

The minimal working hours planned after the reconstruction: 6ooo h/year.

5.7. The regular maintenance of the boilers and the cleansing of the heating surfaces, resp. of the grate are executed yearly two times. We are performing the general overhaul yearly four times in the case of the turbine and the generator. ✓

5.8. The incinerator is situated in the premises in the northern part of Budapest as indicated in the enclosed illustration.
Address: Budapest, XV., Ifjugárda u. 119-121.

5.9. The average domain of the pollution concentrations emitted by flue gas:

dust: 5o-15o mg/m^3
SO_2: 2oo-18oo mg/m^3
HCl: 4oo-15oo mg/m^3
NO_x: 2oo-5oo mg/m^3

The temperature of flue gas escaping from the boiler: 22o-23o °C.

1o.The extent of the area where the waste is collected from and is taken to the incinerator, depends on the current incinerating capacity. In case of incineration of yearly 31o.ooo t waste - as expected from 1992,- about 45% of the total solid communal waste will go the incinerator. The main collection district is in the northern and middle part of Budapest, according to the location of the incinerator.

5.11.Number of motor-cars delivering waste to the incinerator: 9o-11o. Number of average turns per day: 2,6.

5.12.Waste iron is separated from slag by two parallel-acting electro-magnets, situated above the belt. Their capacity is suitable for separating the whole quantity of waste iron being in the slag.

5.13.The separated waste iron is sold to the MÉH company dealing with the collection and marketing of utilizable materials. It is to mention that the interest on the part of the metallurgy is constantly decreasing in this waste iron being polluted by slag and because of the increasing quality requirements of steel production.

5.14.Apart from the incinerator there is no other facility for solid waste treatment.

Eclosures to para 5.: 3 pcs.

6. Landfills /operated or closed between 1980-1990.

6.1.

Denomination	Period of operation	Site	Cubic cap. thousand m^3
Óbuda II.	1964-82	Clay mine in the II.district	3.900
Ujpest III.	1976-82	Flood embankment at rivers Szilas and Mogyoród	830
Akna str.	1968-	X. district	5.000
Bodza-Száraz str.	1968-	X. district	3.500
Rákoskeresztur	1964-80	XVII.district	1.000
Micsurin str.	1977-	XVII. district	1.600
Gubacs	1976-83	XV. district	900
Souther Pest	1979-80	XX. district, swamp	200
Péteri farm	1985-	XX. district	450
Tétény no.1.	1971-81	filling of low-lying areas in the XXII. district	1.100
Tétény no.2.	1981-	abandoned rock dust mine in the XXII. district	2.500
Vecsés	1977-84	gravel mine	900
Diósd	1978-83	sand mine of Diósd	100
Gyál	1980-88	gravel mine of Gyál	260
Csomád	1983-	abandoned gravel mine	700
Kerepestarcsa	1985-	gravelmine of Kerepestarcsa	320
Dunakeszi	1988-	outer dust mine	2.200

6.2. The capital is at present in a lucky situation, because we are filling mine holes and there are no protective prescriptions on the part of the authorities. The prescriptions concerned, accordin to necessity, closing layers in hole bottoms, ventilating pipes. But there are no further mine holes and in the case of new hill building landfills the technical protection will be, very likely, a decisive point involving thus much higher costs.

+inspection wells

6.3. Controlled prismatic depositing technology.

6.4. Costs of establishing landfills
Non-recurrent fee of 30-40 Ft/m^3 for taking into use according to demand and supply and social and administration costs of 1.500-2.000 thousand Ft.

6.5. The global net cost of 1 m^3 compact solid waste neutralization is 111 Ft.

6.6. In the capital and in the agglomeration there are 7 waste landfills. Two of these are of considerable cubic capacity receiving daily 3 - 6 thousand m^3 of waste.

In the landfills of high loadability the followong machines are working:

Akna str.	2 compactors	FA 823oo TEREX	of 24o HP
	1 compactor	DZ11o/A	of 13o HP
	1 compactor	T 1oo/4	of 1oo HP
Dunakeszi	1 compactor	FA 823o TEREX	of 24o HP
	2 compactors	DZ 11o/A	of 13o HP

In the landfills of medium loadability /1.ooo-2.ooo m^3/day/:

Micsurin str1	compactor	FA 823o TEREX	of 24o HP
	1 compactor	DZ 11o/A	of 13o HP
+++	1 compactor	T-1oo M	of 1oo HP
Péteri farm	1 compactor	DZ 11o/A	of 13o HP
	1 compactor	T-1oo M	of 1oo HP

In the landfills of low loadability /5oo - 1.ooo m^3/day/:

Kerepes-tarcsa	1 compactor	DZ 11o/A	of 13o HP
Csomád	1 compactor	DZ 11o/A	of 13o HP

Machines under repair

1 compactor	FA 823o TEREX	
2 compactors	DZ 11o/A	
1 compactor	T.1oo M	

Reserve:

1 compactor	1oo M	of 1oo HP

In total:

TEREX FA 823o	6 machines
DZ 11o/A	9 machines
T-1oo M	4 machines
UNK 32o	1 loading machine

+++ Tétényi	1 compactor	FA 823o TEREX	of 24o HP
	1 compactor	DZ 11o/A	of 13o LE

6.7. It is the duty of the mining party according to the recultivation plan.

6.8. We dispose of a depositing technology against metan formation. Our Enterprise gives back the areas,after having filled them up, to the mining company for completition of the recultivation.

6.9. We have no knowledge concerning metan utilization.

7. CHARACTERISTICS OF THE SETTLEMENT SOLID WASTE IN BUDAPEST

7.1 Physical composition of the settlement solid waste

In % of ~~volume~~ weight

Characteristic denomination:	1986	1987	1988	1989	1990	average of 86/90.
moisture	34,73	34,25	38,93	35,76	31,83	35,10
ignition residue	31,92	29,70	26,99	29,10	29,10	29,36
ignition loss	33,35	36,05	34,08	35,10	39,07	35,54

Physical composition of settlement solid waste per season in Budapest, average of 1986-9o

In % of volume

Characteristic denomination:	I.qu. winter	II.qu. spring	III.qu. summer	IV.qu. automn
moisture	31,00	36,94	39,20	33,80
ignition residue	33,55	28,91	23,78	31,20
ignition loss	35,45	34,15	37,02	35,00

Composition of the settlement solid waste according to sorts of material

denomination	1986	1987	1988	1989	1990	average of 86/90
paper	19,98	18,27	18,28	19,55	19,57	19,13
plastic mat.	5,70	4,36	4,76	4,54	4,62	4,79
textile	5,31	4,62	4,58	3,21	6,79	4,90
decomposing organic /from kitchen,garden/	34,73	38,56	35,36	32,09	32,33	34,62
glass	6,09	5,03	5,28	6,04	5,28	5,55
metal	4,43	5,20	4,46	5,39	5,95	5,08
other unorganic and fine fractions /16 mm/	23,76	23,96	27,28	29,18	25,46	25,93
total:	100,0	100,0	100,0	100,0	100,0	100,0
potential secondary raw material	41,51	37,48	37,36	38,73	42,21	39,45
combustible mat.	65,72	65,81	62,98	59,39	63,31	63,44

7.1.1

Composition of the settlement solid waste in Budapest in the heating and non-heating seasons

In % of ~~volume~~ weight

Average of

Characteristic denomination	1986 heating	1986 non-heating season	1987 heating	1987 non-heat. season	1988 heat.	1988 non-h. season	1989 heat.	1989 non-h. season	1990 heat.	1990 non-h. season	1986/90 heat.	1986/90 non h. season
moisture	33,36	35,50	42,20	38,45	37,66	40,19	36,40	35,12	34,74	28,92	36,87	35,63
ignition residue	35,96	29,19	29,88	25,08	27,87	26,12	30,40	27,80	30,85	27,36	30,99	27,11
ignition loss	30,68	34,53	27,92	36,47	34,37	33,69	33,20	37,08	34,41	43,72	32,11	37,09

Composition of the settlement solid waste according to sorts of material:

In % of ~~volume~~ weight

Denomination:	1986 heating	1986 non-heating season	1987 heating	1987 non-heat. season	1988 heat.	1988 non-h. season	1989 heat.	1989 non-h. season	1990 heat.	1990 non-h. season	1986/90 heat.	1986/90 non h. season
paper /card/	19,55	21,51	17,58	17,96	19,31	18,25	18,45	20,65	19,42	19,73	18,86	19,62
plastic material	5,23	5,59	4,93	4,11	4,41	4,29	4,42	4,66	5,11	4,15	4,82	4,56
textile	5,78	5,38	3,95	4,54	4,83	3,53	2,95	4,10	6,35	7,24	4,77	4,95
decomposing organic/from kitchen, garden/	32,60	37,91	37,27	42,23	37,05	34,09	30,46	33,72	31,06	33,61	33,68	36,31
glass	5,99	5,91	5,01	4,91	4,73	6,05	4,85	7,23	4,31	6,26	4,97	6,07
metal	4,52	4,14	5,20	4,18	4,43	5,70	6,62	4,16	6,59	5,29	5,47	4,69
other /unorganic and fine fractions of 16 mm/	26,33	19,56	26,04	22,02	26,24	29,26	32,25	25,48	27,16	23,72	27,60	24,00
potential secondary raw material	41,07	42,53	36,67	35,70	36,71	36,65	37,29	40,80	41,79	42,67	38,70	39,67
combustible material	62,97	69,75	63,73	68,84	64,60	60,16	56,24	63,13	61.59	64,72	61,82	65,32

7.2 Volumetric mass of the settlement solid waste

In kg/dm^3.

Year	in original loose condition	after collection/transport
1986	0,159	0,210
1987	0,159	0,203
1988	0,156	0,206
1989	0,159	0,206
1990	0,156	0,213
average	0,158	0,203

7.3 Thermal value of the settlement solid waste in original wet condition

Year	kJ/kg
1986	7170,00
1987	6890,00
1988	6230,00
1989	7560,00
1990	6810,00

Min. and max. thermal values of the settlement solid waste in 1986-1990:

Max.value 8810 kJ/kg

Min.value 5240 kJ/kg

Thermal value of the settlement solid waste in the heating and non-heating seasons in Budapest

In kJ/kg

Year	heating season	non-heating season
1986	6990	7560
1987	6190	7310
1988	6140	6340
1989	7230	7890
1990	5870	7760
average	6465	7372

8. Joint decree No. 1/1986 /II.21./ ÉVM-EüM /Min. of Construction - Min. of Public Health/ relating to the activity of public cleansing and with settlement solid waste.

9.

9.1. Decree No. 5/1986 /VIII.1o./ EüM stating the regulations as regards measuring of air pollution materials, limit values of air quality and air pollution.

26/1989 /IX.18./	amendment of the decree No. 5/1986 EüM.
21/1986 /VI.2./	protection of air purity.
4/1986 /VI.2./	Execution of the MT /Council of Min./ decree No. 21/1986
1o/1987 /IX.6./	OKHT order for preparing an exceptional action plan in protection of air purity.
9/199o /VI.3o./	KVM decree amending orders concerning air purity.
11/1991 /V.16./	KTM decree stating the technologic emission limit values of waste incineration further the regulations for application of the same.

9.2. 3/1984 /II.7./ OVH order regarding canal fines.
4/1984 /II.7./ OVH order regarding waste water fines.

9.3. The requirements concerning preparing a study on environmental effects are not regulated, the decrees referring to environmental elements are valid.

9.4. A monitoring network is stating continuously the condition of air quality in the capital.

9.5. The limit values of air and water purity are contained in the executory directives of the concerning standards.

10. Companies working in the field of solid waste

Company name, address: 1.	Kind of check: topography 2.	geology 3.	water quality 4.	solid waste analysis 5.	environmental research checks 6.
Fővárosi Közterület-fenntartó Vállalat Bp.1081. Alföldi u 7.	-	-	X	X	-
Földmérő és Talajvizsgáló Vállalat Bp.1088 Reviczky u 4/c	X	X	X	X	X
Mélyépítési Tervező Vállalat Bp-1051 Vigadó tér 1.	X	X	X	X	X
Környezetvédelmi Intézet Bp.1113 Aga u 4.	-	-	X	X	X
Vízgazdálkodási Tud. Kutató Központ Bp.1095 Kvassay J u 1.	-	-	X	X	X
Központi Bányászati fejl.Int. Bp.1027. Varsányi u 40.	-	-	X	-	X
Budapest Műszaki Egyetem Építőmérnöki és Vegyészmérn. Karai. Bp.1111 Műegyetem rkp 3-9.	X	X	X	X	X

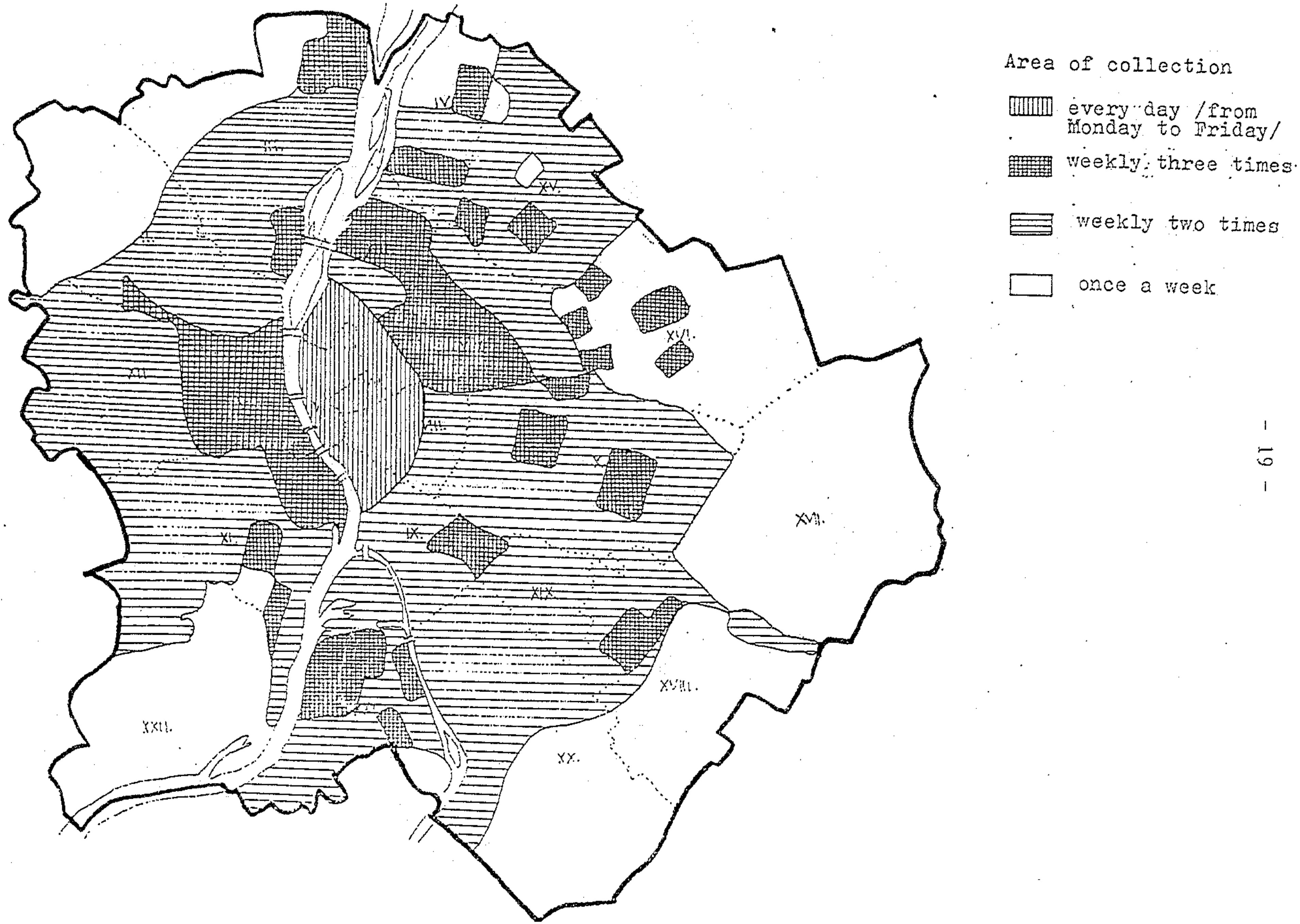
1.	2.	3.	4.	5.	6.
Ybl Miklós Építőipari Műszaki Főiskola 1146 Thököly u 74.	X	X	-	-	X
Építéstudományi Intézet 1113 Dávid Ferenc u 6.	-	-	-	-	X
ELTE TTK Kémiai Technológiai Tansz. 1117. Pázmány sétány 2.	-	-	X	X	-
Környezetvédelmi mérőállomás 1113 Szirmai u 47.	-	-	X	X	X
VÁTI Allocord 1016. Krisztina krt. 99.	X	X	-	-	X

It is very essential for Budapest to dispose of a modern waste management concept, which could be adapted to local conditions at best. The main trouble in this connection is, however, that Budapest is in lack of those financial resources by means of which a modern waste management concept could be realized in a short time.

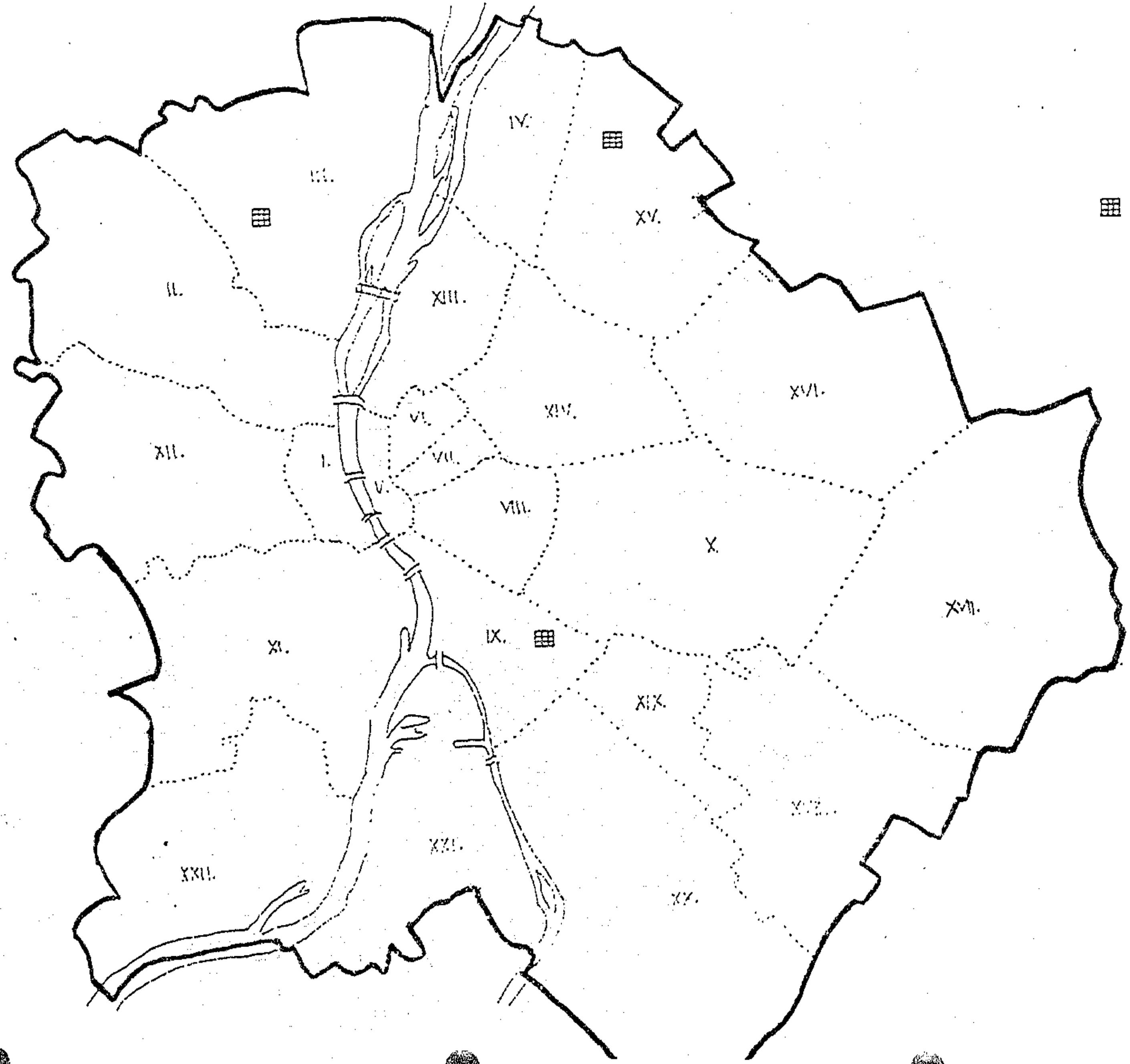
In the field of waste neutralization of the capital for the time being it is a task of high importance to have equipped with gas scrubber the existing incinerator, which is up to now the only one in the country. This scrubber has to correspond to the Hungarian prescriptions, which have come into force recently and which are in conformity with the strictest European norms. /Flue gas separation is done now in the incinerator exclusively by electrofilter./

In connection with gas cleansing it is also necessary that the incinerator should be equipped with suitable environment protective instruments in the interest of continuous control.

The Hungarian party requests the Japanese party kindly to investigate the possibility of promoting - in the frame of the planned study or in connection with the same - the solution of the above very important environment protective problems.

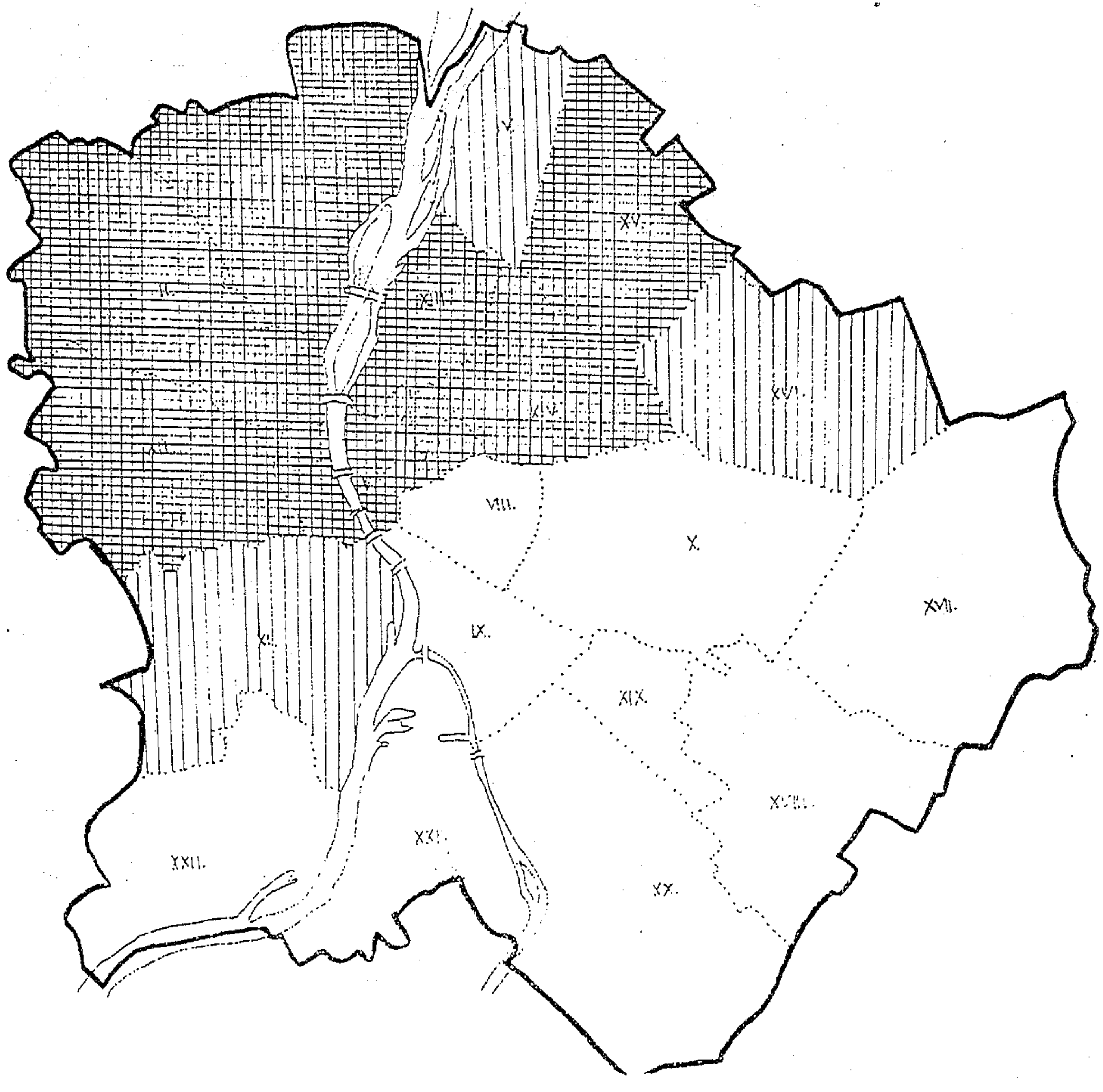

Area of collection
every day /from Monday to Friday/
weekly three times
weekly two times
once a week
IV.
XV.
XVI.
XVII.
IX.
XIX.
XI.
XVIII.
XX.
XXII.

map no.2.



▦ Waste transport units

map no.3.

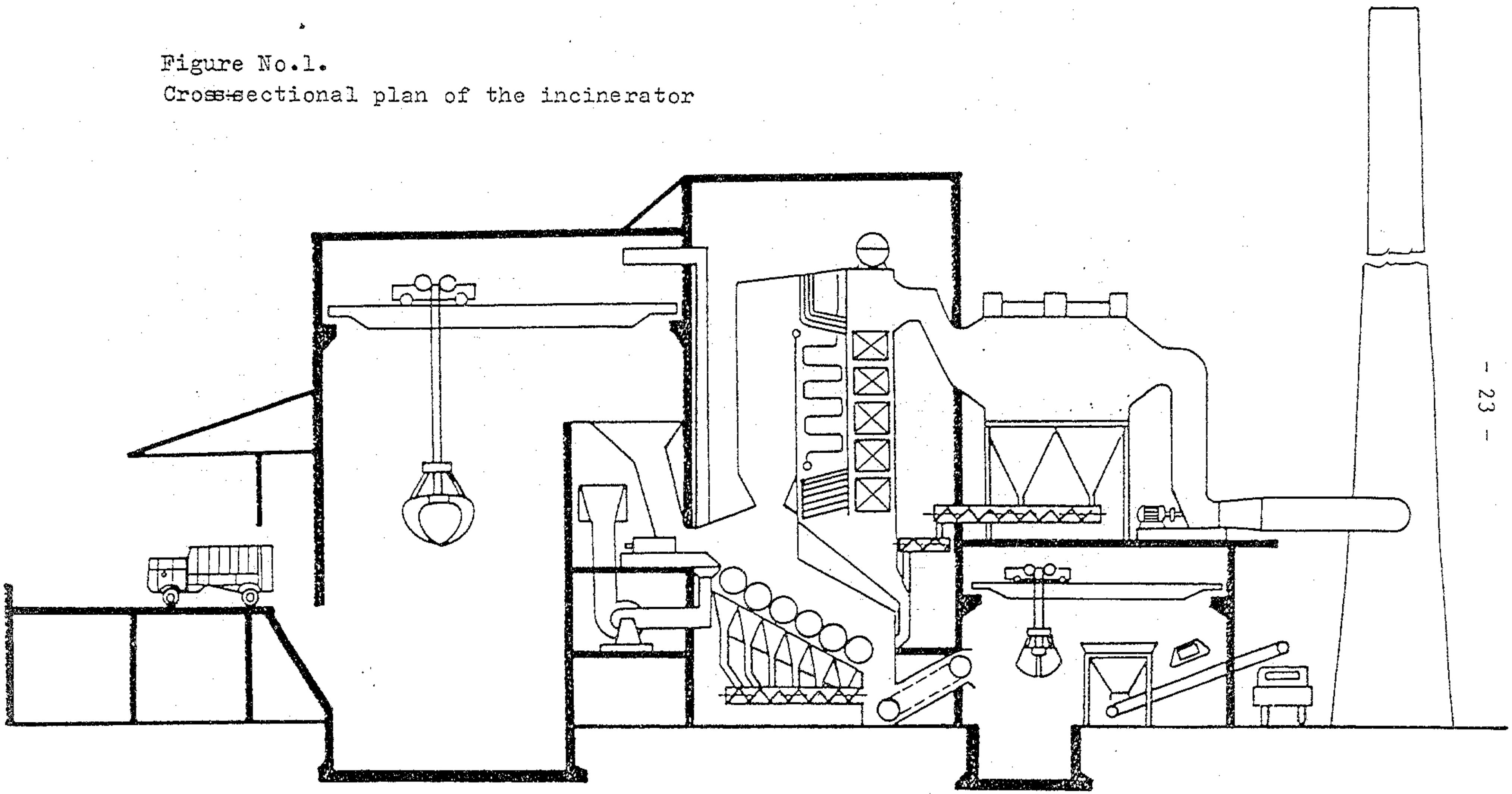


All kinds of waste
Only waste from residential quarter

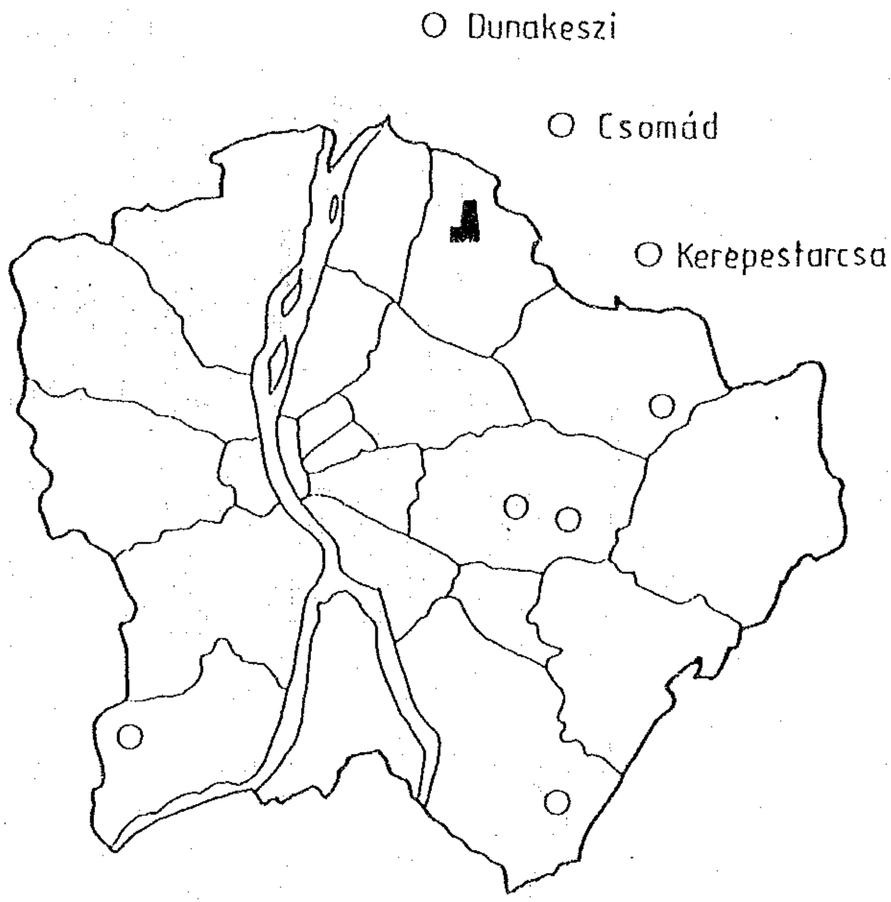
Sketch of the landfills

Map no. 4.

Figure No.1.
Cross-sectional plan of the incinerator



1.sz. ábra. A Hulladékhasznosító Mű keresztmetszeti vázlata



Hulladékhasznosító Mű
Incinerator

O Hulladék lerakó helyek
Waste landfills

3.sz. ábra
Figure no.3.

Hulladékártalmatlanító helyek
Budapesten és környékén
Sites for waste neutralization in Budapest
and environment

Technologic emission limit values of waste incineration on basis of the decree No. 11/1991 /V.16/ KTM

1. The pollution contents of flue gas, in half-hourly average values, must not exceed the values as below:

- solid material	3o mg/Nm^3
- sulfur dioxide	2oo mg/Nm^3
- nitrogen oxides /stated in NO_2/	4oo mg/Nm^3
- carbon monoxide	1oo mg/Nm^3
- hydrochloric acid	5o mg/Nm^3
- hydrogen fluoride	2 mg/Nm^3
- not-burnt hydrocarbons /in C_1/	2o mg/Nm^3

2. The pollution contents of the flue gas, in average of sampling times, must not exceed the undermentioned values:

- mercury	o,1	mg/Nm^3
- total of cadmium, tallium	o,1	mg/Nm^3
- total of arsenium, selenium, nickel, cobalt, tellur	1,o	mg/Nm^3
- total of lead, chrome, copper, vanadium, tin, manganese, antimony	1,o	mg/Nm^3
- polychlorated dibenzodioxyn and dibenzofurane in total /in 2,3,7,8 TCDD equivalent/	$1,1o^{-7}$	mg/Nm^3

III. National Bank of Hungary

- Annual Report -

Contents

The 1990 Annual Report of the National Bank of Hungary deals with economic and financial processes in a period which represents a turning point in the history of the country.

The past year was, undoubtedly, an outstanding one from the point of view of the social and political changes taking place, while from an economic perspective it fitted organically into the process of developing a market economy which had started over twenty years ago and has been gaining speed in recent times.

Consequently, the country has come to a change of its political system at a time, when regarding economic and legal terms, it had already gone through initial phases of this development process. A modern corporate law, a taxation system meeting European standards, the two-tier banking system already in its fifth year, the Budapest Stock Exchange established last year, price and import liberalization extended to the vast majority of products, the legal guarantee of currency transfer given to foreign investors, are only random examples representing – although with an unhealthy predominance of state ownership – the visible effects of an economic philosophy which, if pursued further, will produce not only institutional frameworks but also economic achievements that are matters of pride.

As far as economic achievements are concerned, the change in social system occurred when the country was not in a particularly favourable position. On the one hand, there was a gross debt of USD 21 billion accumulated over the past decades, and, on the other, the East-Central European market that had, for a long time, been a major absorber of Hungarian industrial and agricultural products, as well as the source of raw materials and energy, collapsed.

The increasingly intense effects of the market economy necessarily bring hitherto latent or unknown problems to the surface. First and foremost among these is inflation, in which the vigorous reduction of subsidies plays a decisive part; unemployment, the unavoidable consequence of economic restructuring, is and will be a source of increased tension.

In spite of these difficulties, the Hungarian economy not only was able to maintain its operation and its international solvency, but also achieved results which are promising from several points of view and which point to the realistic possibility of mastering the difficulties referred to, and of recovery from the present situation, within the foreseeable future.

The promising signs include the fact that, over the past three years, exports increased by more than fifty per cent and that about three-quarters of Hungary's convertible exports, by now, go to the OECD countries. The record surplus achieved in trade settled in convertible currencies last year was particularly outstanding. In this, over and above the quantitative and structural changes in domestic demand, the fact that some of the enterprises threatened by the dramatic fall of purchasing power in the rouble zone were able to change markets efficiently, played the decisive part. In 1990, encouraged by the legal guarantees for the investments of foreigners in Hungary, direct foreign investment exceeding half a billion US dollars flowed into the Hungarian economy. For the first time in six years, the convertible current account showed a surplus, amounting to an *improvement of USD 1.6 billion; the growth of indebtedness came to a halt. According to the most recent data, these favourable tendencies are continuing unabated in the first months of 1991, which – if coupled with the desired speeding up of privatization – should be a sufficient basis on which to suppose that this was not a single achievement but the first phase of a lasting tendency.*

I am convinced that these factors, together with the unambiguous and unchanging commitment of the Hungarian Government and of all responsible political forces in the country to meet the country's debt and interest payment obligations as they fall due, will, with reason, reaffirm the confidence of the international financial community.

The 1990 Annual Report of the National Bank of Hungary will, I am certain, only add to the strengthening of this confidence.

Dr. György Surányi
President of the National Bank of Hungary

I. Conditions Determining the Activities of the National Bank of Hungary in 1990

(5)

1. A Few Characteristic Economic Data on Hungary

The territory of the Republic of Hungary covers an area of 93,030 km^2; the number of inhabitants was 10 million 375 thousand on January 1, 1990; the density of population was 111.6 persons/km^2.

The legal tender in Hungary is the Forint (HUF). (1 forint = 100 fillér.) The exchange rate of the Forint on May 31, 1991, in terms of a few currencies, was the following.

EXCHANGE RATES ON MAY 31, 1991 — Table 1
(midpoint rate to 100 units, in forints)

British pound sterling	13,017.66	Austrian schilling	627.29
French franc	1,300.08	Swiss franc	5,175.82
Japanese yen (1000)	548.03	US dollar	7,546.34
German mark	4,413.06	ECU	9,061.41

Industry accounts for about 30 per cent of Hungary's gross domestic product, construction contributes 7 per cent, agriculture and forestry more than 16 per cent, trade produces 10 per cent, and the other sectors are responsible for the rest. The economy puts 74 per cent of the domestic absorption of the gross domestic product to final consumption (within this, the consumption of households including free benefits represents 68 per cent, while public consumption accounts for 11 per cent). Accumulation accounts for 24 per cent of GDP.

According to preliminary calculations, per capita GDP in Hungary was equivalent to USD 3,150 in 1990. New value produced per capita in a few selected countries compared to Hungary on the basis of available data was the following.

PER CAPITA GNP/GDP IN SELECTED COUNTRIES — Table 2

Country	GNP/GDP/capita in USD	Index (Hungary = 100)
Federal Republic of Germany	20,750	659
Austria	17,360	551
Spain	9,150	290
Greece	5,340	170
Portugal	4,260	135
Hungary	*3,150*	*100*
Yugoslavia	2,490	79
Poland	1,760	56
Turkey	1,360	43

Source: World Bank Atlas, 1990. (Except for Hungarian data, calculated at the official average midpoint rate weighted by calendar days: HUF 63.199 = USD 1.)

In Hungary, per capita consumption amounts to approximately USD 1,600. Within the structure of consumption, the amounts spent on food and services are the highest.

CONSUMPTION STRUCTURE OF HUNGARIAN HOUSEHOLDS IN A BREAKDOWN BY COMMODITY GROUPS — Table 3

%

Food	Beverages & Tobacco	Clothing	Heating, Household Energy	Consumer Durables	Other Industrial Goods	Services	Total
26.9	13.0	6.3	3.9	8.7	11.3	29.9	100.0

In the course of the past 10 years, the Hungarian economy exported about 40 per cent of GDP. Within the total the share of exports settled in terms of convertible currencies is increasing. Convertible exports accounted for 50.9 per cent of the total in 1985, for 51.1 per cent in 1986, 62.2 per cent in 1989 rising to 73.7 per cent in 1990.

2. Establishment of the Institutions of the Market Economy

In Hungary, the process of developing the institutional system of a market economy began well before the change of political system in 1990. Endeavours – at first careful, later more vigorous – at giving a more important role to the market have been present in the Hungarian economy since the 1960s. These endeavours took on a more determined shape in the economic reform introduced on January 1, 1968. The implementation of the national plan was to be achieved with the help of economic, market type incentives, personal financial interest and through increasing the autonomy of enterprises. In contrast to the former exclusivity of fixed prices, an increasingly large share of prices were freed. This reform process, no doubt, gave an impetus to economic performance, and, by opening up the economy, Hungary's trade relations with Western countries expanded significantly.

These reforms could not lead to the full unfolding of a market economy, as they did not (indeed, owing to the lack of political change, could not) establish the primary condition of a market economy – the freedom of ownership and of enterprise. Nevertheless, the reform process introduced many market mechanisms into the economy. What can be regarded as an even greater achievement, however, is that this reform process reaching back more than 20 years also generated human resources in line with the requirements of a market economy, accumulating substantial intellectual assets, knowledge and practical experience which transformed public thinking. This, in turn, gave rise to an economic philosophy and practice much more up-to-date than before, enabling economists and the financial community to turn to modern economic theories and practice with an open mind.

Some of the *laws setting down the legal guarantees* of the institutional system of the market economy were enacted by the "pre-change" Parliament, others by the new one. 1988 saw the introduction of a new system of taxation in line with international practices, the two core elements of which were the value-added type general turnover tax and the personal income tax. Mention should be made of the so-called Transformation Act, the Corporate Act, the Act on the State Property Agency, the Act on Investments of Foreigners in Hungary and the Act on Securities and the Stock Exchange. These laws were aimed at promoting the transformation of state-owned enterprises into companies, the foundation of undertakings in joint ownership and privatization. (A separate chapter will discuss the development of privatization.) Another piece of important legislation was the Act on Pre-Privatization created in 1990 regulating the privatization of smaller state-owned shops and restaurants. All legal regulations restricting the private sector, whether in terms of number of employees or scope of activities, were abolished.

Hungary's accession *to the international financial institutions* was an important step in the process of establishing market economy institutions. The country joined the IMF and the World Bank in 1982 and the International Finance Corporation (IFC) in 1985. Hungary's more recent relations with the European Economic Community, with the European Bank for Reconstruction and Development and with the European Investment Bank should also be referred to here. (For details, see Part II, Chapter 3.)

The *two-tier banking system*, as part of the progress towards a market economy, was also established before the political turn. The *securities market* is developing well, and, after a break of some forty years, the *Budapest Stock Exchange* was re-established pursuant to Act VI of 1990, on June 21, 1990 and has been functioning ever since. (See Part II, Chapter 2.)

The measures taken to liberalize the economy, particularly prices and imports are part of the process of letting the market economy unfold. In the course of the past few years but mainly in 1989 and even more so in 1990, the system of fixed prices formerly applied to the vast majority of trade was gradually replaced by *free prices*. Within total retail trade the share of goods sold at a retail price free of state control was 63 per cent in January 1989, 77 per cent in January 1990 and has been about 90 per cent since January 1991. (For further details, see Part I, Chapter 6.) The system of licensing and quotas was abolished for 42 per cent of total convertible imports by the end of 1989 and for 70 per cent by the end of 1990. It is foreseen that, by the end of 1991, this ratio will reach 93 per cent (see Part I, Chapter 4). Engaging *in foreign trade* is now a right of all entrepreneurs.

The *Economic Competition Office* (Cartel Office) established last year aims at safeguarding freedom of business competition, the equality of opportunities and at taking action against monopolies.

The process of establishing *free convertibility* of the national currency, the forint, has also made considerable progress. Today, convertibility can be regarded as implemented as far as current payments are concerned. This is supported by a number of factors. One of these is the high degree of import liberalization already referred to; this implies that the entrepreneur can freely import goods for the foreign currency purchased provided that he has the collateral in forints. With respect to the foreign exchange purchases of households, however, convertibility could not be introduced as yet. The need to protect the balance of the current account for the time being requires that the foreign exchange purchases of households from organizations licensed to trade in currencies be restricted to USD 50 a year. (Hungarian citizens, however, can take out of the country without restriction foreign currency obtained from other sources and kept in savings deposits and withdrawn from there.) Another factor in convertibility is that there are no restrictions on bringing in capital nor on the repatriation of profits and invested capital in foreign currency by foreigners, provided that all obligations have been met. Finally, the foreign supplier may also be compensated for deliveries in forints and these revenues can freely be used in Hungary.

The *privatization* of state enterprises – as one of the most important pre-conditions of the unfolding of the market economy – began on the basis of laws enacted by Parliament and declared programmes and is accelerating; an account of this process is given in Part I, Chapter 8.

Also in the spirit of strengthening the market economy, the influx of direct foreign investment has accelerated substantially: in 1990, 3,814 new companies – independent legal entities – were formed with foreign participation (nearly three times as many as the total in all preceding years). The total number of such companies rose to 5,171 by the end of last year, with a combined prime capital of HUF 196 billion, of which the foreign share was 28.1 per cent (almost USD 900 million). (The presence of direct foreign investment in Hungary is discussed in detail in Part I, Chapter 9.)

3. The Main Economic Processes of 1990

There was a major, favourable change amounting to a breakthrough *in the external equilibrium position* of Hungary in 1990. This is evidenced by the substantial improvement of the convertible current account of USD 1.6 billion relative to the previous year due to the surpluses achieved by trade, tourism and services and to the increase in households' foreign currency deposits. This was the first revenue surplus shown by the current account in six years. (The development of the current account is discussed in Part III, Chapter 1.)

Foreign trade was characterized by the pressure to change markets owing to the drastic shrinkage of the COMECON market. A significant part of the enterprises affected was able to turn this necessity to their own advantage – they were able to convert some of the export capacities lost in this way to convertible exports. Whereas in 1989, 42 per cent of export deliveries went to COMECON countries, this ratio was reduced to 30 per cent a year later. At the same time, the share of exports directed to EEC countries rose from 25 per cent in the previous year to 34–35 per cent. *In convertible foreign trade*, a surplus of USD 945 million was realized involving an 18.2 per cent increase in export revenues and a 12.5 per cent increase in import expenditures. *Trade settled in rouble terms* was essentially balanced, with a 26 per cent reduction in the volume of exports and an 18 per cent reduction in the volume of imports. In order to avoid a repetition of the substantial surplus made in 1989, the original programme reckoned with a balanced non-convertible current account, which could only have been achieved in the case of a deficit in the balance of trade. As against this, the balance of trade-related payments in the non-convertible current account showed a surplus of almost USD 200 million due essentially to the fact that the balance of trade was not closed in equilibrium as scheduled by the programme. (The development of foreign trade is discussed in Part I, Chapter 4.)

Among the economic processes of the last year, *tourism* settled in convertible currencies produced particularly good results, with a revenue surplus of USD 345 million. In view of the fact that the shopping tourism of the previous year gave rise to an expenditure surplus of USD 349 million, this meant an improvement of USD 694 million in 1990. (For details, see Part III, Chapter 1.)

The improvement of the external equilibrium demanded the reduction of domestic absorption. This, as well as the substantial fall in rouble trade had a reductive effect on the development of the *gross domestic product* (GDP) which, according to preliminary calculations, increased by 21 per cent at current prices but, in real terms, lagged 4 per cent behind the previous year's achievement.

Industrial production, on the whole, dropped by some 5 per cent. The reduction in production went hand in hand with the restructuring of the economy. The fall in economic performance was particularly substantial among large enterprises affected by the collapse of the rouble market. Primarily due to this, but also to the decline of purchasing power in the domestic market, the fall in the production of industrial organizations employing more than 50 people was 8.5 per cent. Organizations in building construction produced 17 per cent less than in the previous year (mainly because of the cut-back in investment and housing projects). In contrast, the production of undertakings with less than 50 employees rose to two and a half times the 1989 level.

The 1990 volume of gross *agricultural* production decreased by some 7 per cent. In plant cultivation, production dropped by 11.2 per cent. The deterioration in the performance of agriculture, particularly that of plant cultivation, can be attributed, to a large extent, to the drought.

The number of *business organizations* pursuing various kinds of activities increased by some 14,000, that is, by 93 per cent, in 1990. The increment essentially consists of limited liability companies usually employing less than 20 people. Their sales revenues are increasing fast.

In line with the objective of improving the external equilibrium, *domestic absorption*, as a result of the export surplus exceeding that of the previous year, fell by more than 5 per cent, or more than the 4 per cent decrease in GDP.

A highly favourable manifestation of the reduction in domestic absorption was that the *budget deficit* diminished sharply from HUF 54 billion in 1989 to a mere HUF 1.4 billion in 1990. (The position of the budget is discussed in detail in Part I, Chapter 7.)

In 1990, the *consumption of households* was 3 per cent less, and *communal consumption* was 4 per cent less than a year before.

Accumulation declined by some 10–12 per cent, as a result of the cutback in *capital investments*. The volume of state investment projects was 25 per cent, that of enterprise investments 10–15 per cent below the level of the previous year. In addition to the financial constraints, a number of uncertainties, primarily the lack of clarity in ownership relations, and the expectation of privatization, also discouraged enterprises and cooperatives from making capital investments. At current prices, *inventories* increased, mainly due to the price rises, although it was estimated that their volume developed at around the level of the previous year.

In contrast to the 15.5 per cent in 1988, the *retail price standard* rose by 17 per cent in 1989 and by 28.9 per cent in 1990. In early 1990, measures taken to liberalize prices and a significant cut in price subsidies (an important contributing factor, in addition to inflationary expectations, to the present inflation) gave rise to relatively more vigorous price increases. In the course of the year, price rises slowed down, but picked up again towards the end of the year due to the increase in oil prices. Among the reasons for inflation, the fact that it has not yet been possible to cut on monopolies appropriately should also be mentioned. (The development of prices is discussed in detail in Part I, Chapter 6.)

The appearance and spread of *unemployment*, which hardly existed previously in Hungary, is due to the fact that the liquidation of factories and plants hitherto maintained with substantial budgetary subsidies was put on the agenda and begun. Problems are aggravated by the drastic fall in the purchasing power of the rouble-zone countries. The number of unemployed as registered with the employment agencies rose from 23,426 at the beginning of the year to 81,379 by the end of 1990. Although at the end of the last year, their ratio to active earners was 1.7 per cent, which is quite low by international comparison, the growth of unemployment seems unavoidable in the future. (The number of people unemployed reached 167,400 by the end of April, 1991.) While newly founded independent small businesses do create a number of new jobs, their expansion cannot keep up with the rise in redundancies, especially among unskilled workers. (Part I, Chapter 5 analyzes the development of unemployment.)

With respect to the indicators of people's *living standards*, real incomes – under conditions of vigorous differentiation – showed a decline of some 3 per cent. The consumption of households was better adjusted to the economic possibilities of the country in 1990 than in previous years. In comparison to the preceding period, households put a smaller portion of their income to consumption than what they would have been able to afford in view of their revenues, reduced their borrowing for consumption purposes and – also in a significantly differentiated manner – considerably improved their savings position.

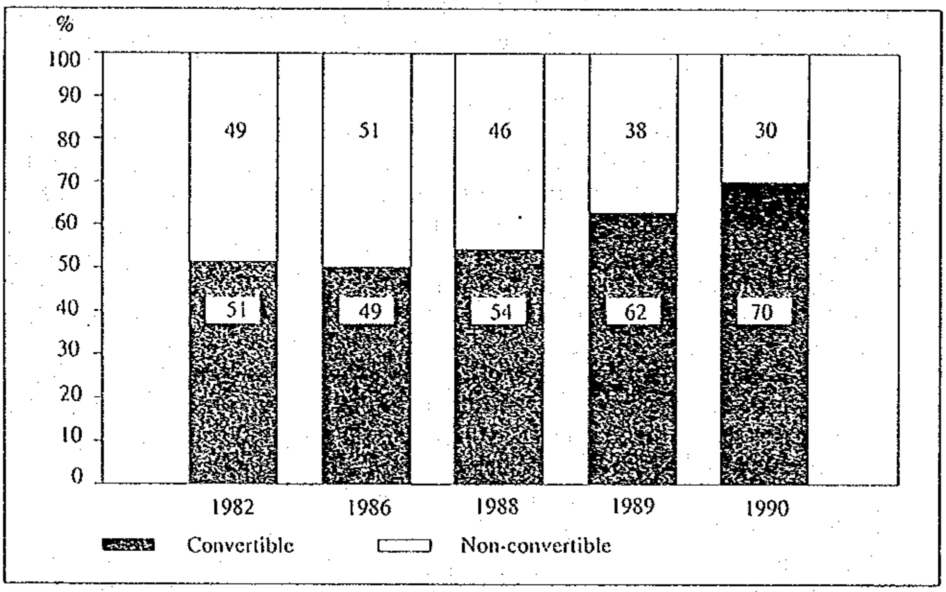
4. Foreign Trade

The Main Tendencies of Foreign Trade in 1990

In 1990, the processes taking place in Hungarian foreign trade had a highly positive impact on the entire economy and particularly on the country's balance of payments.

The fact that economic growth continued in most advanced industrialized countries in 1990 and that Hungary's relations improved with the Western countries assisted the country's foreign trade aspirations; also, Hungarian enterprises were able to adjust to the new situation. On the other hand, Hungarian export markets were substantially reduced owing to the collapse of the COMECON market and to the Gulf crisis.

The market structure of Hungarian foreign trade underwent a radical change. The need to prevent the generation of further surpluses against the countries of the rouble zone and the shrinkage of domestic demand greatly reduced the production of Hungarian industry (driving a part of it into a critical situation), while this also forced the economy into a market shift amounting to a virtual breakthrough, leading to the substantial growth of convertible exports.



TRADE PATTERN BY MAIN GROUPS OF CURRENCIES — Figure 1

Although the total volume of Hungarian foreign trade (that is, exports and imports combined) dropped by some 4–5 per cent, within this, the major shift in markets led to the vigorous growth of convertible exports – a tendency shown also in the last two years. The reduction in the volume of total imports can be traced back to the shrinkage of domestic demand and to the deterioration in the supplying capabilities of the one-time COMECON countries. The market change is indicated, inter alias, by the fact that the share of convertible trade within total exports (measured in forint terms) rose from 62.2 per cent in 1989 to 73.7 per cent in 1990; in imports, from 61.7 per cent to 70.8 per cent.

The main data of foreign trade settled in *convertible currencies* are shown in Table 4 and Figure 2.

Convertible Foreign Trade

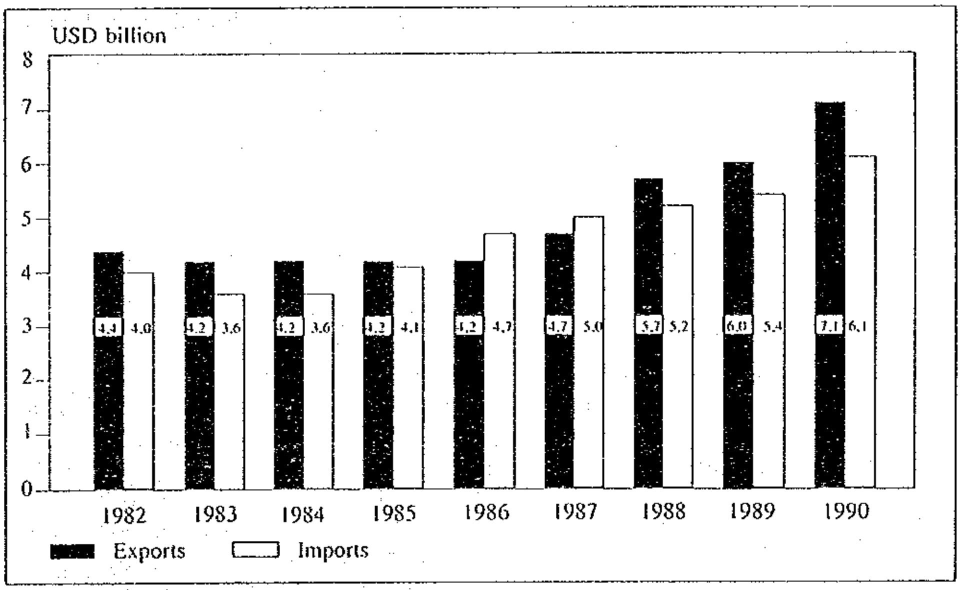
DEVELOPMENT OF CONVERTIBLE FOREIGN TRADE — Table 4

	1989	1990	Change
	USD million		%
Exports	5,975	7,064	+18.2
Imports	5,435	6,119	+12.5
Balance	+540	+945	x

An important characteristic of the substantial trade surplus of USD 945 million in 1990 was that its greater part (USD 590 million) was, in contrast to previous years, realized in the course of trade with the advanced industrialized countries. In this respect, the improvement of the balance was made possible by the export expansion, in comparison to which the growth of imports was moderate. The surplus of trade settled in convertible terms against the former socialist countries also increased.

As far as *volumes* are concerned, 1990 exports exceeded the 1989 level by 9.5 per cent, whereas imports showed a mere 2.8 per cent increase relative to the previous year, although the liberalization of foreign trade reached 70 per cent by the end of the year and the economy also had to carry the burden of a higher oil bill due to the purchases at higher prices resulting from the fall in Soviet oil supplies.

The significant increment in the volume of *exports* can be attributed to the higher sales of manufactured goods and of raw material-type products. The amount of exports of machinery and equipment rose by 18.6 per cent; that of industrial consumer goods, by 11 per cent and that of material-type products, by 16.6 per cent. Exported quantities of agricultural produce and processed food decreased by 3 per cent.



TRADE BALANCE IN CONVERTIBLE CURRENCIES — Figure 2

In dollar terms, exports to Germany increased at the highest rate (by 42 per cent), and the growth of exports to the entire EEC was more dynamic than the average. Hungarian exports to the EFTA countries rose by 12 per cent, those directed to the United States, by 7 per cent, while deliveries to the developing countries decreased by 2 per cent.

Export growth was also facilitated by the liberalization of imports and by the vigorous extension of the right to export (by rendering it a standard right for all entrepreneurs). The latter is characterized by the following figures; in 1987, 370 business organizations sold goods in the convertible markets; by 1989, their number increased to 3,100, whereas by the end of 1990, there were some 12,000 organizations pursuing such activities.

The volume of *imports* settled in convertible currencies increased by 2.8 per cent. The single reason behind this (moderate) growth was the purchase of crude oil necessary because of the shortfall in Soviet deliveries, which by itself makes up 8–9 per cent of the total imports. Without this item, the volume of total imports would have decreased by about 2 per cent. This highly moderate development of imports took place under the conditions of a high degree of import liberalization.

The structure of imports also changed. The absolute amount as well as the relative share of material and spare part imports decreased substantially, due to the shrinkage of the domestic market and the decline in exports to the COMECON area. Imports increased primarily within the liberalized range. Machinery imports (mainly from the advanced industrialized countries) increased, which is advantageous from the point of view of spreading advanced technologies and thereby enhancing export capabilities. The volume of machinery, means of transportation and other capital goods imports rose by 6.4 per cent. The growth in the volume of industrial consumer goods was 15.7 per cent, showing a major upswing in the imports of electric home appliances and entertainment electronics.

It should be mentioned that, with the substantial growth in exports, the terms of trade in convertible trade deteriorated by a mere 1.7 per cent, and even that can essentially be attributed to the rise in oil prices.

Rouble Trade

The rouble-accounted foreign trade in 1990 reflects a substantial decline of the market in this relation. The turnover developed as follows.

DEVELOPMENT OF ROUBLE TRADE

Table 5

	1989	1990	Change
	RBL million		%
Exports	7,590	5,785	−23.8
Imports	7,047	5,787	−17.9
Balance	+543	−2	x

In volume terms, exports fell by 24 per cent, imports, by 18 per cent. A near zero balance developed in trade. According to the original programme, however, which foresaw an equilibrium balance for the current account to avoid the generation of a major surplus similar to the previous year's, a deficit should have been encountered in the balance of trade, instead of the zero balance.

The reduction in rouble imports was much faster than expected. Nearly two-thirds of the fall in imports was due to cuts in deliveries by the Soviet Union. This is also related to the more than 10 per cent fall in the total energy import, due to the fact that the Soviet Union cut its agreed oil export to Hungary by two million tonnes.

In exports, the nearly RBL 1 billion fall in machinery exports projected the development of critical situations for a number of large enterprises (for instance, for the bus manufacturer IKARUS). Exports of materials and parts fell by some RBL 600 million.

5. Employment, Wages, Living Standard

Employment

During the past 40 years, the Hungarian economy was basically characterized by full employment (and indeed, in many areas, by lasting manpower shortages). This, however, was true only from a quantitative point of view resulting from the inefficiency of the centrally planned economy, as large enterprises that had been called into being and were maintained not by the demand signals of the market (and especially not of the world market) or by the modernization taking place all over the world, but by the objective of full employment itself, on the basis of considerable government subsidies.

The transition to a market economy renders the reduction of subsidies unavoidable. This, coupled with the adjustment of production and product structures to the demands of the market, brought about the appearance of unemployment. The situation is aggravated by the collapse of the former COMECON market, by the dramatic fall in its absorbing capacity, which precipitated some of the largest Hungarian enterprises into a crisis.

The number of unemployed rose from 23,426 in January, 1990 to 81,379 by the end of the year while the number of vacancies fell from 37,711 to 16,815. The rate of unemployment (registered unemployed to active earners) was 1.7 per cent at the end of 1990. This is a low rate by international standards, but, on the basis of well-known tendencies, it is expected to rise. (By April, 1991, there were 167,400 unemployed people, representing an unemployment rate of 3.5 per cent.)

Unemployment is developing in a differentiated manner with respect to both regions and skills. In certain regions of the country – underdeveloped regions or those accommodating crisis sectors – the rate of unemployment is already much higher than the average referred to. In the first half of 1990, mainly unskilled workers or workers with a low level of education were hit by unemployment, but, after August, the number of skilled workers becoming redundant was also higher than the number of vacancies they could fill, and the number of unemployed professionals is also increasing. (The unemployment rate for unskilled workers was 6.2 per cent, for skilled and semi-skilled workers, 1.5 per cent, and for white-collar workers, 1.1 per cent.)

The labour supply increasingly in excess of demand greatly increased the number of those in need of unemployment benefits and allowances. In 1990, altogether 85,494 people received unemployment benefit for a shorter or longer period and, upon the expiry of the benefit period, 3,777 people received temporary unemployment allowance. On the last day of the year, 58,406 people were receiving unemployment benefit, two and a half times as many as at the beginning of the year. In addition, 3,241 people received unemployment allowance.

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The Development of Wages and Social Benefits

The income position of wage earners was adjusted, in addition to the fall in employment discussed above, by wage regulations, central wage measures and welfare incomes.

Minimum wages were raised twice in the course of 1990, on September 1 to HUF 5,600 a month and to HUF 5,800 a month on December 1.

In the material sectors, the monthly amount of the gross average salary was HUF 12,555 in 1990, showing an increase of 24.3 per cent against the previous year. Within this average, the differences between the wages of white-collar and blue-collar workers increased. The average monthly salary of a white-collar worker was HUF 17,491, with an annual rise of 26.8 per cent, while that of a physical worker was HUF 10,887, with an annual increase of 19.5 per cent. In the material sectors, the share of those earning less than HUF 6,000 a month was 4.8 per cent, and that of those earning more than HUF 30,000 a month was 5 per cent.

The growth rate of social benefits greatly exceeded that of wages. Social security payments increased by nearly 35 per cent. Pension payments rose by 29.3 per cent. The average monthly pension in December, 1990 was HUF 6,600.

The annual increment of social benefits that also include unemployment benefits and allowances was 67 per cent. The family allowance determined by the number of children increased by 28.5 per cent.

Living Standard

The increase in wages and social benefits presented above in nominal terms means a reduction in real terms, owing to inflation. (The development of the price level is discussed in the next chapter.) Within this general tendency, a high degree of differentiation can be observed, depending on vocations, the nature of jobs and the form of ownership.

The change in the structure of consumption indicates the development of living standards. Within total consumption, the share of income spent on the purchase of goods and services that are inflexible from the aspect of demand (such as basic foodstuffs, rents, electricity, transportation, learning aids, etc.), the consumption of which can hardly be reduced if at all, increased. At the same time, there was a major drop in expenditures on clothing, cultural purposes and consumer durables and a particularly severe fall in the use of services (dry-cleaners, restaurants, tailors, repair services etc.).

At the same time, as discussed in Part III, Chapter 2 of the present Report, household savings in savings deposits and securities increased by nearly 20 per cent in nominal terms, although in a highly differentiated manner.

6. Price System and Price Trends

The Process of Price Liberalization

The process of price liberalization, which had begun in previous years, was continued in 1990 and the application of price controls diminished. Consequently, in accordance with the regulations introduced in 1990, 77 per cent of products for final consumption were free from administrative intervention as against 41 per cent in 1987. Changes in administrative intervention in pricing are shown in the next Table.

15

BREAKDOWN OF PRODUCTS FOR FINAL CONSUMPTION BY THE EXTENT OF PRICE INTERVENTION

Table 6

%

Extent of price intervention	1987	1988	1989	1990
a) Official prices (prices set item by item by the relevant authorities)	38	22	19	16
b) Advance notice about price increases	21	21	12	6
c) Price consultation	–	5	7	1
Full range of administrative intervention (a + b + c)	59	48	38	23
No administrative control	41	52	62	77
Total	100	100	100	100

One type of intervention, the so-called *official price*, the relative weight of which was 38 per cent in 1987, affected only 16 per cent of the total turnover of products for final consumption from the beginning of 1990. In this respect, liberalization was most extensive in the field of food products. Officially limited producer prices were scrapped for fattened pigs, cattle for slaughter, feed grain and protein feeds; within the range of consumer prices for foodstuffs, the prices of prime pork, certain types of sausages, dairy products, sugar and salt were liberalized.

The obligation of advance notice about price increases fell from 21 per cent in 1987 to 6 per cent in 1990. It was completely scrapped for foodstuffs, alcoholic beverages and tobacco, agricultural capital goods and a fair number of engineering products as a result of heightened competition through import liberalization. Advance notice remained applicable to metallurgical, chemical and light industry products primarily where producers had monopoly positions or the market was unbalanced.

The number of enterprises invited to participate in *price consultations* dropped so dramatically that this type of control affected a mere 1 per cent of the total turnover of goods in 1990.

As opposed to the 77 per cent achieved as a result of the measures taken at the beginning of 1990, price liberalization affected almost 90 per cent of the total turnover of goods for final consumption by the beginning of 1991.

Price Changes in 1990

Inflation was accelerating in 1990 over the previous year.

PRICE INDICES

Table 7

%

	1989/1988	1990/1989	December, 1990/December, 1989
Domestic sales prices of industry	113.4	124.2	138.1
Agricultural procurement prices	119.1	131.1	.
Consumer prices	117.0	128.9	133.4

GENERAL TRENDS

Prices were affected by several factors. The unavoidable and gradual dismantling of price subsidies disbursed from the budget played an important role and the self-exciting character of inflationary expectations cannot easily be ignored either.

The impact of actual measures in Hungary and international tendencies can be summarized as follows.

At the beginning of the year, the Hungarian currency was devalued against convertible currencies by 5 per cent in several phases. In the second half of the year, the price of petrol and diesel rose by 20 per cent and 30 per cent which was due partly in the former case and wholly in the latter's case to increases in consumption taxes. An average 25 per cent increase in the prices of tobacco products and spirits was due to the same reason. The producer price of electricity was raised in August.

In addition to government measures, the effects of international markets on prices could also be felt. As the international prices of oil and oil products more than doubled, the producer prices of energy and fuel were raised in November to the then prevalent international price level, the producer price level of energy rose by 42–43 per cent on average. Consumer prices for fuel increased by 36 per cent.

Altogether, these factors raised the price level by 4 per cent in 1990 over the projections made at the beginning of the year. Based on experience it is to be noted that inflationary processes have not got out of hand; inflation proved to be manageable under conditions when the government was gradually phasing out direct intervention as described above. This implies that inflation was not manageable through the administrative control of price increases but as a result of market processes. Therefore, there is a very good chance that Hungary's economy will be able to defeat inflation using a consistent anti-inflationary economic policy which was reinforced by the programme announced in the spring of 1991 by the minister of finance.

CHANGES IN INDUSTRIAL SALES PRICES

In 1990, industrial sales prices were 20.9 per cent higher than in 1989; the price level in December, 1990 was 29.5 per cent higher than a year before. The price level for domestic sales was as follows in the major sub-sectors of industry.

CHANGES IN PRICE LEVEL FOR DOMESTIC SALES IN THE MAJOR SUB-SECTORS OF INDUSTRY

Table 8

%

	1990 / 1989	December, 1990 / December, 1989
Energy sub-sectors	132.1	179.5
Raw-material production	121.2	126.0
Processing sub-sectors	117.8	119.0
Food industry	130.8	132.4
Total industry	124.2	138.1

The decisive factor behind domestic producer price increases was the increase *in energy prices* which is shown in Table below.

DOMESTIC SALES PRICES OF THE ENERGY SECTORS

Table 9

%

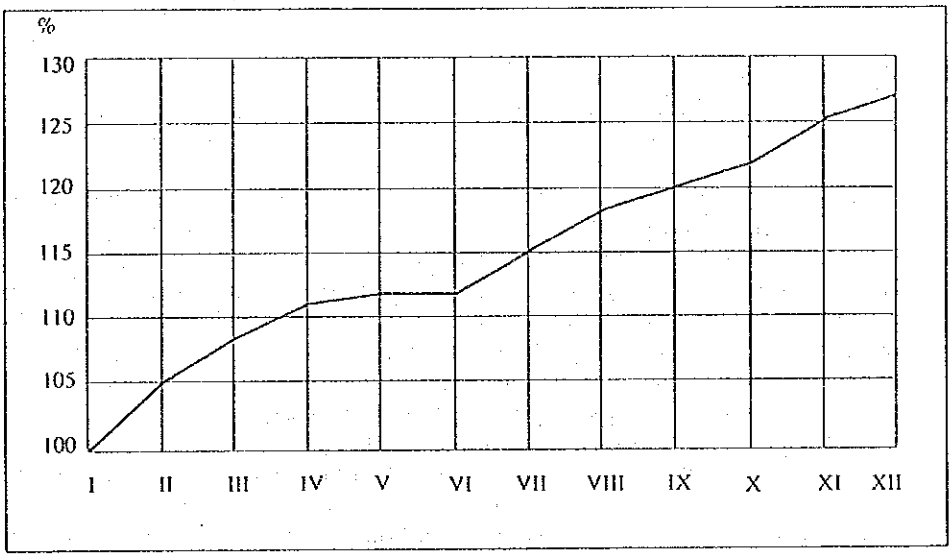
	1990 / 1989	December, 1990 / December, 1989
Mining	122.5	145.8
Oil and gas extraction	140.1	225.4
Electricity	126.9	162.5
Oil refinery	141.3	205.1
Gas production and distribution	133.2	171.2
Total	132.1	179.5

The *food processing industries* experienced price level increases above average. Most of the price increases were triggered by the significant reduction of subsidies in the food sub-sector which boosted prices in the food industry by almost 24 per cent in the first two months of the year. Then, price increases were more moderate at 8 per cent after February, despite almost complete price liberalization.

In 1990, the increase in producer price levels *in the raw material and processing sub-sectors* fell substantially behind the industrial average. (However, in 1991 producers incorporated the energy price increases of November, 1990 into their prices.) The relatively moderate price rises in the processing sub-sectors were due to the fact that attempts at price increases were increasingly in conflict with solvent demand. The markets' balancing role was reinforced by increasing competition supported by import liberalization. This is proven by the fact that increases in producer price levels were more modest in the engineering sub-sector (16.4 per cent) where import liberalization was practically complete.

CONSUMER PRICES

In 1990, consumer prices changed from month to month as follows.



CHANGES IN CONSUMER PRICE INDICES FROM MONTH TO MONTH IN 1990 Figure 3

In 1990, the consumer price level was 28.9 per cent higher than in 1989; the price level in December, 1990 was 33.4 per cent higher than that of a year before.

CHANGES IN CONSUMER PRICE INDICES
IN CERTAIN PRODUCT GROUPS

Table 10

%

	1990 / 1989	December, 1990 / December, 1989
Foodstuffs	135.2	136.5
Beverages and tobacco	130.7	138.1
Clothing articles	123.3	126.8
Heating and household energy	127.6	135.7
Household durables	120.8	121.2
Other industrial products	128.9	139.0
Services	125.5	127.8
Total purchases by households	128.9	133.4

Increases in consumer price levels were determined by the factors listed above which impacted upon producer prices. Constraints on demand began to be perceived which first caused significant increases in inventories (of clothing, cheese, sausages with a longer shelf-life and certain consumer durables), then led to price cuts for a series of goods the prices of which had been increased previously.

The annual 28.9 per cent increase in consumer price level exceeded the average increase in industrial price levels (20.9 per cent). The reason behind this is the relative or (in some cases) the absolute reduction in government subsidies for consumer items (e.g.: water supply and sewage disposal) and the increase in the consumption tax charged on luxury items and fuel.

7. The State Budget in 1990

Planned and Actual Budget Deficit

As 1989 ended with a record-high deficit of HUF 54 billion, a radical reduction of the deficit became a key issue of improving the financial equilibrium. Therefore, Parliament enacted a budget for 1990 with a deficit of HUF 9.9 billion in December, 1989.

However, it became evident relatively early in the course of 1990 that there were a number of threats that endangered the projections. One of the threats was due to the secondary impact of the economic performance in the preceding year. Another threat arose from unfavourable developments in rouble-based foreign trade (see Chapter 4 of Part I). Yet another threat was that – just a little earlier – the Constitutional Court had disapproved taxes on the interest of preferential housing loans. (Instead, at the end of 1990, other, new regulations were introduced which, however, will impact upon economic processes only in 1991.) And last but not least, certain government measures taken in the first few months of the year also induced increases in expenditures that also bore the threat of exceeding the allocations.

In order to preclude any exceeding of the initial budget allocations for the reasons listed above and to improve the financial balance, Parliament passed resolutions in June, 1990 which were followed by government action. As a result, the total deficit turned out to be HUF 1.4 billion as opposed to the projected HUF 9.9 billion.

GRAND TOTAL OF THE BUDGET AND ITS DEFICIT

Table 11

HUF billion

	Revenues	Expenditures	Deficit
1989 actual	535.1	589.1	54.1
1990 planned	598.7	608.6	9.9
1990 actual	640.9	642.3	1.4

Budget revenues and expenditures are shown in detail in Table 12.

DATA OF THE GOVERNMENT BUDGET, 1989–1990

Table 12

REVENUES	1989 actual	1990 projection	1990 actual	1990 actual as % of 1989 actual	1990 actual as % of projection
	HUF million			as percentage	
Transfers by business entities	224,221	273,700	257,752	115.0	94.2
Taxes on consumption	230,705	252,200	254,985	110.5	101.1
Transfers by households	44,448	41,200	62,119	139.8	150.8
Transfers from central budgetary institutions	3,330	900	1,116	33.5	124.0
Transfers from decentralized funds	–	–	2,000	–	–
Revenues from international financial relations	5,832	5,061	5,544	95.1	109.5
Profit taxes and dividends from financial institutions	21,336	23,500	48,585	227.7	206.7
Other revenues	5,212	2,150	8,796	168.8	409.1
TOTAL REVENUES:	535,084	598,711	640,897	111.8	107.0
DEFICIT:	*54,008*	*9,915*	*1,369*	*2.5*	*13.8*

EXPENDITURES	1989 actual	1990 projection	1990 actual	1990 actual as % of 1989 actual	1990 actual as % of projection
	HUF million			as percentage	
Supports to business entities	27,349	19,700	18,511	67.7	94.0
Export subsidies to agriculture and food industry	21,977	17,700	23,209	105.6	131.1
Settlements between former socialist governments	23,721	25,500	28,356	119.5	111.2
Total	73,047	62,900	70,076	95.9	111.4
Supports for consumption	44,087	39,900	36,865	83.6	92.4
Accumulation expenditures	49,753	48,100	55,014	110.6	114.4
Support to central budgetary institutions	133,946	182,568	188,508	140.7	103.3
Support to local authorities	123,315	111,196	113,327	91.9	101.9
Support to decentralized funds	66,800	65,910	67,210	100.6	102.0
Expenditures due to international financial relations	19,612	18,700	20,398	104.0	109.1
Debt service, interest payments	61,673	62,738	70,749	114.7	112.9
Other expenditures	16,859	13,514	20,119	119.3	148.9
Reserves	–	3,100	–	–	–
TOTAL EXPENDITURES:	589,092	608,626	642,266	109.0	105.5

Budget Performance in International Comparison

As a result of the radical improvement in the position of the budget, the 1990 deficit referred to GDP was below 0.1 per cent – as against 3.5 per cent in 1989 – which is a significant achievement even in international comparison.

It is to be noted about international comparison that in the Hungarian statistical system, certain items of financing also constitute part of the budgetary expenditures (domestic and foreign lending operations of the government). The category used in international comparison, i.e. the "deficit of central government in GFS", does not include these items.

Under the Hungarian system, the category of "Central Government" comprises the central budget, social security and the Housing Fund; improving their position was the underlying condition for the agreement concluded with the IMF.

In addition to the HUF 1.4 billion budget deficit, social security had a HUF 700 million deficit and the Housing Fund has a HUF 1.1 billion surplus. Combined, these give rise to a HUF 1 billion deficit against the HUF 5.5 billion originally projected.

Excluding the government's local and foreign loan repayments (HUF 19 billion), the deficit is immediately transposed into a HUF 18 billion surplus and the surplus in the so-called consolidated budget accounts for 0.8–0.9 per cent of GDP. (This indicates a 10–11 percentage point improvement over 1989.)

As indicated in the 1990 Statistical Yearbook on Government Finances of the IMF, budget deficits in the industrially advanced countries amounted to an average of 2.6 per cent of GDP, albeit with wide variations. This ratio is somewhat higher in the developing countries. In view of this, the deficit of Hungary's central government budget, accounting for less than 0.1 per cent of GDP, is not unfavourable.

The total revenues of central government (including the budget, social security and the Housing Fund) accounted for 51 per cent of GDP both in 1989 and 1990. The percentage share of expenditures over GDP was below 51 per cent in 1990 which indicates a 3 percentage point reduction. (Within this, the percentage ratio between the revenues of the budget and GDP were 31.4 per cent and 31 per cent in 1989 and 1990, respectively. Budget expenditures accounted for 34.5 per cent and 32.2 per cent of GDP in 1989 and 1990.) The improvement in the relative ratio between the deficit of central government and GDP implies that the role of central government became somewhat less extensive in GDP reallocations.

Changes in Revenues and Expenditures in 1990

In 1990, revenues and expenditures rose by 19.8 per cent and 7.4 per cent, respectively, in a comparative structure and in nominal terms. Within revenue items, the increase in transfers from business entities and the taxes on consumption were lower than average (at 15 per cent and 10.5 per cent); whereas the profit taxes and dividends paid by financial institutions increased dramatically (by 117.7 per cent). It is a favourable development concerning expenditures that subsidies to enterprises and consumer subsidies fell by 4.1 per cent and 16.4 per cent in 1990, in line with the transition towards a market economy. However, support to budgetary institutions increased by 40.7 per cent and debt service and interest payments rose by 14.7 per cent.

The background to these changes will be described in greater detail below.

REVENUES AND EXPENDITURES RELATED TO BUSINESS ENTITIES

Apart from financial institutions and the taxes and subsidies on consumption. the budget's net revenues from business entities, i.e. the balance of their transfers and subsidies, was HUF 187.7 billion. Although this is 24.1 per cent (or HUF

36.5 billion) higher than the 1989 figure, it fell 11 per cent or HUF 23.1 billion short of projections. This was due, on the one hand, to losses of HUF 10 billion in corporate profit tax and HUF 6.5 billion in transfers because of so-called special circumstances and, on the other hand, export subsidies to agriculture and food industry exceeding projections by HUF 5.5 billion and an extra HUF 3 billion in subsidies for financial settlements among the (ex)-socialist countries.

Total payments *based on profits* (at HUF 122 billion), including the corporate profit tax and dividends payable on state-owned assets, increased by HUF 19 billion over the previous year. HUF 27.1 billion was collected through dividends payable from profits after taxation (first at 18 per cent then at 25 per cent for the second half of the year) on state-owned assets, which was designed to ensure taxation neutrality between state-owned enterprises and other companies. At the same time, the profit tax rate was lowered from 54 per cent of the previous year to 40 per cent, incurring a loss of revenue of HUF 8 billion. The HUF 6.7 billion in lost revenues over projections arose as the balance between tax losses of HUF 11.2 billion and extra revenues of HUF 4.5 billion from dividends on state-owned assets.

Although payments of HUF 79 billion due to so-called *special circumstances* were HUF 13 billion higher than a year ago, the total amount collected was still HUF 4 billion short of projections. The source for the annual increase was the widening gap between the prices for energy and raw materials on rouble markets and local producer prices that reflected prices on dominant markets more effectively in 1990, which was accentuated by the devaluation of the Hungarian currency. Revenues fell short of the projections primarily because less oil was imported from the Soviet Union than the volume specified in the government-to-government agreements.

Although *customs duties and payments on imports* were HUF 10 billion higher than in 1989 (at HUF 50.5 billion), the total amount was HUF 3.5 billion lower than projected. The loss of revenue against projections was due to the elimination of the import licensing fee as a result of import liberalization. The annual increase was due to the rise in convertible imports.

Under the *subsidy reduction* programme, the combined cutbacks in current subsidies for production and export subsidies was HUF 3 billion over the figure for the previous year, including a HUF 9 billion cut in current subsidies for production, while export subsidies rose by about HUF 6 billion. Subsidies exceeded projections by HUF 7 billion (which was due exclusively to export subsidies). In the category of current subsidies, subsidies on milk prices, soya production and water utilization fees were eliminated altogether while support to farms operating under unfavourable conditions was reduced significantly. Subsidies to Mecseki Szénbányák Vállalat (Mecsek Coal Mines) and support to the wool and meat processing industries were also phased out. Although support by way of intervention could not be claimed any more, export subsidies exceeded both projections and previous year's figures, because of the rising volume of convertible exports.

TAXES AND SUBSIDIES ON CONSUMPTION

As the balance of taxes and subsidies on consumption, the budget gained net revenues of HUF 218.1 billion, which was the balance of receipts of HUF 146.8 billion in VAT, HUF 108.2 billion in consumption taxes and HUF 36.9 billion expenditure on consumer price subsidies. Net revenues were up 17 per cent over the 1989 level (by HUF 31.5 billion) and almost 5 per cent higher (by about HUF 6 billion) than projected.

In mid-year, the consumption tax on tobacco, spirits and fuel was increased, but revenues failed to increase as sales fell due to higher price levels.

The HUF 31.5 billion increase in net revenues over the previous year's figure stemmed from a HUF 24.5 billion increase in taxes and a HUF 7 billion reduction in consumer price subsidies. Most of the revenue increase in VAT was due to rising price levels. Consumption tax was boosted by the higher applicable tax rates.

TAXES AND LEVIES PAID BY HOUSEHOLDS

The taxes and levies paid by households were more than 50 per cent higher than projected (up by HUF 21 billion) which was due to faster and more dynamic increases in personal income tax payments. It stemmed from the fact that the 25 per cent increase in nominal wages and salaries was well over the initial assumptions.

CORPORATE PROFIT TAXES AND DIVIDEND PAYMENTS BY FINANCIAL INSTITUTIONS

The fastest growing revenue item of the budget was corporate profit tax and dividend payments by financial institutions (at HUF 48.6 billion, of which dividends account for HUF 2.6 billion) which was twice as high as projections and 2.3-times higher than similar payments a year ago. A key factor behind these payments was that in February-March, 1990, financial institutions paid HUF 9 billion in taxes on their 1989 profits and their profits rose much faster in 1990 than envisaged due to rising interests. The average rate of dividends, as due to the government on its stake in the commercial banks' and other financial institutions' equity, was between 14–15 per cent.

INVESTMENT EXPENDITURES

The government used HUF 7 billion more than projected for accumulation purposes, i.e. financing investment projects based on central and enterprise decisions and supporting private housing construction, which was HUF 5 billion more than the previous year. Most of the surplus over projections and the previous year's figure was used to support private housing construction. At the same time, HUF 10 billion less was used for investment projects based on central and enterprise decisions than in the previous year which indicates not only the fact that resources were insufficient to finance central investment projects but that the government wants less and less involvement in financing investments in the productive sphere.

SUPPORT TO CENTRAL GOVERNMENT AGENCIES

Supports to central government agencies were slightly over projections by HUF 6 billion which was HUF 54.5 more than the comparable figure a year before. However, allocations for defence and other armed forces rose by only HUF 2 billion over the previous year (3.6 per cent).

The increase in subsidies was due to accommodating increases in price levels – although actual rises were much smaller and were limited solely to health care and education – and wage increases in less paid sub-sectors (such as health care, social services, education, law and order and scientific research). This, however, did not allow for maintaining the real value of support because of inflation.

SUPPORT TO LOCAL AUTHORITIES

Supports to local authorities exceeded projections by HUF 2 billion for reasons identical with those listed above. However, supports were HUF 10 billion lower than a year previously. The amount was reduced because revenues from personal income tax transferred to local authorities as well as increases in their own revenues and their expenditures (funds available for housing maintenance and investments) had to be constrained as of necessity.

SPECIAL FUNDS

Support for special funds from the budget was approximately identical with that in 1989, although the actual disbursement was HUF 1.5 billion higher than the projection. The highest amount of support was provided for the Housing Fund, financing the interest upon housing loans granted under preferential terms before 1989. The Employment Fund received HUF 8.8 billion, while the Foreign Trade Policy Fund was given HUF 3.7 billion in support. Support for the Housing Fund was HUF 2.2 billion higher than envisaged due to the tax on preferential interest having been cancelled by the Constitutional Court, while that for the Employment Fund was HUF 800 million over the envisaged amount due to higher unemployment. These extra supports were offset in part by savings in the support earmarked for the Foreign Trade Policy Fund.

DEBT SERVICE AND INTEREST PAYMENTS BY THE GOVERNMENT

Debt service and interest payments by the government exceeded the projection as well at the 1989 actual figure by HUF 8 and 9 billion, respectively. Similarly to the 1989 figure, HUF 7.2 billion was required to amortize loans acquired from the central bank in earlier years and to redeem government bonds. Extra expenditures were incurred through interest payments both in comparison to envisaged targets and the previous year's actual amount, partly because more loans had to be secured to finance the 1989 deficit than originally calculated and partly because the rate of interest on the loans granted by the central bank to refinance state equity allocations for investment was increased several times during the year.

Financing the Budget Deficit

The budget deficit was financed from a HUF 1.6 billion increase in the portfolio of interest bearing and Discount Treasury Bills over the volume at the end of 1989. Consequently, there was no need to call the HUF 5 billion new loan from the central bank which was enacted in the 1990 Act on the Budget. At the same time, the increase in the portfolio of T-bills did not fill in the entire amount enacted in the Budget Act, despite the fact that interest rates have been increased several times during the year. This was due to the fact that savings were lower than assumed and competition was generated by other types of securities.

In the stand-by loan agreement made with the IMF for 1990, limits were specified for the combined net quarterly closing stock of loans (i.e. the difference between the loan and securities portfolio and the deposit portfolio) to be made available to the consolidated government budget and the State Development Institute by the monetary sphere. The limits specified therein could be observed all through the year because, on the one hand, the budget deficit turned out to be less than envisaged and, on the other hand, progress of local and foreign government investment projects, financed through the State Development Institute, was slower than originally calculated.

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As at December 31, 1990, the amount of the *domestic national debt,* i.e. the balance of the loans that finance the 1990 budget deficit, the new loans by the central bank to cover the outstanding resources of the 1989 deficit and repayments by the budget, was HUF 790.4 billion which is 38.2 per cent of the 1990 GDP – without the HUF 519.2 billion which is debited to the budget by the central bank as the cumulative amount, arising from successive devaluations of the Hungarian currency. (Calculated at an exchange rate, applicable at the end of last year, state budget debt is equivalent to USD 12.9 billion.)

The structure of the domestic national debt is shown in Table 13.

DETAILS OF THE DOMESTIC NATIONAL DEBT AS AT DECEMBER 31, 1990 — Table 13

	HUF billion
Portfolio of loans granted by the National Bank of Hungary to the Budget directly and government bonds	503.2
Portfolio of refinancing loans granted by the National Bank of Hungary to the State Development Institute	259.5
Debt instruments (bonds) sold to commercial banks and other financial institutions and insurance companies	17.5
Treasury-bills	10.2
a) Domestic national debt as at December 31, 1990 without forint devaluations debited to the Budget	790.4
b) Forint devaluations debited to the Budget	519.2
c) Total (a + b)	1,309.6

8. The Privatization Process

Background and Underlying Principles

The government's most important economic policy objectives include the transformation of the ownership structure, the reduction of the relative ratio of government holdings and the increase of private ownership through privatization.

The foundations of this process were laid well before the political regime was transformed in the spring of 1990 by Acts of Parliament enacted in 1988 and 1989. Legal regulations were supplemented in 1990 by a series of important statutes.

Currently, privatization is effected in line with laws under the auspices of the Asset Policy Guidelines approved by Parliament, and is under the control and supervision of the State Property Agency. The underlying principle of privatization is to enable market forces to prevail, which is facilitated by using competitive bidding and arrangements that take into account changes in demand.

The ways and means of privatizing state-owned enterprises have become diversified since the time privatization began. Initial, spontaneous privatization has been supplemented by active, government-initiated projects and privatization initiated by prospective investors. In view of the fact that Hungary's capital market is relatively unsophisticated and savings are insufficient, privatization as well as the emergence of a class with private holdings are supported by preferential credit facilities. For the very same reason, the active participation of foreign investment capital is also indispensable for the success of the process. (The latter is described in Chapter 9 of Part I.)

Altogether, 2,200 state-owned enterprises are awaiting privatization in the competitive sector with a total book value of HUF 1,800 billion (i.e. USD 29.3 billion calculated at an exchange rate applicable at the end of last year.) In 1990, privatization affected 8–9 per cent of state-owned enterprises which account for a much lower percentage of total assets. The government's objective is to reduce the relative share of state ownership from a current 90 per cent to below 50 per cent in the competitive sphere over three years.

The Legal Regulation of Privatization

As has already been mentioned, the legal foundations for privatization were laid partly in earlier years, partly in the last year. The most important statutes that govern the process of privatization include the Companies Act, the Transformation Act, the Act on Securities, the Act on the State Property Agency, the Act on the Protection of State-owned Assets, the so-called Pre-privatization Act and the Act on Direct Foreign Investment in Hungary.

An outstanding event of the process was that the State Property Agency came into being on March 1, 1990 whose functions include the supervision of privatization, the transformation of state-owned enterprises, the control of the legitimacy of operations and the utilization of state-owned assets as fast and under as favourable terms and conditions as possible. The new Parliament, elected in the spring of 1990, enacted the so-called Pre-privatization Act concerning the privatization of at least 10,000 retail outlets. Government-initiated privatization programmes were launched which were supplemented in 1991 by several facilities, devised to accelerate the process. Subject to the entity or agency initiating privatization, the channels of spontaneous, active and investor-initiated privatization have been opened up and a fourth channel is being developed which will facilitate privatization through small companies. (These are explained in greater detail in the next section of this Chapter.)

The Asset Policy Guidelines, referred to above, specify that the sales of state-owned assets should facilitate competition, reduce the number of companies with monopoly power, contribute to the creation of new and efficient employment and enable the entry of foreign investment capital that facilitates the adaptation of up-to-date technology and new management know-how. To the extent possible, state-owned assets should not be sold below prices determined by market demand, the cost of reproduction and the depreciation of assets and the attendant debts and liabilities. Every effort has to be made to enable small shareholders to acquire shares provided that sales can be made at fair market prices. State-owned assets should be sold to foreigners if the company can expect to achieve a substantial technological breakthrough, new market niches will be opened up or the national debt may be reasonably reduced through the transaction.

The Channels of Privatization

So far, most *privatization transactions have had a spontaneous character* where transformation, the entry of a foreign investor or the sale of the enterprise is initiated by the enterprise itself. The legitimacy of the process and the due prevalence of the government's interests is controlled by the State Property Agency.

Active privatization initiated by the government is gaining increasing importance. With its privatization project, the government strives to provide compact solutions to the problems of the economy. The objectives set for the various projects define the selection of enterprises to be involved. Programmes in 1990, the First and Second Privatization Projects were launched, together with Pre-privatization.

The *First Privatization Programme* was launched by the State Property Agency in September, 1990 which includes the privatization of 20 prospering enterprises, operating in industry, the hotels sub-sector, commerce, tourism and transportation. Their total assets stood at HUF 33 billion (equal to USD 537 million at end-of-year exchange rates), their combined gross sales were HUF 93 billion (USD 1.5 billion), and their profits before taxation were HUF 6 billion (USD 97 million).

There was great interest in the project and 274 bids were received in response to the invitation issued for the selection of privatization consultants. The winners included several international firms with extensive experience in the field of privatization (such as Credit Suisse First Boston, Daiwa, Ernst & Young, Nomura, Rothschild, etc.). When the project is successfully completed, the government will gain revenues of approximately HUF 25–40 billion (USD 406–650 million).

The *Second Privatization Programme* was announced in December, 1990. This affects enterprises which have turned over at least 50 per cent of their assets to business associations and currently operate as holdings. The enterprises to be included in the programme are being selected.

The *Pre-privatization Act*, enacted by Parliament in September, 1990, deals with the privatization of enterprises involved in catering and retail trade. In accordance with the provisions of the Act, the State Property Agency will initiate sales of the outlets of the enterprises involved in the programme and their assets tied up in the outlets within two years, provided they operated under leasing arrangements after December 31, 1988 or the number of staff was below 10 in the retail shops and 15 in the catering and hotel, and the consumer service facilities. This channel of privatization enables only Hungarian citizens to acquire assets.

Privatization *initiated by prospective investors* is also feasible. It may speed up the process of privatization and can help to gear it better to solvent demand. The State Property Agency will assess bids received on a competitive basis, therefore investors must be prepared to accept the judgement of the market. This channel of privatization is open to both Hungarian and foreign investors including buy outs by staff and management.

Achievements of the Privatization Process in 1990

Between its foundation on March 1, 1990 and December 31, 1990, the State Property Agency passed decisions on 145 cases, approving 115 proposals. In the course of enterprise privatizations approved, the assets of the enterprises involved were valued at HUF 75 billion (i.e. USD 1.2 billion at end-of-year exchange rates). In the course of privatizations under the supervision of the State Property Agency, foreign capital involved amounted to HUF 19.1 billion (USD 311 million) which equals about a quarter of the value of the privatized assets. Last year the State Property Agency dealt with cases affecting about 8-9 per cent of the circle of state enterprises referred to above.

In 1991, the State Property Agency announced new programmes. Under the auspices of active privatization, a *Third Privatization Programme* was launched, affecting the *construction industry*. The terms and conditions were developed for the utilization and later privatization of state-owned assets under the supervision of the State Property Agency and the first invitation of this kind was announced (the Portfolio Asset Management Tender). The privatization of small enterprises will be given greater importance than ever before.

Between 1991 and 1993, the government wishes to launch government-initiated privatization programmes 3 or 4 times a year. In 1991, this will affect approximately 100 enterprises while privatization to be initiated by enterprises will remain of decisive importance (affecting about 200 enterprises). In the course of 1991, another 100 enterprises will be privatized through the initiatives of prospective investors. Under the Pre-privatization programme, 1,600 shops will be sold in the first half of the year.

As a result of privatization, the ratio of state ownership may fall below 50 per cent by 1993 while private ownership may rise to 30–35 per cent.

Loans to Support Privatization

To support Hungarian investors, two loan facilities have been established to facilitate the privatization of state-owned assets through asset sales: one of them is the privatization loan facility of the National Bank of Hungary, the other is the so-called Existence Loan and Installments Facility. Both types of loans can be used only to buy state-owned assets which are to be sold by the State Property Agency through tenders and only to the extent that revenues are to be utilized to reduce the national debt. The privatization loan of the National Bank of Hungary can be used to purchase first-issue shares as well.

The Concessions Act

The latest legal regulation is the Concessions Act enacted by Parliament in May, 1991 which stipulates that one of the possible ways for the effective operation of assets owned by the central or local governments of the performance of activities assigned either to the state or local governments is the use of concession agreements. The new Act serves as the framework for the transformation of the two key sets of activities on a profit-oriented basis. The first set includes activities which are linked to asset items such as the operation and the construction of roads, ports and airports, telecommunications, distribution of radio and television programmes, mining and the transportation of goods and people by rail. The second set of activities is not linked to significant assets, though revenues from such activities have traditionally represented government revenues, such as games and lotteries. Based on the Concessions Act, which provides the framework, other technical acts are expected to be introduced (such as acts on the postal services, railways, roads, etc.)

9. Direct Foreign Investment in the Hungarian Economy

Importance of Direct Foreign Investment in Hungary

Although legal provisions for direct investments by foreign investors in Hungary have been in place since 1972, actual investments were negligible before 1988. A breakthrough was triggered by a much more liberal Act on Direct Foreign Investment enacted in 1988. The Act, combined with economic policies strongly welcoming direct foreign investment and in support of the development of a market economy, along with skilled Hungarian labour, the country's political stability and her encouraging economic position boosted the confidence of foreign investors and despite all difficulties led to a substantial increase in the number of joint ventures. By 1987, there were 123 business entities operating with foreign participation; their total equity was HUF 11 billion with a HUF 5.4 billion foreign exchange portion – whereas between the beginning of 1987 and the end of 1990 more than 5,000 joint ventures were formed with a total equity of almost HUF 200 billion. In 1990 alone, almost three-times as many joint ventures were established as in all the preceding years.

The involvement of foreign investment capital is necessitated by the financing position of the country and the capital needs of economic restructuring. This process plays an important role in privatization due to the insufficient volume of available local savings and the relative under-development of the capital market. Just as important as the financial advantages is the fact that direct foreign investment facilitates the introduction and the adaptation of up-to-date technical, marketing and management know-how.

Legal Regulations Affecting Direct Foreign Investment

Direct foreign investment is governed by the provisions of Act XXIV of 1988, as amended from time to time.

In accordance with the provisions of the Act, the foundation of companies (joint ventures) with foreign participation and the acquisition of stakes in existing companies are regarded as if they were purely Hungarian-owned. The earlier licensing procedure has been phased out: a simple registration with the Company Registry is sufficient. Foreign natural persons can hold shares not only in joint stock companies but can be the founders of any other types of companies or can acquire stakes in existing businesses. There are no constraints whatsoever on activities, including foreign trade. Joint ventures are eligible for all the preferences that are available to any Hungarian business entity and, apart from a few exceptions, their obligations are practically the same.

As a result of amendments to the Act, the previously generally available 20 per cent profit tax allowance (subject to a foreign participation of over HUF 5 million or 20 per cent) was phased out. A tax preference of 60 per cent over the first five years in operation and a 40 per cent preference over the second five years is available to the company if its equity is over HUF 50 million and foreign participation exceeds 30 per cent and more than 50 per cent of its annual gross sales is derived from manufacturing or the operation of a hotel, built by the company. Joint ventures engaged in any of the activities of special importance, listed in the Annex of the Act are eligible for a 100 per cent tax preference in the first five years and a 60 per cent tax preference in the second five years, provided they satisfy the conditions listed above.

The Act provides a tax preference to encourage foreigners to reinvest their profits in Hungary. The cash contribution of the foreign shareholder of the company, made in convertible currency, can be kept on the company's account in the currency of the contribution and used for any purpose designated by the company. Profits due to the foreigner and the amounts due to the foreigner from the proceeds in case of the liquidation or the sale of the company can be repatriated freely in the currency of the investment.

The new Concession Act, described under Chapter 8 above, helps to widen the business opportunities of foreign investors in Hungary.

Major Data of Joint Ventures Established in 1990

MAJOR DATA OF BUSINESS ENTITIES OPERATING WITH FOREIGN PARTICIPATION AND ESTABLISHED AS NEW ENTITIES IN HUNGARY (end of period)

Table 14

Branches of the economy	Joint ventures*											
	Number			Equity			Foreign stake in equity					
	1988	1989	1990	1988	1989	1990	1988		1989		1990	
	units			HUF million			HUF million	%	HUF million	%	HUF million	%
Industry	127	485	1,322	11,330	65,960	103,839	4,838	42.7	14,550	22.1	28,897	27.8
Construction industry	11	116	457	749	1,508	6,772	356	47.6	580	38.5	2,275	33.6
Agriculture	2	18	63	36	4,428	5,407	15	42.3	162	3.7	410	7.6
Transportation	3	24	119	69	5,904	6,463	57	82.8	144	2.4	356	5.5
Trade	37	447	2,240	3,691	34,866	52,416	1,550	42.0	9,834	28.2	14,701	28.0
Other	47	267	970	4,509	12,549	21,127	2,685	59.6	4,572	36.4	8,535	40.4
Total	227	1,357	5,171	20,384	125,215	196,024	9,502	46.6	29,842	23.8	55,713	28.1
Total (million USD)**	x	x	x	388	2,002	3,190	181	46.6	477	23.8	898	28.1
Index (1988 = 100)	100	598	2,278	100	614	962	100	x	314	x	581	x

* Data about equity are approximate figures.

** Calculated at the end-of-year midpoint rate for foreign exchange.

In 1990, 3,814 new, independent legal entities were formed with foreign participation which is 3.4 times more than in the year preceding* . The increase accelerated as time went by: 7 per cent of the companies were formed in the first quarter, 25 per cent in the second quarter, 29 per cent in the third quarter and 39 per cent in the fourth quarter.

More than a quarter of the business entities established in 1990 (26.8 per cent) were launched with foreign participation. Only 6 per cent (230 units) of business entities launched during the year were founded as exclusively foreign-owned entities.

The consolidated equity of the 3,814 companies, launched in the course of 1990, is HUF 70.8 billion, of which 35.7 per cent, i.e. HUF 25.3 billion (or USD 412 million at the exchange rate, applicable at the end of December, 1990) was put up in foreign exchange. By the end of 1990, 5,171 new joint ventures were formed with a combined equity of HUF 196 billion, of which 28.1 per cent, i.e. HUF 55.1 billion (USD 898 million) was put up in foreign exchange**. (See Table 14.) Most of this was in the form of in-kind contribution. Certain well-known foreign companies made major investments (in the range of USD 20-50 million, including Ford, General Motors, Sanofi in 1990 and Elektrolux, Nestlé and Suzuki in 1991).

In addition to a significant increase in the number of joint ventures (3.8-fold), a key characteristic of the newly founded companies is that their initial capital is usually smaller than the capital of companies launched in previous years.

In accordance with the data of balance sheets submitted to the Tax Authority, at the end of 1990 there were 5,693 joint ventures in Hungary. In 1990, foreign investments rose by HUF 63.2 billion to HUF 93.2 billion (USD 1,517 million) within the total founders' equity of all the existing business entities, i.e. it more than trebled compared with the comparable amount a year ago.

Despite the growth demonstrated above, direct foreign investment was less than it could have been considering the circumstances, the propensity for absorption in the Hungarian economy or the desirable levels. In accordance with the balance sheet data for 1990, the ratio of foreign capital within the Hungarian economy almost trebles over a single year, approaching 5 per cent of the total. The government's programme includes an important resolution that Hungary is to be made as attractive as possible to foreign investors and factors hindering foreign investment should be phased out as soon as possible. These include bureaucratic administrative features still to be eliminated and constraints imposed by low infrastructural standards (primarily that of telecommunications in general and telephone and telefax networks in particular). Progress in these fields and stable ownership structures in a legal sense will represent stronger attractions for serious investors than tax preferences and relatively cheap Hungarian labour.

* The data of the Central Statistical Office do not include foreign capital acquired through increases in founders' equity or the purchase of shares of existing business entities.

** See the previous footnotes.

II. The Banking System and the Securities Market in Hungary; Foreign Financial Relations

1. The Development and State of the Hungarian Banking System in 1990

The Reform of the Banking System

The reform of the banking system, as one of the decisive moments of the economic reform process, came into force on January 1, 1987, following wide-range and thorough preparations. Its primary objective was to render the economy more easily influenced by way of money, to improve the efficiency of capital allocation and to let monetary indications play a greater role in decisions of income earners.

As a result of the first step of the banking reform, the National Bank of Hungary, which had hitherto functioned as both a commercial bank and the central bank has, since 1987, gradually transferred its commercial banking functions to the commercial banks. The two-tier banking system developed in this way, making possible the application of an efficient monetary policy on the one hand, and the development of relations free of state interference between enterprises and commercial banks on the other.

The development of the banking system, the increase in the number of its members as well as the expansion of its functions all took place gradually. A few smaller specialized financial institutes came into being in the mid-eighties, before the introduction of the banking reform. These were not yet licensed to pursue retail banking and foreign exchange operations, nor to keep the accounts of enterprises, that is, they did not have general commercial banking licences. Nevertheless, using the deposits collected from enterprises and other sources (equity, profits), they extended loans to enterprises. It was also in the early eighties when three joint banks operating with foreign participation were established in Budapest.

On January 1, 1987, three commercial banks began operating (partly by former lending divisions of the National Bank of Hungary becoming independent), and two existing financial institutes carrying out special functions essentially on the basis of National Bank of Hungary commissions, received commercial banking licences.

The range of activities of the banks also evolved gradually. In 1987, the new commercial banks were assigned the task of keeping the accounts of enterprises, but they did not yet deal with retail banking and foreign exchange transactions. In 1988, they were authorized to keep the accounts of joint ventures and, from the beginning of 1989, to keep the foreign currency accounts of households. Since July, 1989, the commercial banks are licensed to extend foreign currency loans to Hungarian enterprises and to natural persons pursuing economic activities out of the foreign currency sources available to them, at their own risk.

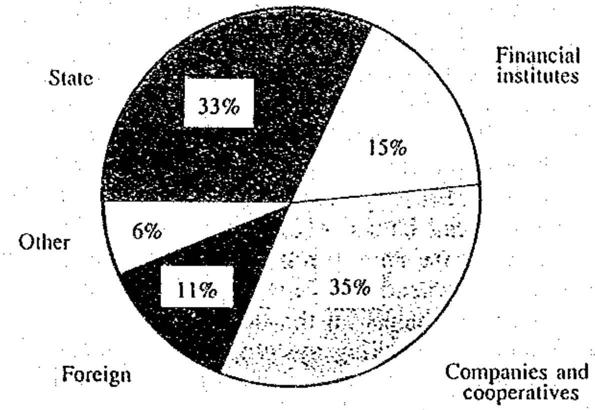
Since the first quarter of 1990, commercial banks prepared for the task took over from the National Bank of Hungary foreign currency transactions related to foreign trading operations. At that time, 8 financial institutes were licensed to administer foreign exchange transactions. By the end of 1990, their number had increased to 14 and reached 16 by May, 1991. The authorized banks may open accounts with foreign banks, through which they can administer their foreign trade-related FOREX transactions.

State Ownership within the Banking System

At the end of 1990, the Hungarian state still had one of the largest holdings among the participants of the banking system (see Figure 4). Nevertheless, only two financial institutes were fully owned by the state by the beginning of 1991. The state's direct share in the four largest commercial banks is significant – between 30 per cent and 50 per cent. However, indirectly (i.e. shareholding in the banks by enterprises owned by the state) the state's ownership share in the

32.

financial institutes is much greater. The state has no holdings in the commercial banks established or licensed in 1990.



OWNERSHIP BREAKDOWN OF SHARE CAPITAL OF FINANCIAL INSTITUTES (END OF 1990) Figure 4

Foreign Capital in the Banking Sector

During 1989–90, the role of foreign capital increased in the banking sector. International capital appeared in the increasingly liberalized banking market through the recapitalizing of existing financial institutes, the acquisition of state shares, but primarily through the establishment of new financial institutes. In the course of 1989–90, several foreign banks established joint banks together with Hungarian financial institutes; some of these were commercial banks with a universal licence, while others specialized in the securities trade.

At the end of 1990, the value of shares in financial institutes owned by foreigners amounted to approx. HUF 9.5 billion (approx. USD 155 million). This is somewhat less than 11 per cent of the total prime capital; in the case of recently established commercial banks, however, this ratio exceeds 67 per cent.

While in 1989, the fully Hungarian-owned banks accounted for 96 per cent of the total assets of the banks and the share of financial institutes operating with foreign participation was only 4 per cent, the share of financial institutes with at least one foreign shareholder rose to above 10 per cent in 1990. Their share in total profits of the sector followed essentially the same pattern: in 1989, 95 per cent against 5 per cent, while in 1990, 88 per cent against 12 per cent.

The Functioning of the Banking System in 1990

THE NUMBER OF BANKS AND THE STRUCTURE OF THE BANKING SYSTEM

On December 31, 1990, – in addition to the central bank – the Hungarian banking system consisted of 13 Hungarian-owned and 8 jointly-owned commercial banks, and 7 Hungarian-owned, 1 jointly-owned and 1 foreign-owned specialized financial institutes. Further members of the banking system include one off-shore bank and 260 savings cooperatives. (Hereinafter banking system shall mean the banks operating in Hungary, except for the central and the off-shore banks.) By the end of the year, the financial institutes also included five insurance companies. In the course of 1990, three jointly-owned and 1 foreign-owned commercial banks received licences for operation. In 1991, the number of insurance companies is also expected to increase significantly: in addition to those functioning already in 1990, another six have been licensed.

In Hungary, financial institutes are categorized according to size and licence. Thus there are:

– large banks (the size of their average total assets is HUF 195 billion; equivalent to USD 3.2 billion, at the exchange rate at the end of the year) all of which operate with full-fledged commercial banking licences;

– medium-sized banks (their average total assets amount to HUF 15 billion, USD 244 million) which came into being partly through the transformation of specialized financial institutes into commercial banks and partly through new foundations;

– specialized financial institutes (their average total assets amount to HUF 5 billion, USD 81 million) which do not have general licences, but are authorized to carry out specific commercial banking functions only;

– owing to its special role, the National Savings Bank (with total assets amounting to HUF 558 billion, USD 9 billion) is still a category on its own, which was operating for decades as the only bank serving households, so its parameters cannot be compared with those of the commercial banks in quite a few respects.

Based on their size, in 1987 the predominance of the large banks was still characteristic. Since then, their share has decreased, partly because of the emergence of new, medium-sized banks and partly, because the latter are more flexible and more dynamic – they do not have to struggle with the problems inherited from the mono-bank system. The increase in the relative importance of the medium-category banks continued unabated in 1990.

According to the categorization based on licences, commercial banks now dominate the scene. The development of their activities increasingly points in the direction of universal banks.

DEVELOPMENT OF THE YEAR-END TOTAL ASSETS IN A BREAKDOWN BY BANK GROUPS*

Table 15

	December 31, 1989	December 31, 1990	Index 1990/1989
	HUF billion	HUF billion	
Large banks	640.4	781.2	122.0
Medium-sized banks	136.3	238.1	174.7
Specialized financial institutes	22.3	43.0	192.8
National Savings Bank	471.9	558.2	118.3
Total	1,270.9	1,620.5	127.5
Of this:			
Hungarian-owned financial institutes	1,219.5	1,456.3	119.3
Jointly-owned financial institutes	51.4	164.2	319.4

* Excluding the savings cooperatives.

The 1990 overall sum of the total assets of the banking system was HUF 1,620.5 billion (USD 26.4 billion), in nominal terms 27.5 per cent more than at the end of 1989.