

# The Evolution of Official Statistical Data in the Czech Republic Since the 1989 Revolution

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## Abstrakt

Charakterizují se změny obsahu státní statistiky, změny metodologie statistického zjišťování a jejich dopady na kvalitu statistických informací poskytovaných orgány státní statistiky, zejména:

- \* přizpůsobení cenové statistiky vzniku územní a jiné diferenciací úrovně cen,
- \* založení celní statistiky po liberalizaci zahraničního obchodu,
- \* registrace nových podnikatelských subjektů a jejich postižení coby respondentů
- \* zavádění mezinárodních klasifikací doporučených Evropskou unií příp. OSN: analogie NACE resp. ISIC - odvětvová klasifikace ekonomických činností (od r. 1992), analogie ISCO - klasifikace zaměstnání (od r. 1993), analogie CPA resp. CPC - standardní klasifikace produkce (od r. 1994); harmonizovaný systém popisu a kodování zboží v zahraničním obchodě (HS) byl akceptován již v r. 1989,
- \* přepočty souhrnných ukazatelů produkce tzv. výrobní sféry na makroekonomické agregáty produktu (ze všech hospodářských činností) a od r. 1992 zavádění evropské soustavy národních účtů (ESA),
- \* od r. 1993 čtvrtletní uskutečňování výběrových šetření pracovních sil odpovídající standardu Evropské unie,
- \* od r. 1991 uskutečňování čtvrtletních a od r. 1992 měsíčních konjunkturálních průzkumů v průmyslu, stavebnictví a maloobchodě,
- \* zobrazení procesů restituce a privatizace anárondněného hmotného majetku.

Oficiální revize údajů státní statistiky z období před r. 1990 se neuskutečnila, protože jako zdroje zkreslení byly identifikovány skrytá inflace a "vylepšování hlášení" (tzv. samoobsluha lži) samotnými respondenty, které nebylo možné dodatečně věrohodně kvantifikovat. Nedostatky v harmonizaci různých vzájemně spjatých indikátorů byly též důsledkem chybějící systémovosti.

## Abstract

Changes in the activities of the state statistical bodies, in the methodology of statistical surveying, and the effects of these changes on the quality of the statistical information given by the statistical bodies are characterized in this paper, specifically:

- \* the adaptation of price statistics to the regional and other differentiation of the price level,
- \* the stabilizing of custom statistics following the liberalization of foreign trade,

- \* the registration of new entrepreneurs and their involvement as responding units,
- \* the introduction of recommended international European standard classifications: the domestic versions of the NACE (ISIC) since 1992, of the ISCO since 1993, of the CPA (CPC) since 1994; harmonized system of the description and coding of commodities in foreign trade (HS) had already been accepted in the year 1989,
- \* the switch from the production indicators of the so-called productive sphere to the macroeconomic aggregates of all the economic activities and the introduction of the European System of National Accounts (ESA) since 1992,
- \* the quarterly performance of the Labour Force Sample Surveys since 1993 in accordance with European Union Standards,
- \* the quarterly (since 1991) and monthly (since 1992) performance of business surveys in industry, construction and retail trade,
- \* the presentation of the figures on the restitution and privatization of the nationalized capital.

The official statistical data from the prerevolutionary period were not revised, as no appropriate ways to exclude the consequences of the hidden inflation and "respondent's improvements" (the self-lying principle), which were considered to be the origins of the distortions, were found. The insufficiencies in the harmonization of various related indicators also stemmed from the lack of a system approach.

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## **Introduction**

The main aim of this article is to characterize the changes in the methodology of statistical surveying in the system of indicators, and the effects of these changes on the quality of the information given by the statistical bodies. The mentioned changes will be treated mainly according to their time courses. However, the substantial interrelations will not be omitted. Some illustrations, ie. graph figures, will also be introduced.

## **1. Official Statistics at the End of 1989**

The chief task of the official statistics was to control state plan fulfillment so that the socio-economic development indicators had a subsidiary character. Practically all the indicators of output and input (including the labor force and fixed capital) were surveyed in an exhaustive manner. The state plan fulfillment was carried out not only on a national level, but also on a local level. The latter was the job of the district and county statistical bodies, where nearly 3/4 of the whole statistical staff was engaged. The Federal Statistical Office was the top of the state statistical service responsible for the methodology of statistical surveying in a broad sense, and also for the rendering of statistical information to the Communist Party and governmental bodies on the federal level, and to the international governmental organizations. The Czech and Slovak Statistical Offices were self-governing bodies, responsible for the collection and processing of statistical data (the district and county statistical bodies were part of the Czech and Slovak offices), and for the rendering of statistical information on national, republic and local levels.

This unique kind of state statistical service division was a consequence of federalism formally treated; it led to barriers and, later, to biases between concepts and their practical realization procedures (these biases could be seen primarily in 1991 and 1992).

The system of statistical indicators was derived from the statistical balance of the national economy, in which the material product system was embodied. The main focus was on the origin of output and its use. This was also the case for the sources and the uses of the labor force, for the balancing of the initial and final states of the fixed assets and finally for the description of primary and secondary income raises. The details of the statistical picture were given mainly by the so-called productive branch statistics (for industry, agriculture, forestry, construction, transport, communication, and commerce), which presented to the state plan fulfillment percentage the physical volume (in constant prices) indices and a variety of other indicators - on wages, working time, labor productivity, global and part-cost ratio inventories, etc. However, there were other statistics that were not directly connected with the planned processes. For example, the population statistics (number, age, birth, mortality and other rates); the incomes and expenditures of the population; the non-productive branch statistics, etc. The role of these statistics was rather limited.

A first look into the Historical Statistical Yearbook, 1985, or into CSSR Statistical Yearbooks published annually since 1957, will convince every reader

that many statistical time series existed, characterizing the federation on the whole as the so-called national republics and their counties, or even districts (a special yearly publication was offered to the regional statistics offices). An independent system of community and town statistics was developed and put into use - mainly for declared defence purposes - as various capacity indicators were included.

The statistical information given to the public was broad but incomplete; the balance of payments was only made available to leading politicians. For a long time there was a similar situation with the gross and net national debt indicators. Foreign trade figures were given either in foreign currency or in domestic currency using the unrealistic official exchange rates. The information about emissions influencing air, pollutants discharged into water courses and accidents related to water resources was not rendered.

The new Federal Statistical Office board, which started its activities in February 1990, tried to find an answer to the questions, which had been falsified in the previously presented statistical information. It was known that the publication of some figures in the past had been postponed or even omitted. There was not, however, a single case found to prove that the bias of the presented statistical information from the results was obtained from the statistical data process. There is a substantial difference in comparison with the findings on this matter in the former USSR, Poland and, primarily, Romania. Nevertheless, this does not mean that all the previously published time series can be used without any doubt.

A great suspicion exists about the price index numbering, especially that of the consumer price index and of the construction price index; it has been proven that hidden growth took place. Unfortunately, it is difficult to assess the rate of this hidden growth, and therefore the revision of the time series, which had been influenced by the use of incorrect deflators, can be made only by using certain assumptions. This assessment was carried out by V. Nachtigal (1991), who was active for a long time in the state statistics body before he started his well-known research activities. He made good use of other findings on hidden price growth (e.g. Johanovsky) and decided to carry out two revisions of the previously used deflators, which differ from the assumptions used. He also used the alternative possibility of export purchasing power, and he took into account the additional corrections stemming from the switch from one statistical source to another on fixed assets in the years 1968 - 1970. The first revision is based on the exchange of the nominal price index numbers by the average price index numbers. The second revision only considers one half of the mentioned

differences, as the remaining half is subscribed to the quality of commodity changes. The concentrated characteristics of the selected macroaggregate time series revisions are given in **Table 1**. Their yearly specifications can be found in **Table 2**.

**Table 1: Comparison of official and revised data on selected macroagregates-average increase per year in percent**

Indicator	1971-1975	1976-1980	1981-1985	1986-1988	1971-1988
official data					
gross material product	5.7	3.8	1.7	2.3	3.5
net material product	5.7	3.7	1.8	2.3	3.5
gross domestic product	5.6	4.0	2.3	2.6	3.7
Ist revision					
Gross material product	5.3	2.6	0.6	1.5	2.6
net material product	4.5	0.6	-1.3	-0.1	1.0
Gross domestic product	4.6	1.6	-0.1	0.6	1.8
IInd revision					
Gross Material Product	5.5	2.9	0.9	1.9	2.9
Net Material Product	5.2	1.4	-0.6	1.1	1.8
Gross Domestic Product	5.2	2.2	0.4	1.6	2.4

\*Source: V. Nachtigal

**Table 2: Comparison of official and revised data on selected macroagregates of the Czech Republic - increase per year in %**

Year	Official Data			Ist Revision			IInd Revision		
	Gross Mat.	Net Prod.	GDP	Gross Mat.	Net Prod.	GDP	Gross Mat.	Net Prod.	GDP
1970	7.7	5.7	5.1	8.2	6.7	5.9	8.4	7.3	6.3
1971	5.8	5.5	5.7	6.9	8.3	8.0	7.2	9.0	8.6
1972	6.3	5.7	5.6	5.3	3.3	3.6	5.6	3.9	4.1
1973	5.5	5.2	4.8	4.9	3.5	3.4	5.1	4.3	4.0
1974	5.4	5.9	5.9	4.9	4.8	5.0	5.2	5.5	5.6
1975	5.7	6.2	6.0	4.3	2.5	3.0	4.5	3.3	3.6
1976	3.8	4.1	4.0	2.5	0.5	1.2	2.7	1.3	1.8
1977	4.8	4.2	4.9	3.2	0.2	1.7	3.5	0.9	2.3
1978	4.5	4.1	4.3	3.3	1.0	1.7	3.6	1.9	2.4
1979	2.7	3.1	3.3	1.8	0.7	1.3	2.1	1.3	1.8
1980	2.9	2.9	3.6	2.1	0.8	1.8	2.4	1.7	2.5
1981	0.3	-0.1	0.9	-0.8	-3.1	-1.4	-0.6	-2.6	-1.0
1982	0.9	0.2	0.8	0.0	-2.5	-1.3	0.2	-1.9	-0.9
1983	2.6	2.3	2.6	1.3	-1.7	-0.4	1.5	-0.9	0.1
1984	2.4	3.5	3.7	1.1	-0.2	0.8	1.3	0.6	1.4
1985	2.4	3.0	3.4	1.7	1.1	2.0	1.9	1.6	2.4
1986	2.8	2.6	2.7	1.6	-0.7	0.0	2.1	0.5	0.9
1987	1.9	2.1	2.3	1.2	0.1	0.8	1.7	1.3	1.8
1988	2.3	2.3	2.7	1.5	0.3	1.1	2.0	1.5	2.0

V. Nachtigal did not treat other aspects of the selected macroeconomic aggregate time series. Nevertheless, we might expect further suspicions about the quality of the mentioned time series to be expressed, but this has not yet happened. The more sophisticated from second revision seems to be more realistic. The greater fluctuations in biases gross domestic product may be observed in the years 1976 - 1985, during which slight increases, or even decreases, were counted.

J. Krejčí (1993) drew attention to the substantial differences between the industrial index numbers and the corresponding index numbers of the national income arising from industry (the observed ratios are 1.36 - 1.75 for the years 1958 - 1988). He also cited the estimates of foreign authors who assert that the official data are exaggerated - see **Table 3**.

**Table 3: Various Indices of Industrial Production (1948=100)**

	1958	1968	1978	1988
1. Official index of industrial production (Section 'Industry' of Statistical Yearbooks)	300	582	1078	1426
2. Gross industrial production in the official social product series at constant prices	239	433	735	907
3. Net industrial production in the official national income produced series at constant prices	220	370	640	814
4. Lazarcik/Alton et al.'s value added index	184	320	427	495
5. Ratio line 1:3	1.36	1.57	1.68	1.75
6. Ratio line 1:4	1.63	1.82	2.52	2.88

The results of another revision may be found in Ivan Šujan's paper presented to this conference. Unfortunately neither the methodology of his revision nor the detailed results are given, and therefore no thorough comparison between the two revisions can be made.

The mentioned ratios express the differences between the methodological procedures that were used. The official index of industrial production was based on the sum of gross output (in recent years, of goods production). This was calculated by respondent units with comparable prices, which had usually been constant for five years or more.

The gross and net material product calculations were carried out by the federal (Czech or Slovak) offices, whereby the data stemming from the enterprise's book-keeping were used. These data concerning output and intermediate consumption were expressed in current prices, and therefore the unified statistical deflation procedures could take place. The book-keeping based data were gathered and classified assiduously.

The concept of individual productive branches (in some cases, but not in industry) was more comprehensive - including the secondary or subsidiary establishments engaged in the same type of activity but existing in organizations with another main type of activity. Therefore the explanation of the treated differences derives from the different methods that were used to eliminate price movement. The large share of the intermediate consumption of the industrial output enabled the multiplication of price-change inaccuracies. This effect was well-known to the planners in the last period of the centrally planned economy,



when the "adjusted own performances indicator" (similar to the net material product of the enterprise) was used instead of that of gross output. Last but not least, it is useful to remember that the statistical deflation of current figures on piece machinery and construction products is a very hard task for all statistical agencies. Also, the share of such output in our industry and construction was relatively high.

Finally, it should be stated that the total gross output of individual enterprises can be compared with similar aggregates for other periods and interpreted as volume changes only in such cases when no changes in the organizational structure of industry and the connected material flows occurred. One cannot be sure that all the requested recalculations following the mentioned rule actually took place, or were even possible.

I was employed at the Federal Statistical Office from 1990 to 1992, and therefore cannot fully know or assess the practices of the period 1948-1989 in their various peripeteiae. Available findings, however, lead me to conclude that, in principle, the staff of the central statistical bodies did not have to change the results coming from statistical processing (except for the usual verification of extremes or balancing). Also, the state statistics of that time managed by using the "self-lying principle" by which official statisticians gladly accepted favorably exaggerated results from reporting units and the users of the statistics behaved as if they were objective, even though they themselves had frequently participated in "improving" them. When the management of the former FSO identified this conclusion, it had no alternative but to state that there was no rational method of revising the previously published time series because it was not possible to trace "the gains" achieved by respondents in filling out the statistical reports. This does not imply, however, that the statistics published in the past cannot be corrected; this may only occur indirectly, e.g. by determining the purchase parity for the 1990 gross domestic product of the CSFR and comparing it with that of GDPs from the late 1960s (or 1940s). An index corresponding to them can then be used as a basis for calculating real average rates of growth.

## **2. Reflection of the Socio-Economic Changes on Official Statistics.**

The first visible change which took place during 1990 was the abolition of state plan fulfillment surveying, instead of which comparisons with the same period of the previous year came to the foreground. In the further stages, the surveying of material flows among various groups of suppliers and consumers,

and the surveying of material and energy consumption intensity of individual 'productive enterprises' was substantially limited.

## 2.1 Tourism Statistics

In mid-1990, the individual documentation of border crossings by tourists was cancelled. Since then the estimates of the number of passing tourists (as compiled by the customs authorities) has been used, and the neighboring country, instead of the country of origin of the visitors, is shown. The number of overnight stays is only obtained from the tourist accommodation facilities, which are registered at courts. These changes have to be taken into account when interpreting the figures in **Tables 4 and 5**.

**Table 4: Accomodation facilities for tourism**

Indicator	1989	1990	1991	1992
Accomodation facilities	2,863	2,531	1,633	1,132
Beds	196,637	193,244	136,507	130,466
Number of visitors (thous.)	9,108	8,423	5,686	4,472
Number of overnight stays (thous.)	28,715	24,480	14,982	13,481

**Table 5: Foreign tourism in CSFR**

Country	1989	1990	1991	1992
Departures of Czechoslovak citizens in total	8,569,197	20,654,000	39,612,723	42,207,682
Arrivals of foreign tourists in total	29,608,436	46,586,782	64,801,030	83,477,428
of which:				
Hungary	5,533,696	6,253,201	3,709,087	3,588,691
Germany	8,266,165	13,938,475	26,634,360	34,549,340
Poland	11,376,102	13,170,639	8,546,482	15,811,814
Austria	349,799	5,416,553	7,506,064	9,067,086
Former USSR	1,171,899	1,223,595	709,515	475,201

The increasing number of foreign visitors influenced the balanced sums and the structure of income and expenditure of the population balance - see **table 6**.

Starting from 1993, an attempt has been made to survey the accommodation services rendered by those accommodation facilities which were not surveyed

due to their smaller size (measured by the number of employees). A random sample of 1% of unregistered firms and 10% of firms registered at business courts were used.

## **2.2 Foreign Trade Statistics**

The breakdown of the foreign trade state monopoly in mid-1990 and the expanding number of foreign trade license holders contributed to substantial changes in the surveying of foreign trade. Previously, about 50 specialized state organizations (joint stock companies) were authorized for foreign trade operations and therefore these were respondents who were able to inform on the operations, in all their stages - agreement, delivery, cash. Regular custom statistics were introduced from January 1, 1991.

During the first months there were many mistakes and omissions in custom declarations which delayed their processing and, as a result, the published foreign trade figures were incomplete. This was the reason for the total revision of the published figures at the end of 1991. Nevertheless, even the revised figures are not comparable with the figures shown for the previous years as the custom statistics do not include such items as export and import of services, switches (re-exports carried on outside our territory), the value of know-how and training, the value of assembling works carried out abroad. At the beginning of 1992 the Unified Customs Declaration Formula (due to an agreement in association with European Communities) was introduced, and it took several more months before it could be filled in correctly.

In spite of the fact that the figures on foreign trade before 1993 are given separately for the Czech and Slovak Republics, complete, separated information does not exist. Not only are the deliveries from one republic to the other missing, but the exports and imports are recognized because of the seats of the traders, and not as a result of the producers and users following the tradition of the greater part of foreign trade operations being carried out by Czech firms.

The nominal price indices for exports, as for imports, based on data gathered from specialized foreign trade firms, were used up to the end of 1991. Afterwards, unit value indices were introduced because the custom statistics methodology made this possible, and because it was difficult to follow the current role of many newly engaged firms in foreign trade. An attempt is being made to specify the consequences of this methodological change on the indices by comparing them with the indices of the previous few years.

The information given by the figures in **Table 6** is not complete, but it is clear that the eastern market losses are soon compensated for by the participation of western markets. Using the further specified information, it could be shown that the compensation was connected with a substantial restructuring in the commodities composition: instead of the exportation of machinery, raw materials and mineral fuels are now exported.

**Table 6: Development of prices, terms of trade and physical volume of foreign trade - CSFR\***

Indices	1989	1990	1991	1992
Total				
Export prices	123.3	127.4	200.0	189.6
Import prices	130.5	131.4	265.0	249.9
Real terms of trade	94.5	96.6	75.4	75.8
Exports at current prices	155.3	153.7	229.3	253.7
Exports at constant prices	125.9	120.6	114.7	133.8
Imports at current prices	151.6	168.2	207.5	282.8
Imports at constant prices	116.2	127.5	78.3	113.2
Market Economies				
Export prices	108.4	123.3	.	.
Import prices	107.4	122.2	.	.
Real terms of trade	100.9	100.9	.	.
Exports at current prices	129.6	166.8	296.2	399.6
Exports at constant prices	119.5	135.3	.	.
Imports at current prices	123.2	177.1	255.4	428.7
Imports at constant prices	114.7	145.0	.	.
Planned and transition economies				
Exports prices	135.3	131.2	.	.
Import prices	149.9	142.7	.	.
Real terms of trade	90.3	92.6	.	.
Exports at current prices	178.0	142.0	170.0	123.3
Exports at constant prices	131.6	107.5	.	.
Imports at current prices	176.1	160.5	166.0	156.6
Imports at constant prices	117.5	112.4	.	.

### 2.3 Price Statistics

Price liberalization was the first serious challenge to the state statistical service after the 1989 revolution. Thanks to the 'Prague Spring' of 1968, a basis for market price statistics was created, as practically all price indices were sample-based indices. The samples, however, only concerned the commodities (including services) and not the area of differentiation, while before 1989 the unified price lists for the entire country existed (small exceptions being fruit and vegetables).

The basic information regarding the composition and the realized changes of the consumer price index in recent years is given in **Table 7**.

**Table 7: The number and structure of the representative commodities and services included in the consumer price indices in mid 1989-1993**

Item	No. in	Expired			New Inclusion	Exchange		
		1989	1991	1992		1993	1991	1992
Food goods	398	172	45	7	5	0	0	5
Non-food goods	854	374	110	12	11	17	2	4
Public catering	142	67	20	2			1	
Services (including housing rent, municipal services, transport and communications, etc.)	408	186	60	6	23	14	5	6
Total	1802	7991	2351	27	39	31	8	5

The number of representative items was reduced by half at the beginning of 1991, but the number of observations for each commodity (or service) was increased from 1 to 225 (three observations in each of the 75 districts); the results were published monthly. Parallel to this, the prices of 20 - 30 basic food goods were surveyed in 7 towns weekly at the beginning of price liberalization, at the start of the value added tax in 1993 and in such periods when greater price movements were expected, as in Autumn 1992 and 1993. These additional observations only took place for several weeks.

The weights for the consumer price index based in 1989 were derived from the retail trade turnover and all inhabitant expenditures on services in 1989. The same basic year and the same set of representative items with the weights derived from the family budgets were used for the cost of the living indices of selected social groups (employees, and originally separately workers; other employees; farmers, who were originally members of cooperative farms; and retired people). The influence of the obsolete weights is roughly measured from time to time: the results of the last comparison are given in **Table 8**.

**Table 8: The consumer price index for March 1993**

Group of items	1989 Retail trade turn-over structure	1st Quarter 1993 Family expenditures	3rd Q. '93/3rd Q. '92	
			Constant weights 1989	Current weights 1st Q. '93
Total	1,000,000	1,000,000	121.9	122.2
Food goods and public	398,230	346,296	121.5	116.4
Non-food goods	453,067	343,754	119.2	119.2
Services	148,703	309,950	132.1	133.3

The current weights for the 1st quarter of 1993 were derived from the family budgets of all surveyed social groups compared with the 1989 structure. As opposed to foods and public catering where a choice among commodities can be made, the services connected with housing, water and heating supplies cannot be avoided.

Much greater stress is given to the issue of how handling services which had been free of charge and are now ranked among payable services, e.g. medicines. CSO keeps the rule that such a transition can be taken into account only in the second year of its appearance, because in the first year the comparable price for the basic period of the weights is unknown. The change in quality does not influence the price indices (e.g. the price increase connected with the assembly of catalysator equipment for the 'Favorit' car has been removed).

**Graph 1: The development of consumer prices: monthly average for  
1989 = 100**

The price indices of producers, farmers and construction workers are calculated according to concepts which were common until 1989 with partial adaptations concerning the number of representative items and area differentiation, which is similar to the case of the consumer price index. A substantial review of all types of price indices is underway, and the new time series should start in January 1995.

## 2.4 Emergence of private entrepreneurship.

**Table 9: 1990-1992 numbers of entrepreneurial subjects by selected legal form\***

Date	Total	of which: Selected legal forms		
		State-owned enterprises	Joint-stock companies	Private entrepreneurs at per Trades Liscensing Act
Jan. 1, 1990	18,837	1,576	43	-
Jan. 1, 1991	178,993	3,505	658	124,455
Apr. 1, 1991	342,857	3,761	1,010	312,854
Jul. 1, 1991	482,385	3,818	1,721	422,219
Oct. 1, 1991	680,067	3,780	2,086	630,520
Jan. 1, 1992	955,647	3,737	2,541	891,872
Apr. 1, 1992	978,016	3,668	2,772	905,050
Jul. 1, 1992	1,030,068	3,562	3,669	937,766
Oct. 1, 1992	1,071,373	3,453	3,858	961,960
Dec. 1, 1992	1,106,499	3,298	4,044	979,633

The first registrations of private entrepreneurs took place in mid-1990 due to the new Trades Licensing Act. The district statistical bodies were responsible for the allotment of identification numbers. This agenda accounted for about 20% of their working capacity in 1990 and 1991. Unfortunately it isn't possible to distinguish between real entrepreneurs and those who only possess identification numbers. There is a great delay between license and number allotments, as the licensing authorities and registering courts are unable to settle their agenda in a short time. The rules concerning the termination of business activities are not adhered to; therefore a lot of dead souls may also be found in the statistical registers, as the register of the reporting unit has to be kept in full accordance with the registers of official authorities.



**Table 10: Structure of private entrepreneurs Dec. 31, 1992**

Indicator	Legal forms	
	101 and 103	102 and 104
Private entrepreneurs in total	1,205,955	15,622
including (%):		
Agriculture, forestry and game management	6.0	1.3
Fish breeding and fishing	0.0	0.0
Mining and quarrying	0.2	0.1
Manufacturing industry	22.8	16.6
Production and distribution of electricity, gas and water	0.1	0.1
Construction	17.1	8.8
Trade, repairs of motor vehicles and consumer goods	18.0	37.0
Catering and accommodation	5.7	2.8
Transport, storing and communications	3.8	11.3
Banking and insurance	0.2	0.1
Immovables, services to enterprises, research and development	20.4	19.8
Public administration, defence, compulsory, social insurance	0.4	0.1
Education	1.2	0.4
Health care, veterinary and social services	0.4	0.1
Other public, social and personal services	3.7	1.5
Private households with employed persons	0.0	-
Extraterritorial organizations and associations	-	-

According to the recent revision, only 788,653 of the 1,119,400 registered entrepreneurs in December 1993 were really doing business, i.e. about 30% of the statistically registered were 'dead souls,' mainly in construction, retail trade and other business services. **Tables 9 and 10** include the basic information about the historically expanding numbers and their last published industrial structuring.

**Table 11** shows the role of the private sector in the national economy.

**Table 11: 1992 structure of national economy by selected legal form and type of ownership\***

Type of ownership Legal form	Numbers as of Dec. 31,1992	Type of ownership Legal form	Numbers as of Dec. 31, 1992
Total units registered	1,118,637		118,637
1.of which: in ownership:		2.	
Private	1,064,947	of which:	
Cooperative	4,153	Selected legal forms:	
State	14,125	State-owned enterprises	3,272
Municipal	5,547	Trading companies in total	39,495
Of associations, political parties, churches	20,613	of which: Joint-stock companies	4,076
External	3,690	Cooperatives	4,041
International		Budgetary organizations	1,827
(internal and external)	5,120	Contribution-based organizations	2,600
Mixed (combined types of internal ownership)	442	Private Entrepreneur in total	1,029,343
		including:	
		Those running their businesses as per Trade Licensing Act	982,075
		of which: Those incorporated in business register	15,590
		Self-employed farmers in total	47,268
		of which: Those incorporated in business register	32

\* Data from the register of reporting units

The development of private entrepreneurship is closely connected with the privatization of former state property. The statistics regarding privatization are prepared by the Ministry for the Administration of National Property and its Privatization. The information about the importance of various privatization methods used may be found in **Table 12**.

**Table 12: Property approved for privatization and passed over to the National Property Fund by founder (as of June 30, 1993)**

Indicator	Total	Including:				
		Industry	Agriculture	Trade and regions	Other material branches	Health service and other non-material branches
Total property (mill CZK)	607,635	285,599	79,625	30,970	183,326	28,115
Businesses to be privatized	4,893	1,951	1,413	963	408	158
Privatization method: Property (mil CK)	5,634	2,011	772	2,401	304	146
Auction: Businesses to be privatized	431	113	65	209	26	18
Public tender: Property (mil. CK)	16,434	11,219	2,496	1,636	544	539
Businesses to be privatized	424	208	95	76	13	32
Direct Sales: Property (mil. CK)	38,016	22,748	7,672	3,839	2,655	1,102
Businesses to be privatized	1,359	560	436	236	94	33
Joint-stock companies: Property (mil. CK)	534,779	245,234	65,532	19,000	178,964	26,049
Businesses to be privatized	1,327	528	407	202	141	49
Free transfer: Property (mil. CK)	12,772	4,387	3,153	4,094	859	279
Businesses to be privatized	1,352	542	410	240	134	26

The following table contains information concerning privatization through shares (**Table 13**), the progress of privatization in agriculture (**Table 14**), and the small-scale privatization of businesses (**Table 15**).

**Table 13: Privatization through shares (as of June 30, 1993)**

Indicator	Total	including:				
		Industry	Agri- culture	Trade and regions	Other material branches	Health service and other non- material branches
Total capital stock Privatization method:	442,145	229,007	61,554	23,020	113,779	14,785
Intermediate sale	6,193	4,459	407	1,263	24	40
Vouchers	271,324	152,344	40,216	15,644	56,007	7,113
Domestic direct sale	8,194	4,455	1,045	156	641	1,897
Temporarily in NPF*	71,200	48,184	8,192	299	11,732	2,793
Permanently in NPF*	329	260	24	0	9	36
Free transfer	49,763	4,464	4,010	200	39,712	1,377
Resitution claims + RIF**	16,550	8,514	2,017	714	4,858	447
Foreign direct sale	7,103	4,597	1,121	975	314	96
Employee's shares	11,489	1,730	4,522	3,769	482	986

\* National Property Fund

\*\* Restitution Investment Fund

All types of ownership and their legal forms are included within a set of attributes which creates the description of the unit stated in the statistical register of reporting units. The privatized joint-stock companies were transferred from state ownership at the moment when new stock holders had the right of disposal.

**Table 14: Progress of privatization in agriculture**

Indicator	Total	including:		Total	including:	
		Cooper ative sector	State and public sectors		Cooperat ive sector	State and public sectors
Dec. 31, 1991				Dec. 31, 1992		
Applicants for agricultural land restitution	61,859	46,073	15,786	199,958	121,989	77,969
of which: Applicants with requests attended to the affirmative	33,150	27,063	6,087	110,941	79,582	31,359
Applicants with approved requests for restitution of agricultural land in the area:						
Up to 5.00 ha	30,314	24,905	5,409	87,583	64,805	22,778
From 5.00 to 10.00 ha	1,554	1,154	400	12,940	8,178	4,762
Over 10.00 ha	1,282	1,004	278	10,418	6,599	3,819

\*Source: Statistická ročenka České republiky 1993

**Table 15: Small-scale privatization of business**

Indicator	As of:				
	Dec. 31, 1991	Mar. 31, 1992	June 30, 1992	Sep. 30, 1992	Dec. 31, 1992
Business approved for privatization	24,523	27,881	30,303	31,589	32,289
Businesses privatized	14,155	17,666	20,028	21,637	22,487
including:					
In auction -number	12,492	15,688	17,904	19,428	20,182
-Mill,CSK	14,504	20,975	24,874	27,575	28,989
Sold to economic lease holder					
-number	1,521	1,795	1,923	1,994	2,090
-Mill,CSK	280	354	403	436	472
Businesses returned to original owner	142	183	201	215	215
Of privatized:					
Shops	7,672	9,507	10,747	11,502	11,891
Restaurants and canteens	1,451	1,827	1,989	2,100	2,168
Local production and services businesses	3,164	3,805	4,237	4,528	4,667
Others	1,868	2,527	3,055	3,507	3,761

\*Source: Statistická ročenka České republiky 1993

## 2.5 Output Statistics

In 1990 the state statistical service was under great pressure, as it was seen as an integral part of the state planning process that had to be cancelled. In 1991, it was decided to drop the regular monthly surveying of reporting units with less than 100 employees. For the year 1992, in accordance with book-keeping regulations, the specified limit was lowered to 25 employees. Unfortunately, the state statistical service did not involve sample surveying, partly due to insufficiencies in the reporting units' registers, but mainly due to lack of professional knowledge and experience. The Public Opinion Research Institute helped to gather some basic information on the ratio of proper entrepreneurs to the identification number holders and on the extent of realized activities (sales, number of employees, intermediate consumption etc.) in the emerging private sector. The main problem with the output statistics for 1991 and 1992 are the

estimates of outputs achieved by establishments with different kinds of activities rather than the main activity of the legal subject that they are included in. It is supposed that the specified establishments were partly separated and privatized (especially in agriculture). It is expected that this information gap can overlap with the aid of yearly indicators on taxation. However, a serious delay exists both in processing data and in fair declaration for the current year (tax evasion is punishable, but only after 3 years). The great fall in industrial production in 1991, which is evident (see **Graph 2**), might also be influenced by changing the ways of statistical surveying.

**Graph 2 The development of industrial production, goods production, enterprises with 25 workers or more, monthly average 1989 = 100**

The same conclusions cannot be made for construction work, as existing statistical information has practically doubled: the data regarding construction work can be compared with the data on fixed capital investment structured into machinery and parts for construction work. Nevertheless, it must be admitted that not all renovations were necessarily statistically surveyed.

Moreover, there were external influences which have caused distortions. The expectations connected with the introduction of the value-added tax on January 1st, 1993 have caused some exaggeration of the figures from the December 1992 output. An opposite consequence has been observed in the figures from the December 1993, output due to the decreasing of the income tax rate in 1994.

**Graph 3 Development of construction works, enterprises with 25 workers or more, monthly average 1989 = 100**



An exhaustive statistical surveying of output cannot be expected to take place again. It is, however, possible to involve such sample surveys which will cover all types of reporting units using this stable methodology. It is supposed that the new index of industrial production based on about 500 representative items of industrial goods (and services) and on the value added by manufacturing in 1993 will be prepared for current monthly measurement at the beginning of 1995. Using the obsolete industrial production index numbers until 1995, it is necessary to take into account the influence of other possible external factors. Since 1992, goods production has been surveyed instead of gross production. The concept of gross production is a bit broader: it also includes changes in unfinished production stocks. The reporting units report on goods production in current prices; the branch total of goods production is deflated by the CSO using the approximative deflators. The newly emerging and terminating units cannot be taken into account, as every reporting unit has to report both on the current as well as on the comparable period of the past year. However, from 1994 sample surveying among the reporting units with less than 25 employees will be carried out by using the concept of goods production or gross output. The growing role of estimates for this group of respondents is evident from **Graphs 4 and 5**, which characterize the estimated parts of totals.

**Graph 4:** Estimated part of total industrial production

**Graph 5:** Estimated part of total construction works

**Table 16: Development of gross domestic product**

Indicator	1989	1990	1991
1. Global product created	1,141,520	1,206,377	1,498,316
2. Operating costs of providing non-material services by organizations	206,861	225,541	289,702
3. Profit (+)/loss (-) from non-material activities (excl. housing economy)	-5,208	-9,201	-15,971
4. State insurance services	4,363	2,578	2,357
5. Non-material performances of population	5,484	6,806	9,924
6. Total performance of national economy at selling prices (1 through 5)	1,353,020	1,432,101	1,784,328
7. Material consumption in production	713,579	734,881	889,554
8. Material costs of providing non-material services by organizations	108,250	115,359	144,986
9. Depreciation and depreciated value of population-owned fixed assets retired, subject to depreciation and used for non-material activities	2,008	2,058	2,600
10. Total material consumption in material and non-material spheres (7 through 9)	823,837	852,298	1,037,140
11. Depreciation and depreciated value of fixed assets retired and subject to depreciation (including houses owned by population)	76,435	78,276	86,219
12. Operating component of material losses	4,905	5,504	8,946
13. Material component of intermediate consumption (10-11+12)	752,307	779,526	959,867
14. Payments from material sphere for non-material services*	33,252	42,638	58,569
15. Payments from non-material sphere for non-material services*	32,210	34,692	44,334
16. Other settlements from material sphere for costs of operation of non-material activities	8,554	6,710	3,943

Indicator	1989	1990	1991
17. Payments from material sphere for state insurance services	2,041	1,156	946
18. Payments from non-material sphere for state insurance services	91	57	76
19. Non-material component of intermediate consumption (14 through 18)	76,148	85,253	107,868
20. Total intermediate consumption (13+19)	828,455	864,779	1,067,735
21. Gross domestic product at market prices (6-20)	524,565	567,322	716,593
22. Indirect taxes	50,012	69,499	98,137
23. Subsidies to purchases for intermediate consumption	2,518	1,501	0
24. Gross domestic product at factor cost (21-22+23)	477,071	499,324	618,456
25. Imputed banking services	14,985	15,721	45,279
26. Branch-structured gross domestic product (24+25)	492,056	515,045	663,735

\*Excluding social payments to population from organizations: the Czechoslovak balance of national economy incorporates these payments into those for non-material services.

**Table 17: Expenditures on gross domestic product by component of use**  
(Mill. CSK current prices)

Indicator	1989	1990	1991
1. Material personal consumption by population	233,907	261,761	295,139
2. Reclassification of depreciation and deprecated value of population-owned retired fixed assets for non-material activities, subject to depreciation, into operating costs of services	2,008	2,058	2,600
3. Consumption of housing in owner-occupied dwellings	2,008	2,058	2,600
4. Payments by populaion for non-material services	33,925	41,766	60,853

Indicator	1989	1990	1991
5. Contributions to membership organizations and collections (included in item 4 above)	2,661	2,259	1,484
6. Bets up to the level of winnings (included in item 4 above)	1,019	1,072	1,025
7. Estimated payments by population for services of state-owned insurance companies	2,048	1,228	1,189
8. Reimbursements for costs of travelling, removal, and the like in Czechoslovak currency	6,305	7,018	9,374
9. Consumption by non-residents on CR territory	8,631	9,582	26,398
10. Private consumption (1-2+3+4-5-6+7-8-9)	251,264	284,824	318,900
11. Accumulation in fixed assets and unfinished construction	58,873	69,333	74,932
12. Depreciation and depreciated value of fixed assets retired and subject to depreciation	76,435	78,267	86,219
13. Investment component of compensation for losses	1,123	1,684	4,105
14. Gross fixed capital formation (11 through 13)	136,431	149,293	165,256
15. Increase in active assets, stocks and reserves	4,079	13,235	47,921
16. Gross capital formation (14+15)	140,510	162,528	213,177
17. Unpaid services	123,998	126,262	153,170
18. Covered from non-material sphere excluding payments for services (incl. in item 17 above)	8,554	6,710	3,943
19. Unpaid services covered by collections and by contributions from membership organizations	2,661	2,259	1,484
20. Profit (+)/loss (-) from providing non-material services	-5,208	-9,201	-15,971
21. Final consumption by administration and membership organizations (17-18+19+20)	112,897	112,610	134,740
22. Total consumption of gross domestic product (10+21)	364,161	397,434	453,640
23. Domestic use of gross domestic product in total (16+22)	504,671	559,962	666,817

## 2.6 System of National Accounts

The state statistical service was obliged to introduce a system of national accounts in 1992 by a resolution of the former federal government in May 1990. The first attempts to start these activities, however, were made in 1968 and then again in 1988. Therefore, some professional knowledge and even experience existed. Nevertheless, it was not clear which version of national accounting should be preferred. In 1991, during the period in which the association agreement of the former CSFR with the European Community was under preparation, the European System of National Accounts (ESA) was decided upon. At the same time, direct cooperation between the former FSO, CSO and SSO with Eurostat began. This cooperation has been and still is very fruitful, as it secures the fluent inflow of statistical know-how from the statistical offices of practically all EC member countries.

It is supposed that the first preliminary set of national accounts for 1992 will be published in 1994. Thus a more solid basis for GDP quarterly estimates will arise, as the mentioned set should also include the input-output table. It is hoped that this set will enable more comprehensive analyses of the mutual interrelations of the parts recognized inside the system, i.e., that of sectors, branches, etc. However some distortions will survive, e.g., the new industrial production index, using the value added by manufacturing as weights, will still be under preparation. (The present goods production index has features similar to the output index.)

The calculations for the gross domestic product and related indicators began in 1992. Having some previous experience with the transformation of MPS indicators into SNA indicators (using the recommendations made by the UNO in "Comparisons..."), the former FSO began, paradoxically, with quarterly estimates (retrospectively for 1991 and 1990 also). The reason for this was the urgent need for a global short-term indicator and the delays in the branch processing of yearly data (the letter having not been settled up to now). An output-based method of the GDP's indirect calculation is illustrated by the figures in **Table 16**. The expenditure-based method of indirect GDP calculation may be followed with the aid of items in **Table 17**. Both methods were applied to data of current prices. The expenditure-based components of GDP were later deflated into the constant prices of 1984 - see **Table 18**.

**Table 18: Gross domestic product components** (bln CSK, 1984 constant prices)

Indicator	1989	1990	1991	1992	1992 (in %)
Private consumption	237.4	253.2	192.7	211.5	52.7
Public consumption	102.5	103.4	94.0	90.5	22.5
Gross fixed capital formation	139.8	136.8	112.6	116.9	29.1
Increase/active assets, stocks, reserves	3.8	12.1	16.6	-27.0	-6.7
Net exports	26.4	-1.8	16.2	9.6	2.4
TOTAL	509.9	503.7	432.1	401.5	100.0
Index (1989=100)	100.0	98.8	84.7	78.7	x

The relatively high share of gross fixed capital formation in 1992 is rather astonishing, as is the relatively low share of private consumption, which is, however, more unstable. It is supposed that the possible statistical shortening of (probably industrial) output might have decreased private consumption. The rapid division of the former state and cooperative retail trade organizations led to direct statistical surveying of only about 40% of retail turnover in the first half of 1993, the substantial remaining part being estimated. It should also be noted that construction work and the corresponding part of the gross fixed capital formation are deflated by indices which unfortunately are not of the highest quality.

According to the preliminary figures stated in **Table 19**, the volume of the 1992 gross domestic product was 21.3% lower than in 1989. A certain exaggeration of the gross fixed capital formation can be explained by the introduction of the value-added-tax from January 1st, 1993. Many investors were glad to pay their expected bills in advance, and thus the higher figures in the December 1992 output, i.e., construction work, were commonly 'backed'. (It should be mentioned that such types of statistical 'backing' were common in the pre-transition period but are no longer necessary.)

The development of the private sector share of the GDP, and more recently of the non-state sector, may be seen in the figures given in **Table 19** and pictured in **Graph 6**. The two specified shares differ in the inclusion of cooperatives (until NZERO) and later in the inclusion of companies with mixed ownership.

Industrial specification is shown for the years 1989-91 in **Table 20**; more detailed specification of 1992 industrial output may be found in **Table 21**.

**Table 19: Share of non-state sector on the GDP**

YearQ.	GDP current prices	GDP constant prices	Private sector %	Non-state sector %	GDP current p. private s.	GDP constant p. private s	GDP current p. non-state s.	GDP constant p. non-state s.
1985	473.7	465.6	0.4	8.3	1.9	1.9	39.3	38.6
1986	483.0	475.3	0.4	8.5	1.9	1.9	41.1	40.4
1987	495.1	478.0	0.5	8.4	2.5	2.4	41.6	40.2
1988	513.4	487.8	0.5	8.5	2.6	2.4	43.6	41.5
1989	524.5	509.9	0.6	11.2	3.1	3.1	58.7	57.1
1990	567.3	503.7	3.1	12.3	17.6	15.6	69.8	62.0
1991.1.Q	183.1	122.6						
2.Q	176.0	106.1						
3.Q	176.8	103.0						
4.Q	180.7	100.4						
Year	716.6	432.1	11.3	17.3	81.0	48.8	124.0	74.8
1992.1.Q	181.1	96.7	16.3	20.3	29.5	15.8	36.8	19.6
2.Q	182.3	96.4	18.5	24.5	33.7	17.8	44.7	23.6
3.Q	200.3	103.8	20.0	26.0	40.1	20.8	52.1	27.0
4.Q	207.6	104.6	21.5	27.5	44.6	22.5	57.1	28.8
Year	771.3	401.5	19.2	24.7	147.9	76.8	190.6	99.0
1993.1.Q	213.0	94.6		31.2			66.5	29.5
2.Q	223.1	97.5		44.7			99.7	43.6
3.Q	228.3	102.2		56.9			129.9	58.2
1.3Q	664.4	294.3		44.6			296.1	131.2

## Graph 6: Gross domestic product and private sector share

**Table 20: Estimated changes in the industrial structuring of the GDP (constant prices)**

Industry	1991 in %	Volume change 1991/1989 in %
Agriculture	7	+ 1.6
Forestry	0.4	- 35.7
Water economy	0.5	+ 67.5
Mining, manufacturing, electricity, power	51.4	- 16.9
Construction works	7.0	- 25.6
Transport	2.0	- 44.8
Communication	2.2	- 1.6
Trade	9.3	- 30.4
Market services	9.9	+ 16.4
Non-market services	9.4	- 0.8
Banking and insurance companies	0.9	- 48.3
<b>TOTAL</b>	100	- 15.3

\*Source: materials CSO



**Table 21: 1992 output of industry (based on 1992 organization and methodology)**

Branch	Goods production (1989 constant prices)		<u>1992</u> 1989 gross output estimate
	mill CSK	%	
Industry in total	425,207	100.0	67
Including:			
Mining and quarrying	33,493	7.88	76
Food industry	92,459	21.74	81
Textile and clothing industries	24,514	5.76	63
Production of leather and leather products	7,479	1.76	60
Production of wooden goods	6,241	1.47	66
Pulp and paper industry, printing industry	13,597	3.20	77
Coking; oil refining; production of nuclear fuel, radioactive elements and compounds	19,503	4.59	86
Production of chemicals and man-made fibres	20,588	4.84	65
Production of rubber and plastic products	7,041	1.66	62
Production and processing of aggregates and earth; ceramics	16,706	3.93	67
Production of metals and metallic products	57,926	13.62	60
Production of machines and devices/instruments	34,212	8.05	54
Production of electrical and optical devices	15,970	3.75	42
Production of means of transport	30,732	7.23	70
Production n.e.c.	13,600	3.20	...
Production and distribution of electricity, gas and water	31,146	7.32	91

\*Source: materials CSO, own estimates

The fall in production was more important in the majority of the production of goods branches than in the service sector. Using the figures from **Table 21**, the most affected branches were those of electrical engineering, machinery, the metal industry, chemistry and rubber, textiles and clothing and leather. On the other hand, an increase of output can be expected in branches with a rapid increase of the private sector, particularly in services such as real estate, business services, financial services, probably trade and catering, etc., although reliable figures are still missing.

## **2.7 Classifications**

The International Standard Industrial Classification of all economic activities (ISIC) and its partner, Nomenclature generale des Activités économiques dans les Communautés Européennes (NACE), were used as standards for the new industrial classification of economic activities (odvětvová klasifikace ekonomických činností - OKEČ), which has been used since November 1991.

The Harmonized System of the Description and Coding of Commodities (HS) and the Standard International Trade Classification (SITC) have been used since they were recommended for custom and international statistics purposes - a change that was not influenced by the 1989 revolution.

The International Standard Classification of Occupations (ISCO) was translated, partly adjusted and published for common use in August 1992. At the end of 1993 the domestic version of the Classification of Production by Activities (CPA) will be published for common use from 1994 (the title will be Standardní klasifikace produkce - SKP). Thus the necessary interconnection between the Central Product Classification (CPC) of the EC and the HS will arise.

Further classifications of domestic versions, such as as e.g. ICSE (on employment status), COFOG (on governmental functions), ISCED (on education) will be prepared and introduced. The classification of countries is carried out according to international standard ISO 3166.

Data output, employment, wages, etc. in the time series were classified by the old classifications until 1991; since 1992, the OKEČ classification has been used (the double classification either for 1991 or 1992 being indisposable). The classification and coding of the purpose of final consumption of households (EC standard) was introduced into the family budget statistics in 1993.

## 2.8 Employment and Unemployment Statistics

Employment indicators are traditionally surveyed together with output indicators from individual firms or institutions, and therefore the effect of the transition process on them is similar from the statistical point of view. Starting from 1993, a labor force sample surveying households /LFS/ on a quarterly basis has been introduced, and thus new series, which are more comprehensive than those connected with output statistics, on employment and unemployment are available.

The main consequences of the transition process on employment statistics may be seen in the branch classification of employees. The preceding employment statistics were based on branch differentiation at the firm level, i.e. the individual firms as reporting units did recognize the structure of their staff according to real activities performed using the common obligatory branch classification and the results were reported to statistical bodies. (At the same time, output structuring took place according to the same branch classification; however, as different forms for data collecting were being used, the output data were not fully comparable with the employment data, the latter being considered more accurate.)

In 1991 the OKEČ classification was introduced and the employment data were temporarily classified simultaneously according to the old branch and OKEČ classifications. Thus the possibility of interconnection in the employment time series has been secured - see **Tables 22 and 23**.

**Table 22: Workers in national economy by branch (as of year-end)**

Branch (old classification)	1990			1991		
	Total	of which: Women		Total	of which: Women	
		Number	%		Number	%
<b>TOTAL*</b>	5,387,098	2,384,010	44.3	4,889,281	2,165,930	44.3
Including:						
Agriculture	481,308	184,474	38.3	393,496	150,674	38.3
Forestry	73,438	19,549	26.6	55,520	13,396	24.1
Water economy	28,644	9,124	31.9	26,804	8,098	30.2
Industry	2,056,363	800,290	38.9	1,820,988	695,486	38.2
Construction	506,091	61,512	12.2	459,360	53,253	11.6
Geological activities	9,532	1,926	20.2	6,840	1,503	22.0
Design activities	53,368	23,572	44.2	45,819	17,894	39.1
Transport	285,579	71,289	25.0	292,770	67,093	22.9
Communications	82,033	54,415	66.3	82,374	53,590	65.1
Internal trade	454,694	340,532	74.9	472,760	316,740	67.0
External trade	20,095	13,144	65.4	15,503	10,417	67.2
Material technical supplies	39,620	20,961	52.9	31,918	17,685	55.4
Purchase of agricultural products	15,843	5,799	36.6	12,151	4,575	37.7
Publishing and other material activities	15,749	8,097	51.4	10,558	5,710	54.1
Science, research and development	105,496	39,082	37.0	79,945	29,620	37.1
Housing economy	73,803	31,666	42.9	52,390	23,735	45.3
Accommodation services	36,097	24,943	69.1	35,446	24,122	68.1
Services to tourism	5,020	3,509	69.9	5,823	3,528	60.6
Municipal services	166,883	61,420	36.8	108,050	49,874	46.2
Education	297,154	214,577	72.2	285,853	207,059	72.4
Culture	86,565	45,240	52.3	59,874	32,333	54.0
Health care	238,816	189,167	79.2	230,243	182,930	79.5

Branch (old classification)	1990			1991		
	Total	of which: Women		Total	of which: Women	
		Number	%		Number	%
Social care	36,650	32,554	88.8	30,417	26,827	88.2
Commercial and technical services	46,468	23,975	51.6	96,982	59,032	60.9
Banking	22,492	18,226	81.0	34,016	26,851	78.9
Insurance	7,467	5,065	67.8	9,343	6,466	69.2
Administration, justice prosecution, arbitration	102,060	63,348	62.1	97,154	63,318	65.2
Activities of membership organizations and other activities	39,770	16,554	41.6	36,884	14,121	38.3
Material branches	3,966,310	1,561,441	39.4	3,567,018	1,364,638	38.3
non-material branches	1,420,788	822,569	57.9	1,322,263	801,292	60.6

\*Excluding women on maternity and additional maternity leaves, incl. secondary-job workers

**Table 23: Workers in national economy by branch classification of economic activities (as of year-end)**

Branch (OKEČ)	1990			1991*		
	Total	of which: Women		Total	of which: Women	
		Absolute Number	%		Absolute Number	%
<b>TOTAL**</b>	4,889,281	2,165,930	44.3	4,766,115	2,116,330	44.4
Including:						
Agriculture, forestry and game management	480,927	175,655	36.5	373,492	139,757	37.4
Fish breeding, fishing and related services	2,300	499	21.7	2,005	435	21.7
Total industry	1,826,619	674,604	36.9	1,724,760	636,475	36.9
Construction	390,142	45,370	11.6	396,016	42,895	10.8
Trade, repairs of motor vehicles and consumer goods	483,651	322,049	66.6	511,816	325,145	63.5
Catering and accommodation	93,209	58,765	63.0	106,883	65,619	61.4
Transport, storing and communications	366,563	122,329	33.4	358,811	117,722	32.8
Banking and insurance	43,358	33,316	76.8	55,973	42,008	75.1
Immovables, leasing of movables, services to enterprises, research and development	339,393	142,342	41.9	344,530	140,415	40.8
Public administration, defence, compulsory social insurance	106,559	65,322	61.3	130,905	78,299	59.8
Education	330,750	239,463	72.4	333,112	245,915	73.8
Health care, veterinary and social activities	264,130	212,531	80.5	264,824	212,425	80.2
Other public, social and personal services (incl. culture)	161,680	73,685	45.6	162,988	69,220	42.5

\* Preliminary data

\*\* Excluding women on maternity and additional maternity leaves, inclu. secondary-job workers

In 1993 the previous methods of branch structuring at the firm level were abandoned, as the newly begun establishment statistics were to be used instead. This intention, however, succeeded only partially, and therefore the classification of the firm staffs was possible only globally, i.e. the whole staff of the individual firm was considered to be engaged only in the main activity of the firm. (The establishment statistics at the end of 1993 were based on gathered forms from a small number of reporting units, and therefore their use does not substantially improve the picture of the economic activities structure.)

Last but not least, the troubles with the statistical surveying of the small sized firms should be mentioned. The increase in the working age population by 200,000 people at the end of 1992 compared to the end of 1989 was accompanied by a decrease of more than 300,000 employees during the same period, whereas only a mild increase in unemployment, 134,000, took place. The important labor force flows were not only from the employed to the unemployed and vice versa, but also from the labor force to the economically inactive - see **Table 24**.

**Table 24: Changes in working-age population by sex and status (in thousands)**

Indicator	1989 (end of year)			1992 (end of year)		
	Total	out of which		Total	out of which	
		male	female		male	female
Working-age population out of which:	5946	3130	2816	6150	3216	2934
employed	4660	2542	2118	4344	2428	1916
unemployed	0	0	0	134	57	77
not econ. active	1286	588	698	1672	731	941

## 2.9 Family Budget Surveys and Microcensuses

Income surveys (entitled microcensuses) have been carried out in our country for a long time (the first was for 1956). Together with budget surveys, they are aimed at various aspects of the standard of living (time budgets, household savings, social stratification, housing standards, household furnishing). They take place every 3-5 years and they should first of all give representative

information on the monetary income and income in kind of individuals and households related to the demographic and social contexts.

The households were selected by the method of a regional two-level random sample, cover 1-2% of the total number of households. However, for 1992 only 0.5% were sampled, which amounts to about 19,000 households. The unit of sampling is an apartment; the unit of observation is the "apartment household" - the set of all persons who live there (concerning only Czech citizens permanently living and working in the Czech Republic). Surveys include information on: demographical composition of the household, jobs, addresses of employers and all possible kinds of income from employment, private agriculture, social benefits and other sources (renting rooms, apartments, selling cars, selling house furniture, insurance, scholarships, inheritances, monetary gifts, alimonies, etc.). Loans given by banks, or from state enterprises or agricultural cooperatives (mainly for apartments, houses or equipment), interest from deposits and income from the "shadow economy" were not investigated. Income from additional jobs, winnings, money from insurance, etc. taken into account (only if admitted to by the respondent). For the 1992 microcensus, the definition of income was adjusted so that it did correspond to the new economic conditions of the market economy and to the recommendations of EUROSTAT.

The sampling errors were calculated for the years 1970, 1976, 1980, and 1988 using the usual procedures. The examination of the results of estimates of the relative sample errors has shown that a 2% selection of households gives sufficiently accurate results to estimate the basic coefficients in the individual social groups, and also to evaluate the income differentiation in the main household groups.

During the first microcensus all the required data, including incomes, were investigated by the direct questioning of respondents, which led to the systematic underestimation of incomes. This kind of sampling error was limited by the introduction of the confirmation of the main monetary incomes by the paying organizations (until 1988 only). The percentage of non-investigated households for 1980 was rapidly decreased using a quantity of demographic and socio-economic data from the forms of the population census of 1980.

Family budget surveying in the post-war CSFR was reestablished in 1957. It is a regular annual survey of income, expenditures and consumption of the selected types of households across the country beginning in 1991 and processed on a quarterly basis. The households are selected by quota sampling according to several criteria - social group (blue collar, white collar, agricultural workers



and retired people), number of dependent children, level of income per capita (in the case of retired people, the average retirement benefit for one person). The quotas are based on the structure shown by the results of population censuses and microcensuses. The selected households are asked to give the reports monthly over one year, the range of the sample being between 0.1-0.15%, i.e. about 3,300 households in the Czech Republic. The chosen sampling procedure does not enable one to calculate the sampling errors.

An additional sample was added in 1990 in order to 1) screen the expenditures of one- and two-member households composed of retired people receiving the minimum retirement benefits; 2) to screen the expenditures of households subsisting at the poverty level with dependent children, and 3) to screen the expenditures of households subsisting at the poverty level without children. Other measures, facilitating the setting of the poverty level, were introduced in the data processing. The introduction of international standards concerning the income and expenditure classifications and the typology of households are under way. The inclusion of the Czech Republic into the integrated system of surveys on the households of the European Union in 1995 is assumed.

Up to the end of 1992, the so-called Money incomes and expenditures of population balances were presented for the federation of the Czech and Slovak Republics. The main aim was to show the role of various kinds of money incomes in creating the total money income, and to characterize the ways in which these incomes are used. In actuality it was a picture of the mutual relations between the state on the one hand (state enterprises and institutions being the main income rendering bodies - the cooperatives were under strict state control as well) and the population on the other - see **Table 25**. The flows of goods, services, and money among the inhabitants were not included at all, as they were considered to be illegal (e.g. undeclared income, bribes, etc.).

**Table 25: Money incomes and expenditures of population (Mill. CSK)**

Indicator	1989	1991	1992*
Money income of population, <b>TOTAL</b>	330,215	421,170	495,575
including from:			
Wages	201,778	213,097	232,597
Agricultural coops	15,025	12,419	12,560
Selling of agricultural products	2,667	1,480	1,650
Social security and health insurance	65,311	82,105	91,797
Loans from state savings banks	8,558	12,327	18,232
Winnings from savings books and interest on deposits	5,848	16,879	15,460
Insurance premiums from insurance companies	5,061	8,670	10,163
Other incomes	18,374	57,360	82,592
Personal incomes from abroad	8,460	15,585	24,142
Balance of transfers between districts	-867	1,248	6,382
Money expenditures of population, total	319,602	385,051	462,735
including:			
Purchase of goods, total of which:	210,991	234,192	262,874
In state and coop. retail trade**	209,835	232,706	261,360
In agricultural coops	1,156	1,486	1,514
Payment for services	43,252	56,785	81,413
Rent and municipal services	15,619	18,745	25,299
Transport and communications	9,829	13,579	14,293
Personal services	11,165	15,426	29,658
Admission to cultural, entertainment and sports events	1,086	989	1,057
Recreation, health services, facilities for children	2,031	2,108	2,674
Other services	3,522	5,938	8,432
Financial payments	62,276	82,275	105,850

Indicator	1989	1991	1992*
Taxes and duties	39,415	44,733	62,170
Insurance and coop. share payments, contributions to membership organizations	10,274	10,270	13,588
Loans paid back to state saving banks (incl. interest paid off)	8,493	9,359	10,056
Other expenditures	4,094	4,146	4,198
Payments for privatization and securities	-	13,767	15,838
Expenditures of population abroad	3,083	11,799	12,598
Change in population's resources not spent Including:	10,613	36,119	32,840
Deposits	7,193	27,641	28,342
Cash	3,420	8,478	4,498

\* Preliminary data

\*\* Since 1991, including private retail trade and productive organizations

The meaning of some items changed after 1989. The flows of goods, services, and money not only of registered, but also unregistered entrepreneurs, according to available information, gradually included in the balance.

Visitors and resident inhabitants changing foreign currency at commercial banks are not recognized, and therefore all their exchanges are part of "other incomes," which since 1990 have also been influenced by the compensation of the price increase caused by the anulment of food subventioning. This compensation was rendered first to all resident inhabitants and later only to socially weak inhabitants. On the other hand, the expenditure of the population includes the expenses of foreign visitors in domestic currency, as this is the usual method of expenditure.

The regular yearly presentation of the balance of creation and the use of the full incomes of the population is worth mentioning too - see Table 26. From the methodological point of view, this balance is another attempt to characterize total final consumption by using the full net income indicator. The theoretical differences result from the fact that the proprietors' incomes (arising from capital and land) are not taken into account. Similar to the money incomes and

expenditures of the population balance, the residents and visitors are not recognized; each is considered a "population." From the practical point of view, it must be admitted that the specific differences did not have substantial influence until 1989.

The advantage of the balance of creation and the use of the full incomes of the population lies in the fact that this balance does include the incomes, and simultaneously the expenditures, in kind, i.e. as a part of the public consumption. Further, the subtraction of taxes and exclusion of expenses connected with economic activities could be mentioned. (The economic activities, however, were limited to the so-called productive activities.) Thus the information obtainable from the balance of creation and the use of the full incomes of the population was more comprehensive than the information offered by the Money incomes and expenditures of the population balance mentioned above.

Starting in 1993, the quarterly estimates and the regular yearly indicators of gross and net disposable incomes of the Czech Republic have been presented.

**Table 26: Balance of creation and use of full incomes of population (Mill. CSK, current prices)**

Indicator	1985	1988	1989	1990	1991
<b>A</b> Creation of full incomes of population					
I Work incomes	206,287	224,303	231,601	240,948	304,449
II Social incomes	129,010	140,025	150,963	168,260	202,601
III of which: Unpaid services	68,634	75,583	82,306	85,141	96,564
IV Other irretrievable incomes	22,286	28,504	30,767	39,793	97,855
V Irretrievable incomes (I+II+IV)	357,583	392,832	413,331	449,001	604,905
VI Retrievable incomes	1,361	3,044	1,396	8,316	8,767
VII Full gross incomes (V+VI)	358,944	395,876	414,727	457,317	613,672
VIII Use of incomes in material spheres	201	258	550	877	39,555
IX Taxes from work incomes	32,429	35,657	36,793	38,015	42,813
X Full net incomes (VII-VIII-IX)	326,314	359,961	377,384	418,425	531,304
<b>B</b> Use of full incomes of population					
XI Material use in households including:	206,461	228,802	236,841	266,907	319,134
Accumulation	2,205	3,038	2,934	5,146	23,995
Personal consumption	204,256	225,764	233,907	261,761	295,139
XII Non-material services	98,965	108,496	116,231	126,907	157,417
XIII Other irretrievable income expenditures	10,412	11,498	13,128	13,686	15,196
XIV Irretrievable use of income In total (XI+XII+XIII)	315,838	348,796	366,200	407,500	491,747
XV Retrievable expenditures	10,476	11,165	11,184	10,925	39,557
XVI Use of full net incomes, total (XIV+XV)	326,314	359,961	377,384	418,425	531,304

Unemployment statistics in the years 1990-1992 were only based on the administrative records of the labor offices. During 1993, the first sample labor force surveys (LFS) took place. The expected difference between these two sources of statistical information has been confirmed as the average unemployment rate from March to May 1993, based on records, was 2.78%, whereas the corresponding figure based on the LFS is 3.86%. Therefore, the people not registered at the labor offices were taken into account. The LFS not only published statistics of the number of the unemployed, it also structured these statistics by age, sex, degree of education, type of previous activities, by length of job seeking, etc. The definitions of the ILO regarding the employed, the partly employed, the unemployed, and the economically active are used. The number of surveyed households amounts to twenty-three thousand.

### **3. Statistical Prognoses**

The population projections so far for the whole population, as for various population contingents or individual districts and their aggregates, are presented regularly by the CSO. The last presentation took place in November 1993 and will run until the year 2020. Mostly it is only the natural population movement (births and deaths) that is taken into account.

Though the monthly indicators on industrial production, construction work, and retail trade turnover are presented regularly with a 5 week delay, this seems rather late to some users. Since 1991, the business surveys (first quarterly, now monthly) in industry, construction, and retail trade turnover have been carried out by using the common set of questions recommended by the OECD in cooperation with Eurostat (e.g. the appreciation of the present economic situation, expectations concerning domestic and foreign demand, price development, employment, stock changes, etc.). In **Graphs 7** and **8**, the expected (ex ante) and actual (ex post) balances on the economic situation and the goods production of industry and construction works (improving - worsening) are shown without seasonal adjustment. It can be said that with few exceptions, the accord between what was expected and what really happened in the same quarter (due to later surveying of the same respondents) is relatively good (correlation coefficient for goods production being 0.82 and for construction works 0.79).

**Graph 7: Balances of expectations in business surveys on the development of the goods production of industry**

**Graph 8: Balances of expectations in industrial business surveys on the development of the construction works**

The business surveys are sample surveys. The respondents who were chosen are obliged to answer - to fulfill the questionnaire. The total number of respondents amounts to 500.

The preliminary figures on gross domestic product are presented with a lagtime of 10 weeks. In advance, practically five weeks before, the econometric calculation of the GDP quarterly index is made. The "inputs" for this calculation are 5 indices and their subscribed weights (in brackets): industrial production index (0.419), construction work index (0.128), retail trade turnover index (0.232), exports to Slovakia index (0.048), and other exports index (0.173). Additionally, the import indices were also introduced. In principle, the "output" of the calculation is the variable obtained by multiple regression. In the next, step seasonal adjustment is carried out. There are then two results of the calculations designed as "composite indicators" - see **Table 27 and Graph 9**. The same econometric procedure can be used in order to obtain the monthly estimates; the respective research work is under way (Šujan-Šujanová).

**Graph 9: Seasonally adjusted GDP and composite indicator in constant prices, average quarter 1990 = 100**



**Table 27: Gross domestic product and composite indicator (Average quarter 1990 = 100, constant prices)**

Year, Quarter	Origin indicators		Seasonally adjusted indicators	
	GDP	Comp. i.	GDP	Comp. indicator
1990 1	94,819	95,691	98,133	104,391
2	99,821	101,288	102,912	101,289
3	99,622	92,799	98,844	97,155
4	105,700	110,225	100,111	97,167
1991 1	97,396	79,214	100,435	86,130
2	84,258	79,459	86,583	79,196
3	81,795	68,551	80,859	71,531
4	79,730	79,362	75,267	69,729
1992 1	76,792	72,867	79,480	79,498
2	76,554	77,711	78,828	77,717
3	82,430	77,173	81,757	80,801
4	83,066	86,697	78,677	76,432
1993 1	75,124	70,593	77,669	76,669
2	76,782	77,332	79,077	77,258

\*Source: Šujan I., - Šujanová, M.: Sestavení a ověření složeného ukazatele pro odhady vývoje HDP. Statistika 10, 1993.

#### **4.Registers of Statistical Units**

The business register, regardless of which authority is responsible, is the register of legal subjects. The legal units are usually the responding units reporting either about themselves as integral units or about their branch or local units considered as separate units. Statistical registers should include all the specified types of these said units, including physical entrepreneurial people.

Until 1990, the state statistical service had kept the register of responding units. During 1990 it was decided that the statistical service was responsible for the

allotment of an identification number to everyone who registered as an entrepreneur and thus the register became the register of legal and personal units. During 1992, following the intentions of national accounts, an attempt was made to start the register of establishments (more precisely: kind-of-activity units). It failed, as there was little understanding of the usefulness and necessity of the intention of some statistical bodies and mainly of the prospective responding legal units.

From 1994 the main register of the state statistical service should be the register of responding (both legal and personal) units, as the responsibility for the allotment of the identification numbers will be given either to business courts or to licensing authorities (there are some exceptions, which are still covered by the statistical service). The related statistical registers should involve the local units in which the kind-of-activity units will be recognized.

The main advantage of the existence of the statistical registers system (concerning various types of statistical units) is the ability to carry out sample surveying on a solid basis. It is supposed that it will be sufficient to carry out the exhaustive surveying (censuses, etc.) every 3 to 5 years. In the meantime, sample surveying concerning the smaller units will be organized - in the near future it will not be possible to omit the greatest units and introduce an overall sampling, as large restructurizations are still on the way.

Besides sample labor force surveys, which are based on random sampling, the surveying of the sample family budgets takes place in about 3,300 households. The CSO took part in the Labor Cost Survey 1992 (a project of Eurostat). The first calculations of an employment cost index are under way. In both cases, sampling procedures have been applied.

### **Instead of a Conclusion**

From a statistical point of view the transition process in our country, complicated by the separation of the former CSFR, has substantially complicated the conditions for the functioning of the state statistical service. The chief problem arose from the explosive expansion of a number of potential responding units, as the statistical bodies did not find a way to proceed in time. The accompanying issues were the change in concepts and in the methodology and the lack of professionals, which is still multiplied by attractive jobs being offered to statisticians by commercial banks, privatization funds, and private businesses of other kinds as well.

In comparison with the development of the Polish and Hungarian statistical services, where the first attempts to adapt the concepts to international standards took place many years ago, the preceding Czechoslovak statistics - namely in the so-call normalization period - were strictly bound to COMECON standards only. The GDP share of the private sector in the late 80's did not reach one percent, and therefore there was practically no experience of tackling the bulk of newly emerging small-sized firms. International contacts were allowed at the upper strata of the "statisticians nomenclature" and thus the staff had no opportunity to gain knowledge and experience.

Unfortunately, the influence of the hidden economy has not yet been investigated systematically in our country. Until November 1989, it was officially supposed that the GDP shares of the hidden economy and of the private sector were negligible. The results of the investigations on the hidden economy in recent years have shown ten to twenty percent GDP shares in Hungary and Poland. This must be considered as a serious challenge for Czech statisticians.

In spite of many obstacles, the state statistical service was and is able to regularly supply all users with statistical information. The interpretation of some parts of the statistical output is not clear. Nevertheless, this is acceptably limited, as the trends shown by statistics correspond to other signals, such as to the experience of other professional and that of the general public. A good understanding exists for the temporary insufficiencies of the results of the statistical service, and it is generally hoped that they will soon be overcome.

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