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INTERNATIONAL MONETARY FUND

CZECH REPUBLIC

Selected Background Studies

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July 14, 1995

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I. Adjustment in the Czech Enterprise Sector 1/

1. Introduction

The reform program launched by the former Czech and Slovak Federal Republic (CSFR) in January 1991 to establish a market economy drastically altered the economic environment in which enterprises operated. Almost at one stroke, the distortions in the price structure that prevailed under central planning were substantially reduced, and central directives ceased to be the basis for the allocation of resources. Under the reform program, virtually all prices at both the producer and retail levels were freed, subsidies were sharply cut back, and the foreign exchange and trade system was extensively liberalized in order to open the economy to international competition. The impact of these measures on the structure of domestic prices was further reinforced by the dismantling of the CMEA (Council for Mutual Economic Assistance) trade and price arrangements. The shift to pricing at world market prices and to settlement in convertible currencies worsened the former CSFR's external terms of trade and led to a several-fold increase in the koruna prices of energy and industrial raw materials imported from CMEA members.

The changes in relative prices and the opening of the economy to international competition were accompanied by a number of other measures aimed at strengthening enterprise efficiency and financial discipline. Enterprises began to face harder budget constraints: budgetary subsidies were cut back; fiscal and monetary policies were designed to be restrictive; a fixed exchange rate regime was maintained; the Government declared its intention not to bail out enterprises and launched a program of rapid privatization; and extensive reform of the banking sector was initiated to improve financial intermediation and ensure that bank lending decisions were based on risk return criteria. However, because of the lead time needed to implement privatization and banking sector reform, their impact was not immediate. Until enterprises were eventually privatized and new owners assumed control, regular mechanisms of corporate control of state-owned enterprises in the Czech Republic were effectively absent. Moreover, initially, the incentives for banks to enforce debt contracts and initiate bankruptcies were weak. Although a number of measures were taken by the authorities to strengthen the balance sheets of banks, the banks were undercapitalized and lacked adequate loan-loss provisions and reserves.

The response of enterprises in the Czech Republic, as well as in other transition countries, to the course of reforms and the new market environment has been a subject of considerable interest. The decline in output following the introduction of reforms and the collapse of the CMEA trading system, and the trends in employment and wages are well documented. 2/ But, the picture on enterprise sector restructuring and financial performance is less clear. A common perception based on

1/ Prepared by Biswajit Banerjee.

2/ See, for example, Aghevli, Borensztein and van der Willigen (1992), Borensztein, Demekas and Ostry (1992), and Čapek (1993).

macroeconomic evidence--the slow turnaround in economic activity, low rate of unemployment, relatively small number of bankruptcies, and depressed investment activity--is that the pace of enterprise restructuring has been slow. However, the strides made in reorienting exports to western markets and the widespread division of large state-owned enterprises into independent units suggest that there have been considerable changes in product markets and internal organization. Such changes have also been noted in a number of individual case studies on the behavior of enterprises in different industries. The case studies also record information on financial performance, but it is difficult to say to what extent the findings are applicable for a particular branch of activity or the enterprise sector as whole. As Carlin et al. (1994) note, many of these studies suffer from inherent selection bias.

In this study, we examine financial performance of the Czech enterprise sector, drawing on data reported by nonfinancial enterprises to the Czech Statistical Office (CSO) in 1993. ^{1/} All enterprises with 25 or more employees were required to provide on a quarterly basis information on selected indicators of financial performance and selected items of assets and liabilities for the current quarter and for the same period of the previous year. The annual estimates for 1993 and 1992 were derived by aggregating the quarterly returns of enterprises that filed in all four quarters. It is estimated that the data cover about 95 percent of all enterprises with 25 or more workers. The data released by the CSO are grouped by branch of activity and show separately profitable and loss-making enterprises. An important strength of the data base is that information for a common set of firms is available for two years, thereby avoiding the problems that arise because of variable sample size and breakup of enterprises.

To put the analysis of the financial performance of the enterprise sector in perspective and to get a broader picture of restructuring, we also examine sectoral developments in output, the changing size distribution of enterprises, and evidence on the timely settlement of scheduled payments to creditors.

2. The structure of production

Following the introduction of reforms and the collapse of the CMEA, output suffered. The decline in economic activity was concentrated mostly in 1991. Thereafter, real GDP fluctuated around the low level reached in the last quarter of 1991 for the next two years, and began to rebound only in early 1994. After suffering a cumulative decline of about 20 percent during 1991-93, measured real GDP increased by 2.6 percent in 1994.

Rapid growth in services propped up the level of economic activity in 1992-93, while industrial output declined progressively and bottomed out only in late 1993. The growing importance of services and the declining share of industry in GDP--from 39 percent in 1990 to 33.5 percent in

^{1/} Data for 1994 are still being processed by the CSO.

1994--is an important part of the reallocation of resources that is expected during the transition to a market economy. However, there also have been changes in the structure of production in the industrial sector itself. Gross production declined in all branches of industry during 1991-93, but the fall has varied considerably across branches. The sharpest drops were experienced by the electrical equipment, machinery, and textiles branches, all of which recorded a cumulative decline of over 50 percent. At the other end of the scale, utilities, food products, and mining fell by 30 percent or less (Table 1.1 and Chart 1.1).

The output decline bottomed out in the course of the second half of 1993 in all branches of industry, except for food products and transport equipment. Following a pronounced fall in output in 1991, the food industry has continued to decline at a slow pace. In the transport equipment sector, the fall in output was arrested in mid-1992, but, after holding steady for about a year, output declined sharply in the second half of 1994. The output recovery has been strongest in paper and publishing, electrical equipment, and nonmetallic mineral products. In sectors where the recovery has been modest, average annual output showed a further small decline in 1994 because of carryover effects.

The degree of output decline in any sector depends on several factors: the impact of stabilization policies, the distortions in the price and cost structure that prevailed prior to the reforms, reliance on the CMEA market for inputs or for exports, and the speed of adjustment by enterprise managers. The pronounced decline in output in all sectors in the first year of transition reflects the dominant impact of economy-wide factors associated with the reforms and stabilization. Since then, with the pace of decline varying considerably across sectors, the other factors are likely to have become increasingly important.

However, the observed sectoral pattern of output developments is not easily explained. In particular, sectoral developments do not follow closely the pattern of comparative advantage that has been estimated for Czech industry. Hughes and Hare (1992) calculated domestic resource costs (DRCs)--defined as the ratio of value added at domestic prices to value added at international prices--for different branches of Czech industry prior to price and trade liberalization. Domestic resource costs measure the level of protection offered to each industry and the degree of adjustment in domestic costs and prices necessary to face international competition. The higher the DRC or if it is negative, the less competitive a sector will be after price and trade liberalization, and we would expect output in these sectors to contract the most. Hughes and Hare noted that the entire food products industry had negative value added at world prices and was, therefore, the most vulnerable sector. The food products industry, however, has experienced one of the smallest declines in output, which may be partly explained by the fact that enterprises in this sector continued to receive inputs at below cost owing to excess supply in agriculture. With excess supply in agriculture largely eliminated by mid-1994 and prices beginning to cover costs, a substantial adjustment in output in the food products industry may be expected in the coming years. On the other hand,

Table 1.1. Industrial Production and Exports, 1991-94 1/

	Industrial Production (Annual percentage change)				Percent of Firms Reporting Declining Output		Exports 3/ (Annual percentage change)			
	1991 2/	1992	1993	1994	1993	1994	1991 2/	1992	1993	1994
Mining and quarrying	-13.6	-12.8	-7.1	0.6	49.3	29.9	...	1.7	59.1	6.5
Manufacturing	-26.4	-14.6	-7.7	0.2	50.5	41.2	...	-15.2	10.0	5.9
Food products and beverages	-17.0	-7.0	-4.4	-2.2	42.5	49.6	17.6	-17.2	25.5	-11.3
Textiles and textile products	-35.8	-13.7	-14.2	-1.7	49.6	45.7	-7.1	-6.6	-1.0	5.5
Leather and leather products	-34.2	-14.0	-2.0	-1.2	51.2	47.6	-27.2	-15.9	14.7	7.3
Wood and wood products	-24.7	-21.4	-14.0	3.0	57.9	32.3	-0.5	-6.5	-2.3	27.0
Pulp, paper, publishing and printing	-24.1	-3.2	-7.1	18.3	46.5	40.5	19.5	7.9	-3.8	32.4
Coke, refined petroleum products	...	0.9	-8.1	8.0	...	...	...	13.8	7.2	36.7
Chemicals and chemical products	-29.1	-9.3	-6.2	3.8	46.8	38.3	-14.2	6.5	11.7	16.8
Rubber and plastic products	-28.6	-4.9	-2.0	1.7	59.1	38.3	...	24.6	7.2	27.0
Nonmetallic mineral products	-29.4	-6.0	-11.4	5.7	58.3	33.1	2.1	19.1	-7.6	14.1
Basic metal and fabricated metal products	-30.5	-18.6	-6.5	3.3	45.1	39.1	9.0	1.7	20.3	14.7
Machinery and equipment, n.e.c.	-31.0	-24.9	-16.6	-4.8	59.5	38.9	...	-33.6	22.4	-2.5
Electrical and optical equipment	-38.8	-29.0	-8.1	12.3	46.3	36.9	-36.0	-34.0	19.8	27.6
Transport equipment	-28.5	-26.7	-3.4	-14.1	39.8	45.2	...	-42.7	3.6	-22.9
Other manufacturing, n.e.c.	-24.0	-12.4	-10.4	-5.8	58.7	41.8	...	2.1	-4.4	2.7
Electricity, gas, and water supply	-2.8	-3.0	-4.8	-2.8	26.4	23.1	...	-2.4	14.9	-28.6
Total industry	-24.4	-13.7	-7.4	--	49.7	40.2	-7.6	-14.4	12.0	5.6

Sources: Statistical Yearbook, various years; and data provided by the Czech Statistical Office.

1/ In 1991, enterprises with 100 or more workers. From 1992 onward, enterprises with 25 or more workers. All changes are measured at constant prices.

2/ Staff estimates derived from growth rates according to ISIC classification.

3/ As reported by enterprises. A similar classification of exports as recorded in customs or balance of payments data is not available.

CHART 1.1
CZECH REPUBLIC
INDUSTRIAL PRODUCTION BY BRANCH OF ACTIVITY
(Cumulative percentage change)

Sources: Czech Statistical Office; and staff estimates.

output decline in the machinery and transport equipment sectors was higher than would be predicted on the basis of estimated DRCs. For both sectors, estimated DRCs were below that for industry as a whole and close to unity; yet, output contracted by more than average industrial production. Two cases in which the output declines and estimated comparative advantages are in line are the electrical equipment and textiles industries; both sectors had DRCs among the highest, and they figured among those with the greatest loss in output.

The lack of a significant relationship between domestic resource costs and cumulative change in output is also confirmed by a regression exercise in which sectors were ranked according to their DRCs and cumulative change in output during 1991-93. Equations were estimated for two alternative groupings of manufacturing industry. In one specification, the International Standard Industry Classification (ISIC) at the three-digit level used by Hughes and Hare was followed, except that food product industries were combined into one group; thus, there were 24 branches in all. In the second specification, manufacturing industry was grouped into 11 branches according to the statistical classification of economic activities in the European Community (NACE). 1/ Neither of the two regression equations was statistically significant. 2/

1/ The DRCs for the NACE classification were calculated as weighted averages of the disaggregated estimates derived by Hughes and Hare. The leather goods sector and manufacturing, n.e.c. were excluded because their average DRCs could not be calculated on the basis of available information.

2/ The results are not affected if the reference period for the cumulative change in output includes 1994. Neven (1995) also found no significant correlation between DRCs and changes in production during 1988/89-1991/92, in an exercise based on sectoral groupings according to the three-digit ISIC level. However, when sectors were grouped into six broad categories, Neven obtained statistically significant rank correlations. On this basis, he concludes that DRC should be taken as a broad estimator of competitiveness and that not too much attention should be paid to the precise values of these calculations. Borensztein et al. (1992), too, found no significant relationship between DRCs and output change, though in this case the output change was for only the first year of the reform program. They note that the lack of a significant relationship might be a reflection of the weaknesses of DRC estimates, which are based on a large number of judgmental assumptions. DRCs are based on the assumption of a fixed coefficient technology and do not consider the possibility of different elasticities of substitution across sectors. Problems also arise from the existence of nontraded goods, substantial quality differences, and peculiar exchange rate arrangements in the CMEA area. Further, Glyn (1994) has argued that value added at domestic prices during the pre-reform period--an important input in the calculation of DRCs--may not be an adequate measure of domestic resources absorbed.

The loss of external markets was an important factor behind the output decline in the electrical equipment, machinery, and transport equipment sectors. Exports of these three sectors declined steeply in 1991-92 and again in 1994 in the transport equipment sector. The subsequent output recovery in the electrical equipment sector also owed much to the discovery of new export markets. In contrast, the textiles sector, which also is among the more export-oriented industries, suffered only a mild decline in exports; the sharp drop in output in this sector can thus be attributed to competition from imports and the contraction in domestic demand. In the basic metals sector, too, the decline in output reflects a fall in domestic (investment) demand, as exports have increased considerably every year (see Table 1.1). ^{1/}

Enterprise-level factors also are likely to have had an important effect on output performance. This is suggested by the fact that many firms were expanding production at a time when, in the aggregate, output was declining in all sectors, and that a large number of enterprises continued to experience drops in output in 1994, when most sectors were on the recovery path. Forty percent of industrial enterprises reported declining output in 1994, compared with 50 percent in 1993.

3. Size distribution of industrial enterprises

Since the introduction of reforms, there has been an enormous change in the size distribution of enterprises in industry. Under central planning, large enterprises were the norm and there was a considerable amount of horizontal and vertical integration. With the elimination of central planning, enterprises began to break up into smaller independent units. In the beginning, the breakups were initiated by plant managers, motivated by the expectation of engaging in management or employee buy-out when the privatization program began. Subsequently, the privatization program itself offered ample opportunity for the breakup of enterprises. Privatization proposals solicited by the Government from enterprise managers and outside parties in a large number of cases proposed splitting up the enterprises and independently privatizing the separate parts. Proposals for organizational restructuring as part of privatization mostly came from managers of financially stronger plants that were well-suited for survival in competitive markets, and such proposals were generally approved (Charap and Zemlinerova (1993)).

In 1990, before the introduction of reforms, enterprises employing less than 100 workers were rare (and were not enumerated for statistical purposes), and slightly more than one third of the enumerated industrial

^{1/} The analysis here is based on export data provided by enterprises and not on exports as recorded in customs or balance of payments data, which follow a classification scheme different from that for industrial output. Export growth rates based on enterprise data may be biased if changes occur in the share that is exported directly by the enterprise rather than through a trading organization.

enterprises had more than 1,000 employees. With the proliferation of smaller-sized firms, from 1992 the threshold for enumerating enterprises was lowered to 25 employees. Reflecting the growing number of small firms, the proportion of industrial enterprises with more than 1,000 employees has fallen progressively to only 6 percent in 1994 (Table 1.2).

Table 1.2. Distribution of Industrial Enterprises by Size, 1990-94

Number of Employees	1990	1991	1992	1993	1994
Up to 500	459	565	1,765	2,483	3,383
501-1,000	207	265	299	314	317
More than 1,000	353	415	352	312	260
Total number of enterprises	1,019	1,245	2,416	3,109	3,960

Source: Statistical Year Book, various years, and Statistické Přehledy.

The breakup of large enterprises has taken place in all branches of industry, indicating that multiplant operations and vertical integration were widely prevalent. Large enterprises, however, continue to exist in sectors where economies of scale arising from indivisibilities are important. In general, such enterprises tend to be capital intensive. This pattern is borne out in the Czech Republic. 1/

4. Profitability of enterprises

The profit position of enterprises deteriorated in 1993. The proportion of enterprises which reported making profits fell to 57 percent, from 67 percent in 1992. The shift in profit-making status was not all in one direction. While 18 percent of all enterprises moved from profitability in 1992 to loss-making in 1993, about 8 percent of enterprises ceased to make losses and reported profits. The sharpest decline in the proportion of profit-making enterprises occurred in the hotels and restaurants sector (35 percentage points), followed by a second group comprising transport equipment, paper and publishing, wood, and nonmetallic mineral product

1/ A regression of the share of enterprises with 1,000 or more workers in total number of enterprises in 1993 (SHRLARGE) on fixed assets per worker in 1993 (KLRATIO) yields the following estimates (t-ratio in parentheses):

$$\text{SHRLARGE} = 6.4414 + 0.0084 \text{ KLRATIO} \quad R^2 = 0.2994 \\ (2.44)$$

sectors and trade, all of which recorded net declines of 15 to 20 percentage points (Table 1.3). The experience of the hotels and restaurants sector and trade may appear surprising, given the growing attractiveness of the Czech Republic as a tourist destination. However, the results are consistent with the fall in 1993 of total sales (in real terms) in retail trade and public catering. Also, it is likely that the enterprises enumerated by the CSO were losing business to the smaller-sized unenumerated enterprises. Indeed, in the course of 1993, it was becoming increasingly apparent to the banks that they had overestimated profitability in trade and in the hotels and restaurants sector, and they scaled back credit to both sectors in the fourth quarter. ^{1/}

Owing primarily to the fall in the proportion of enterprises making profits, the profit rate for the enterprise sector as a whole fell to 4 percent in 1993, from 8 percent in 1992. ^{2/} However, the profit-making group also recorded lower profits in 1993, despite the fact that many of them had graduated to profitability from loss making in the previous year, implying that the financial position of enterprises which recorded profits in both 1992 and 1993 had deteriorated. This phenomenon was noticeable among profit-making enterprises in virtually all sectors.

Changes in the profit position can arise from changes in operating revenue and expenses, provision for depreciation, and in the nonoperating account. In the case of profitable firms, the weakening of the profit position essentially reflected a narrowing of gross operating surplus, whereas for loss-making firms, all three sources were important. These aspects are discussed in detail below (Table 1.4).

a. Materials and energy costs

For the enterprise sector as a whole, the ratio of materials and energy costs to the value of current production rose, from 64.5 percent in 1992 to 66.5 percent in 1993. In the aggregate, both profit-making and loss-making

^{1/} Partial data for 1994 indicate considerable sectoral variation in financial performance. The situation in trade and in the hotels and restaurants sector improved marginally. There was a noticeable increase in the proportion of profit-making firms in agriculture, transport and communication, and other services. However, despite the turnaround in activity, profit making declined in many branches of industry. These include: food products, leather, paper, rubber, metals, and manufacturing, n.e.c. In all sectors there was considerable movement into and out of profitability. For the enterprise sector as whole, 14 percent of firms moved from losses in 1993 to profits in 1994, while 12 percent slipped into loss making.

^{2/} The profit rate is defined here as the ratio of aggregate profits to aggregate value of current production. The profit rate derived from data on aggregate profits will not match the average of profit rates of individual enterprises in the sector. The latter is a more desirable measure.

Table 1.3. Enterprise Sector Profitability, 1992-93

	Percentage of Firms in Each Sector Reporting Profits		Profit Rate 1/	
	1992	1993	1992	1993
All nonfinancial enterprises	67.3	57.2	8.0	4.1
Agriculture, forestry, and fishery	34.1	30.7	-10.9	-9.5
Industry	78.1	67.2	10.5	5.6
Mining	82.1	76.8	7.4	6.7
Manufacturing	78.8	66.5	7.5	2.1
Of which:				
Food products, beverages and tobacco	84.5	73.1	8.9	6.1
Textiles and textile products	76.1	68.0	4.5	0.4
Leather and leather products	80.6	70.8	4.5	--
Wood and wood products	73.6	55.8	3.4	-1.9
Pulp, paper, printing, and publishing	85.3	67.0	9.2	3.0
Coke, refined petroleum products and nuclear fuel	100.0	100.0	12.0	6.9
Chemicals and chemical products	85.9	78.1	11.1	6.4
Rubber and plastic products	84.5	73.4	11.1	6.9
Other nonmetallic mineral products	76.6	60.2	9.4	2.0
Basic metals and fabricated metal products	79.7	69.9	6.4	2.4
Machinery and equipment, n.e.c.	75.8	58.3	3.9	-1.5
Electrical and optical equipment	71.8	67.2	4.1	0.8
Transport equipment	70.2	50.0	6.6	-8.9
Manufacturing, n.e.c.	80.9	69.5	12.2	7.9
Electricity, gas, and water supply	56.8	81.8	24.0	19.2
Construction	85.3	72.8	5.4	3.6
Trade	70.5	55.5	4.9	1.5
Hotels and restaurants	69.7	34.8	21.0	-8.6
Transport, storage and communication	45.3	53.9	-3.9	2.9
Other services	75.8	64.4	10.1	6.3

Source: Data provided by the Czech Statistical Office.

1/ Profits in percent of value of current production.

Table 1.4. Financial Position of Enterprises, 1992-93

	(In percentage of current production)								(In percent)			
	Profits	Gross Operating Balance	Net Operating Balance	Balance of Nonoperating Account	Materials and Energy Costs	Labor Costs	Interest Costs	Sales of Fixed Assets	Wage Costs/ Value Added	Investment/ Depreciation	Change in Employment	Change in Average Wages
1992												
All nonfinancial enterprises	8.0	19.6	13.1	-5.1	64.5	15.8	3.5	1.4	31.4	141.9		
Agriculture	-10.9	6.9	-3.6	-7.3	64.8	28.3	3.7	2.0	59.9	53.7		
Industry	10.5	20.4	14.6	-4.1	66.5	13.1	2.7	1.0	26.7	150.5		
Construction	5.4	12.5	8.4	-3.0	66.3	21.1	1.5	1.1	43.1	83.1		
Trade	4.9	31.7	26.6	-21.7	49.4	19.0	16.6	3.8	26.2	150.8		
Hotels and restaurants	21.0	28.6	20.5	0.5	47.1	24.2	4.0	0.7	36.9	256.6		
Transport and communication	-3.9	13.4	-3.7	-0.2	58.5	28.1	1.5	3.4	52.3	169.3		
Other services	10.1	25.4	15.4	-5.3	50.7	23.8	4.0	2.6	35.7	193.0		
1993												
All nonfinancial enterprises	4.1	16.6	9.8	-5.7	66.5	16.8	4.2	2.4	36.5	129.6	-6.8	24.1
Agriculture	-9.5	10.4	-2.6	-6.9	62.0	27.5	3.7	5.5	53.3	30.4	-17.9	22.8
Industry	5.6	17.7	11.4	-5.8	68.4	14.0	3.6	1.9	31.9	138.0	-6.5	23.6
Construction	3.6	8.5	5.2	-1.6	71.1	20.5	1.7	1.4	51.3	110.0	2.0	27.6
Trade	1.5	22.1	15.4	-13.8	54.5	23.4	19.5	6.5	37.6	80.0	-4.8	19.5
Hotels and restaurants	-8.6	9.9	--	-8.6	57.0	33.1	7.4	6.7	55.8	105.0	6.3	14.1
Transport and communication	2.9	15.9	3.7	-0.8	55.5	28.6	2.2	1.7	46.4	216.4	-2.2	23.4
Other services	6.3	19.5	11.1	-4.7	57.4	23.2	4.8	3.2	39.8	206.5	-4.8	29.7
(Change in indicators (difference in percentage points) between 1992 and 1993)												
All nonfinancial enterprises	-3.9	-3.0	-3.3	-0.6	2.0	1.0	0.7	1.0	5.1	-12.3		
Agriculture	1.4	3.5	1.0	0.4	-2.8	-0.8	--	3.4	-6.6	-23.3		
Industry	-4.9	-2.7	-3.2	-1.7	1.9	0.9	0.9	0.8	5.2	-12.5		
Construction	-1.8	-4.0	-3.2	1.4	4.8	-0.6	0.2	0.3	8.2	26.9		
Trade	-3.4	-9.6	-11.2	7.9	5.1	4.4	2.9	2.8	11.4	-70.8		
Hotels and restaurants	-29.6	-18.7	-20.5	-9.1	9.9	8.9	3.4	6.1	18.9	-151.6		
Transport and communication	6.8	2.5	7.4	-0.6	-3.0	0.5	0.7	-1.7	-5.9	47.1		
Other services	-3.8	-5.9	-4.3	0.6	6.7	-0.6	0.8	0.6	4.1	13.5		

Source: Data provided by the Czech Statistical Office.

enterprises reported increases, though the extent of the increase was higher for loss-making firms. There were, however, notable exceptions to the overall trend. Profit-making enterprises in most branches of manufacturing industry reported a decrease in the materials and energy costs ratio. This was also the case for loss-making enterprises in agriculture, leather industry, and the transport and communication sector.

The considerable improvement in efficiency in the use of intermediate inputs in agriculture is particularly striking, since this occurred despite a marked deterioration in the internal terms of trade in 1993. Whereas agricultural producer prices rose by about 8 1/2 percent, the increase in the index of agriculture input prices was about 27 percent. The increase in materials and energy costs observed in a large part of the nonagricultural sector cannot be attributed to the worsening of relative prices but rather reflects worsening efficiency. Increase in energy prices was not a significant factor. Crude oil and natural gas prices declined in 1993, and the increase in domestic tariffs of electricity and gas for the enterprise sector was about 5 percent, which was below the increase in the producer prices indices for virtually all branches of the manufacturing industry and the GDP deflator. In some industries, such as textiles and manufacture of rubber products, raw materials prices declined. Despite this, materials and energy costs rose for loss-making enterprises in these two sectors.

b. Labor costs

Labor costs (basic wages plus payroll taxes and social insurance contributions) also increased in 1993, relative to both value of current production and value added. The increase occurred in all sectors of the economy, with the exception of agriculture and transport and communication, among both profit-making and loss-making enterprises. However, the increase was larger for the latter group. The increase in labor costs was primarily due to an increase in wage costs, as employer-paid taxes on wages were significantly reduced in 1993--from 50 percent of wages to 36 percent--following the introduction of direct employee contributions for social security.

It is useful to breakdown developments in wage costs in terms of changes in employment and average wages, since the changes in these two components were in opposite directions. Employment declined in all sectors of the economy in 1993, except for construction and hotels and restaurants. For the enterprise sector as a whole, employment fell by about 7 percent. Significantly, in every sector, loss-making firms shed more labor than profit-making firms or increased employment by less. However, at the intersectoral level, there was no significant relationship between change in employment and profitability. Generally, we would expect labor intensive sectors to lead the way in labor shedding, but there was no evidence of this in the Czech enterprise sector.

The favorable impact of lower employment was more than offset by sharply higher average wages. Average nominal wages in the enterprise sector increased by 24 percent in 1993, compared with increases of

21 percent and 16 percent, respectively, in consumer prices and the GDP deflator. Wages moved briskly in both profit-making and loss-making firms. For the enterprise sector as a whole, growth of average nominal wages in these two groups were about the same. In a number of sectors, wage growth in loss-making enterprises was higher than in profit-making firms: these include agriculture, nonmetallic mineral products, electrical equipment, transport equipment, and utilities. At the intersectoral level, there was no significant relationship between wage growth--of both nominal wages and real product wages--and profitability.

c. Depreciation

The experience of profit-making firms with regard to depreciation differed from that of loss-making firms. Among the profit-making group, depreciation as a ratio of gross fixed assets fell slightly in 1993 in a large number of sectors and in the aggregate. In contrast, depreciation increased among loss-making enterprises in virtually all sectors. This pattern reflects a younger vintage of capital for loss-making firms, ^{1/} which put them in a better position to take advantage of a new law introduced in 1993 permitting enterprises to calculate depreciation on an accelerated schedule. To the extent higher losses arise from increased deductions for depreciation, they do not reflect lack of adjustment.

d. Interest costs

The burden of interest costs of enterprises rose in 1993, in part due to a 1 percentage point increase in the average lending rate of banks. Relative to the value of current production, the increase in the interest costs was higher for loss-making enterprises. On average, the interest burden of loss-making firms in 1993 was twice as large as that of profit-making firms, mainly reflecting a higher level of indebtedness and, possibly, higher rates of interest.

For both the profit-making and loss-making groups, the interest payment burden of a sector was positively associated with liabilities (as a ratio to net worth) and negatively associated with the ratio of net worth to total assets. In regression equations for these two alternative specifications, the size of the coefficient of the explanatory variable was larger in absolute terms for the loss-making group (Table 1.5). This tends to suggest, not surprisingly because of higher risk, that loss-making enterprises are charged higher rates of interest by creditors.

e. Other developments in the nonoperating account

The balance in the nonoperating account, excluding interest costs, deteriorated for loss-making enterprises to a deficit of 3 percent of value of current production in 1993, from a slight surplus in the previous year.

^{1/} Cumulative depreciation as a ratio of gross fixed assets was lower for loss-making firms.

Table 1.5. Regression Analysis of Interest Payments ^{1/}

Equation Number	Constant	Ratio of Liabilities to Net Worth	Ratio of Net Worth to Total Assets	Adjusted R ²	F-Ratio
(Dependent variable: Ratio of interest payments to current production)					
Profit-making firms (N=22)					
1.	1.1888 (1.52)	0.0409 (4.04)***		0.4216	16.31
2.	11.7077 (4.43)***		-0.1211 (-3.12)***	0.2937	9.73
Loss-making firms (N=21)					
3.	0.3652 (0.15)	0.1037 (3.08)***		0.2981	9.49
4.	20.8612 (4.04)***		-0.2180 (-2.69)**	0.2381	7.25
All firms (N=22)					
5.	1.2159 (0.97)	0.0559 (3.31)***		0.3214	10.95
6.	15.3106 (4.21)***		-0.1645 (-2.96)***	0.2702	8.77

Source: Data provided by the Czech Statistical Office.

^{1/} Figures in parentheses are t-ratios.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

In contrast, the deficit for profit-making enterprises narrowed from 2 1/4 percent of value of current production in 1992 to about 1 percent in 1993. The widening of the nonoperating deficit of loss-making enterprises can be attributed to new policy initiatives introduced in 1993 in the form of tax credits for investment and provisions for dubious claims abroad, and to losses from sales of fixed assets. Direct evidence on these components is not available, though information exists on the amount of fixed assets sold and is discussed below.

5. Decapitalization and investment behavior

Sales of fixed assets are to be expected as enterprises restructure and adapt to a market economy. Enterprises that are in the process of downsizing and those that are upgrading their capital to take advantage of new technology are likely to dispose of old capital equipment. However, when corporate governance is weak, decapitalization can be a means for financing higher labor and input costs and for delaying adjustment. Evidence suggests that this latter phenomenon may have been at work to some extent in the Czech enterprise sector.

The sales of fixed assets by profit-making firms in 1993 were the equivalent of 1 1/2 percent of value of current production, an increase of 1/2 percentage point over the previous year. In contrast, sales of fixed assets by loss-making firms as ratio to value of current production increased from about 2 1/2 percent in 1992 to 4 1/2 percent in 1993. In both 1992 and 1993, sectors with higher wage costs tended to have higher sales of fixed assets. Regression equations were estimated in which the levels of sales of fixed assets in 1992 and 1993 were related to the levels of wage costs (both variables appropriately scaled), separately for profit-making firms, loss-making firms, and all firms. For all three groups, the coefficient on wage costs was positive and statistically significant in both years. The size of the coefficient was larger in 1993 than in 1992, indicating that enterprises had become more prone to sales of fixed assets (Table 1.6). Regression analysis also shows that among loss-making firms, sectors with greater increases in wage costs also had higher increases in sales of fixed assets.

Another indicator of decapitalization, suggested by Pinto et al. (1993) and Pinto and van Wijnbergen (1994), compares investment and depreciation. However, they argue that decapitalization does not necessarily signify deliberate squandering of assets. Rather, if profitable firms are found to invest more relative to depreciation, then decapitalization should be seen as a part of normal adjustment during the transition period.

By Pinto et al.'s measure, decapitalization has been widely prevalent in the Czech enterprise sector among both profit-making and loss-making enterprises. The most severe cases were agriculture, mining, textiles, leather, machinery, and electrical equipment sectors: the ratio of investment (defined as purchases minus sales of fixed assets) to depreciation in these sectors in 1993 was 50 percent or less. In both 1992 and 1993, in virtually

Table 1.6. Regression Analysis of Sales of Fixed Assets by Enterprises 1/

Equation Number	Year	Constant	Ratio of Wage Costs to Current Production	Change in Ratio of Wage Costs to Current Production	Adjusted R ²	F-Ratio
(Dependent variable: Ratio of sales of fixed assets to current production)						
All enterprises (N=22)						
1.	1993	-0.3599 (-0.35)	0.2356 (3.40)***		0.3350	11.58
2.	1992	0.2390 (0.45)	0.1083 (2.76)**		0.2397	7.62
Profit-making enterprises (N=22)						
3.	1993	0.0457 (0.04)	0.1666 (1.94)*		0.1170	3.78
4.	1992	1.0228 (1.35)	0.0303 (0.62)		-0.0365	0.26
Loss-making enterprises (N=21)						
5.	1993	-0.9265 (-0.40)	0.3058 (2.44)**		0.1986	5.95
6.	1992	-0.5621 (-0.53)	0.1846 (2.93)***		0.2743	8.56
(Dependent variable: Change in ratio of sales of fixed assets to current production)						
All enterprises						
7.		0.4212 (0.81)		0.6812 (2.40)**	0.1846	5.76
Profit-making enterprises						
8.		0.4797 (0.78)		0.3199 (0.92)	-0.0076	0.84
Loss-making enterprises						
9.		0.8431 (0.93)		0.6668 (2.27)**	0.1726	5.17

Source: Data provided by the Czech Statistical Office.

1/ Figures in parenthesis are t-ratios.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

all sectors and branches of the economy, profit-making enterprises invested more, relative to depreciation, than loss-making enterprises. The differential in the investment ratios of the two groups widened in 1993, as profit-making firms increased investment or cut it back to a smaller extent than loss-making firms. This aspect is also reflected in the results of a simple investment function estimated for 1992 and 1993. For all firms considered together and for profit-making firms, investment (scaled by depreciation) was a positive function of the profit rate in both 1992 and 1993, but the coefficient of the explanatory variable was larger in the equation for 1993 (Table 1.7). A similar result holds in an alternative specification in which the gross operating balance (as a ratio to current production) is entered as an explanatory variable. For loss-making firms, there was no significant relationship in either year between gross operating balance or loss rate and investment.

6. Financial arrears of enterprises and corporate governance

An important gauge of the financial strength of enterprises is their ability to service debt and make payments to suppliers on a timely basis. The problem of overdue payments on bank credit to enterprises has become acute. A number of measures were taken by the Government during 1991-92 to reduce the burden of bad debts of the banking system inherited from the days of central planning. ^{1/} Nevertheless, a considerable amount of new bad loans has since emerged. At the end of 1992, about 19 percent of outstanding bank loans to enterprises were classified as nonperforming, but the share had jumped to 38 percent by the end of 1994. Although much of the increase is due to the adoption of tighter classification criteria in 1994, the level is quite high. Nearly one half of the nonperforming loans were in the "loss-making" category, implying that payment was overdue by more than 360 days.

The bulk of the nonperforming loans at end-1994 was in manufacturing industry and trade; each sector accounted for about one third of the total. This reflects the dominance of these two sectors in economic activity and the distribution of total bank credit. The incidence of nonperforming loans in manufacturing was about the same as that for the economy as a whole, but in trade it was among the highest recorded--54 percent (Table 1.8). In general, sectors and branches of activity that were less profitable had a higher incidence of nonperforming loans. The negative relationship between loan quality and profitability is apparent in all years since the recording of asset quality started and has strengthened over time. Regressions of proportion of loans classified as nonperforming on sectoral profit rates were run separately for 1992, 1993 and 1994. The coefficient of the independent variable is negative and statistically significant in all three years, and becomes progressively larger in absolute size (Table 1.9). Regressions were also estimated to examine if the deterioration in the

^{1/} A description of the measures implemented by the Government to strengthen the balance sheet of banks is contained in Czech Republic--Recent Economic Developments, SM/94/194 (7/20/94), Annex III.

Table 1.7. Regression Analysis of Investment Behavior of Enterprises ^{1/}

Equation Number	Year	Constant	Ratio of Profits to Current Production	Ratio of Gross Operating Balance to Current Production	Adjusted R ²	F-Ratio
(Dependent variable: Ratio of investment to depreciation)						
All firms (N=22)						
1.	1993	106.4483 (6.98)***	7.1988 (3.16)***		0.2997	9.99
2.	1993	32.8220 (0.70)		5.9309 (2.07)*	0.1357	4.30
3.	1992	97.2408 (5.40)***	6.7465 (3.85)***		0.3966	14.80
4.	1992	50.1287 (1.23)		5.2031 (2.56)**	0.2093	6.56
Profit-making firms (N=22)						
5.	1993	56.7558 (1.60)	8.0105 (2.52)**		0.2037	6.37
6.	1993	9.9988 (0.19)		6.4567 (2.53)**	0.2044	6.39
7.	1992	62.3297 (2.36)**	6.9787 (3.47)**		0.3445	12.04
8.	1992	28.4899 (0.67)		5.1293 (2.81)***	0.2476	7.91

^{1/} The figures in parenthesis are t-ratios. Results for loss-making firms are not reported, as none of the regressions was statistically significant.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table 1.8. Incidence of Nonperforming Loans by Branch of Activity, 1992-94

(In percent: end-of-period)

	1992	1993	1994
Agriculture, hunting and fisheries	37.2	50.7	60.2
Forestry	2.5	16.8	21.9
Mining	7.4	12.6	15.6
Manufacturing industry	28.0	31.1	38.7
Food products	16.8	18.2	31.3
Chemicals and pharmaceuticals	17.6	11.1	15.7
Metallurgy and mechanical engineering	35.0	41.8	47.3
Electrical and electronics	46.9	55.5	50.5
Textiles, clothing, and leather	23.4	23.3	36.0
Other industries	16.0	20.4	36.2
Electricity, gas, and water	6.6	2.3	4.5
Building and construction	13.9	20.9	38.2
Trade, hotels, and restaurants	25.7	28.5	54.2
Transport and communication	16.3	20.2	37.6
Other operations	5.0	14.0	23.8
All sectors	19.0	23.8	37.8
(Risk-weighted basis)	...	9.1	24.3

Source: Data provided by the Czech National Bank.

Table 1.9. Regression Analysis of Nonperforming Bank Loans to Enterprises ^{1/}

Year	Constant	Profit Rate	Adjusted R ²	F-Ratio
<u>(Dependent variable: percent of loans classified as nonperforming)</u>				
1992	25.9897 (6.59)***	-0.7233 (-1.84)*	0.1781	3.83
1993	31.7460 (9.85)***	-1.9164 (-4.30)***	0.6143	18.52
1994	47.5977 (11.11)***	-2.7838 (-4.08)***	0.5867	16.61
<u>(Dependent variable: change in share of loans classified as nonperforming)</u>				
1993	5.8850 (4.47)***	-0.6496 (-3.57)***	0.5164	12.75
1994	10.4170 (2.92)**	-0.0760 (-0.13)	-0.0980	0.90

^{1/} Figures in parentheses are t-ratios.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

portfolio quality of banks in any particular year could be linked to the worsening financial situation of enterprises, over and above the influence of improvements in reporting. The results show that in 1993 the less profitable sectors experienced a greater increase in the share of loans classified as nonperforming, but that in 1994, there was no significant relationship between deterioration in portfolio quality and profitability. This confirms that the strengthening of reporting requirements affected the classification of nonperforming loans in all sectors.

An additional source of information on timely settlement of obligations is the monthly surveys of business opinions. However, no data are collected in these surveys on amounts overdue. The survey data indicate that delays in settlement of scheduled payments are widely prevalent in industry and retail trade (Table 1.10). The problem of overdue payments is particularly severe in the textiles, basic metals, machinery and equipment, and other transport equipment (that is, excluding motor vehicles and trailers) sectors. At the end of 1994, nearly three fourths or more of the enterprises in these sectors were behind in making scheduled payments. Overall, however, the incidence of delays appears to be declining with a smaller proportion of firms reporting delays in both 1993 and 1994.

This is also confirmed by quarterly data on the enterprise sector published by the CSO, which show that, at the end of 1994, about 19 percent of the enterprise sector's liabilities to nonbanks was overdue, compared with about 21 percent at the beginning of the year. There are no official data on interenterprise debt for 1992-93, but Čapek (1994) estimates that in 1992 about one third of interenterprise credit was in arrears.

Despite the widespread failure of enterprise debtors to make scheduled payments, there has been little effort by creditors to enforce debt contracts, thereby relieving the pressure on enterprises to adjust. The legal framework for enforcing financial discipline on enterprises was put in place in April 1993 with the passage of the amended bankruptcy law. Since then, only about 500 bankruptcies have taken place through the end of 1994; most of these cases were small companies and small entrepreneurs.

Creditor passivity in interenterprise credit can arise due to several reasons: the creditor enterprise fears that it will be caught in a chain of bankruptcy proceedings because it also has overdue liabilities and its underlying financial position is not sound; the debtor enterprises happen to be the creditor enterprise's major clients whom it is reluctant to lose; or the cost of initiating bankruptcy is greater than the amount the enterprise expects to recover. ^{1/} Banks, too, have not been eager to initiate

^{1/} In order to reduce the prospect of a chain reaction of linked bankruptcies, the Government carried out two rounds of netting out of interenterprise arrears soon after the introduction of the bankruptcy law. However, participation was limited and only Kc 15 billion of arrears (about 16 percent of the estimated outstanding arrears at end-1992) were reduced.

Table 1.10. Percent of Enterprises in Each Branch of Activity Reporting Delays in Making Scheduled Payments, 1992-94 ^{1/}

	Unweighted			Weighted by Production		
	1992 Nov.	1993 Nov.	1994 Nov.	1992 Nov.	1993 Nov.	1994 Nov.
Industry	66	59	53	60	55	49
Food products and beverages	52	43	41	32	36	25
Textiles	72	69	71	79	86	75
Wearing apparel	75	47	44	68	58	41
Leather and leather products	75	65	62	84	89	71
Wood and wood products	65	78	69	74	96	78
Pulp, paper and paper products	70	62	65	42	88	67
Publishing and printing	50	62	50	38	25	25
Chemicals and chemical products	79	52	42	80	73	67
Rubber and plastic products	62	50	64	66	45	62
Other nonmetallic mineral products	48	35	30	50	33	20
Basic metals	87	84	77	90	94	96
Fabricated metal products	84	60	49	90	84	56
Machinery and equipment	81	77	73	90	80	79
Electrical equipment	73	53	68	81	67	57
Radio, television, and communication equipment	87	80	47	91	80	50
Medical, precision and optical equipment	71	75	56	84	88	64
Motor vehicles, trailers and semi-trailers	57	42	41	17	12	41
Other transport equipment	75	90	96	99	97	90
Furniture and other manufacturing	60	56	61	62	46	46
Construction	36	42	37	40	33	31
Retail trade	64	44	46	63	42	42

Source: Data provided by the Czech Statistical Office.

^{1/} As reported in the monthly surveys of business opinions. These surveys include about 750 industrial enterprises (representing about 60 percent of total output in industry), 320 construction enterprises (representing nearly one half of total construction output in enterprises with 25 or more workers), and 280 enterprises in retail trade (representing about one fourth of retail turnover among enterprises with 25 or more workers). The surveys include enterprises in all size groups.

bankruptcy proceedings because of insufficient loan-loss provisioning for the bad loans in their portfolios. ^{1/} Creditor passivity of banks is also often attributed to the cross-ownership of banks and Investment Privatization Funds which have major stakes in the delinquent enterprises. Yet another reason has been noted by Tuma (1994): in some instances, where an enterprise is large and its closure would lead to an intolerable level of regional unemployment or wipe out the windfall wealth of a large interest group, the Government has been reluctant to see bankruptcy proceedings being initiated by the major creditors and has come to the rescue of the enterprise. However, measures in this regard have not involved any direct transfers from the Government. Measures have typically been in the form of credit guarantees by the National Property Fund, participation in debt-equity swaps by the Consolidation Bank, and other forms of financial and restructuring arrangements with the major creditors.

7. Conclusions

The transformation of the enterprise sector is an essential element of the transition from a centrally planned economy to a market economy. Enterprise restructuring has many dimensions and has to be undertaken at both the firm level and the sectoral level. This paper has sought to examine a few selected aspects of adjustment and restructuring in the Czech enterprise sector. The overall picture that emerges is that significant progress has been made in the nonfinancial aspects of adjustment, but that a large part of the enterprise sector has been slow to adopt measures to achieve sustainable financial viability.

By the end of 1993, the decline of economic activity that followed the introduction of reforms and the collapse of the CMEA trade regime had come to an end virtually all across the economy. The data did not reveal that resources had moved toward sectors with relatively low domestic resource costs, as a simple version of comparative advantage theory might predict and as had been expected in the initial stages of the transition process. The rebound in activity did not involve all firms. Within each sector, a sizeable proportion of enterprises continued to scale back production in their struggle to survive in the new market environment.

In the aggregate, there was no improvement in the financial position of enterprises during 1992-93. While many enterprises made strides in increased efficiency in materials and energy use, there was little adjustment in this regard for a large part of the enterprise sector. Little was achieved also by way of restraining labor costs. Enterprises shed labor, and this occurred to a larger extent in loss-making firms, but large wage awards more than offset the gains from lower employment. Evidence

^{1/} The major banks made considerable progress in 1994 in accumulating loan-loss provisions, but until the audit reports are available, it is not possible to determine whether provisions and collateral provide adequate cover against likely losses. However, provisions and reserves of small banks, as a group, fell substantially short of international norms.

suggests that financially weak enterprises partly financed the wage increases through decapitalization, in the form of both sales of fixed assets and investing less than depreciation. Weak financial performance also resulted in difficulties in servicing bank debt.

In a market economy, banks are expected to impose financial discipline on enterprises and put pressure to adjust. However, saddled with bad loans in their books and inadequate loan-loss provisions, Czech banks have not exercised their enterprise governance role in any significant way. The passivity with regard to adjustment on the part of enterprises, especially those included in the voucher privatization scheme, is not surprising since regular mechanisms of corporate control and governance were effectively absent in 1993. Enterprise managers were awaiting the completion of privatization and the arrival of new owners, with the distribution of shares of the first round of voucher privatization completed only in May 1993 and the second round completed in February 1995. When data become available for 1994-95, a similar analysis will show whether restructuring accelerated following the completion of the privatization process.

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II. The Efficiency of VAT Implementation: A Comparative Study
of Central and East European Countries in Transition 1/

I. Introduction

Many countries in central and eastern Europe have undertaken significant tax reforms since 1989 as part of the move from centrally planned to market-based economies. Major components of the reforms have included the introduction of new taxes such as personal income taxes, corporate profits taxes, and broad-based consumption taxes. As a result, the form of public revenue mobilization has become more transparent and less distortionary. Long-term benefits from such reforms are undisputed: over time, these should provide sufficient resources for necessary government operations while exerting minimal disincentives on the operation of a market economy. However, individual economic agents and government administrators have to adapt to the new institutional environment, and transitional adjustment costs may impede speedy convergence to an efficiently functioning new system.

Of particular interest in this regard is the efficiency with which economies in transition collect value-added tax (VAT) revenues. This tax has been advocated by some commentators as an economically efficient revenue source which, if properly designed, imposes few distortions on the decisions of private economic agents. 2/ On the other hand, administrative costs of calculating, collecting (including refunding), auditing, and enforcing the tax may be high. For example, as a tax on each stage of production, the number of registered taxpayers is large compared with a sales tax levied on retail sales only. 3/

This note examines the efficiency of VAT collections in five central and eastern European countries in 1994, viz., the Czech Republic, Hungary, Poland, Romania, and the Slovak Republic. With the exception of Hungary, which has had a VAT since 1988, VAT systems in these countries have been newly established in the last two years. The general method of measuring efficiency is to compare the actual tax collections with those that would have resulted if the statutory VAT rates had been applied without any

1/ Prepared by William Jack.

2/ See, for example, Lindholm (1980). Note, however, that this claim is often overstated for two reasons. First, in a static setting, it is unlikely that uniform taxation of all consumption goods is optimal. Second, it is generally not the case that preserving the intertemporal marginal rate of substitution between consumption at different dates at its tax-free rate (by exempting capital income from the tax base) is optimal. (See Atkinson and Stiglitz (1980).) However, the calculation of optimal tax rates is sufficiently complicated and open to argument that uniformity may be an nth-best approach.

3/ Kay and King (1986) report that, when the VAT replaced the turnover tax in the United Kingdom, the number of tax payers rose from 74,000 to 1.4 million, and the number of collectors rose from 2,000 to 12,500.

"revenue leakage." This approach, while conceptually simple and appealing, is in practice, subject to a number of constraints. Since the VAT is levied at each stage of production, calculating the amount of tax that should be collected based on the statutory tax rates requires detailed knowledge of the production process (for example, in terms of an input-output table). ^{1/}

However, because of the lack of such information, an alternative method using final consumption data is employed in this study. This method makes use of the fact that the economic incidence of the VAT is on final consumption, and involves the comparison of the average statutory tax rate and the average effective tax rate, using household consumption data. One problem is that differences between VAT systems in terms of exemptions, etc. are difficult to incorporate accurately. However, this is not believed to alter the general findings of the analysis.

The main result is that the five countries fall into two broad groups: three countries (the Czech Republic, Poland and the Slovak Republic) are of roughly equal and relatively high efficiency, while the other two (Hungary and Romania) are of roughly equal but relatively low efficiency. These findings remain, however, somewhat tentative because of the difficulties involved in estimating the underlying average statutory and effective tax rates. First, survey data on consumption are typically reported for categories which do not match identically those to which VAT rates apply, thus hampering the precise calculation of average statutory VAT rates. Second, the effective tax rate is difficult to calculate due to problems associated with measuring domestic consumption. Whether this is best approximated by consumption as measured in the national accounts, retail sales, or some other number, is debatable.

Given these measurement problems, the results should be interpreted with caution. However, for comparative purposes, the relevant issue is whether the relative ranking of countries is robust to the measurement problems. For the broad groupings of high and low efficiency mentioned above, the results are probably fairly robust.

^{1/} This is the approach taken by Aguirre and Shome (1988).

2. Brief overview of VAT systems

In accordance with the European Union (EU) norm, the VAT systems in the five countries are generally of the consumption-based credit-invoice type. 1/ The general characteristics of the VAT systems, including rates and broad exemption rules, are presented in Table 2.1. In addition to the standard and reduced rates, each country zero rates certain goods and services, in particular, exports. There are important differences among countries with respect to exemptions, both for particular categories of productive units in the economy, and for specific goods. 2/ In particular, the Polish and Romanian systems contain relatively many exemptions for specific goods and services, while the base of the Hungarian system is broadest, and the Czech and Slovak systems are intermediate. The exemption thresholds existing in 1994 for each country have been expressed in local currency and in U.S. dollars using average annual market exchange rates. Firms that have annual turnover less than these thresholds are not required to register in the VAT system. If they choose not to register, they neither pay VAT nor collect refunds on VAT paid on inputs. Clearly, the usefulness of the single currency measure is limited, for there might be differences among countries in the structure of production across firms of varying sizes. However, the general pattern is that Hungary and Romania have much lower exemption thresholds than the other three countries.

3. Methodology

As mentioned above, the general approach to measuring efficiency of VAT collection is to compare the effective tax rate with the average statutory tax rate. This methodology necessitates: (i) a measure of revenue collections; (ii) an estimate of the consumption base on which the VAT is levied; and (iii) a calculation of the average statutory rate.

1/ VATs are often thought to be by definition consumption taxes. However, income-based VATs are also possible. The main difference is in the treatment of capital investment purchases for purposes of calculating the tax base. Under a pure consumption-based VAT, the total amount of tax paid on any capital purchases is immediately creditable, while under an income-based VAT, the input tax is creditable on an accrual basis over the useful life of the investment. Thus, the income-based VAT retains some of the administrative problems of the income tax system.

A credit-invoice VAT is implemented by basing VAT liabilities on total sales less VAT already paid on creditable inputs. This method accommodates multirate systems more easily than two other alternatives (known as the addition and subtraction methods). Japan, which has a single VAT rate, is the only industrial country with a VAT that does not use the credit-invoice method. It uses the addition method.

2/ The difference between zero rating and exemption is that VAT paid at an earlier stage is creditable on zero-rated sales, but not on exempt sales.

Table 2.1. VAT System Characteristics in 1994

	Czech Republic	Hungary	Poland	Romania	Slovak Republic
Tax rates (In percent)					
Standard rate	22	25	22	18	25
Reduced rate	7	10	7	--	6
Exempted goods and services					
Health	x		x	x	x
Science/culture			x	x	
Finance	x		x	x	x
Food			x	x	
Social services	x	x	x	x	x
Communications	x	x	x	x	x
Turnover thresholds					
Millions of					
local currency	24	1	12	10	24
Thousands of	80	9	49	6	72
U.S. dollars					

Sources: International Bureau of Fiscal Documentation; and staff estimates.

a. The effective VAT rate

The effective tax rate (ETR) is measured as total VAT revenues as a proportion of final consumption. The base on which the ETR is defined is not determined by the legal definition of the tax system, but should correspond with the perceived economic incidence of the tax. It is assumed that the tax is passed on to final consumers, so that a natural tax base is final consumption. Three issues that arise in this context are: (i) the data source that should be used to measure consumption; (ii) whether government consumption should be included; and (iii) whether the base should be defined net or gross of tax collections. The answers to these questions depend in part on the analytical use to which the ETR is to be put, in particular, its comparison with the average statutory rate (defined below).

The two main data sources for estimating aggregate consumption are the national income accounts and reports of retail sales. Since VAT payers are required to be registered, the use of retail sales may appear to be prudent. However, this may mask the objective of revealing low levels of compliance from retail establishments that escape registration and inclusion in data surveys. On the other hand, national accounts data include estimates of

activities of nonregistered entities, and so any inefficiency due to evasion of this kind (as opposed to that due to administrative laxity for example) may be identified using that source. In addition, certain components of consumption (particularly services) may not be included in retail sales data.

Government purchases are generally subject to VAT. 1/ The ETR is then ideally calculated as the ratio of total VAT revenues to total final consumption (both private and public). However, the average statutory tax rate is estimated using surveys of private consumption patterns only. Since collection efficiency is measured by comparing the ETR with the average statutory rate, the definitions must be consistent. Therefore, the ETR used here relates only to direct final consumption by individuals, and is the ratio of VAT paid on nongovernment purchases to final private consumption. 2/

Because statutory VAT rates are defined on a net basis, the ETR is calculated in a similar fashion. 3/ That is, the consumption base used to measure the ETR is net of VAT paid. Because VAT is usually levied on a good's price inclusive of other excise taxes (such as specific taxes on alcohol, tobacco, and fuel), the base is not reduced by revenues from such taxes in the calculation.

b. Average statutory tax rate

Because detailed production data such as input-output tables are not available for the countries considered in this study, it is not possible to calculate an average statutory VAT rate on the legally defined base. However, under the reasonable assumption that the VAT is passed forward to consumers, it can be assumed that the economic base is final consumption.

1/ There is, in principle, no net revenue impact of exempting government purchases from tax. However, administration is generally easier, and the scope for fraud narrower, if suppliers must remit tax on all sales independent of the identity of the purchaser.

2/ That is, if C_p is private consumption, C_g government consumption, T_p VAT revenues collected on private purchases, and T_g that collected on government purchases, then the "ideal" measure of the ETR is $(T_p + T_g) / (C_p + C_g)$, and the ETR on private consumption only is T_p / C_p . Another reason for calculating the ETR exclusive of government consumption is that this approach could sharpen the ability of the study to detect inefficiency. In general, one expects a smaller incentive for government purchasers of VATable goods and services to evade the tax; so, including them would reduce the power of any efficiency measure to detect evasion in general.

3/ Taxes on goods and services are nearly always on a net basis--that is, if the tax rate is t and the pretax price is p , then the after-tax price is $p(1+t)$. This is different to the income tax, which is typically levied on a gross basis--that is, if the tax rate is τ and the pretax wage is w , then the after-tax wage is $w(1-\tau)$.

Under a credit-invoice VAT with refundable credits ^{1/} and no exemptions (e.g., for small businesses, etc.), the structure of taxation at each stage of production is irrelevant to the determination of the ultimate incidence. Any taxes paid on intermediate products would be credited against taxes paid at later stages, and the final tax liability for a particular consumption good would just be given by the statutory rate on that good. Thus, for such a tax system, it is not necessary to have information about production processes, and household consumption patterns are sufficient to estimate the average statutory VAT rate.

When exemptions exist and credits are not always refundable, the average statutory rate is more difficult to calculate from consumption data alone. For example, if some sellers of a good are exempt from filing VAT returns, then the implicit tax paid on purchases from such firms is the unrefunded portion of any input taxes paid at earlier stages of production. The tax paid on purchases of the same good from VAT-registered sellers is the statutory rate, which may be higher or lower than the implicit tax paid on purchases from exempt sellers. ^{2/} In this case, applying the statutory rate to total purchases of the particular good will give an inaccurate measure of the actual average VAT rate on that item, which is a weighted average of the explicit tax on purchases from registered sellers and the passed-forward input tax on purchases from exempt sellers. However, with little information on the share of consumption of particular goods that is purchased from exempt and nonexempt firms, it is difficult to adjust for this factor.

It should be noted, however, that this drawback is a result of the exemption of certain productive units in the economy (e.g., small retailers) and is not caused by the exemption of particular goods and/or services from the tax base. In theory, any pattern of tax rates (including zero rating) on goods and services can be accommodated within the current framework, since private consumption patterns are used to calculate average statutory rates. It is only when a particular good or service faces more than one rate, due to either the exemption of sales from certain producers or exemption of purchases by a particular group of individuals (e.g., pensioners), that this method is problematic.

^{1/} A credit is refundable if, when the credit is larger than the gross tax liability, the taxpayer receives a net payment from the Government. If the credit is non-refundable, the taxpayer would pay zero net tax, but would also receive zero net refund, in this situation.

^{2/} If there is a single VAT rate, the tax on purchases from registered sellers will be higher than the implicit tax on purchases from exempt sellers, as long as there is some value added at the retail stage. However, if there are multiple rates and the rate applied to the final consumption good is less than that applied to some of its inputs, purchases from registered sellers may be subject to a lower tax rate than the implicit rate on purchases from exempt sellers.

The approximation methodology employed here is to assume that the effective statutory tax rate on goods that are not exempt is equal to their actual statutory rates under law. This is not exactly correct as some nonexempt goods are sold by exempt businesses. On the other hand, it is assumed that the effective statutory tax rate on exempt goods is zero, which is inaccurate to the extent that inputs in the production of such goods have been taxed. To address the quantitative impact of these approximations, the appendix to this note examines the effect of exemptions of certain goods and productive units on the estimation of the average statutory tax rate. In general, the higher the threshold for exemption, the larger the share of total value added that is exempt, and the higher the unadjusted estimate of the average statutory rate. This, in turn, means that the efficiency estimate described below will be underestimated. On the other hand, the larger the number of goods for which all sales are exempt, the lower the unadjusted average statutory rate estimate. In this case, the measured average statutory tax rate will be too low, and the measured efficiency level will be overestimated. The implications for the interpretation of the results are discussed in section 4.

The average net statutory VAT rate is defined as

$$\tau_s = \sum_{i=1}^n \sigma_i \frac{t_i}{1+t_i} \quad (1)$$

where t_i is the VAT rate on good i , and σ_i is the share of gross expenditures on good i in total household spending. ^{1/} Information on consumption shares is drawn from household surveys and other official statistical sources.

c. Collection efficiency

To measure the efficiency with which VAT laws are implemented, the effective VAT rate, τ_e , is compared with the average statutory rate, τ_s . Specifically, efficiency is defined as

$$\epsilon = \tau_e / \tau_s \quad (2)$$

In a comparative study, an important issue is the extent to which possible errors in measurements of efficiency are common to all countries. If the efficiency measures are equally biased in all countries, then comparative ratings are unaffected, and the information derived is useful. However, if the measures are biased independently, not much confidence can

^{1/} In the two-good case, if pretax prices are 1, and if X_1 and X_2 face tax rates t_1 and t_2 , respectively, then $\sigma_i = (1+t_i)X_i/m$, where m is income. The average tax rate is $\tau_s = (t_1X_1+t_2X_2)/m$, which reduces to the expression in the text.

be placed in either the comparative or absolute results, unless these biases are small. Based on the information available, it is difficult to know the extent to which the biases are correlated.

4. Results

a. General findings

Table 2.2 below presents the results of the empirical exercise, and shows that the countries fall into two broad groups. One group, consisting of the Czech Republic, Poland, and the Slovak Republic, shows relatively high efficiency levels, while the other, comprising Hungary and Romania, exhibits relatively low efficiency. The two main concerns with the reported statistics relate to the accuracy of measuring the statutory rate, and the proper treatment of VAT paid on government purchases in calculating the ETR. There is some uncertainty about the average statutory tax rate because the categories used in household budget surveys do not match exactly those used for the purposes of defining tax liabilities. Also, information on government-paid VAT is not generally available. As a rough calculation, if the calculated average statutory VAT rate in the Czech Republic was applied to government non-labor and non-transfer expenses, government purchases would account for roughly 30 percent of total VAT revenues. In the absence of more detailed information, it is assumed that the same ratio of total VAT revenues is collected on government purchases in each country.

Table 2.2. Statutory and Effective Tax Rates and Implied Efficiency Levels
(In percent)

	Czech Republic	Hungary	Poland	Romania	Slovak Republic
Average statutory rate	12.2	12.8	8.9	9.3	15.6
Effective rate	11.3	8.5	8.7	5.5	14.2
Efficiency	92.6	66.4	97.8	59.1	91.0
Relative efficiency vis-à-vis Poland	94.7	67.9	100	60.4	93.0

Source: Staff estimates.

As long as the proportion of VAT paid on government purchases is the same in each country, the relative efficiency rankings are unaffected. On the other hand, if the share of government-paid VAT varies across countries, those in which the share is higher (lower) will have lower (higher) efficiency rates than reported in Table 2.2. Despite this caveat, it seems likely that

even with more accurate country specific estimates, Hungary and Romania would continue to appear relatively inefficient, while the Czech Republic, Poland, and the Slovak Republic would remain relatively efficient. ^{1/}

b. Impact of exemptions

As discussed in section 3, the efficiency results for countries with high general exemption/threshold levels are probably understated, while those for countries with many explicitly exempt goods and services are likely to be too high. For a thorough investigation of the importance of these approximations, data on the share of value added produced by exempt firms, the share of exempt goods in total value added, and the underlying production processes are necessary. In the absence of such data, the information presented in Table 2.1 is used to qualify the general results above.

First, the rather striking pattern observed is that exemption thresholds are much higher in the group of more efficient countries (as measured above), than in the pair of less efficient countries. To the extent that higher threshold registration rules suggest that the efficiency measures underestimate the true levels of collection efficiency, the preliminary results are strengthened.

Second, the impact of exempt goods and services can also be gauged. We concentrate here only on health care and food, in which the countries' rules differ most clearly, and which constitute relatively large shares of value added. The evidence suggests that the efficiency estimates for Poland and Romania (which have relatively many exemptions) may be on the high side, particularly if inputs into the production of exempt goods are fully subject to tax. This reinforces the finding that the efficiency of Romania's VAT system is relatively low, but tempers somewhat the conclusion that Poland's system is relatively efficient. The efficiency of the Hungarian system is overestimated least due to the exemption of specific goods and services, but this fact probably does not change the general conclusion that it is in the group with less efficient systems.

5. Further issues

This note has attempted to measure the efficiency with which revenues from value-added taxes are collected in selected transition economies. Clearly, for the purpose of policy making, it is important to have some idea of the sources of any divergence in performance that is observed using the measures derived above. Without providing specific evidence on the nature and strength of these sources, some proximate causes of inefficiency can be

^{1/} The (simple) average efficiency level of Hungary and Romania is two thirds that of the Czech Republic, Poland and the Slovak Republic, suggesting that the proportion of VAT paid on private consumption in the first pair would have to be 1.5 times that in the second group for the ordering to be reversed. Such a divergence seems unlikely.

suggested. These include: (i) the size of the informal sector and the number of small firms; (ii) the proportion of total consumption satisfied by imports (if it is thought that border taxes are more easily enforced than domestic taxes); (iii) inappropriately set penalty rates; (iv) low staffing levels, or poorly motivated/paid staff in tax collection and/or audit offices; (v) poorly implemented computerization; and (vi) the unfamiliarity of the new system compared with previous practices.

A determination of which of these effects are at work is crucial for designing and implementing a reform of VAT administration. However, a detailed examination of this issue is beyond the scope of this note.

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Data Sources

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Aggregate consumption: National income accounts.

Individual consumption patterns: Shares based on 1993 data from
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Hungary

Tax revenue: Ministry of Finance.

Aggregate consumption: National income accounts.

Individual consumption patterns: From household budget survey
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inactive households.

Poland

Tax revenue: Ministry of Finance.

Aggregate consumption: National income accounts.

Individual consumption patterns: Statistical Bulletin, December, 1994.

Romania

Tax revenue: Ministry of Finance.

Aggregate consumption: National income accounts.

Individual consumption patterns: From "Anuarul Statistic Al României,"
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Slovak Republic

Tax revenue: Ministry of Finance.

Aggregate consumption: National income accounts.

Individual consumption patterns: From June 1993 CPI weights, in
"Štatistické Číslo a Grafy", Statistical Office of the Slovak Republic.

Impact of Exemptions

As discussed in section 3, the exemption of certain goods and services or sellers of such items from the tax base has an effect on the average statutory rate, which is difficult to measure without detailed information on the tax rates levied at earlier stages of production, and on the share of consumption purchased from exempt sellers. This appendix presents an example of the adjustments that must be made to the average statutory tax rates calculated in the text, in the presence of exemptions.

Let X_i denote the quantity of good i purchased by an individual at the retail level. This good faces a VAT rate of t_i if sold by registered taxpaying retailers, and zero if sold by exempt retailers. The share of purchases of good i made from registered taxpayers is γ_i , with a share of $(1-\gamma_i)$ being purchased from exempt sellers. Assume for simplicity that, apart from labor and capital, all inputs are subject to their statutory VAT rates--that is, no intermediary inputs are exempt. If ϵ_{ij} is the input of good j used in the production of a unit of good i , then the total tax revenue from sales of good i to final consumers is

$$R_i = X_i[\gamma_i t_i + (1-\gamma_i) \hat{t}_i] \quad (\text{A.1})$$

where $\hat{t}_i = \sum_j t_j \epsilon_{ij}$. Note that if there is a single statutory VAT rate, then $\hat{t}_i < t_i$ as long as there is some value added in the production of good i . If, on the other hand, nonexempt purchases of good i face a reduced statutory VAT rate, then it is possible that $\hat{t}_i > t_i$.

Total expenditures by the individual on good i amount to

$$S_i = X_i[\gamma_i(1+t_i) + (1-\gamma_i)(1+\hat{t}_i)] \quad (\text{A.2})$$

so the average statutory tax rate on good i is

$$\tau_i = \frac{[\gamma_i t_i + (1-\gamma_i) \hat{t}_i]}{[\gamma_i(1+t_i) + (1-\gamma_i)(1+\hat{t}_i)]} \quad (\text{A.3})$$

When $\gamma_i = 0$, all purchases of the good are exempt, and the average statutory tax rate is $\tau_i = \hat{t}_i/(1+\hat{t}_i)$, which is smaller, the larger is the share of labor and capital in production of the good. In the estimates in the main text of this note, average statutory tax rates of exempt goods were assumed to be zero. For many exempt goods, such as dairy products and other primary foods, this may be a close approximation, although it is less accurate for goods such as medical services which may require larger proportionate shares of intermediate inputs. Thus, for countries that

exempt many goods that use significant quantities of intermediate inputs, the efficiency estimates of the text will be somewhat high (since the calculated average statutory tax rates will be biased downwards).

Exemption of certain retailers--most usually those with small turnovers--is reflected in values of γ_i between zero and one. For example, the value of γ_i for services provided mostly by small businesses (e.g., home gardening) will be close to zero, but that for goods which are mainly sold by large establishments will be close to one. As is clear from equation (A.3), as $\gamma_i \rightarrow 1$, the average statutory tax rate on good i is as included in equation (1) in the main text. Under the assumption that $\hat{t}_i < t_i$, a higher general level of exemption (as would result for example from a higher threshold level for registration) leads to a lower average statutory tax rate on good i . Thus, the calculation of equation (1) in the main text overstates the average statutory tax rates by omitting the effect of the exemption of sales by certain (small) businesses. The overestimation is greater the larger is the amount of value added that is exempt (e.g., the higher the turnover threshold). This means that the estimated efficiency of collection for countries with relatively generous exemption thresholds will be understated relative to those with lower thresholds.

III. Pension System Trends and Reforms: A Comparison of the Czech Republic, Hungary and Poland 1/

1. Introduction

As the countries of central and eastern Europe move toward market-based economic systems, the role of Government in all aspects of production and distribution is being re-evaluated. Social security--broadly defined as the protection of individuals from fluctuations in real income due to unemployment, disability, old age, family circumstances, etc.--previously existed implicitly due to the Government's extensive control over the allocation of resources. As the Government's allocative role is reduced, explicit social insurance schemes are required to replace the implicit mechanisms of the old system.

This note addresses the current and projected states of pension systems in three countries in central and eastern Europe; namely, the Czech Republic, Hungary, and Poland. The analysis concentrates on the financial positions of the pension systems, and projections of future expenditure trends, and does not address such issues as the distortionary impact of the financing mechanisms and benefit rules, or the implied distributional consequences. The broad objective is to evaluate the urgency of reform in the Czech Republic in comparison with the situation in Hungary and Poland, and to provide some information on the possible reform options under consideration in the Czech Republic.

2. Current financial positions of pension systems

This section examines the current levels of expenditures and revenues of the pension systems in the three countries. Total pension expenditure depends on the number of pensioners and the average pension received, which in turn are determined by the eligibility requirements (e.g., standard retirement age, allowance of early and/or postponed retirement, rules for determining partial or full disability, bereavement rules, rules about working while receiving a pension, etc.) and the benefit rules (e.g., relation to past profession, earnings, and years of contributions, and indexation rules). 2/

Financing of the three pension systems is nominally provided by proportional taxes on labor income. The revenues from these taxes may not be sufficient to cover expenditures on an annual basis, and it is unlikely that they will provide a sufficient revenue source over the long term. Without increases in tax rates and broader effective tax bases, the government budget must cover any pension shortfalls.

1/ Prepared by William Jack.

2/ A detailed description of the pension systems in the three countries can be found in International Monetary Fund (1994) for the Czech Republic, World Bank (1994) for Hungary, and Perraudin and Pujol (1995) for Poland.

These spending and financing rules have direct effects on the incentives of individuals to work, retire, and save, and can also present individuals and employers with substantial arbitrage opportunities (with no necessary change in behavior). Such incentives increase the net financial cost of the system, and both the direct and associated distortions lower economic welfare.

a. Spending patterns

Although the underlying determinants of aggregate pension spending relate to the micro design of the system discussed above, expenditures as a proportion of GDP, σ , can be usefully decomposed according to the following identity:

$$\begin{aligned}\sigma &= \frac{S}{GDP} = \frac{b}{w} \frac{p}{n} \frac{nw}{GDP} \\ &= \rho \delta \alpha\end{aligned}\tag{1}$$

where S is total pension spending, b is the average benefit received by a pensioner, w is the average wage, p is the number of pensioners and n is the number of workers. $\rho = b/w$ defines the replacement rate, $\delta = p/n$ is the system dependency ratio, and $\alpha = nw/GDP$ is labor's share in output.

A number of points about these definitions need to be made. First, pension benefits, b , may be measured on a pre- or post-tax basis. ^{1/} Second, wages may be defined as gross producer wages, net take-home wages, or taxable wages received by the employee (that is, labor costs not including the employer share of social security contributions, etc.). These alternatives allow the replacement rate to be defined in a number of different ways: two definitions employed in this note are (i) the gross replacement rate, ρ_g , which is the ratio of after-tax pension benefits to the gross producer wage, and (ii) the taxable wage replacement rate, ρ_t , which is the ratio of after-tax pension benefits to the taxable wage received by the employee. It should be noted that the definition of wages used in the replacement rate must be consistent with that used in measuring the share of labor income in GDP.

A second point to note is that b is the average benefit received by a pensioner, and not the average pension, because some individuals receive more than one pension. Thirdly, the system dependency ratio differs from the standard demographic dependency ratio (defined as the ratio of the number of individuals above the retirement age to the number of working age individuals) due to the existence of less than 100 percent labor force participation, unemployment, early retirement, and non-old-age pensioners.

^{1/} This distinction is irrelevant in the Czech Republic and Hungary where pensions are currently untaxed. In Poland, pensions were made taxable in 1992.

Table 3.1 presents data on pension spending as a proportion of GDP for the three countries in 1993, broken down according to equation (1). The replacement rate and share of labor in output are presented on both gross and taxable wage bases (with Polish pensions measured after-tax), and both demographic (δ_d) and system (δ_s) dependency ratios are shown.

There is a wide degree of variation among the countries in many respects. In 1993, the share of GDP devoted to pensions differed significantly: it was highest in Poland and least in the Czech Republic. The relatively low share in the Czech Republic is explained mainly by that country's low system dependency ratio, which in 1993 was two thirds of that for Poland ^{1/}; the Czech Republic's gross replacement rate was significantly less than Poland's, but this effect was offset by the significantly higher gross share of labor in output. Hungary spent a smaller proportion of GDP on pensions than Poland despite having a similar system dependency ratio. This difference was due to the fact that, although the gross share of labor in output in Hungary was more than double of that in Poland, the gross replacement rate was only about one third of Poland's.

b. Financing

Pension benefits are financed through payroll taxes and from the general government budget. Pension payroll taxes are part of general social security taxes, and in the Czech Republic and Hungary legal liability for payment is split between employers and employees. Because the allocation of legal tax liability between employee and employer differs among countries, it is useful for comparative purposes to calculate also the effective pension tax rates on gross labor income (including the employers' contributions). Since the payroll taxes are proportional, the effective tax rates represent both average and marginal rates, and provide information on both the relative burden and distortionary effects of the payroll tax. ^{2/} Finally, because the annual cash flow positions of the systems differ, it is useful to calculate a "balanced budget" pension tax rate for each country. This is the ratio of average pension expenditures to the average gross wage, and represents the effective gross payroll tax that would be required to finance the system on a cash flow basis.

^{1/} A major cause of this difference appears to have been the number of individuals receiving disability pensions. Although 1993 data are not available for the Czech Republic, in 1992, 17 percent of Czech pensions were for disability, while the corresponding number for Poland was 37 percent. The lower unemployment rate in the Czech Republic also contributed to the divergence.

^{2/} Of course, the net tax burden and net distortions of the entire tax system are of ultimate concern, but the effective tax rate reported above provides information on the contribution of the payroll tax to these variables.

Table 3.1. Pension Data, 1993

(In percent)

	Czech Republic	Hungary	Poland
Dependency ratios			
Demographic (δ_d)	35.5	36.0	35.0
System (δ_s)	47.4	66.0	69.0
Gross Outlay Measures			
Replacement rate (ρ_g)	37.5	21.3	59.0
Labor's share of GDP (α_g)	49.0	70.4	30.5
Taxable wage outlay measures			
Replacement rate (ρ_t)	51.0	39.0	85.6
Labor's share of GDP (α_t)	36.0	38.5	25.7
Expenditure share of GDP (σ)	8.7	9.9	12.4
Financing			
Social security contribution rate 1/ of which:	48.0	54.0	37.0
Employee share	12.0	10.0	---
Employer share	36.0	44.0	37.0
Pension contribution rate of which:	27.2	30.5	37.0
Employee share	6.8	6.0	---
Employer share	20.4	24.5	37.0
Gross effective pension tax rate	18.4	21.3	25.5
Gross balanced budget tax rate 2/	16.9	23.8	36.3

Sources: Ministry of Labor and Social Affairs, Czech Republic; World Bank (1994); Perraudin and Pujol (1995); and staff estimates.

1/ Includes pension, health, and other social insurance contributions.

2/ Defined as the ratio of total pension expenditures to gross payroll tax base.

The fact that the Czech pension system ran a surplus in 1993 means that the balanced budget tax rate was lower than the effective statutory tax rate. The Hungarian system had a deficit of about 12 percent of pension revenues, and the deficit of the Polish system was over 40 percent of revenues. While the effective tax rate of the Polish system is higher than that of the other two countries, the low share of labor in GDP means that it is not sufficiently high to cover current pension costs. In fact, the tax rate required to balance the Polish pension system may be higher than the 36 percent reported in Table 3.1, since this figure is calculated assuming that the tax base is held fixed. However, with such a high marginal tax rate (in addition to personal income taxes), reduced labor supply and increased informal sector activity are likely to reduce the base and necessitate even higher rates.

3. Spending projections

For a useful analysis of the financial position of the pension systems, the description of current expenditures and revenues needs to be supplemented with information on expected longer-term trends. Such projections are fraught with uncertainty, but rough calculations at least are required, based on demographic projections, assumed growth rates, and policy stances. A full analysis for all countries is beyond the scope of this note, and this section only presents some basic data on expected future behavior. The next section presents more detailed projections for the Czech Republic under various reform scenarios.

Table 3.2 presents data on projected demographic trends and pension spending as a proportion of GDP. The first point to note is that while all countries currently have similar demographic dependency ratios (about 35 percent), those of the Czech Republic and Poland are projected to reach significantly higher levels than that of Hungary by 2020. However, despite its more favorable demographic projection, Hungary's system dependency ratio increases proportionately slightly more than Poland's. ^{1/} Indeed, by 2020, the countries' system dependency ratios are projected to converge somewhat relative to their current distribution. This is due mainly to the fact that the Czech unemployment rate is assumed to increase above its current level of 3.3 percent, while unemployment is currently significantly higher in Hungary and Poland, and is projected to fall over the long term.

^{1/} The reasons for this are not apparent from the available sources, although differences in projected unemployment, early retirement, and disability pension take-up may have contributed.

Table 3.2. Pension Projections, 2020

(In percent)

	Czech Republic	Hungary	Poland
Dependency ratios			
Demographic (δ_d)	45.8	40.0	48.0
System (δ_s)	70.2	75.0	77.0
Gross replacement rate (ρ_g)	33.1	21.3	59.0
Expenditure share of GDP (σ)			
Labor's share of GDP constant	12.5	11.2	13.9
Labor's share of GDP two thirds	15.5	10.6	35.8

Sources: Ministry of Labor and Social Affairs, Czech Republic; World Bank (1994); Perraudin and Pujol (1995); and staff estimates.

If replacement rates and the share of labor in GDP remain fixed, then changes in the proportion of GDP devoted to pension expenditures are driven solely by changes in the system dependency ratio, according to equation (1). In this case, the Czech Republic experiences a larger increase in the share of GDP devoted to pension spending than Hungary or Poland, due to the proportionately larger deterioration in the system dependency ratio.

However, as the economies restructure, the share of labor in output is likely to approach western European levels over time. For illustrative purposes, the table reports projections of pension spending assuming the gross share of labor in output in 2020 is two thirds (while retaining a constant replacement rate). It is clear that, since the Czech Republic and Poland currently have relatively low labor shares, spending as a proportion of GDP in these countries will increase more if the share of labor in GDP increases to two thirds. The effect is particularly noticeable for Poland, where the labor share is currently very low.

This extreme development of Polish spending is unlikely to occur in practice, since if the share of labor in GDP more than doubles, the replacement rate is unlikely to remain fixed. The political process by which benefit levels are set is then relevant, and the replacement rate is unlikely to be a useful parameter to keep constant. 1/

The comparison, however, suggests that, from having the lowest level of spending relative to GDP, the Czech Republic, without effective reform of its pension system, could quickly converge to the levels of Hungary and Poland. The low level of spending and the lack of financial difficulties at present, thus should not be seen as an excuse not to proceed with reform.

4. Long-term pension projections in the Czech Republic 2/

The pension system in the Czech Republic is seen by advocates of reform to be inefficient, inequitable, and in danger of insolvency in the not too distant future. The reforms aim to both improve the medium- to long-term financial position of the system, and to reduce the distortions it imposes on individuals' decisions about work, retirement, and saving. This section looks at some financial projections and indicators of the system as it now stands and under various reform scenarios, abstracting for the moment from individual responses to the changes, which may be of second order importance.

There are three main components of the reforms: (i) unification of the treatment of individuals in different professions; (ii) increasing the retirement age; and (iii) changing the calculation of benefits. The first component can be expected to have long-run efficiency enhancing effects through its impact on the allocation of labor in the economy, but is largely ignored in the following discussion. The second component has clear implications for the development of dependency ratios and, thus, expenditures. The third component--changing the benefit formula--has two effects. First, by possibly linking benefits more closely to contributions, it may reduce labor supply distortions. Thus, while the average benefit could be left unchanged, changing the distribution of benefits across individuals with different wages (generally in favor of the better off) is argued to increase labor supply, earnings, and total saving. The second

1/ That is, if a greater share of personal income is received in the form of wages, a lower replacement rate is sufficient to maintain a given relationship between total pre- and post-retirement income. It should be noted, however, that assuming a constant share of wages in GDP, Perraudin and Pujol's projections imply that under current pension rules, the gross replacement rate will increase to about 70 percent by 2020, and that spending on pensions (not including unemployment benefits) will be about 16 percent of GDP. The figures reported in Table 3.2 use Perraudin and Pujol's projections, but assume a constant replacement rate for purposes of comparison with the Czech Republic and Hungary.

2/ Data reported in this section were provided by the Ministry of Labor and Social Affairs, Czech Republic, or estimated on the basis thereof.

effect is that, to the extent that the change in the benefit formula lowers the average nominal pension benefit, expenditures are reduced directly. This can be thought of, in general, as the effect on the replacement rate. Note that under conditions of inflation and real wage growth, making pension benefits more directly related to wages affects the ratio of new pensions to wages, and hence the average replacement rate (see below). The main focus of the analysis that follows is thus on component (ii) (the retirement age effect) and the second part of component (iii) (the replacement rate effect).

a. Essence of the reforms 1/

The increase in the retirement age will reduce the dependency ratio to a level below its current trend path. 2/ This has the impact of increasing the number of working individuals, and hence the social security contribution base, as well as reducing the number of pensioners receiving benefits.

Currently, pension benefits bear little relationship to lifetime earnings and contributions. In practice, nominal wages from the last 5 working years are averaged (without indexation), and then "reduced" according to a piecewise linear increasing but sharply concave transformation function. The brackets of this function are set in nominal terms (as opposed to being, for example, some multiple of the average wage), and most individuals end up on the flattest part. Pension benefits are proportional to the reduced average wage, and are thus virtually independent of average real lifetime wages. As well as the obvious distortions that such a scheme may impose on economic decision-making (which are mostly ignored here), this arrangement means that, without explicit indexation rules, benefits are essentially constant in nominal terms and in times of inflation fall in real terms. To alleviate this problem, newly awarded pensions are adjusted upwards on an ad hoc basis so that they are equal to benefits received by existing pensioners. Existing pensions are indexed, more or less, to the Consumer Price Index (CPI), so the real value of both average and new pensions remains close to constant over time. In an environment of real wage growth, this clearly means that the replacement rate, measured as the ratio of average pension benefits to average wages, is on a downward trend.

If, on the other hand, pensions were linearly related to past wages, then even if existing pensions were indexed only to the CPI, the replacement rate would not fall, assuming a constant dependency ratio. To see this, note that while the real benefits of existing pensioners would fall relative to average wages, each year a new cohort of just-retired individuals enters

1/ For a more thorough discussion of the details of the Czech reform proposals, see International Monetary Fund (1994).

2/ The standard retirement age is increased, on a phased-in basis, by 2 years to 62 for men, and by 4 years to 57-61 for women (depending on the number of children reared).

retirement (with a pension effectively indexed to the real wage in the first year) and the last cohort of retired individuals dies off (removing the group contributing least to the average benefit).

b. Long-term projections

Section 3 presented long-term projections of the Czech, Hungarian, and Polish pension systems assuming a constant replacement rate. This section presents projections for the Czech system under two sets of alternative assumptions. The first is that pension benefits increase only with CPI inflation (and not with wages), so that the replacement rate falls over time. Clearly, expenditures will increase more slowly under such a scenario, and the share of GDP devoted to pensions will actually fall. The second scenario is that of the current reform proposal. Under this proposal, the current (1995) replacement rate will be retained for 10 years, after which it will be allowed to fall (as the role of private savings vehicles is envisaged to increase).

The results of these exercises are presented in Table 3.3. Also included are the latest estimates of the projected outturn in 1995. If current pension rules are followed, and in particular, if pension benefits increase at the rate of CPI inflation, the share of GDP devoted to pensions by 2020 will be just 6.7 percent (second column of Table 3.3). ^{1/} This is despite the fact that the system dependency ratio is projected to be over 70 percent, and occurs because the gross replacement rate is only about 18 percent. The contribution rate (as a proportion of taxable wages) necessary to finance the system is just 19 percent.

Such a low replacement rate is not likely to be considered satisfactory, but maintaining it at its 1995 level of 45 percent with no other changes will lead to increasing expenditures as a proportion of GDP, reaching 12.5 percent in 2020 (third column of Table 3.3). The required contribution rate then would be over 35 percent of taxable wages. By increasing the retirement age and indexing pensions to wage developments for the next 10 years, the reforms are projected to reduce the growth of spending, so that by 2020, the proportion of GDP devoted to pensions will be 8.9 percent (fourth column of Table 3.3). The system dependency ratio is expected to fall to 62 percent from its no-reform projected level of 70 percent. The contribution rate (as a proportion of taxable wages) required to finance the system will then stabilize at about 25 percent.

^{1/} This projection assumes that the share of wages in GDP is constant.

Table 3.3. Alternative Projections of the Czech Pension System ^{1/}
(In percent)

	1995 Projection	2020 CPI Indexation	2020 Wage Indexation	2020 Reform
Replacement rates				
percent of taxable wage (ρ_t)	45.0	24.1	45.0	36.6
percent of gross wage (ρ_g)	33.1	17.7	33.1	26.9
System dependency ratio (δ_s)	53.1	70.2	70.2	62.1
Expenditure share of GDP (σ)	9.5	6.7	12.5	8.9
Required contribution rate (on taxable wages)	26.8	19.0	35.5	25.8

Sources: Ministry of Labor and Social Affairs, Czech Republic; and staff estimates.

^{1/} Projections to 2020 assume the share of wages in GDP is constant at its 1995 level.

An important assumption underlying the projections is that the share of wages in GDP will remain constant. However, this share has been rising even over the last few years (increasing from 36 percent in 1993 to 38 percent in 1994), so a further increase towards levels of western Europe may be expected. Maintaining the projected replacement rates and demographic developments of the reform proposal, an increase of the labor share of GDP to two thirds would raise the share of GDP to 11 percent.

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IV. Challenges to Monetary Policy ^{1/}

1. Introduction

With no budgetary recourse to central bank credit and minimal quasi-fiscal operations, the Czech National Bank (CNB) has been relatively free to concentrate on its central task of providing a stable macroeconomic environment in the transition to a market economy. Monetary policy has been largely successful: after adjusting for the impact of the introduction of the VAT, underlying inflation has been held down to around 10 percent for the past three years, while foreign exchange reserves have grown dramatically, even in the face of major economic shocks, including the collapse of vital trade links with the CMEA and the split of the Czech and Slovak Federation. At the same time, direct controls over credit and interest rates have given way to flexible prices, market-based instruments of monetary control, and the development of a supervisory framework within which some 59 domestic and foreign banks now compete.

Most recently, however, strains have emerged, two of which merit special mention. The first has been the task of maintaining monetary control in the face of large capital inflows, which have entailed difficult decisions about monetary sterilization, interest rate policy, and the need to guard against prudential risks to banks. The sheer size of the inflows has severely burdened monetary policy. In 1994, for example, the capital account surplus was virtually equal to the starting stock of base money. A second problem is the effect on the financial system of rising bad loans, which are now estimated at over one third of total bank credit.

2. Targets and instruments of monetary policy

a. Nominal anchors and intermediate targets

Since the former Czech and Slovak Federal Republic's successful stabilization program in 1991, the fixed exchange rate has served as a basic nominal anchor for monetary policy in the Czech Republic. While the exchange rate anchor was invaluable in stabilizing expectations in the wake of big-bang price liberalization, over time the implied endogeneity of the money supply became problematical as mounting balance of payments surpluses raised money growth and threatened the disinflation effort. Rather than abandon the peg, the CNB began emphasizing broad money (M2) as an independent target (i.e., not merely as an indicative figure consistent with expected balance of payments and fiscal developments)--thus, in effect, establishing it as a second nominal anchor in addition to the fixed exchange rate. Ever since, the CNB has been struggling with the inherent tension in fixing two policy anchors, with the result that it has had only limited success in achieving its announced targets for M2.

^{1/} Prepared by Ranjit Teja.

In the uncertain environment of economic restructuring, the targeting of M2 has been fraught with difficulties. Structural upheavals in the economy--the split of the federation, the emergence of an imperfectly accounted services sector, and new statistical methods--render the data series too short and unreliable for proper estimation of money demand. In practice, M2 targets have been set based on a simple velocity equation, i.e., by adding up targeted inflation and real GDP growth and then making an allowance for lower velocity. Indeed, M2 velocity has been on a declining trend for the last four years, but even a one standard error band around the velocity trend line is quite wide, roughly equivalent to 4 percent of broad money (Chart 4.1). ^{1/}

Partly because of this uncertainty about underlying money demand, the CNB has tended to accommodate missed monetary targets. Thus, both in 1993 and 1994, the original M2 target was revised upwards at mid-year in the face of heavier-than-expected capital inflows, while the final outturn proved to be higher still (Table 4.1). In turn, the following year's targets were built on actual outcomes, thus giving rise to some further "base drift."

Table 4.1. M2 Growth Targets and Outcomes

(Percent change)

	Original Target	Mid-year Revision	Final Outcome ^{1/}
1993	17	19	20
1994	12-15	17	21
1995	14-17	...	...

Source: Czech National Bank.

^{1/} Adjusted for special factors at end-year (see section 3 below).

Aside from the uncertainty of money demand, three other factors have constrained monetary policy: (i) problems in filtering out the "noise" in monetary data arising from large swings in bank float (see below); (ii) the emergence of offsetting capital inflows following open market operations to

^{1/} Although the velocity trend line is an imperfect guide to predicting money demand, deviations from the trend line provide some useful insights into liquidity conditions and interest rate movements. For example, periods when seasonally adjusted velocity is close to or below the bottom of the band coincide with generally lower interest rates in the money market, and vice versa.

CHART 4.1
CZECH REPUBLIC
VELOCITY OF MONEY AND INTEREST RATES

Source: Czech National Bank.

1/ Prague interbank offered rate.

mop up liquidity, and (iii) the possibility of sterilization costs forcing the central bank into a loss-making position, which could ultimately compromise its independence.

b. Operating targets and instruments

Up until July 1994, the CNB used the monetary base (currency plus banks' reserves) as the operating target in its quest to reach quarterly intermediate targets for M2. Once a week, the CNB's operating desk combined net sales of CNB bills, government securities, and auctioned refinance credits to achieve the desired level of base money. From time to time, changes in reserve requirements were also used, as were adjustments to the discount and Lombard rates (the latter, however, are mostly of symbolic/signaling value, since the volume of CNB rediscounting is relatively small). After an initial period of volatility in 1993, the money multiplier has been on a generally stable, if declining, trend--thus, permitting the CNB to make more informed judgements about the desired path of reserve money (Chart 4.2). ^{1/}

Starting in August 1994, the CNB switched to total bank reserves as its operating target and began daily--instead of weekly--intervention in the money market, principally through reverse purchase operations and outright sales of CNB and government securities. Daily open market operations are carried out with a high degree of sophistication, and have been supplemented with other control techniques when necessary (such as the transfer of National Property Fund (NPF) deposits from commercial banks into the central bank). The operating procedure was modified at the start of 1995 when the CNB was confronted with two problems. First, the reserves target resulted in significantly higher money market rates that began attracting a high volume of short-term capital inflows. ^{2/} Second, temporary volatility in the level and composition of deposits at the end of the year made it difficult to forecast the demand for bank reserves. To mitigate the first problem, the operating desk began working with an explicit upper limit on interbank interest rates, which was to override the reserves objective. To address the second problem, the CNB switched to targeting a relatively small amount of excess reserves, the idea being that the system should run with minimum slack. In practice, when the excess reserves objective began to conflict with the interest rate objective, the latter nearly always won out. Since April 1995, the CNB has resumed using total bank reserves as the principal operating target--though the upper bound on the interbank interest rate has been retained.

^{1/} The fall in the multiplier was essentially driven by a sustained rise in the currency deposit ratio, reflecting a return to more normal levels after the trauma of the currency split in 1993; however, since mid-1994, the multiplier has been flat.

^{2/} Short-term flows had not, until late 1994, been a major force in the capital inflows phenomenon.

**CHART 4.2
CZECH REPUBLIC
MONEY MULTIPLIER**

Source: Czech National Bank.

1/ $M2A / \text{average base money}$. $M2A$ is defined as $M2$ plus interbank clearing account float, which eliminates the effects of swings in the latter.

3. Monetary developments in 1994 and early 1995

After adjusting for special and transitory factors, broad money grew by about 21 percent in 1994, well ahead of the original and mid-year revised targets (Chart 4.3). 1/ The bulk of this expansion was concentrated in time and savings deposits, so that the narrower aggregate M1 increased by a more moderate 18 percent. Credit to enterprises and households grew by about 16 percent, with the bulk of the expansion consisting of short- and medium-term loans to the business sector. The "true" pace of credit expansion was higher than suggested by the above figure, since direct enterprise borrowing from banks resident abroad--a substitute for domestic bank credit--also increased markedly (see Chapter V).

Monetary expansion was particularly brisk during the first half of 1994, and seasonally adjusted M2 velocity fell well below the band around the longer-term trend. Although monthly inflation was rising only moderately at that point, the CNB nevertheless decided that the underlying momentum in money growth was excessive, and that it was necessary to pull back somewhat, even if to a less ambitious rate of M2 growth than originally targeted. Accordingly, the stance of monetary policy was progressively tightened during the second half of the year. An increase in the minimum reserve requirement was announced in July (raising the average reserve requirement by about 1 percentage point). This was followed by increases in the discount and Lombard rates in October, each of which was raised by 0.5 percentage points to 8.5 percent and 11 percent, respectively. In November, agreement was reached with the NPF to transfer to the CNB the bulk of its deposits with commercial banks (Kc 16 billion, equivalent to roughly 10 percent of reserve money, was moved to the CNB during the period December 1994-February 1995). 2/ The upshot of these measures was to significantly tighten liquidity conditions during the second half of the year, as reflected in rising money market and bank loan rates. Correspondingly, the growth of seasonally adjusted M2 fell from around 25 percent per annum in the first half of the year to an annualized rate of about 18 percent in the second half.

The tightening of monetary policy was not without problems or complications. Starting in late 1994, the CNB began observing that the widening of the differential between domestic and foreign interest rates (Chart 4.4) was prompting large short-term capital inflows especially via

1/ To eliminate the distortion of underlying trends, it is necessary to adjust for swings in customer float, which consist of deposits that--pending clearance--get temporarily reclassified in "other items net" as nondeposit liabilities to clients. A second important adjustment involves correcting for a large operation by a foreign bank at the end of 1994 that temporarily inflated both sides of its balance sheet. These adjustments are incorporated in Charts 4.1-4.3.

2/ A further Kc 6 billion was transferred in May 1995.

CHART 4.3
CZECH REPUBLIC
GROWTH OF MONEY AND CREDIT
(In Percent)

Source: Czech National Bank.

1/ Adjusted for swings in customer float (i.e. deposits that, pending clearance, are temporarily reclassified in other items net), and other special factors noted in section 3 of the text.

CHART 4.4
CZECH REPUBLIC
SELECTED INTEREST RATES
(In Percent)

Source: Czech National Bank.

1/ Difference between one-month PRIBOR and a weighted average of one-month interbank rates in U.S. dollars and Deutsche marks.

foreign banks' branches. ^{1/} However, it was not until the first quarter of 1995 that short-term inflows began approaching levels that might be described as a "flood." For the first time, banks became the major conduit for capital inflows: net foreign borrowing by resident banks was close to US\$1 billion in the first quarter of 1995, and accounted for more than half of total reserve accumulation of the central bank during that period (Table 4.2). Aside from the sheer scale of the inflow, the authorities were concerned by the fact that most of the inflow consisted of short-term--and hence potentially volatile--borrowing by foreign banks' branches. Although the period under consideration is short and the data limited, preliminary estimates suggest that during the period September 1994-April 1995, up to two thirds of CNB sterilization operations may have been "offset" by such short-term capital flows responding to local liquidity conditions (see section 4 below).

In this rather difficult environment, broad money growth began to pick up. After adjusting for special factors, the seasonally adjusted growth of M2 during the first quarter of 1995 was close to 24 percent--well ahead of the 14-17 percent target range for the year as a whole. Interest rates softened from the peak levels observed in December, and estimated velocity declined towards the bottom of the velocity band. Credit expansion remained at around 16 percent (annual rate) through end-March, but picked up markedly in the following two months.

With broader macroeconomic indicators--inflation and surveys of expected inflation, the trade balance, and consumption demand--pointing to a greater risk of overheating, the CNB announced in mid-June a series of measures aimed at reducing the force of the short-term offset to sterilization operations and curtailing the growth in money and credit. These included: (i) a 1 percentage point increase in the discount and Lombard rates (to 9.5 and 12 percent, respectively); (ii) an increase of about 1 percent in the average reserve requirement via a unified rate of 8.5 percent, effective August 1 (previously, the requirement was 3 percent on time deposits and 12 percent on sight deposits); and (iii) the introduction of a limit on short-term foreign borrowing by banks, also effective August 1, requiring each bank to ensure that its net short-term liabilities to nonresidents, in all currencies, do not exceed the smaller of 30 percent of claims on nonresidents or Kc 500 million. The limit applies to on-balance-sheet assets and liabilities, as only these affect the monetary base. The following section sheds some additional light on the motivations for instituting capital controls, which arguably is one of the most significant and controversial steps taken by the CNB in recent years.

^{1/} Some of these inflows were initially related to tax arbitrage resulting from tax treaties that eliminated the withholding tax on NPF bills for nonresidents. This difference allowed nonresidents to make substantial returns as the bills approached maturity. While a tax play may serve as an initial impulse, it inevitably involves the repatriation of proceeds at completion, and by itself cannot be a source of continued net inflows.

Table 4.2. Commercial Banks' Foreign Exchange Position, 1994-95 Q1

	1994				1995
	March	June	Sept.	Dec.	March
(In millions of U.S. dollars)					
Banks' position					
vis-à-vis nonresidents					
Assets	2,454	2,642	2,499	2,744	2,803
Short-term	2,308	2,486	2,387	2,649	2,676
Long-term	147	157	112	125	127
Liabilities	2,560	2,695	2,711	3,145	4,185
Short-term	767	876	944	1,163	1,873
Long-term	1,793	1,819	1,767	1,982	2,313
Banks' net asset position					
vis-à-vis nonresidents	-105	-53	-212	-371	-1,382
Short-term	1,541	1,610	1,444	1,486	803
Long-term	-1,646	-1,662	-1,656	-1,857	-2,185
Quarterly change in all banks'					
net position to nonresidents	-217	53	-159	-159	-1,011
Short-term	-127	69	-166	43	-683
Long-term	-90	-16	7	-202	-328
Quarterly change in foreign banks'					
net position to nonresidents	-59	-21	-88	-249	-779
Long-term	-60	-16	-101	-39	-751
Short-term	2	-6	13	-210	-28
Memorandum items:					
Gross official reserves	4,566	5,170	5,417	6,243	8,262
Quarterly change in gross					
official reserves	694	605	246	827	2,018
Quarterly change in net					
official reserves	871	967	718	966	1,874
Ratio of net bank borrowing					
abroad to change in net foreign					
assets of the CNB					
(in percent)	24.9	-5.4	22.1	16.5	54.0

Source: Data provided by the Czech National Bank.

4. The offset to monetary sterilization

Until mid-1994, the CNB was largely successful in sterilizing inflows; such hesitation as existed with regard to sterilization activities was based, apart from uncertainty over money demand, on only a generalized recognition of the limits of such policies over time. However, starting in the last quarter of 1994, the limits to sterilization became less and less abstract as the CNB's operations desk began noticing that its efforts to tighten liquidity conditions were unravelling at a rapid rate. For example, during the first quarter of 1995, the CNB found that of the Kc 14 billion increase in the stock of prime securities (Treasury, NPF, and CNB bills) sold to sterilize external inflows, roughly Kc 12 billion had been acquired by nonresidents and foreign banks' branches.

Despite the many empirical limitations--notably, the short period of observation and the lack of data on key variables--more formal estimates of the "offset coefficient" are presented in this section. The exercise is best considered work in progress and the results preliminary at this stage.

The standard procedure for calculating the offset coefficient involves estimating equation:

$$KAP = a_1\Delta NDA + a_2CAB + a_3\Delta R^* + a_4\Delta Y + u_i \quad (1)$$

where KAP, NDA, CAB, R^* , and Y are, respectively, the capital account balance, net domestic assets, the current account, the foreign interest rate, and nominal output; u_i is the usual error term and the prefix Δ denotes the change in a variable. This equation is a reduced form derived from substituting demand functions for (non-money) domestic and foreign assets into an inverted money demand equation, with the a_i 's being arithmetic combinations of various income and interest elasticities of asset demand functions. By adding CAB to both sides, noting that $KAP + CAB = \Delta NFA$ (net foreign assets), and setting $a_2 = a'_2 + 1$, the equation can also be expressed as:

$$\Delta NFA = a_1\Delta NDA + a'_2CAB + a_3\Delta R^* + a_4\Delta Y + u_i \quad (2)$$

When a_1 is "high" (i.e., close to -1), the central bank's domestic money operations are fully undone by capital flows in the reverse direction; monetary sterilization is both pointless and expensive for the central bank. When a_1 is "less high," e.g., -0.5, sterilization is feasible, but still relatively expensive (because mopping up of Kc 100 of external inflows requires Kc 200 of open market operations).

To estimate equations (1) or (2), fortnightly data--coinciding with the cycle for banks' minimum required reserves--were used; where data at this frequency was not available, proxies were utilized. 1/ Moreover, given the difficulties in implementing the underlying economic model at a high frequency and over a short time period, alternative specifications and lag structures were experimented with.

Six alternative specifications, calculated using ordinary least squares (OLS), are reported in Table 4.3. 2/ The change in net domestic assets is, in all cases, a significant variable explaining movements in the central bank's net foreign assets. Summing over the lags of ΔNDA gives a rough estimate of the offset coefficient, which averages around -0.65 across all the equations. Alternatively, if one adds up only the significant lagged coefficients, the offset averages -0.40 across the six specifications (see last two columns of Table 4.3). Reassuringly, this range of estimates for the offset coefficient is broadly in line with those calculated for other countries facing capital inflow surges in the late 1980s and early 1990s (see e.g., Schadler, et al. (1993)). The main implication of the above is that sterilization remains a feasible, if expensive, option for the central bank.

5. The bad loan problem

For the past several years, the problem of "bad loans"--i.e., credits not regularly serviced and hence potentially unrecoverable--has been a major drag on the development of the Czech banking sector. 3/ The recorded volume of bad loans rose in 1994 from about 23 to 38 percent of outstanding credit. Although some of this rise may be due to further degradation of

1/ The current account was proxied by the monthly trade balance--converted to a fortnightly basis using polynomial smoothing--plus net clearing account payments to the Slovak Republic; in addition, direct financial credits from abroad--which are mostly long term and require prior CNB authorization--were also added as a means of further isolating the component of the capital account capable of quickly reacting to money market conditions. Output was proxied using monthly data on household income (converted to a fortnightly frequency as above).

2/ OLS estimates of the offset coefficient are known to be biased due to a "simultaneity problem" arising from central bank sterilization. To illustrate, suppose an increase in output raises money demand and draws capital from abroad, and that the central bank tries to sterilize the inflow by lowering NDA. Although the ΔNFA is due to higher output, OLS attributes some of the rise in NFA to lower NDA, thus exaggerating the size of the offset coefficient. Unfortunately, it was not possible to satisfactorily implement an instrumental variables procedure to overcome this problem.

3/ For a description of the origins and handling of early problems, see Czech Republic--1994 Recent Economic Developments (SM/94/194), Annex III. In addition, some further analysis on the sectoral composition of bad loans can be found in Chapter I.

Table 4.3. Summary of Regression Analysis of Offset Coefficient ^{1/}

(Based on data for the period September 1, 1994 - May 10, 1995)

Equation Number	Dependent Variable	Change in (NDA) A	Change in NDA (t-1) B	Change in NDA (t-1) C	Change in Foreign Interest Rate	Trade and Other Flows	Change in Income	R ²	Durbin-Watson	Total Offset (measured as A+B+C)	Statistically Significant Offset ^{2/}
1.	Change in net foreign assets (NFA)	-0.21 (2.13)**	-0.19 (1.66)*	-0.25 (2.28)***	...	...	...	0.54	2.09	-0.64	-0.64
2.	Change in NFA	-0.09 (0.71)	-0.22 (1.56)	-0.34 (3.12)***	-4.86 (1.03)	0.33 (0.55)	0.10 (0.94)	0.66	2.08	-0.65	-0.34
3.	Change in de-trended NFA	-0.19 (1.90)**	-0.21 (1.51)	-0.27 (2.50)***	...	...	...	0.49	1.89	-0.66	-0.46
4.	Change in de-trended NFA	-0.09 (0.76)	-0.17 (1.35)	-0.27 (2.80)***	-3.70 (0.90)	0.46 (0.87)	0.06 (0.63)	0.62	1.49	-0.52	-0.27
5.	KAP ^{3/}	-0.14 (1.13)	-0.21 (1.51)	-0.34 (3.18)***	...	...	...	0.54	1.92	-0.69	-0.34
6.	KAP	-0.09 (0.71)	-0.22 (1.56)	-0.34 (3.12)***	-4.86 (1.03)	-0.67 (1.11)	0.10 (0.94)	0.69	2.08	-0.65	-0.34
	Average offset	...	...	...	...	...	...	...	...	-0.64	-0.40

Source: Data provided by the Czech National Bank.

^{1/} All regressions are estimated by the ordinary least squares (OLS) method. In equations 3 and 4, the trend component of the change in NFA was removed (by taking the residuals of a regression on a constant and time trend). The numbers in parentheses are t-statistics.

^{2/} Sum of statistically significant (at least 15 percent confidence) A, B, and C.

^{3/} KAP is change in net foreign assets less the trade balance, enterprise credits, and net clearing payments to Slovakia.

**** significant at 1 percent level.

*** significant at 5 percent level.

** significant at 10 percent level.

* significant at 15 percent level.

bank portfolios, the bulk--up to two thirds--probably reflects the introduction of tighter accounting norms in September 1994. The new loan classification system utilizes both objective and subjective criteria: ^{1/}

- Standard loans: timely servicing and information;
- Watch loans: payments or information on borrower overdue by 30-90 days or loan restructured during the past 6-36 months;
- Substandard loans: payments or information on borrower overdue by 90-180 days or loans restructuring more than 6 months ago;
- Doubtful loans: payments or information on borrower overdue by 180-360 days or full repayment assessed to be improbable;
- Loss loans: payments or information on borrower overdue by more than 360 days or full repayment assessed to be improbable.

Banks are expected to create reserves on a quarterly basis to cover a risk-weighted average of the above loans, less applicable collateral (the risk weights for the categories noted above are, respectively, zero, 5, 20, 50, and 100 percent). It is still too early to judge whether most banks were indeed fully provisioned by end-1994 as per norms, because auditors' reports on the subject had not been completed for most banks as of mid-June. For the largest banks, the level of provisions is generally thought to be adequate; even so, provisioning in the banking system as a whole continues in 1995 at about the same rate observed the year before.

The bad loans problem has not, so far, posed systemic risks to the banking system. Since a spate of incidents in early 1994, when three small banks were shut down, there have been no major crises. Nevertheless, the condition of several smaller, privately-owned banks, remains fragile--prompting not only heightened surveillance by the CNB, but also an informal moratorium on the licensing of new banks; the only exception to the latter in the past two years has been the licensing of the state-owned Czech Export Bank in May 1995.

The impact of bad loans, however, extends well beyond the question of banking system stability, and is closely related to the macroeconomic problem of capital inflows. The high incidence of bad loans and associated provisioning has been a major factor pushing up intermediation costs in the Czech economy. As such, it has encouraged newer and more creditworthy enterprises to seek financing abroad. These links are taken up further in Chapter V.

^{1/} These criteria are applied by borrower and not by loans--so that even if one loan of a particular borrower enters the problem loan categories, all loans to that borrower are classified in the same way.

Reference

Schadler, Susan, Maria Carkovic, Adam Bennett and Robert Kahn, Recent Experiences with Surges in Capital Inflows, Occasional Paper 108 (Washington: International Monetary Fund, December 1993).

V. Banking Sector Problems as a Magnet for Capital Inflows 1/

1. Introduction

A basic requirement for effectively dealing with the problems associated with capital inflows is to focus the policy response to the underlying causes of the inflow. For example, in an economy with a fixed exchange rate, a positive interest differential drawing capital flows from abroad may reflect endogenous factors (e.g., overly tight monetary policy) or, alternatively, exogenous factors (e.g., weaknesses in the intermediation process that push up domestic interest rates). If the latter are indeed important, the usual financial policy responses may need to be supplemented with structural measures.

There are at least two reasons for looking to banking sector problems as a cause of capital inflows in the Czech Republic. First, high domestic lending rates seem to be more connected with high intermediation costs than with restrictive monetary policy. The latter explanation is unconvincing for a number of reasons, not least because inflation has been persistently in double digits and real bank deposit rates persistently negative for several years. In contrast, the spread between bank lending and deposit rates has been high by any measure, and indeed double that in neighboring countries such as Germany and Austria. The size and structure of capital inflows suggests that the influence of high intermediation costs can only have grown over time (Chart 5.1). Not only has the volume of direct foreign borrowing by Czech enterprises nearly doubled each year in recent periods, but also the effective cost of such funds has declined with falling demand from lenders for local credit guarantees; typically, guarantee fees cost 2-4 percent per year. Moreover, the access of medium- and smaller-sized companies to foreign credits has also expanded, as indicated by the decline in the loan concentration ratio. Section 2 examines some of the factors contributing to the high spreads.

A second clue pointing to banking sector problems as a source of capital inflows is the stark difference in the maturity structure of domestic and foreign borrowing. Foreign credits are mostly long term, with more than two thirds of the net inflow in 1993 and 1994 being of over 5 years maturity (and one third being of over 10 years maturity). In contrast, domestic bank loans are concentrated at the short end of the maturity spectrum--which would not seem consistent with longer-term financing needs of enterprises in the midst of restructuring. Section 3 discusses the dimensions and forces behind the reluctance of domestic banks to lend long term.

1/ Prepared by Ranjit Teja.

CHART 5.1
CZECH REPUBLIC
SIZE AND STRUCTURE OF FOREIGN BORROWING BY ENTERPRISES

Source: Czech National Bank.

2. Spreads in the banking sector

At first glance, average nominal lending rates of 13-14 percent prevailing in the Czech banking system do not appear very high when viewed against an underlying inflation of about 10 percent; real interest rates on new loans averaged a reasonable 3 percent through most of 1994 (Chart 5.2). However, given that depositors were remunerated at substantially negative real rates, banks would have had considerable room for lowering average loan rates while still earning a positive real return. In fact, this has not been the case, as high costs and low profitability have kept domestic bank lending rates up.

Although bank spreads have fallen from about 8-9 percent in 1993 to below 6 percent in the first quarter of 1995, they remain relatively high. For example, spreads in the Czech Republic are roughly twice the average level in European OECD countries (Table 5.1). To be sure, too much weight

Table 5.1. Average Bank Spreads in Selected Countries

(In percent)

Czech Republic (1994)	6.1
Average in selected	
European OECD countries (1993):	3.2
Austria	3.0
Belgium	1.9
Denmark	4.9
Finland	2.1
France	2.5
Germany	2.6
Italy	5.4
Netherlands	2.3
Spain	5.0
United Kingdom	3.3
Sweden	3.3
Switzerland	2.3

Sources: The Czech National Bank; and T. Timmermans, "Competitiveness of the Belgian Banking Sector," paper presented at a seminar at the Czech National Bank, Prague, May 15-16, 1995.

should not be placed on cross-country comparisons, as there are important differences in accounting conventions (e.g., inclusion of net interest income from securities in the case of OECD comparators) and market practices

CHART 5.2
CZECH REPUBLIC
LENDING AND DEPOSIT RATES
(In Percent)

Source: Czech National Bank.

1/ CPI inflation over the previous 12-month period, adjusted for VAT increase.

(e.g., loan fees are less common in the Czech Republic). Even so, the high spread relative to other countries is certainly suggestive of underlying problems in the banking system.

Table 5.2 identifies some of the main components of the spread using the 1994 consolidated income statement of the banking system and of major bank groupings. Five broad variables affecting the spread are singled out: administrative costs, loan-loss provisioning, taxes, the after-tax profit margin, and other net earnings (fees from trading and guarantees, income from securities, etc.). 1/ The first four add to spreads, while the last tends to lower it; in addition, a sixth variable, an arithmetic adjustment, is necessitated by the algebra.

By far, the most striking result is that provisioning plays as large a role as administrative costs in explaining the total spread: at a level of 4.5 percent of loans, it is equivalent to nearly three quarters of the total spread. The cost of provisioning stands out across all segments of the banking system, though least so in the case of foreign banks and branches (who are still relatively minor figures in overall bank intermediation).

A certain amount of caution in attributing a causal role to provisioning is, however, necessary: although provisioning for past bad loans is clearly an accounting cost, economic theory does not provide a clear rationale for its contribution to bank spreads. It could be argued, for example, that fixed costs such as provisioning are irrelevant to the price of bank intermediation, as profit maximization only involves marginal costs and revenues. While inconsistency with standard models of profit-maximizing behavior should not be ruled out in a transition economy, a case could also be made for including provisions in a profit-maximizing model by viewing provisioning as a proxy for current risks, rather than a mere fixed cost from the past. In an uncertain environment, recent experience with the cost of bad loans--and a large part of bad loans in the Czech Republic are of relatively recent vintage--is probably as good a guide as any for determining the average premium to be charged for risk.

1/ The components of the spread are derived from the accounting identity:

$$\Pi = i_L L + O - i_D D - A - T - P,$$

where Π is (after-tax) profits, i_L is the average lending rate, L is the average stock of loans, O is other net income, i_D is the average deposit rate, D is average nonbank deposits, A is administrative costs, T is taxes, and P is provisioning from current earnings. Dividing by L and manipulating, this can be restated as:

$$i_L - i_D = a + p + t + \pi - o + \alpha$$

where the lower case letters on the right correspond to the upper case variables divided by total loans. The last term, equal to $-i_D(1-D/L)$ and labeled "arithmetical adjustment" in Table 5.2, arises from the non-equivalence of loans and nonbank deposits; the adjustment is especially significant for medium and small Czech banks that fund much of their loan portfolio from interbank borrowing.

Table 5.2. Sources of Bank Spreads in 1994 ^{1/}

(In percent)

1. TOTAL BANKING SYSTEM	
Spread between lending and deposit rates	6.1
Administrative costs	4.6
Provisions	4.4
Tax payments	0.4
Other sources of income, net	-3.4
Accounting profit margin	0.6
Arithmetical adjustment	-0.4
<u>Memorandum items:</u>	
Share of risk weighted bad loans at end-year	26.0
Ratio of reserves and provisions to loans at end-year	12.1
A. Profit margin on economic basis ^{2/}	-2.9
B. Profit margin on economic basis ^{2/}	-2.0
2. "BIG FOUR" BANKS	
Spread between lending and deposit rates	5.9
Administrative costs	4.8
Provisions	2.9
Tax payments	0.5
Other sources of income, net	-6.4
Accounting profit margin	3.0
Arithmetical adjustment	1.0
<u>Memorandum items:</u>	
Average market share of loans	64.4
Average market share of deposits	79.0
Share of risk weighted bad loans at end-year	23.7
Ratio of reserves and provisions to loans at end-year	14.4
A. Profit margin on economic basis ^{2/}	0.1
B. Profit margin on economic basis ^{2/}	1.0
3. MEDIUM AND SMALL DOMESTIC BANKS ^{3/}	
Spread between lending and deposit rates	5.6
Administrative costs	3.5
Provisions	7.5
Tax payments	0.1
Other sources of income, net	3.8
Accounting profit margin	-4.6
Arithmetical adjustment	-4.6
<u>Memorandum items:</u>	
Average market share of loans	32.0
Average market share of deposits	17.2
Share of risk weighted bad loans at end-year	32.3
Ratio of reserves and provisions to loans at end-year	8.3
A. Profit margin on economic basis ^{2/}	-9.5
B. Profit margin on economic basis ^{2/}	-8.6
4. FOREIGN-OWNED BANKS AND BRANCHES	
Spread between lending and deposit rates	3.9
Administrative costs	10.8
Provisions	3.0
Tax payments	1.4
Other sources of income, net	-13.7
Accounting profit margin	2.8
Arithmetical adjustment	-0.2
<u>Memorandum items:</u>	
Average market share of loans	3.6
Average market share of deposits	3.7
Share of risk weighted bad loans at end-year	5.3
Ratio of reserves and provisions to loans at end-year	5.7
A. Profit margin on economic basis ^{2/}	2.1
B. Profit margin on economic basis ^{2/}	2.3

Source: Staff estimates based on data provided by the Czech National Bank.

^{1/} The components of the spread, including the "arithmetical adjustment," are explained in the main text. Data on bad loans and provisions exclude the foreign branches of Czech banks.

^{2/} For illustrative purposes, estimate A assumes that actual receipts are proportional to risk weighted assets. Estimate B is based on the share of "loss loans" only.

^{3/} Includes the Consolidation Bank. The large negative arithmetical adjustment arises from the fact that loans--nearly twice as high as primary deposits--are largely funded in the interbank market.

Although Table 5.2 gives the impression that direct taxes are largely irrelevant to spreads, the fact remains that banks face severe tax distortions that could add significantly to bank margins. The most important of these is the taxation of accrued--as opposed to actually received--interest; Czech tax accounting does not distinguish between the two, and so overstates taxable profits. In addition, beyond a certain level, provisioning is not deductible as a cost for tax purposes. One way of illustrating the impact is to estimate the difference in "break-even" spreads banks need to charge in distorted and undistorted regimes. ^{1/} On this basis, plausible parameter values for the Czech Republic suggest that tax distortions could, in theory, add some 2-3 percentage points to lending rates, with most of the effect arising from the taxation of unreceived interest income on nonperforming loans.

In practice, actual tax payments have been relatively low, amounting to only 0.5 percent of loans for the banking system as a whole. Although all of it may be deemed "excessive," in the sense of taxing unreceived income, the overall figure is not quantitatively worrying. The reason that the effect of the distortion has been so low is simply that a very large number of banks have recorded zero to negative profits even on the basis of accounting practices that overstate profits. Data on unreceived interest is not available, but two illustrative calculations of "true" profits are shown in Table 5.2 for various segments of the banking sector. The first assumes that banks only receive payments on a risk-weighted average of loans (using the CNB's risk weights described in Chapter IV, section 5); the second assumes that only "loss loans"--i.e., in arrears for over 1 year--fail to deliver an income stream. The calculations suggest that the banking system as a whole may be running a loss rather than a small profit, principally on account of medium and small (private) banks; even the profit margin of the potentially oligopolistic "big four" is, on this basis, quite modest (between 0 and 1 percent).

As the incidence of new bad loans falls over time and the need for provisioning for past mistakes declines, an improvement in bank profitability is likely--at which point the effects of tax distortions on

^{1/} It can be shown that, in a regime without tax distortions, the "break-even" spread is approximately:

$$\frac{i_D(b-p+gr) + c(b-p)(1-r) + a(1-r)}{g(1-r)} \quad (2)$$

where b is the (risk-weighted) share of bad loans, g is simply 1-b (the share of serviced loans), p is provisioning, r is the required reserve ratio, c is collateral, and a is administrative costs; all variables, except the deposit interest rate i_D and the reserve ratio, are expressed as a share of loans. A similar expression can be derived for the spread in the presence of distortions (i.e., taxation of unreceived interest and only partial tax credit for provisioning). The difference between the two gives the impact of the distortions.

spreads can rise significantly. 1/ Accordingly, the Government forwarded legislation to Parliament in June 1995 aimed at giving banks greater latitude in writing-down bad loans against provisions; (up until now, writeoffs have been extremely rare as they must await the final outcome of bankruptcy proceedings in courts). This seemingly cosmetic measure--a mere balance sheet cancellation of assets (bad loans) against liabilities (provisions)--has, in fact, important tax implications for banks: once a loan is written off the books, it ceases to accrue interest for tax purposes. As such, the proposed measure could greatly reduce the potential effect of tax distortions in raising bank spreads.

3. Long-term lending and maturity transformation

A striking feature of bank lending in the Czech Republic is the sharp reduction in the average maturity of loans over the past several years, with the share of long-term loans in total lending falling steadily from over 42 percent at end-1991 to just 29 percent at end-1994. Not only did the relative share of long-term loans fall, but the absolute availability of long-term loans declined even more dramatically. Over the three years to end-1994, a period during which the stock of total bank credit grew by about 25 percent in real terms, real long-term credit declined by over 25 percent. Significantly, this erosion in the availability of long-term finance coincided with a pick up in the demand for long-term funding by restructuring enterprises and by the large number of start-up businesses following the economic reforms begun in 1991. To the extent that a large part of capital inflows is long-term borrowing by Czech enterprises, it is clear that they represent a market response to lagging domestic supply of long-term finance. Indeed, direct loans from abroad have been the only source of net increase in long-term lending in recent years (Chart 5.3).

It is common for bankers in the Czech Republic to point to the relatively short maturity of bank deposits as a rationale for avoiding longer-term lending. Sight and short-term deposits are, indeed, the dominant source of funding, accounting for over 70 percent of deposits. Long-term deposits, by contrast, are a mere 5-6 percent of total deposits, while bank financing through bonds is still in its infancy (although such activity began picking up in 1994). These arguments have a certain validity in terms of cautious banking practices, but overall do not constitute a convincing explanation for the banks' reluctance to lend long term: after all, a standard function of banks in developed economies is precisely to parlay short-term deposits into longer-term loans to businesses (with due regard for the need for liquidity). The spread earned by banks is partly compensation for the risk of undertaking such maturity transformation.

1/ Although there is no real difference between existing provisions and profits in a balance sheet sense (both are part of net worth), there is an important effect in the income statement: the swing from negative to positive bank profits also triggers tax payments, including taxes on unreceived interest income.

CHART 5.3
CZECH REPUBLIC
STRUCTURE OF BANK LOANS AND DEPOSITS

Sources: Czech National Bank; and staff estimates.

1/ Ratio of long-term loans to sight and short-term deposits, in percent.
2/ Foreign loans estimated on the basis of cumulative CNB approvals of long-term (over 5 year) financial credits. (Disaggregated data on actual drawings is not available but, in practice, total drawings closely follow approvals.)

However, Czech banks as a whole have been moving in the other direction, i.e., they have been reducing the mismatch in the maturity of assets and liabilities. If one uses the ratio of long-term loans to short term and sight deposits as a crude measure of maturity transformation, the effort of banks in providing this intermediary service can be seen to have declined by nearly 40 percent during 1991 and 1994 (Chart 5.3). Instead, such maturity transformation as does occur, is from short-term deposits to medium-term loans.

It is difficult to identify empirically the reasons for such declining maturity transformation, although the generally uncertain environment of transformation, the lack of transparent accounting practices, and limited banking expertise all make risk assessment more difficult and so contribute to a general aversion for long-term commitments. Shorter maturities, on the other hand, carry a high "option value" for banks in an environment of economic restructuring, providing them--at rollover dates--the opportunity to reassess loans after the passage of time and the resolution of uncertainties.

It is also important to ask whether or not there are regulatory impediments to maturity transformation. Table 5.3 lists three key ratios routinely monitored by the Banking Supervision Department of the CNB, together with the normative view (the rating) attached to each. Of these, the only one with the potential to interfere seriously with maturity transformation is the first, namely the limit on the ratio of long-term assets to long-term liabilities. 1/ The definition and ratings for this ratio are structured in such a way as to discourage banks from using short-term (less than 1 year) resources to fund loans with maturity of more than 1 year. However, both the banking system as a whole and major bank groupings have operated well within the norms. The only exception has been the (small) group of foreign bank branches, who in any case are technically able to meet the criterion by virtue of their capital backing abroad. Overall, prudential regulations do not seem to impose any binding limit on maturity transformation.

1/ Limits 2 and 3 are concerned with very short-term liquidity.

Table 5.3. Indicators of Bank Liquidity Monitored by the CNB, 1993-94

(End of period. in percent)

		All Banks	Large Banks	Foreign Banks	Other Banks
1. Long-term assets position <u>1/</u>	1993	114.8	120.1	427.6	94.7
	1994	105.3	116.0	230.7	65.0
Ratings:					
1 (best) less than 100%					
2 100 to 125%					
3 125 to 150%					
4 150 to 175%					
5 (worst) more than 175%					
2. Short-term liquidity position <u>2/</u>	1993	8.4	13.7	4.0	-5.0
	1994	-5.9	-7.6	5.5	-5.8
Ratings:					
1 (best) 0 to 5%					
2 more than 5%					
3 0 to -5%					
4 -5 to 10%					
5 (worst) more than -10%					
3. Interbank dependency <u>3/</u>	1993	20.1	14.6	50.1	28.9
	1994	19.9	13.5	51.0	25.3
Ratings:					
1 (best) less than 20%					
2 20 to 40%					
3 40 to 60%					
4 60 to 80%					
5 (worst) more than 80%					

Sources: Data provided by the Czech National Bank; and staff estimates.

1/ Assets of more than 1 year maturity/(liabilities of more than 1 year maturity + capital); in this illustrative calculation, capital has not been included.

2/ Ratio of cumulative net position up to 3 months (excluding 80 percent of deposits) to total assets.

3/ Ratio of interbank liabilities to total liabilities.

Table 1. Czech Republic: Gross Domestic Product, 1990-94 1/

	1990	1991	1992	1993	1994
<u>(In billions of koruny. at current prices)</u>					
Total consumption	397.4	453.6	573.9	726.4	828.9
Of which:					
private consumption	284.8	318.9	410.2	512.6	597.8
Gross capital formation	162.5	214.2	214.1	167.5	211.3
Gross fixed investment	149.3	165.3	225.7	241.9	277.3
Change in stocks	13.2	48.9	-11.6	-74.4	-66.0
Net export of goods and nonfactor services	7.4	48.8	3.0	16.7	-2.7
Gross domestic product	567.3	716.6	791.0	910.6	1,037.5
<u>(In billions of koruny. at constant 1984 prices)</u>					
Total consumption	356.6	275.2	299.7	305.6	314.9
Of which:					
private consumption	253.2	181.8	208.5	214.5	225.9
Gross capital formation	148.9	126.7	104.4	98.0	120.3
Gross fixed investment	136.8	112.6	122.6	113.2	118.2
Change in stocks	12.1	14.1	-18.2	-15.2	2.1
Net export of goods and nonfactor services	-1.8	30.2	0.4	-2.9	-24.0
Gross domestic product	503.7	432.1	404.5	400.7	411.2

Source: Data provided by the Czech Statistical Office.

1/ The data are official estimates, and differ from those shown in Table 5 in SM/95/167.

Table 2. Czech Republic: Gross Domestic Product by Origin, 1990-94

	1990	1991	1992 ^{1/}	1993 ^{1/}	1994 ^{1/}
(In billions of koruny, at current prices)					
Agriculture, hunting, forestry, and fishing	41.4	39.9	44.8	56.3	57.6
Industry ^{2/}	222.7	315.0	317.8	318.1	348.2
Construction	46.2	44.9	39.0	44.5	59.1
Wholesale and retail trade, restaurants and hotels ^{3/}	74.9	75.1	86.6	99.6	110.9
Transport, storage and communication	24.5	29.1	46.2	47.6	58.6
Financial services	3.4	6.0	5.8	17.6	32.0
Real estate, renting and business activities	19.1	23.0	...	...	...
Public administration, education and health	41.7	50.1	77.8	104.4	113.7
Community, social and personal services ^{4/}	25.4	35.4	73.3	116.1	144.9
Taxes minus subsidies	68.0	98.1	99.7	106.4	112.5
Total GDP (at market prices)	<u>567.3</u>	<u>716.6</u>	<u>791.0</u>	<u>910.6</u>	<u>1,037.5</u>
(In billions of koruny, at constant prices)					
Agriculture, hunting, forestry and fishing	31.9	31.8	...	...	...
Industry ^{2/}	222.4	193.2	...	...	...
Construction	42.3	30.0	...	...	...
Wholesale and retail trade, restaurants and hotels ^{3/}	52.2	38.2	...	...	...
Transport, storage and communication	21.4	18.3	...	...	...
Financial services	3.3	3.9	...	...	...
Real estate, renting and business activities	18.4	15.2	...	...	...
Public administration, education and health	37.9	39.5	...	...	...
Community, social and personal services ^{4/}	25.4	28.7	...	...	...
Taxes minus subsidies	48.5	33.3	...	...	...
Total GDP (at market prices)	<u>503.7</u>	<u>432.1</u>	<u>404.5</u>	<u>400.7</u>	<u>411.2</u>

Source: Data provided by the Czech Statistical Office.

^{1/} Estimates. Disaggregated GDP at constant prices not available due to lack of data on sectoral deflators.^{2/} Includes mining, manufacturing industry, electricity, gas, and water.^{3/} Accommodation in hotels included in community, social and personal services in 1990 and 1991.^{4/} Includes real estate, renting and business activities in 1992, 1993 and 1994.

Table 3. Czech Republic: Agricultural Production, 1991-94

(Annual percentage change: at constant prices)

	1991	1992	1993	1994 1/
Total gross agricultural production	-8.9	-12.1	-2.3	-5.6
Crop production	-3.0	-17.0	4.6	-5.8
Of which:				
Grains	-11.4	-15.3	-0.1	2.9
Fodder and root crops	2.3	-27.1	5.7	-10.1
Potatoes	16.4	-3.6	21.7	-47.7
Vegetables	6.4	-25.3	18.6	-0.5
Animal production	-13.1	-8.1	-7.3	-5.4
Of which:				
Livestock for slaughter	-11.2	0.2	-2.0	-12.6
Of which:				
Cattle	-14.9	-3.0	-5.7	-15.9
Pigs	-7.5	3.8	1.2	-10.0
Milk	-14.1	-10.2	-9.5	-7.5
Eggs	-4.7	-3.4	-10.7	-7.1

Source: Data provided by the Czech Statistical Office.

1/ Preliminary data.

Table 4. Czech Republic: Production and Yields
of Selected Agricultural Crops, 1991-94

	1991	1992	1993	1994
<u>(In thousands of tons)</u>				
Cereals overall	7,845	6,565	6,468	6,777
Wheat	4,081	3,413	3,304	3,713
Rye	353	240	256	276
Barley	2,833	2,512	2,419	2,419
Corn (kernels)	150	104	157	91
Sugar beets	4,013	3,874	4,310	3,240
Potatoes	2,043	1,969	2,396	1,231
<u>(In tons per hectare)</u>				
Cereals overall	4.9	4.2	4.0	4.1
Wheat	5.1	4.5	4.2	4.6
Rye	4.0	3.7	3.8	3.5
Barley	4.9	4.0	3.8	3.8
Corn (kernels)	4.3	3.4	4.9	3.4
Sugar beets	33.7	31.2	40.4	35.6
Potatoes	18.0	17.8	23.3	16.1

Source: Data provided by the Czech Statistical Office.

Table 5. Czech Republic: Industrial Production, 1991-94 1/

(Annual percent change, at constant prices)

	1991	1992	1993	1994
Mining and quarrying	-13.6	-12.8	-7.1	0.6
Manufacturing 2/	-26.4	-14.6	-7.7	0.2
Food products and beverages	...	-7.0	-4.4	-2.2
Textiles and textile products	...	-13.7	-14.2	-1.7
Leather and leather products	...	-14.0	-2.0	-1.2
Wood and wood products	...	-21.4	-14.0	3.0
Pulp, paper, publishing, and printing	...	-3.2	-7.1	18.3
Coke, refined petroleum products, and nuclear fuel	...	0.9	-8.1	8.0
Chemicals and chemical products	...	-9.3	-6.2	3.8
Rubber and plastic products	...	-4.9	-2.0	1.7
Nonmetallic mineral products	...	-6.0	-11.4	5.7
Basic metal and metal products	...	-18.6	-6.5	3.3
Machinery and equipment, n.e.c.	...	-24.9	-16.6	-4.8
Electrical and optical equipment	...	-29.0	-8.1	12.3
Transport equipment	...	-26.7	-3.4	-14.1
Other manufacturing, n.e.c.	...	-12.4	-10.4	-5.8
Electricity, gas, and water supply	-2.8	-3.0	-4.8	-2.8
Total industry	-24.4	-13.8	-7.4	--

Source: Data provided by the Czech Statistical Office.

1/ In enterprises employing 25 workers or more.

2/ Comparable disaggregated data are not available for 1991 because of changes in the classification scheme.

Table 6. Czech Republic: Electricity Production and Consumption, 1991-94

(In millions of kilowatt hours)

	1991	1992	1993	<u>1994</u> Prelim.
Production	60,529	59,131	58,882	58,705
Of which:				
Thermal	47,139	45,243	44,659	44,065
Hydro	1,258	1,638	1,596	1,663
Nuclear	12,132	12,250	12,627	12,977
Imports	2,127	989	903	1,390
Exports (including to Slovak Republic)	4,655	4,025	3,007	1,835
Losses	3,835	3,860	4,793	4,660
Domestic consumption	54,166	52,235	51,985	53,600
Of which:				
Industry	30,748	...	28,435 1/	...
Agriculture	3,123	...	1,793 1/	...
Households	9,873	10,343	11,399	...
Other	10,423	...	10,358 1/	...

Source: Data provided by the Czech Statistical Office.

1/ Estimate.

Table 7. Czech Republic: Energy Balance Sheet, 1991-93

(In millions of tons of coal equivalent)

	1991	1992	1993
Primary domestic sources	55.4	51.1	50.7
Coal	49.4	45.4	45.0
Other solid fuels	0.8	0.7	0.5
Liquid fuels	0.1	0.1	0.2
Other (excluding hydro- and nuclear-generated electricity)	5.1	4.9	5.0
Imports	22.1	20.2	20.5
Liquid fuels	10.5	11.0	10.9
From CMEA	9.1	9.7	8.7
From Slovak Republic	1.4	1.3	1.1
From other countries	--	--	1.1
Gas	8.8	7.8	8.1
From CMEA	8.8	7.8	8.1
From Slovak Republic	--	--	--
From other countries	--	--	--
Other primary energy imports	2.8	1.4	1.5
Exports	11.0	10.7	11.2
Liquid fuels	0.5	0.5	0.9
Gas	--	--	--
Solid fuels	4.5	5.2	5.4
To Slovak Republic (all categories)	6.0	5.0	4.9
Change in stocks	0.2	1.5	-0.1
Domestic use of primary energy	66.7	62.1	59.9
For electricity generation by steam (excluding hydro- and nuclear-power)	17.1	16.0	16.0
By industry	20.4	18.8	...
By agriculture	2.3	1.9	...
By households	10.5	10.6	...
For other purposes 1/	16.4	14.8	...

Source: Data provided by the Czech Statistical Office.

1/ Includes energy used in power and public heating stations and transmission and other losses.

Table 8. Czech Republic: Civil Employment in Large Enterprises by Sector, 1991-94 1/
(In thousands, annual averages)

	1991	1992	1993	1994 Prelim.
Agriculture	497	402	300	262
Industry	1,715	1,514	1,416	1,352
Construction	276	221	226	237
Trade and catering	388	251	212	241
Transportation and communication	339	311	302	292
Financial services	36	50	63	72
Real estate	253	157	133	134
Public administration	95	119	131	145
Education	321	315	314	312
Health service	268	263	238	221
Other services	116	108	99	99
Total employment	4,304	3,710	3,434	3,367

Source: Data provided by the Czech Statistical Office.

1/ Includes only enterprises with 25 or more employees.

Table 9. Czech Republic: Civil Employment by Sector, 1991-94 1/

	1991	1992	1993	<u>1994</u> Prelim.
<u>(In thousands, annual average)</u>				
Agriculture	510	427	333	343
Industry	1,948	1,798	1,710	1,652
Construction	404	408	453	444
Trade and catering	571	644	720	811
Transportation and communication	368	366	385	359
Financial services	37	51	65	75
Real estate	351	339	303	348
Public administration	99	123	133	145
Education	324	326	324	322
Health service	268	268	263	260
Other services	178	176	159	140
Total employment	5,059	4,927	4,848	4,899
<u>(Share in total employment, in percent)</u>				
Agriculture	10	9	7	7
Industry	39	36	35	34
Construction	8	8	9	9
Trade and catering	11	13	15	16
Transportation and communication	7	7	8	7
Financial services	1	1	1	2
Real estate	7	7	6	7
Public administration	2	2	3	3
Education	6	7	7	7
Health service	5	5	5	5
Other services	4	4	3	3
Total employment	100	100	100	100

Source: Data provided by the Czech Statistical Office.

1/ Includes private entrepreneurs and workers in enterprises of all size groups.

Table 10. Czech Republic: Average Monthly Earnings, 1991-94 1/

(In koruny)

	1991	1992	1993	1994 2/
Agriculture	3,710	4,270	5,107	5,873
Industry	3,972	4,805	5,893	6,896
Construction	4,041	5,024	6,529	7,635
Trade and catering	3,271	4,182	5,154	6,273
Transport and communication	3,914	4,602	5,672	6,804
Financial services	5,192	7,877	10,336	12,133
Real estate	3,536	4,585	6,032	7,390
Public administration	3,994	5,324	6,850	8,320
Education	3,423	4,206	5,249	6,325
Health service	3,663	4,387	5,525	6,476
Other services	3,127	3,950	5,021	5,790
All sectors	3,792	4,644	5,817	6,896
<u>Memorandum items:</u>				
State sector	3,836	4,697	5,929	6,921
Cooperatives	3,488	4,078	4,795	5,478
Private sector	4,293	5,061	5,757	6,798

Source: Data provided by the Czech Statistical Office.

1/ In 1991, for entrepreneurial sphere and for all budget sphere organizations with 100 or more employees; since 1992, organizations with 25 employees or more.

2/ In 1994, classification of branch of activity is by enterprise, while in 1991-93, it is by establishment.

Table 11. Czech Republic: Quarterly Average Monthly Earnings, 1992-94 1/

(In koruny)

	1992				1993				1994 2/			
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.
Agriculture	3,791	4,115	4,409	4,833	4,412	4,970	5,327	5,800	5,056	5,589	6,131	6,746
Industry	4,333	4,732	4,675	5,521	5,324	6,008	5,789	6,641	6,090	6,819	6,854	7,834
Construction	4,439	4,937	5,016	5,756	5,700	6,493	6,620	7,225	6,611	7,448	7,794	8,667
Trade and catering	3,793	3,936	4,145	4,935	4,612	5,139	5,045	5,884	5,411	6,094	6,358	7,040
Transport and communication	3,869	4,494	4,626	5,403	5,158	5,675	5,597	6,529	5,855	6,661	6,772	7,884
Financial services	6,015	8,689	6,822	9,636	8,010	11,782	9,564	12,012	9,150	13,432	10,758	14,753
Real estate	3,927	4,386	4,551	5,511	5,309	5,839	6,052	7,100	6,345	6,987	7,263	8,779
Public administration	4,144	5,009	5,514	6,475	5,953	6,561	6,898	7,906	7,183	7,836	8,666	9,529
Education	3,236	4,017	4,263	5,289	4,718	5,034	5,154	6,098	5,509	6,172	6,221	7,390
Health services	3,737	4,178	4,554	5,089	5,088	5,348	5,548	6,097	5,873	6,428	6,542	7,066
Other services	3,402	3,832	3,992	4,605	4,526	4,786	4,946	5,757	5,186	5,562	5,694	6,591
All sectors	4,038	4,577	4,617	5,430	5,176	5,809	5,769	6,615	6,001	6,773	6,889	7,899
Memorandum items:												
State sector	4,098	4,625	4,639	5,523	5,297	5,947	5,800	6,674	6,028	6,840	6,921	8,066
Cooperatives	3,565	3,978	4,180	4,662	4,158	4,672	4,988	5,362	4,706	5,225	5,742	6,253
Private sector	4,047	4,907	5,033	5,525	5,104	5,668	5,784	6,472	5,958	6,640	6,808	7,654

Source: Data provided by the Czech Statistical Office.

1/ In organizations with 25 employees or more.

2/ In 1994, classification of branch of activity is by enterprise, while in 1992-93, it is by establishment.

Table 12. Czech Republic: Developments in Wholesale and Consumer Prices, 1991-95 Q1

(Average 1994 = 100)

		1991	1992	1993	1994	1994				1995
						Q1	Q2	Q3	Q4	Q1
Wholesale prices										
Industry		79.0	86.9	94.9	100.0	98.1	99.4	100.6	101.7	105.3
<u>Weights 1/</u>										
Consumer Prices										
Goods and services	100.0	67.7	75.2	90.9	100.0	97.3	98.6	100.7	103.6	106.3
Foodstuffs	29.0	72.0	78.5	91.5	100.0	95.9	97.8	100.5	105.9	109.9
Industrial goods	37.3	70.7	77.0	92.0	100.0	97.9	99.0	100.7	102.4	104.2
Services	29.1	52.9	66.4	85.5	100.0	97.8	98.9	101.0	102.3	105.0
Public restaurants	4.6	67.2	72.9	92.9	100.0	96.4	97.4	100.2	105.9	109.7

Source: Data provided by the Czech Statistical Office.

1/ 1993 constant weights.

Table 13. Czech Republic: Summary of Fiscal Operations, 1993-95 Q1

(In billions of koruny)

	1993 Actual	1994 Budget	1994 Actual	1995 Budget	1995 Revised Projection	Q1 1995 Actual
Components of the general government						
Balance of central operations	-2.7	-10.4	-10.2	-14.5	-23.4	4.6
Central budget balance	4.1	-0.1	10.4	-0.4	--	6.5
Revenue	340.9	371.0	381.1	403.6	411.4	97.3
Expenditure	336.8	371.1	370.7	404.0	411.4	90.8
Extrabudgetary operations	-6.8	-10.3	-20.6	-14.1	-23.4	-1.9
From the National Property Fund 1/	-4.7	-10.3	-10.4	-13.2	-13.5	-0.9
From state financial assets 2/	-2.1	--	-2.2	-0.9	-10.0	-1.0
Balance of local operations	4.9	--	-1.1	-9.1	-5.0	2.4
Revenue	84.6	85.0	111.0	102.9	120.0	24.4
Expenditure	79.7	85.0	112.1	112.0	125.0	22.0
Balance of extrabudgetary funds	0.2	-1.5	0.4	--	--	1.1
Balance of Health Fund	2.8	1.3	-2.5	--	--	--
Revenue	60.3	65.3	64.8	72.2	72.2	14.5
Expenditure	57.5	64.0	67.3	72.2	72.2	14.5
Consolidated balance excluding privatization revenues	5.1	-10.6	-13.4	-23.6	-28.4	0.1
Consolidated balance including privatization revenues 3/	12.6	-0.3	5.0	-10.4	-14.9	9.0
Summary of government finance						
Change in credit from:						
The banking sector	8.7	...	-12.2	...	20.3	-16.7
Central bank	-12.5	...	-17.9	...	-13.0	-26.6
Commercial banks	21.2	...	5.7	...	33.3	9.9
Stock adjustment 4/	20.0	...	--	...	--	--
Domestic nonbanks	2.6	...	-0.1	...	4.8	6.7
National Property Fund	8.5	...	10.4	...	13.5	0.9
External financing	-4.2	...	6.7	...	-10.2	1.0
Valuation	0.7	...	-0.6	...	--	--
Total	15.6	...	12.8	...	28.4	-8.1
Total excluding stock adjustments and valuation	-5.1	...	13.4	...	28.4	-8.1

Sources: Data provided by the Ministry of Finance; and staff estimates.

1/ Includes expenditures financed from transfers from the National Property Fund which substitute for normal budgetary expenditures.

2/ Nonbudgeted expenditures financed from state financial assets and liabilities accounts at the central bank.

3/ Privatization revenues include only the transfers from the National Property Fund to and spent by the central government in the current year.

4/ Includes liabilities associated with the takeover of nonperforming loans from the banking system. The counterpart assets are not included.

Table 14. Czech Republic: Operations of the General Government, 1993-95 Q1 1/

	(In billions of koruny)					(In percent of GDP)						
	1993	1994		1995		Q1 1995	1993	1994		1995		Q1 1995
	Actual	Budget	Actual	Budget	Revised Projection	Actual	Actual	Budget	Actual	Budget	Revised Projection	Actual
total revenue	460.9	488.3	513.0	545.0	562.8	128.6	49.9	47.1	49.4	46.3	47.8	10.9
tax revenue	413.6	448.1	462.5	494.8	515.5	114.6	44.8	43.2	44.6	42.0	43.8	9.7
Direct taxes	100.8	113.5	119.0	126.3	121.5	27.8	10.9	10.9	11.5	10.7	10.3	2.4
Corporate income tax	70.9	72.9	64.5	71.1	56.9	13.8	7.7	7.0	6.2	6.0	4.8	1.2
Personal income tax	29.9	40.6	54.5	55.2	64.6	14.0	3.2	3.9	5.3	4.7	5.5	1.2
Indirect taxes	122.7	153.5	149.6	150.1	162.2	37.6	13.3	14.8	14.4	12.7	13.8	3.2
VAT (value-added tax)	70.4	94.5	85.8	88.5	95.0	20.3	7.6	9.1	8.3	7.5	8.1	1.7
Excise	37.1	42.1	46.4	45.1	50.2	13.2	4.0	4.1	4.5	3.8	4.3	1.1
Customs duties	15.2	16.9	17.4	16.5	17.0	4.1	1.6	1.6	1.7	1.4	1.4	0.3
Social security and unemployment contributions	109.4	120.1	130.0	147.1	155.4	35.0	11.8	11.6	12.5	12.5	13.2	3.0
Health fund contributions	41.6	51.7	49.2	57.8	57.8	11.6	4.5	5.0	4.7	4.9	4.9	1.0
Other taxes	39.1	9.3	14.7	13.5	18.6	2.6	4.2	0.9	1.4	1.1	1.6	0.2
non-tax revenue	47.3	40.4	50.5	50.2	47.3	14.0	5.1	3.9	4.9	4.3	4.0	1.2
Total expenditure	455.8	507.1	526.3	568.6	591.2	120.5	49.4	48.9	50.7	48.3	50.2	10.2
Current expenditure	394.1	439.3	452.5	492.6	508.4	107.8	42.7	42.3	43.6	41.8	42.5	9.1
On goods and services	221.8	239.9	260.4	277.6	283.6	60.6	24.0	23.1	25.1	23.6	24.1	5.1
Consumption	132.6	143.1	157.0	165.2	156.3	32.5	14.4	13.8	15.1	14.0	13.3	2.8
To subsidized organizations	31.7	32.8	36.1	40.2	55.1	13.6	3.4	3.2	3.5	3.4	4.7	1.2
Health fund expenditures	57.5	64.0	67.3	72.2	72.2	14.5	6.2	6.2	6.5	6.1	6.1	1.2
Interest payments	14.9	13.7	14.2	14.9	15.4	0.1	1.6	1.3	1.4	1.3	1.3	--
Transfers	157.4	185.7	177.9	200.1	201.4	47.1	17.1	17.9	17.1	17.0	17.1	4.0
To enterprises 2/	35.8	33.2	35.7	32.9	35.4	8.1	3.9	3.2	3.4	2.8	3.0	0.7
To households	121.0	147.6	141.4	158.4	164.6	38.9	13.1	14.2	13.6	13.4	14.0	3.3
Social security	102.6	123.7	123.8	144.9	151.3	35.3	11.0	11.9	11.9	12.3	12.8	3.0
Unemployment	2.2	5.5	2.6	3.5	2.8	0.6	0.2	0.5	0.3	0.3	0.2	0.1
General income support and others	16.2	18.4	15.0	10.0	10.5	3.0	1.7	1.8	1.4	0.8	0.9	0.3
Other	0.6	4.9	0.7	8.8	1.4	--	0.1	0.5	0.1	0.7	0.1	--
Capital expenditure	60.8	69.2	76.0	75.4	88.3	12.2	6.6	6.7	7.3	6.4	7.5	1.0
budgetary organization	38.5	51.4	54.0	49.0	59.8	8.8	4.2	5.0	5.2	4.2	5.1	0.7
Transfers	22.3	17.8	22.0	26.4	28.5	3.4	2.4	1.7	2.1	2.2	2.4	0.3
Net lending	0.9	-1.4	-2.2	0.6	2.4	0.5	0.1	-0.1	-0.2	0.1	0.2	--
Balance without privatization revenues	5.1	-18.6	-13.4	-23.6	-28.4	8.1	0.6	-1.8	-1.3	-2.0	-2.4	0.7
Use of privatization revenues 3/	7.5	18.3	18.4	13.2	13.5	0.9	0.8	1.8	1.8	1.1	1.1	0.1
Balance with privatization revenues	12.6	-0.3	5.0	-10.4	-14.9	9.0	1.4	--	0.5	-0.9	-1.3	0.8

Sources: Data provided by the Ministry of Finance; and staff estimates.

1/ Includes operations of the central state budget, local authorities, operations of the extrabudgetary and health funds, and fiscal operations of the National Property Fund.

2/ Includes balance of the Fund for Market Regulation in Agriculture and transfers to nonprofit organizations.

3/ Includes only privatization revenues provided to the Government by the National Property Fund to finance budgetary and quasi-budgetary operations.

Table 15. Czech Republic: Operations of the Central State Budget, 1993-95 Q1

	(In millions of koruny)						(In percent of GDP)					
	1993 Actual	1994 Budget	1994 Actual	1994 Budget	1995 Revised Projection	Q1 1995 Actual	1993 Actual	1994 Budget	1994 Actual	1995 Budget	1995 Revised Projection	Q1 1995 Actual
Total revenue	349.4	371.0	381.1	403.6	411.4	97.3	37.8	35.7	36.7	34.3	34.9	8.3
Tax revenue	334.0	357.4	360.1	384.6	396.7	92.1	36.2	34.4	34.7	32.6	33.7	7.8
Direct taxes	72.4	77.4	70.2	77.3	64.1	17.1	7.8	7.5	6.8	6.6	5.4	1.3
Corporate income tax	70.9	72.9	64.4	71.1	56.9	13.8	7.7	7.0	6.2	6.0	4.8	1.2
Personal income tax	1.5	4.5	5.8	6.2	7.2	3.3	0.2	0.4	0.6	0.5	0.6	0.3
Indirect taxes	122.7	153.5	149.6	150.1	162.2	37.6	13.3	14.8	14.4	12.7	13.8	3.2
VAT (value-added tax)	70.4	94.5	85.8	88.5	95.0	20.3	7.6	9.1	8.3	7.5	8.1	1.7
Excise	37.1	42.1	46.4	45.1	50.2	13.2	4.0	4.1	4.5	3.8	4.3	1.1
Customs duties	15.2	16.9	17.4	16.5	17.0	4.1	1.6	1.6	1.7	1.4	1.4	0.3
Social security contributions	109.4	120.1	130.0	147.1	155.4	35.0	11.8	11.6	12.5	12.5	13.2	3.0
Other taxes 1/	29.5	6.4	10.3	10.1	15.0	2.4	3.3	0.6	1.0	0.9	1.3	0.2
Nontax revenue	15.4	13.6	21.0	19.0	14.7	5.2	1.7	1.3	2.0	1.6	1.2	0.4
Total expenditure	345.3	371.1	370.7	404.0	411.4	99.8	37.4	35.8	35.7	34.3	34.9	7.7
Current expenditure	312.4	322.8	339.6	358.1	364.4	83.5	33.8	31.1	32.7	30.4	30.9	7.1
On goods and services	115.3	108.8	121.2	122.6	115.7	23.2	12.5	10.5	11.7	10.4	9.8	2.8
Wages and salaries	30.0	41.9	40.3	46.3	50.0	10.0	3.3	4.0	3.9	3.9	4.2	0.9
Other 2/	76.8	66.9	80.9	76.3	65.7	13.2	8.3	6.4	7.8	6.5	5.6	1.1
Interest payments	12.2	--	--	4.2	4.2	--	1.3	--	--	0.4	0.4	--
Transfers	184.9	214.0	218.4	231.3	244.5	60.3	20.0	20.6	21.0	19.6	20.8	5.1
To enterprises	25.6	27.5	27.0	26.1	26.5	6.4	2.8	2.6	2.6	2.2	2.2	0.3
To households	118.1	139.6	137.0	153.1	155.3	37.4	12.8	13.4	13.2	13.0	13.2	3.2
Social security benefits	102.6	123.7	123.8	144.9	147.5	35.3	11.1	11.9	11.9	12.3	12.5	3.0
Unemployment benefits	2.2	5.5	2.6	3.5	2.8	0.6	0.2	0.5	0.3	0.3	0.2	0.1
General income support	13.3	10.4	10.6	4.7	5.0	1.5	1.4	1.0	1.0	0.4	0.4	0.1
Other 3/	41.2	46.9	54.4	52.1	62.7	16.5	4.3	4.5	5.2	4.4	5.3	1.4
Capital expenditure	32.3	49.7	33.3	45.3	46.4	7.2	3.5	4.8	3.2	3.8	3.9	0.6
By budgetary organization	19.0	28.9	19.7	20.5	21.0	3.8	2.1	2.8	1.9	1.7	1.8	0.3
Transfers	13.3	20.8	13.6	24.8	25.4	3.4	1.4	2.0	1.3	2.1	2.2	0.3
Net lending	0.6	-1.4	-2.2	0.6	0.6	0.1	0.1	-0.1	-0.2	0.1	--	--
Balance of central state budget	4.1	-0.1	10.4	-0.4	--	6.5	0.4	--	1.0	--	--	0.6
Memorandum item:												
Defense spending 4/	24.2	...	27.6	...	27.8	...	2.7	...	2.7	...	2.4	...

Sources: Data provided by the Ministry of Finance; and staff estimates.

1/ Includes property, gift and inheritance tax, motor vehicle tax, and carryover from 1992.

2/ Includes transfers to the health fund on behalf of nonproductive individuals.

3/ Includes transfers to local authorities, subsidized organizations, and extrabudgetary funds.

4/ Includes expenditures of the Ministry of Defense, civil defense expenditures, and local authorities.

Table 16. Czech Republic: Extrabudgetary Expenditures of the Central Government, 1993-95 Q1

(In billions of koruny)

	<u>1993</u> Actual	<u>1994</u> Budget	<u>Actual</u>	<u>1995</u> Budget	<u>Revised</u> <u>Projection</u>	<u>Q1 1995</u> Actual
NATIONAL PROPERTY FUND						
Total spending	4.7	18.3	18.4	13.2	13.5	0.9
Consumption	--	--	--	1.0	--	--
Interest	2.7	13.7	13.7	10.7	10.7	--
Transfers	2.0	4.6	4.6	1.5	2.8	0.9
To enterprises	2.0	--	2.6	--	--	--
To local authorities	--	--	--	--	0.8	--
To extrabudgetary funds	--	--	1.9	1.5	2.0	0.9
To households	--	4.6	0.1	--	--	--
STATE FINANCIAL ASSETS						
Total spending	2.1	--	2.2	0.9	10.0	1.0
Consumption	0.3	--	--	--	0.6	--
Transfers	1.0	--	2.1	0.9	7.5	0.5
To enterprises	1.0	--	0.3	--	2.6	0.1
To extrabudgetary funds	--	--	1.4	--	0.4	--
To households	--	--	0.3	0.9	4.5	0.4
Capital expenditure	0.5	--	--	--	--	--
Net lending	0.3	--	--	--	1.9	0.5

Sources: Data provided by the Ministry of Finance; and staff estimates.

Table 17. Czech Republic: Operations of the Local Authorities, 1993-95 Q1

	(In billions of koruny)						(In percent of GDP)					
	1993	1994		1995		Q1 1995	1993	1994		1995		Q1 1995
	Actual	Budget	Actual	Budget	Revised Projection	Actual	Actual	Budget	Actual	Budget	Revised Projection	Actual
TOTAL REVENUE	84.6	85.0	111.0	102.9	120.0	24.4	9.2	8.2	10.7	8.7	10.2	2.1
Tax revenue	39.6	39.0	53.2	52.4	61.0	10.9	4.3	3.8	5.1	4.4	5.2	0.9
Direct taxes	28.4	36.1	48.8	49.8	57.4	10.7	3.1	3.3	4.7	4.2	4.9	0.9
Corporate income	--	--	0.1	--	--	--	--	--	--	--	--	--
Personal income	28.4	36.1	48.7	49.8	57.4	10.7	3.1	3.3	4.7	4.2	4.9	0.9
Property taxes	6.4	2.9	3.8	3.4	3.6	0.2	0.7	0.3	0.4	0.3	0.3	--
Other taxes	4.8	--	0.6	--	--	--	0.5	--	0.1	--	--	--
Nontax revenue	27.5	18.5	21.5	24.2	23.0	5.5	3.0	1.8	2.1	2.1	2.0	0.5
Entrepreneurial and property income	10.2	7.1	13.8	12.0	15.3	3.2	1.1	0.7	1.3	1.0	1.3	0.3
Budgetary and subsidized organizations	10.2	7.1	12.7	12.0	14.0	3.1	1.1	0.7	1.2	1.0	1.2	0.3
Interest	--	--	1.1	--	1.3	0.1	--	--	0.1	--	0.1	--
Fees and fines	3.0	2.4	4.2	2.5	4.5	1.0	0.3	0.2	0.4	0.2	0.4	0.1
Other 1/	14.3	9.0	3.5	9.7	3.2	1.3	1.5	0.9	0.3	0.8	0.3	0.1
Transfers 2/	17.5	27.5	31.0	26.3	31.6	6.8	1.9	2.6	3.0	2.2	2.7	0.6
Capital revenue	--	--	5.3	--	4.4	1.2	--	--	0.5	--	0.4	0.1
TOTAL EXPENDITURE	79.7	85.0	112.1	112.0	125.0	22.0	8.6	8.2	10.8	9.5	10.6	1.9
Current expenditure	54.1	62.3	69.7	77.1	79.3	17.1	5.9	6.0	6.7	6.5	6.7	1.5
On goods and services	35.7	43.1	44.4	51.5	49.9	10.3	3.9	4.2	4.3	4.4	4.2	0.9
Wages and salaries	6.7	7.5	8.2	8.5	10.2	1.5	0.7	0.7	0.8	0.7	0.9	0.1
Other	29.0	35.6	36.2	43.0	39.7	8.8	3.1	3.4	3.5	3.7	3.4	0.7
Interest payments	--	--	0.4	--	0.5	0.1	--	--	--	--	--	--
Transfers	18.4	19.2	24.9	25.6	28.9	6.7	2.0	1.8	2.4	2.2	2.5	0.6
To enterprises	5.9	5.7	5.8	6.8	6.3	1.6	0.6	0.5	0.6	0.6	0.5	0.1
To subsidized organizations	9.6	10.1	12.2	14.4	14.4	3.4	1.0	1.0	1.2	1.2	1.2	0.3
To extrabudgetary funds	--	--	2.9	--	3.4	0.6	--	--	0.3	--	0.3	0.1
To households	2.9	3.4	4.0	4.4	4.8	1.1	0.3	0.3	0.4	0.4	0.4	0.1
Capital expenditure	25.6	22.7	42.4	34.9	45.7	4.9	2.8	2.2	4.1	3.0	3.9	0.4
By budgetary organization	19.5	18.2	34.0	26.6	35.9	4.0	2.1	1.8	3.3	2.3	3.0	0.3
Transfers	6.1	4.5	8.4	8.3	9.8	0.9	0.7	0.4	0.8	0.7	0.8	0.1
To enterprises	2.1	2.0	3.4	3.5	4.4	0.3	0.2	0.2	0.3	0.3	0.4	--
To subsidized organizations	4.0	2.5	5.0	4.8	5.4	0.6	0.4	0.2	0.5	0.4	0.5	0.1
BALANCE OF LOCAL BUDGETS	4.9	--	-1.1	-9.1	-3.0	2.4	0.5	--	-0.1	-0.8	-0.4	0.2

Sources: Data provided by the Ministry of Finance; and staff estimates.

1/ In 1993, includes revenue from sales of property.

2/ Includes transfers from the central government, extrabudgetary funds, and the National Property Fund.

Table 18. Czech Republic: Operations of the Extrabudgetary Funds, 1993-95 Q1

	(In billions of koruny)					(In percent of GDP)						
	1993 Actual	1994 Budget	Actual	1995 Budget	Revised Projection	Q1 1995 Actual	1993 Actual	1994 Budget	Actual	1995 Budget	Revised Projection	Q1 1995 Actual
Revenue	6.2	8.1	8.1	8.5	10.5	3.8	0.7	0.8	0.8	0.7	0.9	0.3
Own revenue	--	7.6	1.4	6.1	4.3	1.9	--	0.7	0.1	0.5	0.4	0.2
Transfers	6.2	0.5	6.7	2.4	6.3	1.9	0.7	--	0.6	0.2	0.5	0.2
Expenditures	6.0	9.6	7.7	8.5	10.5	2.7	0.7	0.9	0.7	0.7	0.9	0.2
Fund for Market Regulation	2.9	4.0	3.8	3.5	3.5	1.7	0.3	0.4	0.4	0.3	0.3	0.1
Current expenditure of other extrabudgetary funds	0.1	0.1	1.9	0.1	0.1	--	--	--	0.2	--	--	--
Capital expenditure of other extrabudgetary funds	3.0	4.3	0.3	1.9	2.9	1.0	0.3	0.4	--	0.2	0.2	0.1
Transfers by other extrabudgetary funds to local authorities	--	1.2	1.7	3.0	4.0	--	--	0.1	0.2	0.3	0.3	--
Balance	0.2	-1.5	0.4	--	--	1.1	--	-0.1	--	--	--	0.1

Sources: Data provided by the Ministry of Finance; and staff estimates.

Table 19. Czech Republic: Operations of the Health Fund, 1993-1995 Q1

	(In billions of koruny)					(In percent of GDP)				
	1993	1994		1995	Q1 1995	1993	1994		1995	Q1 1995
	Actual	Budget	Actual	Budget	Actual	Actual	Budget	Actual	Budget	Actual
Revenue	60.3	65.3	64.8	72.2	14.5	6.6	6.3	6.2	6.1	1.2
Health contributions	41.6	51.7	49.2	57.8	11.6	4.6	5.0	4.7	4.9	1.0
Transfers from Government	16.0	12.9	14.3	13.5	2.7	1.8	1.2	1.4	1.1	0.2
Other	2.7	0.7	1.3	0.9	0.2	0.3	0.1	0.1	0.1	--
Expenditures	57.5	64.0	67.3	72.2	14.5	6.3	6.2	6.5	6.1	1.2
Payment of claims	52.8	56.3	63.6	64.0	12.8	5.8	5.4	6.1	5.4	1.1
Operating expenditures	2.8	3.3	3.7	4.6	0.9	0.3	0.3	0.4	0.4	0.1
Other	1.9	4.4	--	3.6	0.7	0.2	0.4	--	0.3	0.1
Balance	2.8	1.3	-2.5	--	--	--	0.1	-0.2	--	--

Sources: Data provided by the Ministry of Finance; and staff estimates.

Table 20. Czech Republic: Functional Classification of Subsidies, 1989-95

(In billions of koruny)

	1989 CSFR	1992 Underlying	1993 Actual	1994 Actual	1995 Projection
Total subsidies 1/	122.1	38.2	38.7	36.3	36.1
Producer	59.2	38.2	38.7	36.3	36.1
Agriculture and foodstuffs	35.0	9.1	6.4	5.4	6.1
Prices and other fees	24.2	--	--	--	--
Fund for Market Regulation 2/	...	3.3	1.3	0.5	0.5
Other	10.8	5.8	5.1	4.9	5.6
Forestry and water	4.9	2.1	0.7	0.1	0.1
Mining	1.3	2.5	4.0	4.8	4.8
Uranium	...	...	1.0	...	...
Ore	...	...	0.2	...	...
Coal	...	...	2.8	...	...
Residential heating	2.3	2.1	5.6	6.6	5.0
Transportation	4.8	10.1	13.8	13.0	13.4
Railways	--	3.5	6.1	5.8	5.2
Bus, urban transport, and airlines	4.8	6.6	7.7	7.2	8.2
Housing	5.0	1.1	...	--	--
Other noninvestment 3/	5.8	11.2	8.2	6.4	6.7
Energy savings	...	...	0.4	0.4	0.2
Export promotion	...	...	1.0	1.0	1.0
Called loan guarantees	...	...	0.6	0.4	1.0
Employment of handicapped	...	...	0.3	0.4	0.3
Small business development 4/	...	...	1.2	1.2	1.5
To financial institutions 5/	...	...	4.5	3.0	2.7
Retail	49.1	--	--	--	--
Consumer food	36.1	--	--	--	--
Consumer nonfood	12.9	--	--	--	--
Of which:					
Coal	5.1	--	--	--	--
Foreign trade	13.9	--	--	--	--
Memorandum items:					
Central investment subsidies	9.8	7.3	5.5	3.7	6.1
Forestry and water	...	...	3.0	0.7	2.6
Transportation	...	...	2.0	2.4	2.3
Environment	...	...	0.5	0.6	1.2
Current subsidies (percent of GDP)					
Total	16.1	4.9	4.2	3.5	3.1
Producer	7.8	4.9	4.2	3.5	3.1
Retail	6.5	--	--	--	--
Foreign trade	1.8	--	--	--	--
Current subsidies (percent of sectoral value added)					
Agriculture	62.2	20.3	11.4	9.4	...

Sources: Data provided by the Ministry of Finance; and staff estimates.

1/ Differences from consolidated budget totals in Table 14 are due to classification.

2/ Includes transfers to and deficit of Fund for Market Regulation in agriculture.

3/ For 1992, includes residual of underlying position estimated by IMF staff and classification information provided by the Ministry of Finance.

4/ Includes Kc 1 billion from National Property Fund in 1993.

5/ In 1993 and 1994, includes subsidies on loans to newlyweds. In 1993, includes transfer of Kc 1 billion to the foreign trade bank (CSOB) for recapitalization.

Table 21. Czech Republic: Loans Guaranteed by the Czech Government 1/

(In billions of koruny)

	Value of Loans Guaranteed				Maximum Government Obligation Falling Due					
	On 1/1/93	On 1/1/94	On 1/1/95	On 3/31/95	1994	1995	1996	1997	1995-2000	2001-2007
Environmental projects	14.2	13.8	12.3	12.2	0.6	0.5	0.7	1.1	6.2	5.1
Coal desulphurization	13.4	13.4	12.3	12.2	0.2	0.5	0.7	1.1	6.2	5.1
Nuclear power	0.8	0.4	--	--	0.4	--	--	--	--	--
Infrastructure	4.7	16.6	14.7	14.4	0.6	0.8	0.8	0.9	6.5	5.8
Aircraft	4.7	4.3	3.5	3.3	0.5	0.5	0.4	0.4	2.3	1.2
Telecommunications	--	12.3	10.6	10.5	0.1	0.3	0.4	0.5	4.2	4.6
Housing guarantee project	--	--	0.6	0.6	--	--	--	--	--	--
Export promotion	0.7	1.8	1.8	1.3	0.4	1.2	0.2	--	1.4	--
Other	1.7	0.6	1.4	1.4	0.4	0.3	0.1	0.1	1.0	--
Total	21.3	32.8	30.2	29.3	2.0	2.8	1.8	2.1	15.1	10.9
Memorandum items:										
Legal ceiling 2/	...	...	...	...	30.5	32.9	35.8	38.1	236.0	...
Exposure as a percent of ceiling	...	...	...	...	6.6	8.5	5.0	5.5	6.4	...

Source: Data provided by the Ministry of Finance.

1/ Excludes guarantees by the Czech Republic on former CSFR obligations now held by the Slovak Republic.

2/ The ceiling on maximum debt service is 8 percent of projected central budget revenues, excluding social security contributions.

Table 22. Czech Republic: Transfers to Households, 1993-95 1/

	(In billions of koruny)				(In percent of GDP)			
	1993	1994	1995		1993	1994	1995	
			Budget	Proj.			Budget	Proj.
Pensions	76.5	88.2	105.3	109.6	8.4	8.5	8.9	9.3
Old age	50.9	62.2	73.9	78.2	5.6	6.0	6.3	6.6
Disability	13.5	15.7	19.5	19.5	1.5	1.5	1.7	1.7
Widow	8.5	9.4	10.5	10.5	0.9	0.9	0.9	0.9
Other 2/	3.8	0.9	1.4	1.4	0.4	0.1	0.1	0.1
Sickness and maternity	12.0	16.6	17.9	17.9	1.3	1.6	1.5	1.5
Traditional state allowances	14.6	18.2	20.1	20.1	1.6	1.8	1.7	1.7
Per child allowances	9.6	12.3	12.7	12.7	1.1	1.2	1.1	1.1
Parental allowances	4.4	5.7	7.0	7.0	0.5	0.5	0.6	0.6
Other	0.6	0.2	0.4	0.4	0.1	--	--	--
Compensatory income support	13.1	10.6	4.7	4.9	1.4	1.0	0.4	0.4
Other state benefits 3/	0.6	1.1	1.6	1.6	0.1	0.1	0.1	0.1
Benefits provided by local authorities	2.9	3.6	4.4	4.6	0.3	0.3	0.4	0.4
Unemployment benefits	2.2	2.6	3.5	2.8	0.2	0.3	0.3	0.2
Total	121.9	140.9	157.5	161.5	13.4	13.6	13.4	13.7

Sources: Data provided by the Ministry of Finance and Ministry of Labor and Social Affairs; and staff estimates.

1/ Totals differ slightly from consolidated budget in Table 14 because of classification, especially restitutions in 1994.

2/ Includes pensions of police and military.

3/ Includes special allowances for soldiers, policemen, etc.

Table 23. Czech Republic: Monetary Survey, 1992-95 Q1 1/

	1992	1993				1994				1995
		March	June	Sept.	Dec.	March	June	Sept.	Dec.	March
(In billions of koruny, end of period)										
Assets										
Net foreign assets	75.2	77.9	95.9	112.3	129.9	150.5	175.9	189.9	218.4	236.1
Foreign assets 2/	128.7	139.2	170.0	194.5	211.6	226.6	241.0	242.7	273.9	307.5
Foreign liabilities	53.5	61.3	74.1	82.2	81.7	76.1	65.1	52.8	55.5	71.4
Net domestic assets	524.2	505.8	525.8	541.9	592.2	580.9	594.3	602.8	658.9	626.8
Domestic credit	612.8	611.4	644.2	667.8	717.2	733.4	760.4	778.6	823.4	819.3
Net credit to Government 3/	53.0	26.5	24.2	25.3	35.1	29.2	20.6	11.9	25.4	10.1
Net credit to National Property Fund	-24.5	-26.5	-28.3	-29.8	-16.7	-16.1	-12.6	-10.6	-18.0	-20.7
Total credit to nongovernment sector	584.3	611.4	648.3	672.3	698.8	729.3	752.4	777.3	816.0	829.9
Credit in local currency	567.8	594.7	628.2	650.8	672.9	691.9	721.4	742.4	772.8	776.8
Enterprises	521.3	549.2	583.2	606.4	626.4 4/	646.5	676.9	698.4	726.4	731.6
Households	46.5	45.5	45.0	44.4	46.5	45.4	44.5	44.0	46.4	45.2
Credit in foreign currency	16.5	16.7	20.1	21.5	25.9	28.4	31.0	34.9	43.2	53.1
Liabilities										
Broad money	599.4	583.7	621.7	654.2	722.1	731.4	770.2	792.7	877.3	862.9
Money	506.9	465.5	491.9	516.5	561.1	545.4	573.9	579.2	626.5	587.5
Currency outside banks	58.9	36.0	46.9	53.1	59.8	67.0	73.0	78.7	84.0	84.2
Demand deposits	248.0	229.5	245.0	263.4	301.3	278.4	300.9	300.5	342.5	303.3
Households	71.0	83.4	82.5	83.2	85.2	88.9	92.1	95.5	100.4	104.1
Enterprises	174.4	141.7	159.3	176.7	210.4	182.8	205.4	200.1	236.9	193.0
Insurance companies	2.6	4.4	3.2	3.5	5.7	6.7	3.4	4.9	5.2	6.2
Quasi-money	292.5	318.2	329.8	337.7	361.0	386.0	396.3	413.3	450.8	475.4
Time and savings deposits	236.6	260.9	268.6	277.0	303.6	329.5	337.8	354.9	390.0	417.4
Households	168.9	178.7	179.3	183.3	205.8	213.7	218.7	223.3	242.4	254.3
Enterprises	30.0	43.5	48.3	52.2	61.5	78.8	83.5	95.5	107.4	121.4
Insurance companies	37.7	38.7	41.0	41.5	36.3	37.0	35.6	36.1	40.2	41.7
Foreign currency deposits	55.9	57.3	61.2	60.7	57.4	56.5	58.5	58.6	60.8	58.0
Other items, net	88.6	105.6	118.4	125.9	125.0	152.5	166.1	175.8	164.5	192.5
(Percent change from previous quarter)										
Memorandum items:										
Broad money	6.7	-2.6	6.5	5.2	10.4	1.3	5.3	2.9	10.7	-1.6
Net domestic assets	11.0	-3.5	4.0	3.1	9.3	-1.9	2.3	1.4	9.3	-4.9
Domestic credit	7.1	-0.2	5.4	3.7	7.4	2.3	3.7	2.4	5.8	-0.5
Total credit to nongovernment sector	3.2	4.6	6.0	3.7	3.9	3.1	4.5	3.3	5.0	1.7

Source: Data provided by the Czech National Bank.

1/ At current exchange rates.

2/ Data include estimates of the claims on the Slovak banking system by the Czech banking system, including notional amount between the two central banks before end-December 1992. Additional claims in 1993 are included in other items, net.

3/ Includes EU, World Bank, and G24 loans to the Government.

4/ Includes capitalization of interest by Consolidation Bank.

Table 24. Czech Republic: Structure of Deposits, 1992-95 Q1

(In billions of koruny, end of period)

	1992	1993				1994				1995
		March	June	Sept.	Dec.	March	June	Sept.	Dec.	March
State-owned enterprises	120.3	106.6	114.3	116.8	132.1	197.2	214.6	211.0	237.2	209.2
Demand deposits	79.6	66.8	65.1	64.5	73.6	95.2	110.1	98.6	124.2	99.2
Time deposits 1/	40.7	39.8	49.2	52.3	58.5	102.0	104.5	112.4	113.0	110.0
Short-term	19.8	19.0	25.3	27.2	25.3	43.7	44.3	50.0	48.1	51.4
Medium-term	8.9	8.7	11.5	12.7	17.9	41.3	42.7	42.8	53.9	50.0
Long-term	12.0	12.0	12.4	12.4	15.3	17.0	17.5	19.6	11.0	8.6
Private sector 2/	137.2	135.2	151.0	166.8	191.6	150.4	153.9	164.3	191.5	193.1
Demand deposits	81.1	71.5	81.2	93.6	119.1	100.0	103.3	110.8	127.0	114.1
Time deposits 1/	56.1	63.7	69.8	73.2	72.5	50.4	50.6	53.5	64.5	79.0
Short-term	12.9	22.2	27.5	30.1	29.4	24.9	27.5	29.4	38.2	44.0
Medium-term	32.2	30.2	30.8	31.2	31.1	15.6	15.9	16.7	19.3	27.0
Long-term	11.1	11.3	11.5	11.9	12.0	9.9	7.2	7.4	7.0	8.0
Households	260.2	278.4	281.9	291.6	314.2	382.4	310.8	318.8	342.8	358.4
Demand deposits	91.0	99.0	101.9	107.4	109.3	88.9	92.1	95.5	100.5	104.1
Time deposits 1/	169.2	179.4	180.0	184.2	204.9	219.5	218.7	223.3	242.3	254.3
Short-term	87.6	92.6	93.8	96.1	104.7	107.4	109.6	110.0	117.7	126.0
Medium-term	65.2	68.9	72.4	73.3	83.5	87.7	89.5	92.2	100.7	102.2
Long-term	16.4	17.9	14.8	14.8	16.7	18.4	19.6	21.1	23.9	26.1

Source: Data provided by the Czech National Bank.

1/ Short-term: up to and including one year; medium-term: more than one and up to and including four years; long-term: over four years.

2/ Cooperatives included under private sector from 1993.

Table 25. Czech Republic: Distribution of Bank Credits to the Nongovernment Sector, 1991-95 Q1 1/

(In billions of koruny, end of period)

	1991	1992	1993	1994				1995
				March	June	Sept.	Dec.	March
Total credits	<u>495.4</u>	<u>578.6</u>	<u>672.3</u>	<u>691.9</u>	<u>715.1</u>	<u>746.0</u>	<u>776.5</u>	<u>776.8</u>
By maturity 2/	<u>495.4</u>	<u>578.6</u>	<u>672.3</u>	<u>691.9</u>	<u>725.1</u>	<u>746.0</u>	<u>776.5</u>	<u>776.8</u>
Short-term	195.6	216.6	280.7	290.7	298.2	315.0	315.9	310.9
Medium-term	90.1	154.2	190.6	195.1	208.6	215.0	233.6	236.6
Long-term	209.7	207.8	201.0	206.1	218.3	216.0	227.0	229.3
By sector	<u>495.4</u>	<u>578.6</u>	<u>672.3</u>	<u>691.9</u>	<u>715.1</u>	<u>746.0</u>	<u>776.5</u>	<u>776.8</u>
To enterprises	360.5	319.6	275.2	271.7	269.1	278.5	279.7	256.7
To cooperatives	49.9	45.9	... 3/	...	...	...	...	...
To private sector	48.8	166.6	350.6 3/	374.8	401.5	423.5	450.4	474.9
To households	36.2	46.5	46.5	45.4	44.5	44.0	46.4	45.2
By branch of industry	<u>219.1</u>	<u>214.7</u>	<u>228.9</u>	<u>231.1</u>	<u>237.4</u>	<u>244.5</u>	<u>265.4</u>	<u>264.1</u>
Mining 4/	29.9 5/	28.0	30.8	28.0	28.3	28.7	26.8	26.6
Engineering	76.1	99.2 6/	99.2	100.7	100.6	101.3	113.4	110.6
Light industry	20.3	14.3	15.7	15.3	15.4	15.8	18.6	19.0
Metallurgy	21.8	...	...	...	...	...	...	...
Chemicals	14.2	18.7	20.8	18.4	20.8	20.3	25.4	24.8
Food processing	18.5	25.6	30.0	31.0	35.6	37.0	37.4	39.0
Other	38.3	29.0	32.4	37.7	36.7	41.3	43.8	44.1
To nonindustrial activities	<u>276.3</u>	<u>363.9</u>	<u>443.4</u>	<u>460.8</u>	<u>477.7</u>	<u>501.5</u>	<u>511.1</u>	<u>512.7</u>
Agriculture	39.4 7/	27.4	26.4	25.2	27.7	23.9	25.7	25.4

Source: Data provided by the Czech National Bank.

1/ Excludes foreign currency denominated credits.

2/ Short-term: up to and including one year; medium-term: more than one and up to and including four years; long-term: over four years.

3/ Cooperatives included in the private sector from 1993.

4/ Coal and gas industry.

5/ In addition to mining, also includes raw minerals, production and transportation of electricity, gas, and water.

6/ From 1992, also includes metallurgy.

7/ Also includes hunting and fishing.

Table 26. Czech Republic: Selected Interest Rates, 1991-95 Q1

(Average in each quarter, in percent per annum)

		Discount Rate 1/	Refinancing Credit	28-day		2-year Bond 2/	Interbank 3/			Credits 4/			Deposits 4/	
				T-bill	CNB 2/		Overnight	7-day	30-day	Total	Enterprises 5/	Households	Total	Households
1991	March	10.00	...	...	...	...	...	...	...	14.68	15.76	3.33	7.60	8.43
	June	10.00	...	...	...	...	...	...	...	15.14	15.61	3.53	8.20	9.04
	Sept.	9.50	...	...	...	...	...	...	...	14.20	14.95	5.16	8.62	9.28
	Dec.	9.50	...	...	...	...	...	...	...	13.94	14.63	4.43	8.04	9.26
1992	March	9.00	10.36	9.60 2/	...	...	...	...	...	13.87	13.92	4.79	7.93	9.72
	June	9.00	9.75	...	...	13.50	6.30	7.45	9.40	13.35	13.78	5.03	6.66	7.99
	Sept.	8.00	14.20	...	...	...	9.69	11.10	12.38	13.38	13.70	6.16	6.07	7.66
	Dec.	9.50	20.01	8.95 2/	...	...	10.18	12.04	13.69	13.21	13.36	6.55	6.30	7.53
1993	March	9.50	13.81	...	8.21	...	9.47	11.14	13.33	13.98	14.72	6.93	6.93	8.29
	June	8.00	13.28	14.00 2/	13.83	...	13.76	15.27	16.47	14.39	15.41	7.07	7.25	8.09
	Sept.	8.00	10.54	8.39 6/	11.65	...	9.35	9.98	11.07	14.08	14.55	7.29	6.99	7.57
	Dec.	8.00	8.98	5.99 6/	8.15	10.00	5.97	6.57	7.62	13.89	14.41	7.54	6.93	7.65
1994	March	8.00	...	6.33 6/	8.11	...	7.37	7.93	8.42	13.24	13.60	7.08	7.26	7.75
	June	8.00	...	5.63	7.43	...	5.88	6.64	7.23	13.25	13.70	7.78	7.14	7.89
	Sept.	8.00	...	6.13	7.95	...	7.86	8.14	8.27	13.12	13.40	7.59	7.02	7.68
	Dec.	8.50	...	8.65	...	8.45	10.41	11.11	11.28	12.86	13.00	7.84	6.87	7.83
1995	March	8.50	...	...	...	8.70	10.21	10.73	10.83	12.76	12.26	8.12	6.94	7.94

Source: Data provided by the Czech National Bank.

1/ End of quarter.

2/ Yields are quoted on gross basis.

3/ Offer rates.

4/ Weighted average on total outstanding stocks.

5/ Includes private corporations and cooperatives.

6/ Yields quoted are net of tax. Before August 1993, treasury bill rates were quoted on a gross basis.

Table 27. Czech Republic: Bank Interest Rates, 1991-95 Q1

(Average in each quarter, in percent per annum)

		Credits 1/				Deposits					
		Total	Short-term	Medium-term	Long-term	Total	Demand	Term Deposits 1/			
								Total	Short-term	Medium-term	Long-term
1991	March	14.68	13.89	13.51	15.10	8.20	2.23	12.26	...	...	...
	June	15.14	17.90	15.36	10.48	8.62	2.49	13.15	...	...	...
	Sept.	14.20	16.34	14.06	9.88	8.04	2.33	13.67	...	...	...
	Dec.	13.94	16.11	14.22	9.63	8.13	2.66	13.11	..	...	...
1992	March	13.87	16.28	16.05	11.18	7.93	2.55	12.88	10.42	14.08	15.94
	June	13.35	16.15	15.57	10.09	6.66	2.37	10.45	8.03	12.62	13.63
	Sept.	13.38	15.53	15.34	10.22	6.07	2.11	10.27	7.84	12.56	13.39
	Dec.	13.21	14.88	15.20	10.24	6.30	1.98	10.41	7.79	12.18	13.77
1993	March	13.98	15.70	16.17	10.35	6.95	2.09	11.22	9.45	12.22	14.05
	June	14.39	16.27	16.03	10.55	7.25	2.27	11.27	9.97	11.99	13.66
	Sept.	14.08	15.43	15.91	10.36	6.99	2.35	10.85	9.51	11.54	13.64
	Dec.	13.89	15.10	15.57	10.44	6.93	2.44	10.87	9.61	11.51	13.62
1994	March	13.24	13.87	15.08	10.55	7.26	2.58	10.93	9.68	11.84	12.83
	June	13.25	13.52	15.24	11.02	7.14	2.51	10.80	9.47	11.78	13.14
	Sept.	13.12	13.25	14.99	11.10	7.02	2.64	10.49	9.19	11.37	12.62
	Dec.	12.86	12.86	14.57	11.13	6.87	2.53	10.34	9.35	11.17	11.75
1995	March	12.76	12.71	14.37	11.16	6.94	2.55	10.29	9.55	11.04	11.15

Source: Data provided by the Czech National Bank.

1/ Short-term: up to and including one year; medium term: more than one and up to and including four years; long-term: over four years.

Table 28. Czech Republic: Monetary Base of the Czech National Bank, 1992-95 Q1

(In billions of koruny, end of period)

	1992	1993				1994				1995
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March
Sources of the monetary base	123.1	92.0	113.8	133.7	166.4	179.0	200.8	204.3	233.3	238.5
Autonomous factors	108.3	83.4	107.5	128.9	158.0	167.0	190.2	191.4	220.8	229.3
Net foreign assets (convertible)	-6.0	-6.3	13.8	33.0	58.4	84.5	110.5	128.6	154.7	191.4
Foreign assets	35.0	45.2	75.1	101.4	129.3	151.2	158.7	160.7	181.2	218.6
Foreign liabilities	40.9	51.5	61.3	68.4	70.9	66.7	48.2	32.1	26.5	27.2
Net foreign assets (nonconvertible)	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Foreign assets	55.2	58.0	58.1	55.3	55.3	49.6	38.7	24.7	24.7	24.7
Foreign liabilities	55.8	58.6	58.7	55.9	55.9	50.1	39.3	25.3	25.3	25.3
Net foreign assets (residents)	--	-7.6	-0.9	0.1	0.1	0.3	0.8	1.0	1.3	1.6
Foreign assets	--	--	--	0.1	0.2	0.3	0.9	1.1	1.3	1.6
Foreign liabilities	--	7.6	0.9	--	--	--	--	--	--	--
Claims on National Bank of Slovakia	23.1	24.5	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
Net credit to Government 1/	28.9	6.0	0.1	4.7	10.2	-4.8	-8.2	-24.4	-20.2	-43.8
Credit to the economy	3.3	2.9	3.9	3.9	2.2	2.2	5.6	5.0	4.8	0.9
Other assets, net	59.5	64.4	66.5	63.8	63.2	60.8	57.6	57.1	56.3	55.2
Other assets	72.8	75.3	78.5	76.8	75.4	76.8	76.3	76.1	79.4	78.5
Redistribution credit	70.3	70.3	69.3	69.1	68.1	68.1	66.6	66.5	65.0	64.9
Cash (currency holdings)	--	0.2	--	--	--	--	--	--	0.4	--
Nongovernment securities	0.4	0.4	0.4	0.4	0.4	1.4	1.4	1.4	1.4	1.4
Other claims on commercial banks	0.7	2.1	2.6	2.3	1.9	2.6	2.4	1.0	0.6	1.0
Other unclassified domestic assets	1.5	2.4	6.2	5.0	5.1	4.8	5.9	7.2	12.0	11.1
Other liabilities	13.4	11.0	11.9	13.0	12.1	16.0	18.7	19.0	23.1	23.2
Own capital	5.7	8.5	9.1	10.8	9.1	11.1	13.7	14.8	15.5	18.9
Other unclassified domestic liabilities	7.7	2.5	2.8	2.2	3.0	4.9	5.0	5.0	7.7	4.3
Policy factors	14.9	8.6	12.3	4.8	8.4	12.8	10.6	12.9	12.6	10.3
Refinancing credit	12.1	5.2	9.1	4.8	6.9	7.7	8.3	7.4	8.8	9.2
Auction credit	8.2	1.1	4.1	--	0.1	--	--	--	--	--
Emergency credit	...	--	0.5	0.5	1.0	0.9	0.9	0.9	0.6	0.6
Rediscounts 2/	3.9	4.0	4.5	4.4	5.8	6.7	7.5	6.5	8.3	7.5
Treasury bills	2.8	3.5	3.3	--	0.9	1.4	1.2	0.3	3.4	1.1
Government and National Property Fund bonds	--	--	--	--	0.6	2.9	1.1	5.3	0.4	--
Use of the monetary base	123.1	92.0	119.9	133.7	166.4	179.1	200.8	204.3	233.3	238.5
Currency	66.1	42.8	54.9	62.2	68.5	75.3	83.8	89.9	96.1	96.2
Deposits of banks with the CNB	51.5	41.8	56.9	43.0	65.8	62.4	67.5	71.9	67.6	67.4
Reserve deposits	44.3	36.9	51.2	34.7	43.2	40.5	45.1	54.3	51.3	54.8
Required reserves	31.8	44.5	45.8	37.3	39.3	41.5	42.4	55.1	56.6	56.8
Excess reserves	12.5	-7.6	5.4	-2.6	3.9	-1.0	2.7	-0.8	-5.3	-2.0
Inseparable reserves	4.8	4.1	4.5	6.5	5.2	5.5	6.4	2.2	2.9	2.7
Other deposits of banks with CNB	2.4	0.8	1.2	1.8	17.5	16.5	16.1	15.4	13.4	9.9
Central bank bills	--	4.0	4.7	24.2	23.9	34.9	43.6	34.1	46.1	49.0
Other nongovernment deposits	5.5	3.4	3.3	4.4	8.3	6.5	5.9	8.4	23.5	25.9

Source: Data provided by the Czech National Bank.

1/ Excludes securities.

2/ Includes Lombard credit.

Table 29. Czech Republic: Nonperforming Loans of the Banking System, 1992-95 Q1

	1992	1993				1994				1995
		March	June	Sept.	Dec.	March	June	Sept.	Dec.	March
(In billions of koruny, end of period)										
Total	109.7	131.5	137.3	149.4	159.8	156.6	176.6	263.9	293.1	298.6
Short-term	61.6	70.7	79.8	89.5	90.1	80.9	78.9	133.9	125.2	125.6
Temporarily in arrears 1/	36.6	46.4	16.1	21.4	32.5	...	...	...	...	...
Dubious and questionable claims	25.0	24.3	63.7	68.1	57.5	80.9	78.9	133.9	125.2	125.6
Medium-term	18.5	18.3	22.7	23.2	27.7	29.6	41.5	73.0	98.7	103.9
Temporarily in arrears 1/	13.2	12.9	2.9	2.6	4.1	...	...	...	...	...
Dubious and questionable claims	5.3	5.4	19.7	20.5	23.6	29.6	41.5	73.0	98.7	103.9
Long-term	29.7	42.5	34.8	36.7	42.0	46.1	56.2	57.1	69.2	69.1
Temporarily in arrears 1/	4.8	9.4	5.1	4.1	6.4	...	...	...	...	...
Dubious and questionable claims	24.9	33.1	29.8	32.6	35.6	46.1	56.2	57.1	69.2	69.1
(As a share of total credits, in percent)										
Total 2/	19.0	22.1	21.9	23.0	23.8	22.6	24.4	35.4	37.7	38.4
Short-term	10.6	11.9	12.7	13.8	13.4	11.7	10.9	17.9	16.1	16.2
Medium-term	3.2	3.1	3.6	3.6	4.1	4.3	5.7	9.8	12.7	13.3
Long-term	5.1	7.1	5.5	5.6	6.2	6.7	7.8	7.7	8.9	8.9
(As a share of total credits of same maturity, in percent)										
Short-term	28.4	29.4	30.2	31.4	32.1	27.8	26.5	42.5	39.6	40.4
Medium-term	12.0	11.3	12.7	12.9	14.5	15.2	19.9	33.9	42.2	43.9
Long-term	14.3	22.1	18.7	19.7	20.9	22.4	25.7	26.4	30.5	30.1

Source: Data provided by the Czech National Bank.

1/ From 1994, loans previously classified as temporarily in arrears are now included under dubious and questionable claims.

2/ Includes claims both temporarily in arrears and those classified as dubious and questionable.

Table 30. Czech Republic: Balance of Payments in Convertible Currencies, 1992-95 Q1 1/

(In millions of U.S. dollars)

	1992	1993	1994	1995 Q1
Trade balance	<u>-1,901.6</u>	<u>-609.2</u>	<u>-851.2</u>	<u>-610.0</u>
Exports, f.o.b.	8,448.4	10,163.0	11,730.0	3,218.0
Imports, f.o.b.	10,350.0	10,772.2	12,581.2	3,827.0
Services balance	<u>1,485.9</u>	<u>1,040.7</u>	<u>1,068.5</u>	<u>475.0</u>
Receipts	<u>3,163.8</u>	<u>4,116.8</u>	<u>4,421.4</u>	<u>1,385.0</u>
Transportation	1,282.2	1,226.0	1,189.4	315.0
Travel	1,126.1	1,557.8	1,965.0	360.0
Other	755.5	1,333.0	1,267.0	710.0
Payments	<u>1,677.9</u>	<u>3,076.1</u>	<u>3,352.9</u>	<u>910.0</u>
Transportation	427.3	693.2	657.8	190.0
Travel	466.8	525.0	1,073.5	210.0
Other	783.8	1,857.9	1,621.6	510.0
Factor income	<u>5.6</u>	<u>-128.4</u>	<u>-39.0</u>	<u>30.0</u>
Receipts	565.5	518.0	755.0	...
Payments	559.9	646.4	798.3	...
Unrequited transfers	<u>105.0</u>	<u>130.0</u>	<u>124.0</u>	<u>30.0</u>
Private	39.1	130.0	124.0	30.0
Official	65.9	...	...	...
Current account	<u>-305.1</u>	<u>433.1</u>	<u>298.0</u>	<u>-75.0</u>
Direct investment	982.9	516.6	841.5	100.0
Portfolio investment	-26.0	1,059.1	819.3	300.0
Other medium- and long-term capital, net	116.7	528.4	1,579.4	750.0
Short-term capital, net	-1,274.7	476.9	327.0	944.0
Capital account	<u>1.2</u>	<u>2,581.0</u>	<u>3,567.2</u>	<u>2,094.0</u>
Errors and omissions	-201.1	-42.8	-361.4 2/	-1.0 2/
Overall balance	<u>-283.1</u>	<u>2,971.3</u>	<u>3,507.7</u>	<u>2,018.0</u>
Change in gross official reserves (-, increase)	80.1	-3,029.3	-2,371.6	-2,018.0

Source: Data provided by the Czech National Bank.

1/ Data before 1993 relate to the share of the Czech Republic in the balance of payments of the former Czech and Slovak Federal Republic.

2/ Includes settlement in convertible currencies of excess over clearing account limit in bilateral trade arrangement with the Slovak Republic (US\$325 million in 1994 and US\$126 million in 1995 Q1).

Table 31. Czech Republic: Balance of Payments vis-à-vis the Slovak Republic, 1992-95 Q1

(In millions of U.S. dollars)

	1992 1/	1993	1994	1995 Q1
Current account	<u>-31</u>	<u>539</u>	<u>-65</u>	<u>-3</u>
Trade balance	<u>269</u>	<u>585</u>	<u>236</u>	<u>47</u>
Exports, f.o.b.	3,146	2,834	2,327	613
Imports, f.o.b.	2,877	2,249	2,092	566
Nonfactor services	<u>310</u>	<u>-30</u>	<u>-303</u>	<u>-56</u>
Receipts	<u>640</u>	<u>606</u>	<u>359</u>	<u>101</u>
Transportation	--	15	11	3
Travel	--	1	1	--
Other	640	590	347	98
Payments	<u>330</u>	<u>636</u>	<u>661</u>	<u>157</u>
Transportation	--	41	122	28
Travel	--	2	2	1
Other	330	593	537	128
Factor income, net	--	11	--	-3
Unrequited transfers, net	-610	-27	2	9
Capital account	<u>750</u>	<u>-472</u>	<u>352</u>	<u>197</u>
Direct and portfolio investment	--	577	-57	-48
Medium- and long-term capital	--	--	--	--
Short-term capital	750	-479	409	244
Capital transfers	--	-570	--	--
Errors and omissions	<u>--</u>	<u>-67</u>	<u>-612</u>	<u>-320</u>
Overall balance	<u>719</u>	<u>--</u>	<u>-325</u>	<u>-126</u>

Sources: Data provided by the Czech National Bank; and staff estimates.

1/ Figures for 1992, before the split of the Czech and Slovak Federal Republic, have been estimated on the basis of partial data.

Table 32. Czech Republic: Balance of Payments in Nonconvertible Currencies, 1991-94 1/
(In millions of U.S. dollars)

	1991	1992	1993	1994
Trade balance	<u>400.3</u>	<u>-150.6</u>	<u>-287.8</u>	<u>-249.2</u>
Exports, f.o.b.	1,601.8	148.7	--	--
Imports, f.o.b.	1,201.5	299.3	287.8	249.2
Services balance	<u>91.8</u>	--	--	--
Receipts	<u>223.1</u>	--	--	--
Transportation	41.0	--	--	--
Travel	10.7	--	--	--
Other	171.4	--	--	--
Payments	<u>131.3</u>	--	--	--
Transportation	6.1	--	--	--
Travel	8.9	--	--	--
Other	116.3	--	--	--
Unrequited transfers	<u>15.2</u>	--	--	--
Private	13.0	--	--	--
Official	2.2	--	--	--
Current account	<u>565.5</u>	<u>-150.6</u>	<u>-287.8</u>	<u>-249.2</u>
Direct investment	2.4	--	--	--
Other medium- and long-term capital	<u>-24.2</u>	<u>150.6</u>	<u>287.8</u>	<u>249.2</u>
Credits extended	-19.0	150.6	287.8	249.2
Credits received	-5.2	--	--	--
Net short-term capital	-809.6	--	--	--
Capital account	<u>-831.4</u>	<u>150.6</u>	<u>287.8</u>	<u>249.2</u>
Errors and omissions	<u>265.9</u>	--	--	--
Overall balance	--	--	--	--

Source: Data provided by the Czech National Bank.

1/ Excluding transactions with the Slovak Republic.

Table 33. Czech Republic: Geographical Composition of Exports and Imports, 1991-94

	1991	1992	1993	1994	1991	1992	1993	1994
	(In millions of U.S. dollars)				(In percent of total)			
Exports, f.o.b. (excluding Slovak Republic)	7,921	8,770	10,370	11,969	100	100	100	100
Former socialist countries	2,871	1,959	2,083	2,331	36	22	20	19
Of which:								
China	79	84	251	86	1	1	2	1
Former Yugoslavia	420	256	205	309	5	3	2	3
Former CMEA	2,350	1,611	1,598	1,917	30	18	15	16
Bulgaria	45	51	56	63	1	1	1	1
Hungary	261	275	296	375	3	3	3	3
Poland	558	421	359	544	7	5	3	5
Soviet Union	1,373	783	838	870	17	9	8	7
Industrial countries	4,369	5,920	7,168	8,575	55	68	69	72
Of which:								
Austria	461	634	794	1,036	6	7	8	9
France	190	223	253	361	2	3	2	3
Italy	334	546	656	702	4	6	6	6
Germany	2,168	2,882	3,434	4,189	27	33	33	35
United Kingdom	175	201	392	394	2	2	4	3
Netherlands	238	282	315	358	3	3	3	3
Switzerland	95	116	153	195	1	1	1	2
United States	83	153	237	306	1	2	2	3
Developing countries	682	870	1,119	1,063	9	10	11	9
Of which:								
India	37	45	50	56	--	1	--	--
Hong Kong	13	64	110	118	--	1	1	1
Egypt	51	47	149	123	1	1	1	1
Singapore	17	25	37	32	--	--	--	--
Imports, f.o.b. (excluding Slovak Republic)	7,080	10,371	10,610	12,639	100	100	100	100
Former socialist countries	2,409	2,542	2,171	2,346	34	25	20	19
Of which:								
China	62	55	77	100	1	1	1	1
Former Yugoslavia	149	107	86	113	2	1	1	1
Former CMEA	2,196	2,377	1,967	2,083	31	23	19	16
Bulgaria	34	21	14	14	--	--	--	--
Hungary	99	118	175	168	1	1	2	1
Poland	366	354	323	421	5	3	3	3
Soviet Union	1,655	1,861	1,441	1,462	23	18	14	12
Industrial countries	4,073	7,236	7,802	9,498	58	70	74	75
Of which:								
Austria	583	942	1,001	1,191	8	9	9	9
France	195	650	394	537	3	6	4	4
Italy	263	499	605	774	4	5	6	6
Germany	1,761	2,783	3,269	3,736	25	27	31	30
United Kingdom	177	275	347	444	3	3	3	4
Netherlands	185	330	360	432	3	3	3	3
Switzerland	206	228	288	327	3	2	3	3
United States	162	525	386	496	2	5	4	4
Developing Countries	596	592	636	795	8	6	6	6
Of which:								
India	29	37	34	48	--	--	--	--
Hong Kong	14	45	65	71	--	--	1	1
Egypt	21	6	7	6	--	--	--	--
Singapore	17	23	25	39	--	--	--	--
Memorandum item: Slovak Republic 1/								
Exports	3,523	3,146	2,834	2,327	29	27	22	17
Imports	3,693	2,877	2,249	2,092	34	22	17	14

Source: Data provided by the Czech Statistical Office.

1/ Estimates.

Table 34. Czech Republic: Commodity Composition of Exports, 1991-94 1/

(In millions of U.S. dollars)

SITC 2/ Category	Description	Former Socialist Countries				Market Countries				Total			
		1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994
0	Food and live animals	178	223	184	176	447	485	460	420	625	708	643	597
1	Beverages and tobacco	31	17	33	33	41	46	60	60	72	63	93	112
2	Crude materials inedible, except fuels	66	80	60	68	386	487	679	870	432	567	739	937
3	Minerals, fuels, lubricants, and related materials	126	129	102	179	307	368	430	428	432	497	533	607
4	Animal and vegetable oils, and fats	2	2	8	10	13	8	12	17	15	11	20	27
5	Chemicals	222	189	199	305	565	619	703	759	787	808	902	1,063
6	Manufactured goods, classified chiefly by material	689	437	561	527	1,536	2,399	2,677	3,210	2,224	2,836	3,238	3,737
7	Machinery and transport equipment	1,276	729	746	709	1,132	1,498	2,124	2,379	2,408	2,227	2,870	3,089
8	Miscellaneous manufactured articles	282	174	190	301	624	879	1,140	1,478	907	1,053	1,330	1,778
9	Miscellaneous transactions and commodities not classified	--	--	--	--	--	--	3	6	--	--	3	6
Total	SITC 0-9	2,871	1,980	2,064	2,328	5,050	6,790	8,288	9,626	7,921	8,770	10,370	11,953

Source: Data provided by the Czech Statistical Office.

1/ Excludes the Slovak Republic.

2/ Standard International Trade Classification.

Table 35. Czech Republic: Commodity Composition of Imports, 1991-94 ^{1/}

(In millions of U.S. dollars)

SITC 2/ Category	Description	Former Socialist Countries				Market Countries				Total			
		1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994
0	Food and live animals	58	55	63	95	419	583	619	803	477	637	681	898
1	Beverages and tobacco	16	21	17	23	93	119	87	129	108	139	104	151
2	Crude materials inedible, except fuels	156	305	289	318	363	301	261	307	519	606	550	625
3	Minerals, fuels, lubricants, and related materials	1,502	1,504	1,164	1,142	196	103	113	232	1,698	1,607	1,276	1,374
4	Animal and vegetable oils, and fats	4	3	2	3	29	26	40	46	33	29	43	49
5	Chemicals	107	125	142	199	630	895	1,088	1,401	737	1,021	1,230	1,600
6	Manufactured goods, classified chiefly by material	210	210	192	249	466	857	1,088	1,390	676	1,067	1,279	1,639
7	Machinery and transport equipment	284	260	201	168	2,008	4,039	3,911	4,562	2,291	4,299	4,112	4,730
8	Miscellaneous manufactured articles	73	62	101	147	460	901	1,179	1,401	533	963	1,280	1,548
9	Miscellaneous transactions and commodities not classified	2	--	--	--	7	3	54	9	9	3	54	9
Total	SITC 0-9	2,411	2,544	2,171	2,343	4,669	7,827	8,438	10,280	7,080	10,371	10,610	12,623

Source: Data provided by the Czech Statistical Office.

^{1/} Excludes the Slovak Republic.^{2/} Standard International Trade Classification.

Table 36. Foreign Direct Investment by Industry and Country, 1991-94

(In millions of U.S. dollars)

	1991	1992	1993	1994
Nonmanufacturing				
Agriculture, hunting, and forestry	--	3	2	1
Mining and quarrying	--	12	14	21
Electricity, gas, and water supply	1	9	24	87
Construction	1	232	65	108
Trade, hotels and restaurants	19	60	40	35
Transport storage and communications	23	30	3	10
Financial intermediation	64	101	55	132
Real estate and business activities	--	--	--	--
Education	--	--	--	--
Health and social work	--	--	--	--
Other social and personal services	--	--	--	--
Total	108	447	203	394
Manufacturing				
Food and tobacco	--	379	229	71
Textiles, wearing apparel, and leather	--	1	1	1
Wood, paper and publishing	--	--	--	--
Refined petroleum and chemicals	42	66	19	44
Nonmetallic products	20	70	49	60
Basic metals and metal products	--	--	--	--
Machinery and equipment	425	40	67	292
Recycling and other manufacturing	--	--	--	--
Total	484	556	365	468
Country				
EU				
Belgium	33	85	32	33
Denmark	--	--	2	5
France	16	218	34	77
Germany	443	139	82	418
United Kingdom	--	--	--	38
Italy	2	64	12	12
Netherlands	--	--	30	6
Spain	--	--	--	--
EFTA ^{1/}				
Austria	37	39	55	80
Finland	--	--	--	--
Sweden	--	--	12	19
Switzerland	2	78	14	39
Canada	--	--	20	--
United States	55	281	255	39
Japan	--	--	--	5
Other	7	99	20	91
Total	595	1,003	568	862

Source: Data provided by the Czech National Bank.

^{1/} European Free Trade Association.

Table 37. Czech Republic: External Debt in Convertible and Nonconvertible Currencies, 1980-95 Q1

(In millions of U.S. dollars, end of period)

	1980	1985	1990	1991	1992	1993	1994	1995 Q1
Debt in convertible currencies								
Medium- and long-term	1,936	1,835	3,557	4,565	5,284	6,494	7,806	8,670
By maturity								
1-5 years	473	854	1,321	1,463	2,094	2,530	4,170	4,737
Over 5 years	1,463	981	2,236	3,112	3,190	3,964	3,636	3,933
By creditor								
Banks	1,373	1,273	2,193	2,250	2,298	2,766	4,429	5,050
Governments	5	--	--	99	231	245	267	293
Multilateral institutions	--	--	--	1,177	1,594	1,766	709	750
Suppliers' credits	322	488	1,192	911	1,020	863	1,162	1,263
Other investors	236	74	172	168	141	855	1,239	1,313
Short-term	3,790	1,539	2,400	2,143	1,798	2,002	2,888	4,296
Total	5,726	3,374	5,957	6,708	7,082	8,496	10,694	12,966
Debt in nonconvertible currencies 1/								
Medium- and long-term	125	54	39	33	344	770	812	883
By maturity								
1-5 years	16	23	39	22	344	...	...	...
Over 5 years	109	31	--	11	--	...	...	...
Short-term	659	750	1,032	1,510	27	7	245	235
Total	784	804	1,071	1,543	371	776	1,057	1,118
Total debt 2/	6,510	4,178	7,028	8,251	7,453	9,605	12,218	14,724
Medium- and long-term	2,061	1,889	3,596	4,598	5,627	7,278	8,629	9,565
Short-term	4,449	2,289	3,432	3,653	1,826	2,327	3,589	5,159

Source: Data provided by the Czech National Bank.

1/ Excluding the Slovak Republic. Total debt to the Slovak Republic at the end of 1994 was US\$467 million, of which US\$456 million was short-term, and the remainder medium- and long-term.

2/ Includes debt vis-à-vis the Slovak Republic from 1993.

Table 38. Czech Republic: Official External Reserves and Other Foreign Assets, 1980-95 Q1

(In millions of U.S. dollars, end of period)

	1980	1985	1990	1991	1992	1993	1994	1995 Q1
Gross external reserves	1,739	745	1,056	2,611	3,587	6,245	8,892	10,937
Gold	86	107	72	87	96	83	83	84
Foreign exchange	1,653	638	984	2,431	3,462	6,153	8,809	10,853
Held by central bank	368	433	236	730	727	3,781	6,161	8,177
Held by other banks	1,285	205	748	1,701	2,735	2,372	2,649	2,676
Holding of SDRs	...	...	...	93	28	8	--	--
Other foreign assets in convertible currencies	1,549	2,582	3,835	4,250	4,877	4,777	4,991	...
Held by enterprises	1,104	1,598	2,089	2,422	2,884	2,652	2,833	...
Held by government institutions	433	923	1,687	1,758	1,742	1,847	1,835	...
Long-term assets of other banks	11	61	59	70	91	62	63	...
Direct investment abroad	...	...	...	...	160	122	143	...
Foreign assets in nonconvertible currencies 1/	1,638	1,545	2,187	6,146	5,242	4,595	4,601	...
Held by central bank	45	82	15	1	--	--	--	...
Held by other banks	343	310	1,060	3,888	3,161	2	1	...
Held by enterprises	517	681	474	528	307	277	295	...
Held by government institutions	732	472	639	1,728	1,770	4,310 2/	4,297	...
Direct investment abroad	...	...	...	...	4	7	8	...
Total 3/	4,925	4,872	7,078	13,006	13,706	17,842	20,704	...

Source: Data provided by the Czech National Bank.

1/ Excluding the Slovak Republic. Assets vis-à-vis the Slovak Republic were US\$2,224 million at end-1993 and US\$2,220.3 million at end-1994.

2/ Reflects assumption by the Government of assets in nonconvertible currencies previously held by the Československá Obchodní Banka (CSOB).

3/ Includes assets vis-à-vis the Slovak Republic from 1993.

Table 39. Czech Republic: External Debt Service Obligations in Convertible Currencies
Based on Medium- and Long-Term Debt Outstanding at End-1994

(In millions of U.S. dollars)

	1992	1993	1994	1995	1996	1997	After 1998
Principal	1,130	841	1,742	1,521	1,385	1,032	3,627
Of which:							
Official creditors	--	--	1,110	--	--	201	389
Of which:							
Fund repurchases 1/	--	--	1,078	--	--	--	--
Financial credit	216	172	205	133	284	214	567
Trade credit 2/	841	553	301	1,194	707	515	1,798
Bonds	73	116	126	194	394	102	873
Interest	308	316	342	534	435	346	995
Of which:							
Official creditors	112	127	88	59	59	59	91
Of which:							
Fund charges	62	69	21	--	--	--	--
Financial credit	83	64	21	61	35	18	107
Trade credit 2/	57	81	139	284	233	194	615
Bonds	56	44	94	130	108	75	182
Total debt service	1,438	1,157	2,084	2,055	1,820	1,378	4,622

Source: Data provided by the Czech National Bank.

1/ Repurchases falling due in 1994 and after were effected ahead of schedule in 1994.

2/ Including suppliers' credits extended by foreign banks to Czech enterprises.

Table 40. Czech Republic: Exchange Rates, 1988-93 Q1

	1988	1989	1990	1991	1992	1993	1994	1994				1993
								Q1	Q2	Q3	Q4	Q1
(In koruny per U.S. dollar)												
Average during period												
Official rate 1/	5.32	...	...	...	...	...	...	...	...	...	...	...
Commercial rate 2/ 3/	14.36	15.05	17.95	29.48	28.29	29.15	28.78	29.93	29.94	28.09	27.88	27.13
Noncommercial rate 2/ 3/	9.31	9.75	...	...	...	...	...	...	...	...	...	...
Auction rate 4/	...	121.24	50.56	...	...	...	...	...	...	...	...	...
Parallel market rate	33.44	42.39	38.03	32.28	29.97	31.80	28.81	30.31	29.09	27.89	27.89	27.43
Tourist rate 5/	...	...	31.42	...	...	...	...	...	...	...	...	...
(In koruny per transferable ruble)												
Official rate 1/	8.00	...	...	...	...	...	...	...	...	...	...	...
Commercial rate 6/ 7/	10.40	10.00	9.00	...	...	...	...	...	...	...	...	...
Noncommercial rate 7/ 8/	16.00	15.00	12.00	...	...	...	...	...	...	...	...	...
(In koruny per U.S. dollar)												
End of period												
Official rate 1/	5.30	...	...	...	...	...	...	...	...	...	...	...
Commercial rate 2/ 3/	14.31	14.29	28.00	27.84	28.59	29.76	28.22	29.59	28.89	27.98	29.22	26.22
Noncommercial rate 2/ 3/	9.28	9.26	...	...	...	...	...	...	...	...	...	...
Auction rate 4/	...	114.35	59.40	...	...	...	...	...	...	...	...	...
Parallel market rate	40.35	43.48	45.65	29.11	31.30	31.31	28.47	29.32	28.71	27.76	28.47	26.31
Tourist rate 5/	...	...	28.00	...	...	...	...	...	...	...	...	...
(In koruny per transferable ruble)												
Official rate 1/	8.00	...	...	...	...	...	...	...	...	...	...	...
Commercial rate 6/ 7/	10.40	10.00	9.00	...	...	...	...	...	...	...	...	...
Noncommercial rate 7/ 8/	16.00	15.00	12.00	...	...	...	...	...	...	...	...	...

Source: Data provided by the Czech National Bank.

1/ Official rate was abolished from January 1, 1989.

2/ Until December 31, 1988, the commercial rate equalled the official rate multiplied by certain coefficients.

3/ The commercial and noncommercial rates were unified from January 1, 1989.

4/ First auction took place on August 30, 1989; last auction took place on December 12, 1990.

5/ Separate tourist rates were in effect during 1990, then unified with the commercial rate on December 28, 1990.

6/ This rate applied to trade with U.S.S.R., East Germany, and Romania. The rates for Bulgaria and Poland were 5 percent lower and that for Hungary 10 percent higher than the shown rates.

7/ Trade in transferable rubles in relation to the CMEA countries was substituted by the convertible currencies or by clearing in convertible currencies from January 1, 1991.

8/ This rate was used for interstate settlements and differed according to individual countries. The data in the table represent those for the U.S.S.R.