

III. MACROECONOMY

III.1 Gross Domestic Product

The annual growth rates of real GDP (in %)

Year	1993	1994	1995	1996	1997	1998	1999	2000
Growth	0.1	2.2	5.9	4.8	-1.0	-2.2	-0.2	2.6

Source: 1993-99 CSO; 2000 CERGE estimate

The GDP growth rate was practically zero in 1993; in this year the economy still felt the consequences of the dramatic structural change after the fall of communism. A moderate recovery occurred in 1994, which was followed by rapid growth in 1995 and 1996. In 1997, the economy slipped into a relatively long recession. This recession ended at the end of 1999. The CSO predicts a fair recovery for 2000.

If one takes a look at the quarterly data from 1993:1 to 2000:2 (indicating the growth rate with respect to the same quarter of the previous year), one can observe that the maximum growth rate was achieved in 1995:2 and 1995:3 (6.6%), while the minimum growth rate occurred in 1998:4 and 1999:1 (-3.3%). The largest quarter-to-quarter increase in the growth of GDP

took place between 1993:4 and 1994:1 (from -0.9% to 2.9%), while the largest decrease occurred between 1993:2 and 1993:3 (from 1.2% to -1.7%) and between 1996:4 and 1997:1 (from 3.3% to 0.4%).

It is of interest to examine the breakdown of GDP into the components of the aggregate demand, i.e., into private consumption, government consumption, total investment, and net exports.

In terms of fractions of individual components, the composition of GDP was relatively stable over time. From 1993 to 1999, the share of private consumption increased from 49.9% to 52.6%. The share of government consumption fell slightly from 21.9% to 20.5%. The share of total investment (gross capital formation including change in inventories) increased from 27.4% to 28.5%.

The breakdown of nominal GDP into the components of the aggregate demand (in bil. of CZK)

Year	1993	1994	1995	1996	1997	1998	1999
GDP	1020.3	1182.8	1381.1	1572.3	1668.8	1798.3	1836.3
Private Consumption	509.5	599.5	692.1	799.8	877.7	934.5	966
Government Consumption	223.4	263	284.7	323.4	343.7	355.7	376.5
Total Investment	279.3	352	470	549.5	547.4	533.7	522.6
Net Exports	8.1	-31.7	-65.7	-100.4	-100	-25.6	-28.8

Source: CSO

III.2 Inflation

The high inflation rate in 1993 was associated with the introduction of the value-added tax. After that, inflation was relatively stable. Some increase in the inflation rate occurred in the aftermath of the currency crisis in 1997. Nevertheless, from 1997 inflation was substantially lower, plausibly as a result of tight monetary policy. Right now the Czech economy experiences a level of inflation which is quite comparable to that in developed countries.

The quarterly data from 1993:1 to 2000:2 reveals that the minimum rate was achieved in 1999:3 (1.2%), while the maximum occurred in 1993:1 (21.9%). The largest quarter-to-quarter decrease took place between 1993:4 and 1994:1 (from 18.2% to 9.4%). The greatest quarter-to-quarter increase occurred between 1997:2 and 1997:3 (from 6.8% to 10.3%).

Also of significant interest is the relationship of nominal interest rates to inflation. Macroeconomic theory predicts that nominal interest rates should be positively correlated with inflation (the Fisher effect). Examining yearly data confirms the presence of Fisher effect in the Czech Republic between 1993 and 1999. The correlation coefficients between the nominal discount rate and inflation, the nominal 3-month

PRIBOR rate and inflation, and between the average nominal new credit interest rate and inflation were 0.82, 0.46 and 0.64 respectively.

It is natural to assume that inflation was primarily influenced by indicators of monetary policy. Growth rates of money supply (M1 and M2) seem to be the most important indicators of monetary policy. The evolution of these indicators between 1993 and 1999 is presented in the following table.

The changes in the CPI are positively correlated with changes in M1 and M2 as well as with the lagged values of these changes. The correlation coefficient between the change in the CPI and the nominal change in M1 (M2) is 0.36 (0.62). The correlation coefficient between the 1-year lag in the change in M1 (M2) and the change in the CPI is 0.61 (0.58). The correlation coefficient between the 2-year lag in the change in M1 (M2) and the change in the CPI is 0.76 (0.70). Although these correlations do not necessarily imply causality, it is likely that changes in monetary aggregates were important determinants of inflation. Consistent with macroeconomic theory, the effect of money on prices was probably associated with a lag of one or two years.

Year-to-year changes in CPI, growth of M1 and M2 (in %)

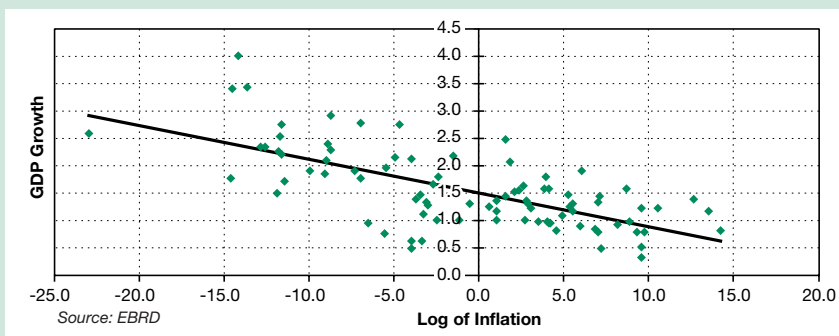
Year	1993	1994	1995	1996	1997	1998	1999	2000
Inflation	18.2	10.2	7.9	8.6	10.0	6.8	2.5	3.9
M1	17.7	17.1	7.2	4.9	-6.4	-2.6	10.7	16.4
M2	20.5	20.8	19.2	7.8	10.1	5.2	8.1	7.4

Source: 1993-99 CNB; 2000 CERGE estimate

Was There a Steep Decline in Output?

(Based on Filer, R.K. and Hanousek, J.: *Output Changes and Inflationary Bias in Transition*. CERGE-EI Working Paper No. 167, 2000)

Relationship between Inflation and Real GDP Growth for Several Transition Countries between 1991 and 1999



Mismeasurement of inflation is likely to be more severe in a transition economy than in a more stable environment. Reasonable estimates of the size of the inflationary bias in the Czech Republic suggest that conventionally reported declines in real output and living standards during the transition may be a statistical artifact rather than a real phenomenon. A decline in real output is a widely assumed outcome of the transition from communism. Almost every textbook claims that one of the most visible changes in the first years of transition was a steep decline in output.

There are many possible reasons to explain the reported decline. Planned economies had incentives to overstate production to meet the plan, while market economies induce underreporting of output to reduce taxes. Statistical organizations were not able to identify newly established private firms that often operated in the gray market. Finally, reported inflation may overstate actual inflation, thereby underreporting real output.

The figure above shows the relationship between inflation and real output growth for several transition countries between 1991 and 1999. Higher inflation is clearly associated with lower growth. While economies might do badly in several areas simultaneously, given that inflation theoretically stimulates an economy, the pattern suggests that upward biases in inflation create downward biases in GDP.

Even in stable market economies, Consumer Price Indices are biased upward. A recent commission concluded that the U.S. CPI overstated the rate of inflation during the 1990s by about 1.1 percentage points out of 3. Similar results exist for the U.K. and other countries.

A greater bias should exist in transition economies, with significant policy implications. Many years of apparent decline in real GDP were probably growth years. In

addition, real wages are higher than believed, with correspondingly lower poverty rates. Thus, governments have more latitude to lower social spending, thereby reducing tax burdens and increasing growth. Implications for integration with the European Union are similarly profound. Less structural assistance will be needed, enabling more rapid expansion and free labor mobility.

Filer and Hanousek (2000) present approximations of these biases for the Czech Republic, the transition country with the lowest inflation, and they conclude that possible biases in Czech inflation are well over 30%. Suppose, however, for the sake of argument we accept that biases are substantially smaller than our preliminary analysis suggests they are. The critical point that biases in the measurement of inflation will fundamentally alter our understanding of the transition still holds. The second column of the accompanying table shows the compound annual growth rate between 1990 and 1999 as officially reported for seven major countries in transition as well as the number of years of negative growth for each country in parentheses. Columns 3 through 6 show what the average annual growth rate and number of years of negative growth would have been if inflation were biased by between 10, 15, 20 or 25 percent. Each of these bias levels are significantly lower than the up to 50 percent bias our calculations presented above suggest is possible for the Czech Republic.

If inflation measures are biased by even this little, eliminating the bias would show that every country in the region grew during the 1990s, turning a story of decline and disruption into one of growth and hope. While we remain ignorant as to the true inflation rate, we are convinced that biases in officially reported measures of price increases mean that economists and policy makers should be extremely cautious in analyzing macroeconomic developments during the transition. When technical adjustments in data collection techniques can fundamentally alter the story being told, one should not place undue emphasis on policy recommendations derived from that story.

**Effect of Bias in CPI on Cumulative Annual Growth Rate: 1990–1999
(Number of years of negative growth in parentheses)**

(Number of years of negative growth in parentheses)	As Officially Reported	If Inflation Overstated by 10%	If Inflation Overstated by 15%	If Inflation Overstated by 20%	If Inflation Overstated by 25%
Bulgaria	-3.8% (6)	0.7% (4)	3.1% (4)	5.6% (1)	8.3% (1)
Czech Republic	-0.7% (6)	0.5% (4)	1.2% (3)	1.8% (3)	2.5% (2)
Hungary	-0.1% (4)	1.8% (3)	2.7% (3)	3.7% (1)	4.6% (1)
Poland	2.0% (2)	4.9% (2)	6.5% (1)	8.1% (0)	9.8% (0)
Romania	-2.8% (6)	1.8% (6)	4.3% (2)	6.9% (2)	9.6% (1)
Russia	-5.4% (8)	-0.5% (6)	2.2% (4)	5.1% (2)	8.2% (1)
Ukraine	-9.6% (10)	-4.8% (9)	-2.1% (7)	0.7% (5)	3.8% (2)

Notes on Inflation Targeting Policy

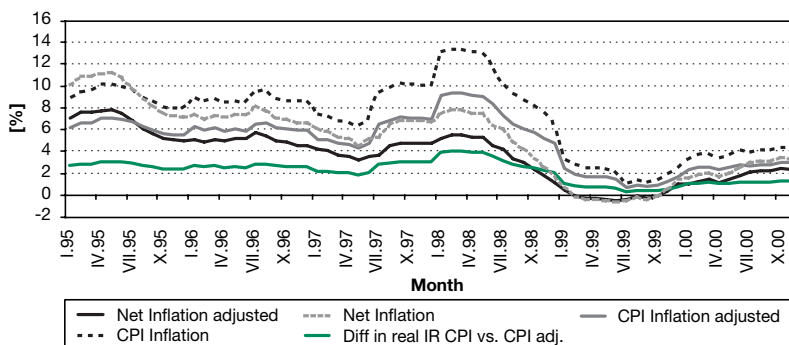
The monetary policy has been fully centered on inflation targets as a new nominal anchor since May 1997, when the Czech National Bank (CNB) announced its floating exchange rate policy. Nominal interest rate discretion was chosen to be the main tool and simultaneously became an operational goal. The targets for net inflation were set on 12/22/1997 as follows: 5.5-6.5% for 1998-1999 and 3.5-5.5% for 2000-2001.

As shown in the figure below, during the period 1997-2000 the nominal interest rate has been adjusted according to actual developments in inflation. We suggest that the policy was not fully efficient due to an increased bias in the measurement of inflation and thus a high real interest rate as well (for discussion about the mis-measurement of inflation see the previous feature). In particular, in periods with high inflation (over 10%) the measurement bias causes higher real interest rates and thus a slowdown in economic activity. The figure below depicts the tendency to overestimate inflation by CNB nominal interest rates setting, which in the end resulted in a rapid (undesired) decrease in inflation at the end of 1999.

The development of the real interest rate and inflation suggest that the policy concerned with bringing down inflation was a step in the right direction. Lower but positive inflation is the better and more efficient monetary policy possible. Nevertheless, the magnitude of the nominal interest rate possibly caused a rapid increase in the real interest rate. In addition the high nominal interest rate contributed to a slowdown in GDP mainly during 1998–1999. High nominal and real interest rates possibly caused net inflation during the period of April-99 till Oct-99, which further hindered economic activity.

Current inflation rate, a relatively low nominal interest rate, a low real interest rate, and a slow increase in output suggest that the Czech economy is not only on the way to fulfilling the inflation target set in 1997 for the end of the millennium but also at the start of a period of greater economic growth.

Inflation and Interest Rate



III.3 Investments

The Czech economy invests a relatively large portion of its GDP. The following table presents the evolution of the ratio of gross fixed capital formation to GDP from 1993.

The investment activity in the Czech Republic has substantially exceeded that in developed countries, where the ratio of gross fixed capital formation to GDP is typically around 20%. Despite this fact, the evolution of real GDP in the Czech Republic has been disappointing in recent years. It is possible that investment has not been sufficiently efficient to result in robust growth of GDP.

Examining the cyclical behavior of investment is of significant interest. The correlation

coefficient between the ratio of gross fixed capital formation to GDP and the growth of real GDP (yearly data from 1993 to 1999) equals 0.68. Thus investment tends to be strongly procyclical, similarly as observed in developed countries. This view is consistent with real business cycle models as well as with the notion that monetary policy affects real output in the short run (high interest rates decrease private investment and output).

The following table presents quarterly investment data. The investment activity exhibits a notable seasonal pattern.

The ratio of gross fixed capital formation to GDP (in %)

Year	1993	1994	1995	1996	1997	1998	1999	2000
Ratio	28.4	28.7	32.0	31.8	30.8	28.3	26.4	26.8

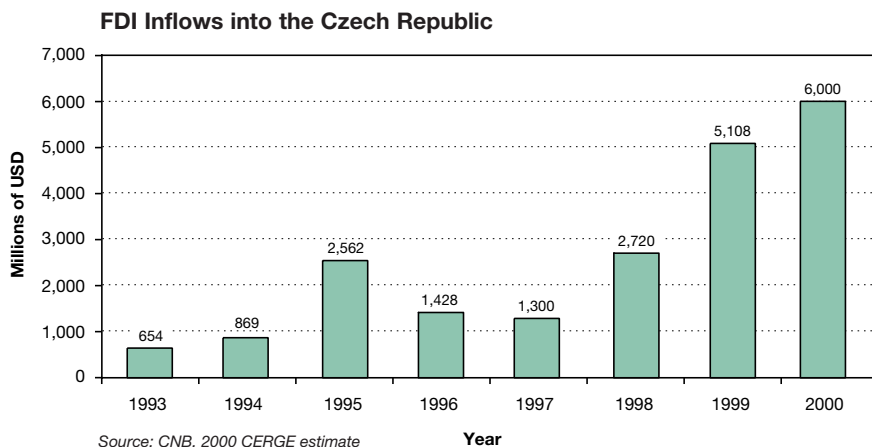
Source: 1993–1999 CSO; 2000 CERGE estimate

The ratio of gross fixed capital formation to GDP (in %)

Quarter	1998:01	1998:02	1998:03	1998:04	1999:01	1999:02	1999:03	1999:04	2000:01	2000:02
Ratio	24.2	26.0	25.0	37.5	21.5	23.4	23.5	36.7	21.1	24.4

Source: CSO

III.4 Foreign Direct Investment



The amount of foreign direct investment (FDI) in the Czech economy has risen steadily since the early part of the decade. The total inflow of foreign direct investment into the Czech Republic has surged from USD 654 million in 1993 to USD 2,562 million in 1995, when inflows culminated, coinciding with the peak of the privatization program. In 1995, the national telecommunications company was privatized along with other public utilities and a large oil refinery. In the following two years, the Czech economy has experienced a sharp decline in FDI inflows. In 1997, the country attracted only USD 1,300 million of inward investment, less than half of the total inflow in 1995. However, in 1998, the negative trend has been broken and FDI has more than doubled in comparison with 1997, as foreign companies invested USD 2,720 million. In 1999, inflow of FDI increased by 88% as the Czech Republic attracted USD 5,108 million of the total FDI, greatly outpacing the worldwide trend. Inflow of FDI on a worldwide scale rose

only 16 %, while Central and Eastern Europe registered a much lower 9 % increase.

For two years in a row FDI into the country doubled, clearly surpassing that of all other Central and Eastern European countries. In per capita terms the Czech Republic was the clear FDI leader in 1999. For the same period Poland recorded growth of FDI inflow of 18% while Hungary experienced a drop of 4.5 %. The preliminary estimate of the total FDI in 2000 is USD 6 billion, which would be the greatest amount for the entire period of transformation. The very promising results of the past three years are to a large extent related to a change in the investment climate in the Czech Republic and a government strategy directed at supporting FDI. In April 1998, the Czech government approved the national investment incentive package and offers incentives to manufacturing investors, which invest at least USD 10 million and fulfill the eligibility criteria. Moreover, privatization of banks, manufacturing and distribution firms

The Largest Foreign Investments in the Czech Republic

Total investment (mil. of USD)	Foreign partner, Country	Type of business, Investment time span	Name of the Czech partner or subsidiary
1,460	TelSource Netherlands, Switzerland	Telecommunications 1995	Český Telecom, a.s.
1,200	KBC Bank Belgium	Banking 1999	ČSOB, a.s.
900	Volkswagen Germany	Automobiles 1991–1998	Škoda Automobilová a.s.
629	IOC Netherlands, USA, Italy	Petroleum refining 1995–2000	Česká rafinérská
450	Asea Brown Boveri (ABB) Sweden, Switzerland	Electronics, engineering 1991–1998	11 companies in total
420	Phillip Morris USA	Tobacco 1992	Tabák a.s.
400	National Energy Corp., El Paso Energy, NRG Energy USA	Energy 1997–1999	Energetické centrum Kladno, ECK Generating s.r.o.
357	Daewoo-Steyr South Korea, Austria	Vehicles 1995	Daewoo Avia a.s., Prague
232	Glaverbel Group (subsidiary of Asahi Glass) Belgium, Japan	Auto glass 1991–1998	Glaverbel Czech
200	Pepsi-Cola International USA	Soft Drinks 1994–2000	No Czech partner
200	Coca Cola Amatil Australia	Soft Drinks 1991–1998	Coca Cola Beverages CR a.s.
200	National Power United Kingdom	Energy 1997–1998	Elektrárny Opatovice

Source: CzechInvest

is being implemented primarily in the form of finding strategic foreign partners. The same process is used for revitalizing and restructuring already privatized companies.

In total, the Czech Republic has attracted USD 17,142 million of FDI in the period 1989–1999. A large proportion of the

world's best-known multinationals has already set up operations in the Czech Republic. In total, there were over 2,200 foreign-owned or partly foreign-owned companies with more than 25 employees registered in the Czech Republic at the end of 1999.

Role of Foreign Direct Investment in the Transition Process

(Based on Jarolím, M.: Foreign Direct Investment and Productivity of Firms. Finance a úvěr 50, 9 (2000), 478–487)

A major problem faced by the Czech economy in the early 1990s was the level of knowledge of new technology, since strict limitations were imposed on access to foreign technology prior to the transition process. Attracting foreign direct investment (FDI), which is a major channel through which technology and innovation can be disseminated among domestic firms, was of particular importance. FDI establishes permanent commercial relations and incentives for investors to take an active part in the decision making process. Moreover, FDI has been a vital source of necessary investment for modernizing the obsolete industrial structure, bringing modern technology, advanced management skills, and facilitating access to the world market.

The above arguments suggest that lifting barriers to foreign capital, along with expanding trade links with the major industrialized economies, would create the potential for rapid increases in productivity and efficiency and, consequently, the growth of the Czech economy. Empirical data on Czech manufacturing firms in the period 1993-1998 shows that firms with foreign participation perform higher levels of labor productivity, export orientation and investment activity. Foreign firms also tend to be more than twice as large on average in terms of total sales than domestic firms.

Analysis of total factor productivity growth provides further evidence of the impact of FDI. Our findings suggest that foreign firms achieved higher growth rates of total factor productivity than domestic firms in the analyzed period. This fact confirms the important role FDI has played in transferring technological, marketing, and managerial knowledge to their partner firms. However, there are significant differences in the performance of foreign firms driven by the mode of foreign investment. The green-field enterprises performed better in terms of TFP (total factor productivity) growth than the firms privatized to foreign investors. This finding indicates that inertia inherent in the former state-owned enterprises is an important factor weakening the positive impact of FDI.

Finally, the existence of technological spillovers generated by FDI was not proved. Higher productivity growth rates for domestic firms were observed in the sectors with a large foreign presence, which might be considered as an indication of technological spillovers from foreign to domestic firms in the industry, but this effect was found to be statistically insignificant.

Benefits of Foreign Direct Investment and R&D Activity in the Czech Manufacturing Sector

(Based on Kinoshita, Y.: R&D and Technology Spillovers via FDI: Innovation and Absorptive Capacity. CERGE-EI Working Paper No. 163, 2000)

Technological change is one of the driving forces of economic growth. New technology can be acquired from deliberate innovative activity called research and development (R&D) or learning the existing technology generated by others. It is generally believed that R&D plays a dual role – “innovation” and “learning” – in both avenues. That is, R&D activity not only stimulates innovation but also develops the firm’s ability to identify, assimilate and exploit outside knowledge. This second role of R&D is considered important in assessing the extent of technology spillovers from others. This is because technology spillovers may not take place automatically where the recipient’s absorptive capacity is insufficient.

This paper examines the relative importance of two faces of R&D, “innovation” and “learning” (or building up the absorptive capacity) on the firm’s productivity growth when a carrier of new technology is foreign direct investment (FDI). Among various channels through which technology spills over internationally, FDI is thought of as one of the most effective vehicles because it transfers technology that is embodied in human capital. Intangible assets possessed by multinational firms such as management know-how and advertisement can be transferred via FDI but not via other channels such as trading goods and services and licensing agreements.

Transition economies are of special interest for studying the effects of FDI and R&D on the host country firms because they are at the early stage of opening up to foreign capital and there exists a technological gap from developed countries that has to be filled over time. The data used for this study is firm-level panel data in the Czech manufacturing sector between 1995 and 1998. Compared to other transition economies such as Hungary and Poland, the Czech Republic had been more conservative in attracting foreign capital. The advantage of using the Czech data is that the changes of productivity over time, since the onset of FDI inflow, can be easily followed.

Comparing foreign and local firms in each industry group, it is shown that foreign firms are more productive on average in most industry groups. However, foreign firms do not necessarily grow faster than local firms. Particularly in electrical machinery and radio & TV, local Czech firms were less productive than foreign firms in 1995 but they had caught up with their foreign counterparts by 1998, which implies the presence of technology spillovers from foreign investment in these sectors.

In the empirical model proposed, productivity growth of a firm occurs either by R&D investment or by technology spillovers from FDI. Next, two faces of R&D are differentiated as innovative and absorptive. Innovative R&D is a direct effect of a firm’s R&D investment on its productivity growth. Absorptive R&D is captured through

the degree of technology spillovers from knowledge embodied in foreign investment. Technology spillovers take place when a firm has a foreign joint venture partner or it is operating in a sector with a large foreign presence.

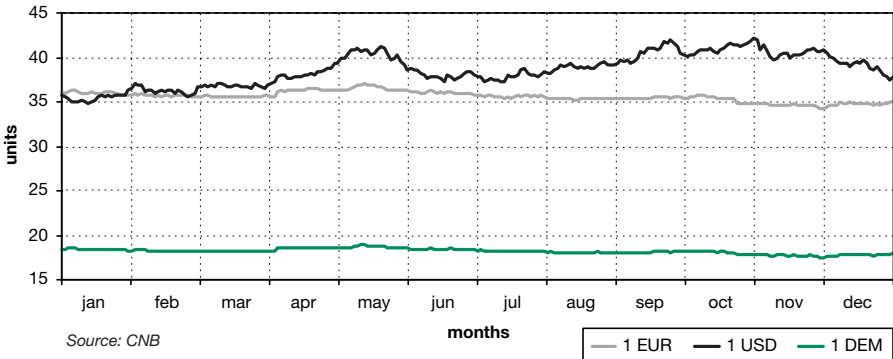
The rate of return to innovative R&D is found to be about 3.3% for firms in our sample. When absorptive R&D is included as an explanatory variable, innovative R&D becomes less important in accounting for productivity growth. It is found that those firms that engage in R&D activity benefit more from technology spillovers from FDI and also grow faster. In the case of Czech firms, the main role of R&D investment is to facilitate the absorption of advanced incoming technology from foreign firms rather than to innovate.

It is also observed that in oligopolistic sectors (electrical machinery and radio & TV) innovative R&D has a higher return and there exists greater technology spillovers from FDI than in non-oligopolistic sectors (food, non-metallic mineral, and other manufacturing). This suggests that firms have to first invest in R&D knowledge in order to benefit from technology spillovers.

Several policy implications are drawn for the recipient country of FDI. First, local firms should build up the absorptive capacity by investing in R&D activity in order to maximize the extent of technology spillovers from FDI. Thus, R&D subsidies or tax breaks should be accompanied by the promotion of foreign investment. Second, it might be beneficial for the host government to attract FDI particularly in oligopolistic sectors in which the potential of technology spillovers is greater than in other sectors.

III.5 Exchange Rate

Evolution of Exchange Rates in 2000 (EUR, USD, DEM)



In 1993-1999, the exchange rate of the Czech crown relative to the euro was quite stable. If one takes a look at the average quarterly data between 1993:1 and 2000:2, the minimum rate occurred in 1997:1 (33.4 CZK/EUR), while the maximum was achieved in 1999:2 (37.6 CZK/EUR). The largest quarter-to-quarter decline took place between 1996:4 and 1997:1 (a fall from 34.6 to 33.4 CZK/EUR). The largest quarter-to-quarter increase was between 1997:1 and 1997:2 (the period of the currency crisis which resulted in an increase from 33.4 to 35.5 CZK/EUR). The change in the exchange rate during the currency crisis was not dramatically large (as compared to the Asian countries which suffered a currency crisis in the same period), and the Czech National Bank was eventually successful in stabilizing the

exchange rate. Before the currency crisis, the Czech crown was allowed to fluctuate within a narrow band against a basket of foreign currencies. Since the crisis the crown has been on managed floating.

The exchange rate of the Czech crown has been less stable relative to the U.S. dollar as a result of the strengthening of the dollar against the euro in recent years. Looking at the quarterly data from 1993:1 to 2000:2, one can observe that the minimum rate was in 1995:2 (26.1 CZK/USD), whereas the maximum rate occurred in 2000:2 (38.8 CZK/USD). The greatest quarter-to-quarter decrease was between 1998:2 and 1998:3 (from 33.2 to 31.6 CZK/USD). The greatest quarter-to-quarter increase took place between 1998:4 and 1999:1 (from 30.1 to 33.0 CZK/USD).

Average Annual Exchange Rates

Year	1993	1994	1995	1996	1997	1998	1999	2000
CZK/EUR	34.5	34.7	36.2	35.3	35.7	35.9	36.9	35.8
CZK/USD	29.2	28.8	26.5	27.2	31.7	32.4	34.6	38.6

Source: 1993–99 CNB; 2000 CERGE estimate

Structural Changes in Exchange Rates: Monetary Measures vs. Real Economic Developments

(Based on Kočenda, E.: Detecting Structural Breaks in Exchange Rates in Transition Economies. CEPR Discussion Paper No. 2546, 2000)

An exchange rate and its regime are important elements in the overall monetary policy of each country. Due to the nature of exchange rate regimes adopted by Central and Eastern European (CEE) transition countries, the exchange rates move within tighter or looser arrangements by following the rules of such arrangements. An exchange rate regime then influences, to a different extent, a trend function of an exchange rate. For example, in the case of a crawling basket peg regime the trend is, simply speaking, a function of time, rate of periodical devaluation, and an effect of currencies in the basket that is limited by the width of a fluctuation band.

The literature provides ample evidence that a large set of macroeconomic variables is subject to structural instability. Exchange rates may be affected by one-time shocks generated by structural changes in the underlying economies and/or measures taken by monetary authorities. During the transition process many crucial steps performed by authorities are likely to either cause or aid in bringing a kind of structural change. A change in an exchange rate regime and/or the official adjustment of an exchange rate level might be mirrored by a structural break in the evolution of an exchange rate.

I have performed an analysis of exchange rates, expressed in terms of the US dollar and the Deutsche mark, of eleven CEE countries over the period from 1991 to 1999. I have frequently found a structural change (the null hypothesis of no structural break was frequently rejected), and numerous detected breaks could be associated with policy measures adopted at the same time. However, in several cases the trend break could not be associated with a coinciding policy change that should have had a significant impact on exchange rates.

In Central European countries the exchange rates evolved in a relatively stable manner without extremely volatile periods or extreme depreciation. Poland was the only country where no structural break was found. Most of the structural breaks could be associated with policy steps. However, in the Czech Republic and Slovakia breaks occurred prior to policy steps aiming to influence exchange rate evolution. In these instances, the policy steps seem to have been an acknowledgement of the structural changes that had already occurred in the real economy.

Serious structural breaks were found in the Balkan countries of Albania, Bulgaria, and Romania. Here the structural breaks can be decisively associated with policy steps that either affected one or more of the exchange rate, its regime, or the foreign exchange market environment. In Albania the structural break was entirely associated with a massive devaluation and a revision of an exchange rate regime. In Romania and Bulgaria the break was associated with monetary policy steps related to foreign exchange markets that were accompanied by massive devaluations.

A series of overall monetary reforms paired with alterations of exchange rate regime form a complex environment that affected the behavior of exchange rates in the Baltic states (Estonia, Latvia, and Lithuania). These countries freed themselves from the former Soviet Union and within the scope of monetary reforms re-introduced their national currencies. The structural breaks detected were associated mainly with the re-introduction of national currencies and adoption of tight exchange rate regimes. Those countries that pegged their currencies to the US dollar or the Deutsche mark experienced a trend break in the exchange rate denominated in a currency other than that of the peg. Such a finding is consistent with world macroeconomic developments and is associated with the gradual appreciation of the US dollar against the Deutsche mark since 1996.

Based on these conclusions, a pattern emerges. In countries that have experienced economic and/or political difficulties the exchange rate policy changes were adopted at a time that coincided with a structural change in exchange rate evolution. In relatively more developed transition countries with less pronounced economic difficulties such a coincidence is less frequent. Rather, real economic developments can be traced behind structural breaks. Since the transformation process of the CEE countries is not yet finished, presented findings provide arguments for further monetary policy debate on how exchange rate management or mismanagement can be related to real economic development during transition.

III.6 Foreign Trade

Both Czech export and imports increased substantially in 1993–1999. With ratios of these variables to GDP exceeding 70% and hence, the Czech economy's openness is extremely large. The evolution of foreign trade and its current orientation with developed countries is in sharp contrast with the past. Before the beginning of the transition process in Central and Eastern Europe the

countries in this region had highly closed economies conducting international trade within the so-called Council of Mutual Economic Assistance (COMECON) framework. By volumes of trade this arrangement could be labeled as a large closed economic system with respect to the outside world or other economic agreements. As early as December 1991, the former Czechoslovakia,

Exports and imports (in % of GDP)

Year	1993	1994	1995	1996	1997	1998	1999
Exports	49.0	48.7	53.6	55.9	61.1	69.1	73.9
Imports	45.5	51.1	58.4	63.7	69.1	76.1	80.7

Source: CSO

Poland and Hungary signed the so-called “European Agreements” with the European Union. These countries have strived to establish a workable framework for international trade and co-operation in order to facilitate the transition process. A further step reflects the institutional aspects of transition reforms

with respect to the international trade arrangement among the CEE countries. This arrangement was institutionalized in March 1993 in the form of the Central European Free Trade Agreement (CEFTA; for details see feature in section VII.3).

Foreign Trade in 2000

An important phenomenon of recent years is a relatively large trade-balance deficit. Large trade-balance deficits are present in many other transition countries. These deficits are probably related to real-economy factors rather than exchange-rate movements. The trade-balance deficit (more precisely, the current-account deficit) reflects the fact that domestic investment exceeds national saving. The transition process is associated with high investment demand, which is financed by borrowing on international credit markets. The largest trade-balance deficit (7.9% of GDP) occurred in 1997, while the deficits in 1996, 1998, and 1999 were of smaller magnitudes. In 2000 we expect the deficit (120–130 billion CZK) to be nearly as large as in 1997.

In 2000, foreign trade turnover rose substantially. The growth in exports was generated by very favorable sales opportunities for Czech products in advanced market economies (especially in Germany). The trend was accompanied by renewed growth in exports to transition economies (including CEFTA countries). The increased imports were due above all to a pick-up in industrial production and by further intensification of international co-operation and of the integration of the Czech economy into international market structures. It is also necessary to note that the rise in foreign trade turnover was partly attributable to the low comparison base of the previous year.

The continuing upward trend for exports of goods in 2000 was associated with structural changes. With respect to the commodity structure, the share of exports of higher-value-added products increased. Engineering and electrical engineering commodities accounted for more than 50% of total exports, and these exports rose by more than 30%. Exports of food, raw materials and semi-manufactures grew, mainly thanks to a rapidly growing demand for food commodities and industrial semi-manufactures on foreign markets.

By territory, there was further robust growth in exports to advanced market economies (up to 30% in year-on-year comparison, and for exports to Germany the figure is even higher), but also there was a rise in exports to the European transition countries. While the rise in exports to Slovakia was not significant, exports to Russia jumped by 25%. The territorial structure of exports in 2000 thus confirmed the ongoing rapid integration of the Czech economy into Western European economic structures and, in particular, increased orientation towards Germany.

With respect to imports, the fastest growth was registered for imports for intermediate consumption, which thus maintained the largest share in total imports of more than 50%. The growth was mainly due to the very high import prices of fuels, the development of production collaborations and the pick-up in domestic industrial production. The gradual development of production collaborations was the main reason why the import propensity of GDP is very high in 2000 (an estimation yields about 90% in current prices). The growth of imports in current prices was linked also to the rise of prices of energy raw materials (oil) on world markets. The growth in imports for investment and particularly for personal consumption was more modest.

It is necessary to underline that the growth trends were not the same for the whole of 2000. The balance of goods and services substantially improved in 2000 Q1 compared with the previous quarter. This was due to a strong pick-up in export growth accompanied by slower growth in imports. In 1999 Q4 the lead of export growth over import growth had been 2.2 percentage points, whereas in 2000 Q1 it increased to 5.8 percentage points. On the other hand, in the second and third quarters of 2000 net external demand had no substantial effect on GDP. The fact is attributable to a substantial narrowing of the lead of export growth over import growth, since exports grew slower than imports.

The trade balance in 2000 was hugely influenced by the situation on the world raw materials markets. The change in prices of energy raw materials on world markets strongly affected not only changes in domestic price levels, but also external trade relations. Since the economy of the Czech Republic heavily depends on imports of energy raw materials, the price of oil and the price of natural gas are important factors of trade balance and current account developments. Prices of imported oil are very closely linked to world oil prices. The importance of this trend for the trade balance has strengthened in summer months owing to the oil price turbulence on global markets. A similar situation applies to natural gas since its price usually follows the oil price.

Oil and natural gas are the main items in group 3 of the SITC classification, so their prices are key medium-term factors for changes in the balance of trade in this group. Prices in group 3 accounted for more than 75% of the overall deterioration of the trade balance in the first three quarters of 2000 (compared with the same period in 1999).

External Trade in January–October 2000
(millions of CZK, current prices)

Total	Imports	1,009,981
	Exports	918,023
	Balance	-91,958
OECD	Imports	789,430
	Exports	758,606
	Balance	-30,824
EU	Imports	629,067
	Exports	633,252
	Balance	4,185
European transition economies (incl. CEFTA)	Imports	130,236
	Exports	155,838
	Balance	25,602
Slovakia	Imports	62,275
	Exports	69,775
	Balance	7,500

Source: CSO