

IV. MICROECONOMY

IV.1 Current Privatization Status

Privatization activities, which were being reviewed in 1999, were resumed at the beginning of 2000, after the minority Social-Democratic government and the largest opposition party ODS agreed to complete the remaining privatization of large enterprises within the next two years. With a view to the improvement of the financial sector, the privatisation of banks has been progressing with the sale of Česká spořitelna (the Czech savings bank) to the Austrian Erste Bank Sparkassen and extensive preparations for the privatization of Komerční banka.

The approval of the new Telecommunications Act in early 2000 opened the door to the privatization in the telecommunications sector. Privatization of České radiokomunikace is well under way with four companies on the shortlist and a final decision expected in January 2001. The details of the privatization of Český Telecom, the monopolistic provider of the fixed-line telecommunication services, are being discussed. The most disputed issue is whether the majority share of 51% for sale should comprise solely of NPF shares or should include some shares of the second major owner, the consortium TelSource. In any case, the future owner of the company should be known no later than June 2001.

Apart from the successful sale of the Česká spořitelna bank, the state sold its 30% share in Škoda Auto to Volkswagen AG in June 2000. The oil refinery Paramo was offered for tender in the spring and ended up in the arms of the Czech company

Unipetrol, which has thereby strengthened its position in the Czech market. Although this has increased Unipetrol's attractiveness to foreign buyers, its privatization is not high on the agenda.

Despite the ongoing privatization of the banking and energy sectors, the list of companies in which the state holds a majority is still unpleasantly long. Most of these are in need of significant restructuring before they can arouse any interest from foreign investors. This includes the steel companies (Nova Hut and Vítkovice), the coal mines (OKD, Mostecká uhelna), and the oil and chemicals companies (Unipetrol, Chemopetrol and Benzina). The establishing of the Revitalization Agency (RA) is equal to centralizing and bureaucratizing the process of restructuring, and as such poses the risk of

Czech Top 10 in 1998 and 1999

Rank		Company	Sales*	
1999	1997		1999	1998
1	1	ŠKODA AUTO a.s.	110	106
2	2	ČEZ, a.s.	54	55
3	5	ČESKÝ TELECOM, a.s.	52	46
4	3	UNIPETROL, a.s.	52	50
5	4	Transgas, s.p.	37	39
6	8	ČESKÁ RAFINÉRSKÁ, a.s.	31	27
7	11	Siemens s.r.o.	28	22
8	10	OKD, a.s.	23	24
9	60	AGROFERT a.s.	22	17
10	20	EuroTel Praha, spol. s r.o.	20	15

* Sales are in billions of CZK

Source: Czech Top 100, 2000

losing time. Besides, it drives attention away from the reorganization of the legislative system, whose inadequacy is at the root of the current problems in both the bank and the industrial sector. To improve the legislative

system, a reorganization alternative to bankruptcy should be adopted and capital market laws should be overhauled so that capital markets can better serve as an alternative to bank financing.

Liberalization of the Energy Sector: Electricity and Gas

Year 2000 was an important landmark in the recent history of the Czech energy sector. The decision about privatization of ČEZ and Transgas – the gigantic state-owned energy monopolies – was finally taken, and a new Energy Act was approved that should create conditions for the opening up of the electricity and gas sector to competition. Not even in this year, however, were the prices of electricity and gas fully liberalized and hence the cross-subsidizations between different categories of consumers removed.

The birth of the new act was painful: more than a thousand amendments were suggested. Still, the final version of the act can hardly be considered perfect as it suffers from an overly general voice and occasional ambiguity. The flaws should be remedied by a number of supplementary decrees, most of which will be issued by a new regulator that will start to work on 1 January 2001. As no deadlines were set for these decrees, however, an impression arises that the parliament managed to postpone current problems for an indefinite future.

The major novelty of the new act is that it allows consumers to choose their supplier. The process of opening up the market is gradual, from large to medium to small consumers. In the electricity sector this process should take place in 2002-6; in gas sector it should start in 2005.

Both ČEZ and Transgas should know their new owners in the next year. Their privatization, though, was a subject of a protracted and heated debate between the Ministry of finance and Ministry of Industry and Trade. While the former was strongly in favor of the “per-partes” privatization in which producers would be privatized independently of regional distribution companies, the latter advocated “pooled” privatization – a sale of majority shares in both the producer and the distributor companies to the same owner. Eventually, parliament opted in case of ČEZ and Transgas for the pooled variant. The arguments of the Ministry of finance about the benefits of increased competition yielded to the opinion of the minister of industry and trade, Mr. Grég, who claimed that “per-partes” sales would generate considerably lower revenue for the government. This argument is at best dubious since separate sales would surely attract more potential buyers and so drive the prices up. While the true reasons for the parliament’s decision can only be speculated about, one cannot escape the conclusion that the short-mindedness and hunger for immediate revenues celebrated the victory over prudential foresight.

IV.2 Enterprise Restructuring: Revitalization Agency

After a lengthy debate on the form and scope of the so-called “Revitalization Program”, in October 1999, the Czech government established a corporate restructuring vehicle Revitalizační Agentura, a.s. (RA).

The RA was mandated to purchase the non-performing loans (NPLs) of Czech commercial banks slated for privatization (Komerční banka and Česká spořitelna) at a fair market value. Selected assets of the state-owned banking institution, Konsolidační banka (which had itself in the past bought a number of NPLs of commercial banks well above the market value), were to be transferred to the RA under the same terms. Furthermore, the RA was supposed to manage, restructure and/or convert NPLs into equity of selected large industrial corporations experiencing (temporary) financial distress. The idea was to increase the state’s influence on the companies, exercise corporate governance and promote restructuring. However, since the Czech legislation requires the company’s owners to agree with such debt-for-equity swaps, it was clear from the very outset that the whole process would take considerable time (had the swapping of debts for equity been easier than engaging in bankruptcy procedures, the process would most likely have been started spontaneously by commercial banks themselves).

Originally, there were nine companies selected for the restructuring program, with the tenth added in March 2000 (see the list below). The officially estimated costs exceeded 60 billion CZK. Company TIBA a.s. declined its involvement in the program. Two other companies (ČKD Praha and Hutní montáže Ostrava) opted for buying the RA’s consulting services on a contractual basis, rather than exposing itself directly to the

RA’s governance. In Spolana the extent of the RA’s involvement is still being discussed; in the rest of the companies RA either participates in the management, or closely cooperates with it. The only company on the list in which the RA’s role was brought to an end is ZPS Zlín which was sold in the spring to Italian investor Tajmac. A few other companies, however, have already started negotiations with potential investors.

The RA raised concern from the EU and small non-strategic companies. The EU argued that the mandate and the function of the RA do not abide by the market law and thus the RA is not an appropriate tool for the restructuring process. The selective character of the RA’s operations (i.e., the focus on large companies and a neglect of the small ones) was the main criticism. Besides, high loans left at the RA’s discretion represents a considerable moral hazard. For all these reasons, it was agreed that the RA should be established for a limited period only. The termination date was set at the date of the Czech Republic’s Accession to the EU (working assumption January 1, 2003).

Companies suggested for the Restructuralization Program

AliaChem, a.s.
 ČKD Praha Holding, a.s.
 Hutní montáže Ostrava, a.s.*
 Spolana, a.s., Neratovice
 ŠKODA, a.s., Plzeň
 TATRA, a.s., Kopřivnice
 Tiba, a.s., Dvůr Králové nad Labem**
 Vítkovice, a.s.
 ZETOR, a.s., Brno
 ZPS, a.s., Zlín

* company entered the program on March 20, 2000

** company declined from the program by the decision of its management

Source: RA

IV.3 Bank Privatization Issues

The year 2000 has been again quite erratic for the Czech banking sector. In February, the privatization of Česká spořitelna to the Austrian Erste Bank Sparkassen was finished, having been preceded by the carve-out of low quality credits of 33 billion CZK in nominal value. Moreover, the Czech government agreed to provide protection against the remaining credit risk on Česká spořitelna's loan portfolio through a ring fencing agreement. The connection of Česká spořitelna and Erste Bank seems to be good as the two banks have a very similar market orientation and business strategy. With Česká spořitelna, Erste acquired a company with a strong position in retail and a large growth potential, but it plans to spend 13.45 billion CZK on restructuring and investment in Česká spořitelna during the period 2000–2002, of which 7.95 billion CZK will go to IT investment, 4 billion CZK to branch restructuring and modernization and 1 billion CZK to human capital enhancing.

Shareholders of Česká spořitelna (as of Oct, 2000)

Shareholder	Share
Erste Bank der oesterreichischen Sparkassen AG	52.20%
Česká pojišťovna, a.s.	9.19%
Municipalities	7.38%
EBRD	5.92%
Institutional investors	23.65%
Other shareholders	1.69%

Source: <http://www.csas.cz/profil.htm>

The privatization of Komerční banka has been postponed by the government due to serious problems (several cases of enormous

illegal activities were uncovered at the end of 1999 and at the beginning of 2000) and as a consequent there has been a change in the bank's management. The expected date of the privatization of this institution is some time in 2001. Four large European banks have been chosen to perform due diligence before submitting their preliminary bids in early 2001: Societe Generale, Credit Agricole, Hypovereinsbank and Unicredito. In February 2000, bad assets worth 60 billion CZK were carved out from Komerční banka's balance sheet. In December additional aid of 20 billion CZK was approved but further bail-out is uncertain. The other two main players on the Czech banking market are ČSOB and Česká spořitelna, who have already had a strong foreign owner and are gaining a time advantage against Komerční banka in the fight for their market shares.

Shareholders of Komerční banka (as of Sep, 2000)

Shareholder	Share
National Property Fund of the Czech Republic	60%
The Bank of New York ADR Department	10.68%
Chase Ireland [Nominees] Limited	1.81%
ČSOB, a. s. – IPB division	1.71%
Chase Nominees Limited	1.46%
State Street Bank and Trust Company	1.22%
Other shareholders	23.12%

Source: <http://www.kb.cz>

IPB, the bank privatized in 1998 to the Japanese Nomura, was facing serious problems with maintaining its capital adequacy

ratio and with deposit outflow in the first half of the year. In order to prevent large losses to the economy, the Czech National Bank imposed forced administration on the bank that was shortly followed by a quick sale of the IPB business to ČSOB (Československá obchodní banka). The prompt sale of the business was rather controversial, as there

was another company interested in the purchase of IPB (Unicredito), but time was the crucial factor as IPB was dealing with the second biggest amount of payments in the economy at that time and any failure could have led to large adverse developments in the economy.

Bank Restructuring Costs

Economic transition in Central and East Europe (CEE) has resulted in a drastic change of functioning principles, objectives and main goals for many sectors in the economy. Commercial banking is, perhaps, one of the most important of them.

Banking during socialism has represented mostly institutions performing an accounting task for government predefined cash flows. It, therefore, was not subject to strict regulatory measures and, even less, competitive pressure. Loans to industrial enterprises were made according to state plan and had little to do with economic efficiency and the ability of the debtor to meet its credit obligations. Not surprisingly, many of the loans have turned out non-performing. However, all the losses were covered from the state budget and the banks management had no reason to care about the quality of the assets under their formal control. From the very beginning of the transformation process this problem has posed a significant threat to the overall success of the reforms. The consensus, achieved among economic experts and government officials, was that the stock of bad loans should be either removed from the balances of the banks or the banks have to be recapitalised. Thus, significant amounts of recapitalisation funds were moved into commercial banking sector. Their size has increased further with the accumulation of so called "new bad loans". In most of these new cases governments have followed the old track of restructuring, namely continuing subsidization of failed banks in one or another way.

One important question that arises from the above short description is "Do governments in CEE spend too much or too little of the budget funds on bank restructuring?" While, of course, there is no straightforward answer to this question due to the complexity and multiplicity of the problem, one potential way of answering it would be explicit comparison of the costs for bank restructuring programs with other developed and developing economies. What follows, therefore, is a short account of the size of so called fiscal costs of bank restructuring programs.

It is important to note that numbers given in the tables below will underestimate the true size of the cost of the banking crisis. It is mostly due to the fact that only fiscal costs, that is direct costs absorbed by the government, are considered. They do not account for the indirect assistance, such as subsidizing the borrower. Private

Cost of bank restructuring around the world (in%)*

Africa

Country	Period	Peak NPL	Cost
Cote d'Ivoire	1988-91		13-25
Ghana	1982-89		3-6
Guinea	1980-83		3
Mauritania	1984-93		15
Senegal	1988-91		17
Tanzania	1987-92		10-14
Zambia	1995		14

Asia and Middle East

Country	Period	Peak NPL	Cost
Bangladesh	1980's-		4.5
Indonesia	1992-	36	2
Israel	1977-83		30
Malaysia	1985-88	33	4
Philippines	1981-87	11	3-13.2
Sri Lanka	1989-93	35	5
Turkey	1982-85		2.5
Turkey	1995		1
Thailand	1983-87	15	1.5

Latin America

Country	Period	Peak NPL	Cost
Argentina	1980-82	12	55.3
Argentina	1994		0.3
Bolivia	1994-		4.2
Brazil	1994-95	11	7.5
Chile	1981-83	16	30-41.2
Colombia	1982-87	25	5
Mexico	1994-95	13	6.5-13.5
Peru	1991	7	0.4
Uruguay	1981-84		31.2
Venezuela	1994-95		17-18

sector costs, which in many cases will be of a significant size, are also not included (such costs, for example can be the deterioration of the values of deposits). Furthermore, fiscal costs do not also describe overall macroeconomic costs of the bank crisis. Examples of these costs can be partial disruption of the credit system. Therefore, represented costs of bank restructuring are only a part of total costs associated with banking failures and bank restructuring programs.

OECD countries

Country	Period	Peak NPL	Cost
Finland	1991-93	9	8-10
France	1991-95		0.6 ¹⁾
Japan	1990's		+\$100 bil.
Norway	1987-92	9	3.3-4
Spain	1977-85		7-16.8
Sweden	1990-93	11	4-6.4
United States	1980-92	4	2.4-3.2

1) in 1994-1995 \$10billion

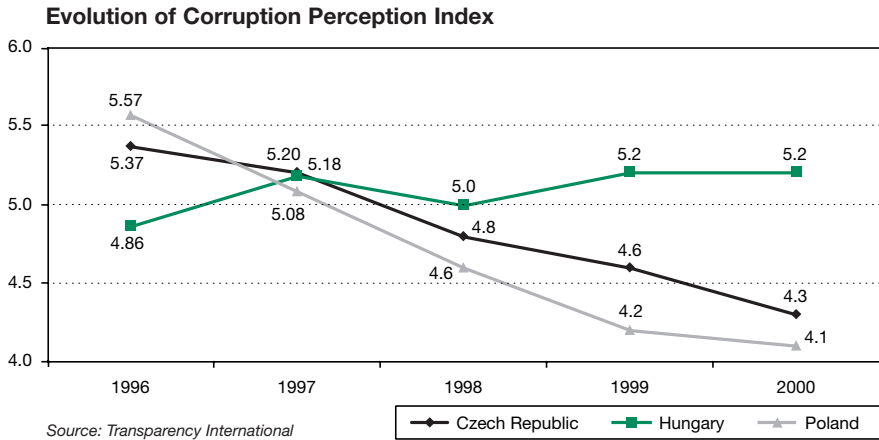
Transition economies

Country	Period	Peak NPL	Cost
Czech Rep.	1991-	31	12
Estonia	1992-95		1.3-1.8
Hungary	1991-95		10-12.2
Kazakstan	1991-93		4,3
Poland	1990's	20	\$1.7bil.
Slovenia	1990's		\$1.3bil.

*Notes: Cost is given as a percentage of GDP in corresponding period, unless otherwise stated; Peak NPL stands for the peak value of non-performing loans as a percentage of total loans

Source: World Bank

IV.4 Business Environment in the CEE



The country corruption perception index (CPI) measures the degree of corruption perceived by business people, risk analyst and the general public and ranges between 10 (highly clean) and 0 (highly corrupt). The state of corruption in the Czech Republic, as measured by CPI, poses a serious problem since no improvement has been observed in the course of transition.

Since the ranking may vary year to year due to different compositions of the sample, the main indicator is the index. The table below juxtaposes the Czech Republic's index to those of Hungary and Poland, also transition countries. In 2000 the index for the Czech Republic is quite close to that of Poland, but not so for Hungary. Indeed, the relatively large gap between Hungary's

Corruption Perception Comparison

Country		1996	1997	1998	1999	2000	Probability of no change, %
Czech Republic	index	5.37	5.2	4.8	4.6	4.3	94.93
	std. error.	1.45	0.47	0.8	0.8	0.9	
Hungary	index	4.86	5.18	5	5.2	5.2	99.97
	std. error.	1.48	1.29	1.2	1.1	1.2	
Poland	index	5.57	5.08	4.6	4.2	4.1	90.53
	std. error.	1.91	1.46	1.6	0.8	0.8	
Probability that countries' CPIs are equal, %		99.11	99.96	99.76	90.05	83.41	99.83

Source: Lízal, M. and Kočenda, E.: *Corruption and Anticorruption in the Czech Republic*, WDI Working paper 345.

index and those of the other two countries brings the probability of all scores being equal down to a mere 83%, a fact unparalleled in previous years when the difference between countries' scores was not statistically significant.

Looking at the Czech Republic alone, the pattern of development of CPI is quite disturbing. Over the last four years the index

fell from 5.37 to 4.3. Although this change is not statistically significant, the constantly declining pattern for the Czech Republic is rather alarming, especially when measured against Hungary's rising pattern. And so, while the CPI time series is rather short to give a statistically decisive answer, the observed pattern signals a clear admonition.

IV.5 Czech Capital Markets

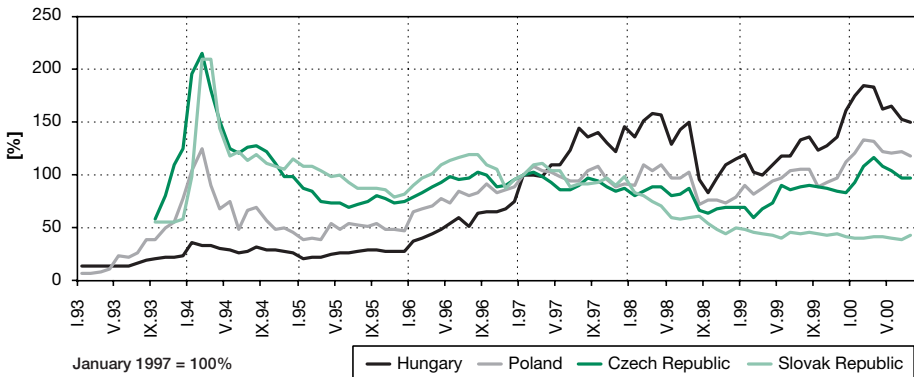
The development of the Czech equity market was very rapid at the outset, as about 1,700 companies were floated as a result of coupon privatization. The regulation of the market, however, lagged significantly behind. Insider trading, price manipulation, fraud in the investment funds industry, and abuses of minority shareholder rights eroded investor confidence to a large extent. In recent years, regulation has improved somewhat, but enforcement still appears to be rather weak. Although the traditional price indicators suggest that securities are correctly valued and that the equity prices are to some extent integrated with international equity markets, these indicators do not capture the divergence of security prices across different marketplaces.

The Economist (April 1996) and the Wall Street Journal (May 1996), among others, reported on "dealing in Prague as a losers' guide to investment," and characterized the Czech capital market as "a muddy market" and as "anarchy to the outsider, sweet profit to those in the know." More recently, The Economist (March 1997) quoted an investor as saying "... [the government should] fight the perception that the Prague stock exchange is just a vehicle for select insiders

to enrich themselves at the expense of the ordinary shareholder." In its 1999 Country Study, the World Bank points out that "The capital market needs to be further strengthened to recover credibility and to be a real source of corporate financing" (Summary Report, page 17). It is also illustrative that the Prague Stock Exchange has been unable to become a member of the Federation of European Stock Exchanges, even though both Budapest and Warsaw Stock Exchanges are associate members of this federation.

The over-reliance on the banking sector to provide credit to enterprises in the Czech Republic raises questions of the role of capital markets in enterprise restructuring and, consequently, in industrial production growth. The enterprises in the Czech Republic have been unusually highly leveraged and established significant links to the respective banks, which can become active shareholders and influence the decision-making in the enterprises. Since the opening of the Prague Stock Exchange (PSE) and RM-System (an over-the-counter system) the tradable equity markets have been a negligible source of finance for industrial enterprises, and remained illiquid for all but a handful of shares.

Stock Market Indices



During 1999 the PSE created conditions which enable a “New market” to operate. The New market, based on a 1996 agreement on New markets, should be an alternative for dynamic young companies which have a viable business plan and want to finance growth via capital market. Let us note that until the end of 2000, none of this type of company was trading on the New market.

The high number of securities, traded in varying volumes and frequencies, market capitalization, varying information disclosures, and the non-transparency of the market in general, resulted in several attempts to restructure the PSE:

1. **Segmentation.** New segments of the PSE were introduced on September 1, 1995, when the PSE market was split into three main tiers. In addition, the so-called New

Listing Requirements for Companies on the PSE (2000)

Trading Group	Requirements*
Tier one	Public offer > 200 mill. and 20% of the total Duration of the business activities at least 2 years
Tier two	Public offer > 100 mill. and 15% of the total Duration of the business activities at least 2 years
Tier three	To be set by the Exchange Committee for Exchange Trades
New market	Registered capital > 10 mill. Market capitalization > 20 mill. Public offer > 15% Duration of the business activities at least 1 year

All figures are in CZK

* Requirements vary for investment trusts and units

Source: PSE

market was introduced in 1999, but no firm belongs to this group. The listing requirements for each trading group are summarized in Table 1.

2. **Delisting.** The following criteria were applied: volume of trade, market capitalisation, number of days traded per year. By September 1997, 1303 companies had been de-listed from the PSE in the following steps: March 1997 – 100, April 1997 – 391, June 1997 – 509, September 1997 – 303. Recently, less than 150 companies were trading on the PSE.

3. **Dealers Market.** The SPAD system supporting the market for shares and bonds is a trading segment based on the exploitation of the function performed by market makers maintaining continual quotations of bid and ask prices for selected issues. Trading under SPAD is divided into two parts: the open phase with an obligatory quotation of prices by appointed market makers; and the closed phase without an obligatory quotation of prices by appointed market makers. Traders wishing to conclude a trade in one of the SPAD securities has the option of choosing either another trader as its counter-party or the market maker. Currently only blue chip companies are included under the SPAD system.

It was expected that the above introduced market segments and trading groups

(1), supported by delisting (2) will increase the transparency of the market, attract foreign investors and significantly increase liquidity. Probably the main reason why this attempt failed was the fact that shares were quite heavily traded off-market. The SCP Control Department noted that the vast majority of off-market trades were actually settled by registered brokers. Therefore, since mid 1997 the PSE members were not authorized to conduct trades at the SCP. Nevertheless, this motion did not increase liquidity at the central market either. The only change observed was that a significant part of off-market transactions turned into direct trades, in other words, transactions occurred in an off-market nature without any influence on the central market price.

The introduction of a market-maker system (SPAD) for the most liquid shares during 1998 has substantially increased trading on the central floor of the Prague stock exchange. Nevertheless, the Prague Stock Exchange (PSE) and RM-System (RMS) is yet to provide transparent trading systems (a consolidated price display, co-ordinate settlement and freedom in order-routing) and to assure unified pricing. Despite several reforms and other proposed changes by the World Bank missions 1998 and 2000 the Czech capital market does not behave as a standard market should.

The Trading Volume on Registered Capital Markets (CZK billion)

Trading volume	1993*	1994	1995	1996	1997	1998	1999	2000
PSE Central market	2.0	16.0	22.0	28.8	22.1	72.1	142.3	245.8
PSE – direct and block trades	7.0	46.0	173.4	364.4	657.5	788.1	1,045.2	977.0
RMS Central market	2.9	4.4	5.8	9.5	7.6	7.5	6.4	4.9
RMS – direct and block trades	n. a.	n. a.	19.4	90.9	151.1	458.8	103.7	55.8

* April–December (PSE), July–December (RMS)

Sources: PSE, RMS

Do Stock Markets Promote Economic Growth?

(Based on Filer, R.K., Hanousek, J. and Campos, N.: Do Stock Markets Promote Economic Growth? CERGE-EI Working Paper No. 151, 2000)

One of the most enduring debates in economics is whether financial development causes economic growth or whether it is a consequence of increased economic activity. Early in the 1920s, Schumpeter argued that technological innovation is the force underlying long-run economic growth and that the cause of innovation is the financial sector's ability to extend credit to the "entrepreneur." Joan Robinson, on the other hand, maintained that economic growth creates a demand for various types of financial services to which the financial system responds, so that "where enterprise leads finance follows."

Several possible mechanisms for a connection leading from equity market development to growth have been advanced. Among these are:

- the fact that a more developed equity market may provide liquidity that lowers the cost of the foreign capital essential for development, especially in low income countries that cannot generate sufficient domestic savings.
- the role of equity markets in providing proper incentives for managers to make investment decisions that affect firm value over a longer time period than the managers' employment horizons through equity-based compensation schemes.
- the ability of equity markets to generate information about the innovative activity of entrepreneurs or the aggregate state of technology.
- the role of equity markets in providing portfolio diversification, enabling individual firms to engage in specialized production with resulting efficiency gains.
- the fact that diverse equity ownership creates a constituency for political stability, which, in turn, promotes growth.

Empirical investigations of the link between financial development in general and stock markets in particular and growth have been relatively limited. In our study we were able to obtain consistent data for 70 countries for varying time periods beginning either in 1985 or the first year that the International Finance Corporation (IFC) reported data for the market and ending in 1997.

Stock market development is measured by two variables: (1) turnover velocity, and (2) the change in the number of domestic shares listed. While we initially analyzed whether market capitalization "causes" growth, interpretation of these results is particularly problematic since efficient markets will reflect future earnings growth in current prices. Since earnings growth should be closely related to overall economic growth, this will make it look like increases in market capitalization preceded and, therefore, "caused" economic growth even if the true link ran in the reverse direction. We must, thus, find indicators of market development that are independent of stock prices. Given that the role of a market is to reallocate capital to its most productive

uses, the best such indicator may be the turnover velocity (the ratio of turnover to market capitalization). As a secondary measure, we also examine the annual percentage increase in the number of listed companies as an indication of financial deepening.

Since it is likely that the impact of stock market development on growth will vary across levels of development, we provide estimates of the causal connection for countries divided into two groups: mature and emerging markets according to IFC categories. The results are similar if we define the classifications more narrowly.

In summary, using a large number of countries with varying economic conditions and levels of stock market activity, we find:

- little relationship between stock market activity and future economic growth, especially for the lower income countries in our sample.
- evidence suggesting that stock market activity **does** cause appreciation in currency rates.

The results of our research suggest that while a developed equity market may play a number of roles in a modern economy, none of these appear to be **essential** for economic growth. Where such a market does not exist, alternative channels appear to be equally effective (or ineffective) in allocating capital in growth promoting ways.

Informed Trading in the Czech Republic

(Based on Hanousek, J. and Podpiera, R.: How Important is Informed Trading for the Bid-Ask Spread: Evidence from an Emerging Market, CERGE-EI Working Paper No. 168, 2000)

Many complaints have surfaced in recent years about the functioning of the Czech equity market. One of the most serious complaints has been that the knowledge of private information is being abused by informed traders. While it is perhaps possible to gather some evidence of individual cases when some investors used nonpublic information to enrich themselves – for instance, prior knowledge of publicly announced financial data of large Czech companies – empirical evidence on the overall extent of this problem has been missing. Also, if one considers the activity of the Czech Securities and Exchange Commission (SEC) in this area as an indication of the extent and importance of informed and insider trading, one would have to conclude that this problem in fact does not exist. There has not been a single case in which the SEC has uncovered and proved insider trading.

New data from the SPAD trading system allows us to estimate the extent of informed trading in the Czech Republic. At this point we need to stress that what we are estimating is the extent of informed, not insider, trading. Informed trading is a broader category than insider trading in that an investor may obtain and use nonpublic information in not only illegal behavior, but also in a completely legal way. For instance,

this might be the result of an investor's superior ability to analyze public information or his fast reaction to new information releases. In the case of insider trading, one side of the trade has nonpublic information, but it was obtained and is used in an illegal way. It is virtually impossible to estimate the extent of insider trading directly, as one would need to know not only what information investors possess at a given point in time, but also how they obtained it. All we can observe and estimate is whether there was some new information that motivated trading and that became gradually incorporated into prices.

Our results suggest that the extent of informed trading at SPAD – the most prestigious market segment of the Prague Stock Exchange – stands at 32%. This implies that almost one-third of all trades are motivated by knowledge of private information and that one of the trading parties has an informational advantage. Such a result is certainly disappointing, at least for those who believed that the most liquid Czech stocks are not plagued by informed trading. One can only speculate about the situation of other less liquid shares.

The model we use is based on the assumption that every day there might be new information that can impact the price of a company's shares. If such information exists, some investors learn it sooner than others – either by chance or as a result of illegal activity. These informed investors then have a reason to come to the market and to try to capitalize on their information. There also exist uninformed traders that come to the market due to other reasons for instance, the need for current liquidity. On markets that are operated by market makers, it is possible to obtain data on individual trades and to determine whether these trades were initiated by the buyer or the seller (depending on the price at which the trade was executed – either above or below the average of ask and bid quotes). By using the number of buys and sells in each trading day, one can estimate the probability that new important information came to the market, whether it is was good or bad news, and also the arrival rates of buyers and sellers. These parameters can be utilized to estimate the probability that a trade is motivated by knowledge of nonpublic information.

We estimated this model for all eight shares traded in the SPAD system from the beginning of August till the end of November 1999. Thus for each stock, we had 86 trading days – there were 14,586 trades during this time period altogether, on average almost 2,000 trades for each share. The estimate of the share (or from the point of view of an individual share, the probability) of informed trading varied from 25% in the case of České radiokomunikace to 48% in the case of IPS and averaged 32%. While in the case of actively traded shares like Český Telecom or ČEZ, new important information was coming to the market almost every other day; in the case of IPS or RIF, new information appeared only once every five and nine days, respectively. The frequencies of information arrival we estimate correspond to our broad definition of new information – it can be news on the development of profits, a new contract

won by the company, but also private information on a large buy or sell international client order at a brokerage house. With this definition, we would expect that there will be more news for shares that are more liquid and closely followed by analysts. Our estimates also suggest that the proportion of good and bad news was approximately equal which again corresponds to expectations.

Estimates of the Model*

Company	Probability of Information Event	Probability that the News Will Be Bad	Probability of Informed Trading
Česká spořitelna	0.31	0.59	0.31
České Radiokomunikace	0.31	0.53	0.25
ČEZ	0.48	0.50	0.32
IPS	0.22	0.38	0.48
Komerční banka	0.33	0.38	0.26
RIF	0.11	0.22	0.34
Český Telecom	0.48	0.52	0.28
Unipetrol	0.31	0.77	0.30
Average	0.32	0.49	0.32

* Note: Data are from August through November 1999

The 32% estimate of the probability of informed trading appears to be large and a comparison with developed markets confirms this impression. In 1996, Easley et al. used the same model for shares on the NYSE that were divided into deciles according to their liquidity. Their estimates varied between 16% and 22% for the first and eighth decile, respectively. It should be noted that the shares in the eighth decile are considerably less liquid than the shares in our sample. Informed trading is thus more widespread in the Czech Republic compared to the NYSE, even if we take into account the differences in liquidity.

To sum up, the fact that little attention has been recently devoted to the problem of informed trading does not mean that the problem does not exist. Rather, it appears that neither domestic nor international investors are interested in the Czech equity market. The most important task for all institutions that deal with the Czech capital market is to renew confidence in the market. An effort to deal with the problem of informed and insider trading might be a good start. The SEC, for instance, might consider starting to check the order flow automatically – a practice that is standard in most developed markets – in order to monitor any obvious problems and unusual events.