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"Corporate Governance and Stock Market Performance in Central and Eastern Europe: A Study of nine countries, 1994-2001"

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CORPORATE GOVERNANCE AND STOCK MARKET PERFORMANCE IN CENTRAL AND EASTERN EUROPE: A STUDY OF NINE COUNTRIES, 1994 -2001

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Abstract

This paper offers analysis of corporate governance issues behind the stock market performance (stock returns and activity) in nine Central and Eastern European (CEE) countries: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. Over the period June 1994 – June 2001, on average the CEE stock markets have had *lower returns* and *higher risk* than developed markets. This is explained by the negative influence of the two *crisis* years (1995 and 1998), the "flight to quality" effect. Among other reasons, there are cases when prices have been artificially kept down by the controlling owners in order to abuse the minority shareholders. The evidence shows that the *enforcement of law* matters more than the quality of law on the books, which is in line with previous research (Pistor et al, 2000). I find that the effectiveness (enforcement) of financial regulations has the highest explanatory power of stock market returns in the sample countries. The protection of minority shareholders (*Legal index*) has a significant impact on market activity, measured by market turnover to market capitalization ratio.

Keywords: *corporate governance, ownership concentration, transition economies*

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Introduction

After ten years of transition we have learned that the role of corporate governance is important in the development of capital markets in transition economies. Recent research has found that the level of stock market development may be determined by the quality of shareholder protection and especially law enforcement[1].

This paper studies the importance of corporate governance issues (rule of law, enforcement, minority shareholder protection, etc.) in determining the level of stock market performance (stock returns and liquidity). This research complements Pistor et.al. (2000) who analyse the *demand* side of capital. Here I focus on the *sypply* side of capital, i.e. the potential returns and risk faced by an outside investor. Our results show that from all the available corporate governance measures, the *effectiveness* of financial regulations index performs the best in explaining *stock market returns* in the sample CEE countries. *Stock market activity*, measured by equity turnover as a share of market capitalization, is significantly dependent on the level of *minority shareholder protection* (in laws) .

Moreover, this report provides an overview of the development of stock markets during the first ten years of transition. The evidence reveals increasing cross-country return correlation, ownership concentration, as well as lower average returns as compared to the developed stock markets.

The chosen countries should be of interest to European investors and policy makers. In a companion paper (Pajuste & Hogfeldt, 2000) we analyze the influence of macroeconomic and financial risk factors in five CEE countries – Czech Republic, Estonia, Hungary, Poland and Slovenia – which were, previously, having the "fast-track" status for joining the European Union (EU). Currently, the line between front-runners and laggards is not as clear anymore. Other CEE countries have opened accession talks and theoretically could be as fast as the first group if necessary policy adjustments are made. Therefore, Latvia, Lithuania, Slovakia and Romania are added.

[1] Many papers on these issues have been provided by "the Gang of Four", i.e. Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (hereafter referenced as LLSV). Significant contributions on governance issues in transition economies have been made by, among others, Katharina Pistor (1999, 2000), Jack C.Coffee, Jr (1999).

CEE Stock Market Development, 1994-2001

The Beginning of Stock markets in CEE

Slovenia, Hungary and Poland were the first to open their stock markets in spring 1990, summer 1990 and spring 1991, respectively. The Czech Republic, Slovakia and Lithuania opened their stock exchanges in 1993. The trading on Latvian and Romanian stock exchanges started in mid 1995, while Estonia opened up the stock exchange only in spring 1996. See Exhibit I for the development of national stock market indices over time (annex).

The emergence of stock markets has been associated with the privatization process since most of the listed companies have gone through privatization. The privatization method has considerably influenced the number of listed companies. Among the nine CEE countries we can distinguish two major types of privatization method[2]. The first method, used in Czech and Slovak Republics, Lithuania and Romania[3], was the mandatory listing after mass privatization. These countries are characterized with large amount of, often illiquid, listed companies in the beginning and a decrease of number of listed securities afterwards. Once the markets became more established, illiquid shares have been de-listed due to more stringent regulatory framework.

Table 1: Number of listed securities (total)

	1994	1995	1996	1997	1998	1999	2000	2001 (6)
Czech Republic	1028	1716	1670	320	304	195	151	135
Hungary	40	42	45	49	55	66	60	58
Estonia	0	0	19	31	29	24	21	16
Latvia	0	17	34	51	68	67	63	66
Lithuania	183	351	460	667	1365	1250	1188	1197
Poland	44	65	83	143	198	221	225	230
Romania	0	9	17	75	126	126	115	na
Slovakia	521	850	970	918	833	830	866	na
Slovenia				85	92	134	154	160

Sources: Homepages of national stock exchanges

[2] See Claessens et al (2000) on more detailed discussion of privatization methods in relation to stock market development in transition economies.

[3] The number of listed securities in the Bucharest stock exchange (BSE) was not very high (as compared to other countries going through Mass Privatization Program). The reason was that only around 2% of the Mass Privatization Program companies were listed on the BSE, the rest of the privatized companies were listed on the Rasdaq, the Romanian OTC market. See Earle et.al. (2001).

The rest of the countries – Estonia, Hungary, Latvia, Poland[4], and Slovenia – chose to start with a small number of listed shares, which was increasing as the markets develop. The shares listed were usually voluntary initial public offerings. Table 1 shows the development of number of shares in the CEE stock markets.

Market Capitalization

By the end of 2000 the stock market capitalization was the highest in Poland (see Table 2), followed by Hungary and the Czech Republic. The rest of the stock markets in the region are of a negligible size, partly due to the small size of the country (Estonia, Latvia, Lithuania, and Slovenia) or poor economic development and regulatory framework (Romania and Slovak Republic).

Table 2: Market capitalization at the end of the period, in mn USD

	1996	1997	1998	1999	2000
Czech Republic	18077	12786	12045	12956	11391
Hungary	5273	14975	14028	16433	11926
Estonia	728	1139	492	1795	1733
Latvia	151	337	688	880	590
Lithuania	1253	2173	2959	3177	3052
Poland	8390	12135	20461	29882	31399
Romania	61	632	357	317	366
Slovakia	5770	5292	4117	3568	3268
Slovenia	663	1625	2450	2880	3101

Sources: Homepages of national stock exchanges

Even the largest CEE stock exchanges are relatively small on a world scale, and if they do not merge or cooperate this can be an obstacle for further development. A large foreign institutional investor is simply too big to spend resources on analyzing markets/ companies where it could become the main owner of a listed companies just in one deal. Some investment funds, for example have a minimum investment size of USD 1 mn which could easily be a controlling stake in many listed companies in these countries.

If we look at the market capitalization as a share of GDP (see Table 3), the average figure is 19%. There are only four countries above the 20% level. The highest figure is for Estonia (35%) which is close to the averages in the other emerging

[4] Poland had some mandatory listings of mass-privatized companies and National Investment Funds. See Claessens et al (2000) and references thereafter.

markets (e.g. Brazil, Mexico, Turkey), but still far below the developed markets (e.g. US – 150%, Germany – 50%, Sweden – 100%)[5].

The development of market capitalization again reflects the chosen privatization method. In countries that followed more gradual privatization, equity market capitalization increased slowly (e.g. Poland, Hungary), while in countries with rapid mass privatization, market capitalization jumped to very high levels and then decreased due to de-listing of illiquid companies (e.g. the Czech Republic).

The downward sloping capitalization figures starting from year 2000 have several explanations (see Exhibit II). First, it has something to do with overall stock market downturn in the world. Second, there is an evidence of continuous de-listings in the transition economies due to stricter listing requirements (e.g. the minimum capital requirement, information disclosure and transparency). The low number of initial public offerings[6] (IPOs) means that the companies still do not believe in the stock market as a real source of external financing. Moreover, as bank loan rates go down, companies prefer to use debt financing, which is cheaper. There is an important indirect cost considered by companies. Listed companies have to provide much more information on a regular basis than unlisted ones, thus being subject to more stringent supervision and scrutiny by the public. As long as this 'discrimination' persists, listed companies will be in an inferior position to their unlisted competitors.

Finally, as we will discuss in the coming paragraphs, there is a tendency of ownership concentration. Most of the countries have already introduced mandatory bid rules[7], which here implies that a listed company may become 100% owned by one owner, and as a result leave the stock exchange (because one of the listing requirements is that a certain minimum of shares (e.g. 25%) must be in public circulation).

[5] The comparative data come from Claessens et al (2000).
[6] Most of the countries in the sample still have not had a single IPO. Poland has had in total 47 IPOs by the end of 2000, which is by far the largest number among CEE countries.
[7] An obligation to offer to buy back shares from minority shareholders once a certain threshold is passed. E.g. in Hungary this threshold is 33%+1 share (calculated as percent of voting power), in Latvia – 50%.

Table 3: Selected facts about CEE stock markets (as of end 2000)

Country	Local index	Number of shares traded in the first and second tier[8]	Share market capitalization (USD mn)	Share market capitalization (as % of GDP)
Czech Republic	PX50	64	11 391	22 %
Estonia	TALSE	21	1 789	35 %
Hungary	BUX	60	11 926	24 %
Latvia	DJRSE	22	1 068	9 %
Lithuania	LITIN G	56	3 052	28 %
Poland	WIG	209	31 398	19 %
Romania	VAB	115	366	1 %
Slovak Republic	SAX	38	3 285	16 %
Slovenia	SBI20	40	3 101	16 %

Sources: Homepages of national stock exchanges

Liquidity

The equity market turnover reflects the actual liquidity of the market in question. In turn, market capitalization includes all the listed companies and may be inflated especially in the countries which followed mass privatization with mandatory stock market listing. Therefore, market turnover expressed in US dollars or as a share of market capitalization is a more relevant measure of equity market activity.

As we can see from Table 4, the highest market turnover in 1998-2000 has been in Poland and Hungary. These figures also reflect the deteriorating situation in the Czech market, which started as the best performer in 1995-1996, was caught by Hungary and Poland in 1997 and decreased rapidly hereafter. The main reason for the Czech market downfall was the lack of adequate corporate governance mechanisms and shirking by closed insider groups and Investment Privatization Funds' managers. We will return to this discussion in the section on corporate governance issues.

Table 4: Market turnover (equity market), in mn USD

	1995	1996	1997	1998	1999	2000
Czech Republic	3 656	8 424	7 070	4 806	4 676	6 621
Hungary	349	1 615	7 474	16 041	28 826	24 317
Estonia	0	288	1 681	1 031	489	573
Latvia	0	12	85	85	43	276
Lithuania	37	47	239	223	309	202
Poland	2 781	5 543	7 951	8 918	23 833	41 518
Romania	0	5	332	193	97	85
Slovakia	na	na	na	na	486	540
Slovenia	345	400	547	810	917	649

Sources: Homepages of national stock exchanges

[8] The first, second and third tiers are also called the official, secondary and free lists or markets.

Looking at market turnover as a share of market capitalization we can see that again only Hungary and Poland has above 100% turnover/ capitalization ratio (see Table 5). The Czech market has reached 58% in 2000, but the rest of the countries in the sample have the equity market turnover below 50%.

Table 5: Market turnover (equity market), in % of market capitalization

	1995	1996	1997	1998	1999	2000
Czech Republic	23	47	55	40	36	58
Hungary	15	31	50	114	175	204
Estonia	0	40	148	210	27	33
Latvia	0	8	25	12	5	47
Lithuania	10	4	11	8	10	7
Poland	61	66	66	44	80	132
Romania	0	8	52	54	31	23
Slovakia	na	na	na	na	14	17
Slovenia	67	60	34	33	32	21

Sources: Homepages of national stock exchanges, author's calculations

It is interesting to observe the increasing role of debt market. Table 6 shows the decreasing share of equity (i.e. increasing share of debt[9]) market contribution in the total market turnover. The average stock market returns in the CEE countries (see Table 8), with an exception of Hungary, has been below the returns on government securities. Naturally, the investors are using the traditional 'safe heaven' strategy widely known in the western markets, i.e. in times of turbulence and instability investors reduce the holdings of stocks and increase fixed income instruments (such as T-bills, government bonds and corporate bonds).

Table 6: Share of equity market trades in total turnover, in percent

	1996	1997	1998	1999	2000
Czech Republic	64	36	20	14	22
Hungary	37	61	55	57	49
Estonia	85	68	43	42	66
Latvia	94	100	100	86	30
Lithuania	37	65	60	54	46
Poland	65	80	87	89	73
Romania	na	na	na	na	na
Slovakia	na	na	na	11	10
Slovenia	na	81	77	63	54
Average	***63.6***	***70.1***	***63.2***	***51.9***	***43.7***

Sources: Homepages of national stock exchanges, author's calculations

[9] With exception of Poland the capital markets in the sample countries consist only of two security groups - equity and debt issues. Poland, especially in the later years, has quite active derivatives (futures) market.

Increasing ownership concentration

An empirical study on ownership structure in the CEE countries reveals a strong ownership concentration (see Table 7). Using the available information on the voting power held by the largest block (owner or group of owners voting in concert) in the listed companies, we observe a median voting power of 44%. This number is close to or slightly below the respective figures observed in continental Europe (e.g. Belgium – 55.9%, Austria – 54.1%, and Italy – 52.3%)[10]. The second block in Europe is much smaller. The Netherlands has the largest second owner (median holding – 7.7% of votes). Meanwhile, the sample CEE countries have median holding of the second block equal to 14.7% of votes.

Since most of the countries use one-share one-vote mechanism, the capital stakes (rights to dividends) are mostly the same as voting power. Moreover, pyramidal structures and cross-company linkages are really hard to observe and prove in the CEE markets unless owners themselves report their ultimate holding. A typical example, the largest owner is a corporation and the second largest – an insider (CEO or manager), who owns a direct or indirect stake in the abovementioned corporation. Unless the interest is clearly visible or the owners report the linkages, the minority shareholders do not explicitly see the joint voting power. Therefore, we can presume that the actual ownership concentration is even higher.

Table 7: Voting power held by the largest and 2nd largest owner, in percent

		Largest owner voting power			2nd largest owner voting power		
Country	**Year**	No. Comp	**Median**	Mean	No. Comp	**Median**	Mean
Estonia [1]	**99/00**	21	**52.6**	53.2	18	**12.6**	14.5
Latvia [2]	**99/00**	43	**51.3**	51.0	42	**7.7**	9.6
Lithuania [3]	**99/00**	46	**42.2**	46.3	34	**11.3**	16.9
Czech Rep. [4]	**2001**	57	**52.6**	61.1	43	**25.3**	26.1
Hungary [5]	**2000**	64	**43.5**	44.7	64	**18.0**	18.6
Poland [6]	**2000**	210	**39.5**	44.6	210	**10.4**	15.6
Romania [7]	**2000**	115	**53.0**	53.4	86	**16.0**	16.5
Slovakia [8]	**99/00**	34	**39.4**	43.8	29	**18.8**	19.1
Slovenia [9]	**2000**	136	**22.3**	27.44	136	**12.13**	13.35
Average			***44.04***	*47.3*		***14.7***	*16.7*

Sources: *"Corporate Governance and Disclosure in the Accession Process"* (ACE Project, Contract No. 97-8042-R), 2001. Contributing authors: [1] [2] [3] [8] Olsson and Alasheyeva; [4] Olsson and Brzica; [5] [7] Earle, Kaznovsky, Kucsera and Telegdy; [6] Dzierzanowski and Tamowicz; [9] Gregoric, Prasnikar and Ribnikar.

Why do corporate owners choose to concentrate their power? One of the reasons is to enjoy private benefits of control at the expense of minority shareholders. Gaps in

[10] See Becht and Mayer (2000).

the regulatory framework and poor enforcement mechanism in many cases has lead to a *"winner-take-all"* situation[11], meaning that only the controlling owners have some influence over the managers and company policy.

Once minority shareholders loose the confidence and patience to stay with the company they sell their shares to the controlling group, usually at deflated prices. The company needs additional capital for development. Since it is hard to attract new minority shareholders or to make a public offer, the existing owners have to provide private capital. To inject the private capital, the potential owner usually requires some sort of control over the operations and strategic decisions, because exit is not so easy. Moreover, gain in terms of share price appreciation is hard to expect, therefore the only way to gain from the investment is dividends or selling the company (or ownership block). Dividend decisions can be influenced only if the owner has a say in the management board. And to sell the shares, it is more attractive to have a significant block of shares (together with control benefits). An instructive example is the situation in the Czech and Slovak Republics where investment funds made their money on collecting blocks in the off-market trades.

Lower average returns

Table 8 shows analysis of the returns on nine local stock indices and compares these with other emerging and developed markets[12]. Over the last 7 years on average the local stock market indices in nine CEE countries, as well as the composite emerging market index (MSCI Free), have had *lower average returns* than developed markets. Hungary is the only CEE country that has been close to the World index. Romania has been the worst performing country, with a negative average monthly return (in USD) of –3.8%, primarily attributable to the local currency depreciation.

[11] This term was used by Coffee (1999) when he described the situation in transition economies – initially dispersed ownership but under a legal regime intended to accommodate concentrated ownership.

[12] Moscow Times index for Russia, MSCI Emerging markets Free and JP Morgan Emerging Markets bond index, EMBI+, MSCI World index, MSCI Europe index and DAX for Germany.

Table 8: Comparison of country index (USD) returns, in percent

	Total returns (in USD)			Total local currency depreciation			Average monthly returns (in USD)	Std. deviation
	Whole period	Before crisis	After crisis	Whole period	Before crisis	After crisis	Whole period	Whole period
Czech	-91.1	-49.0	-42.2	31.7	5.8	25.9	-1.07	8.51
Estonia	0.2	24.6	-24.5	33.7	7.8	25.9	0.00	13.54
Hungary	44.0	92.3	-48.4	102.5	74.1	28.4	0.52	10.78
Latvia	-1.2	94.7	-95.9	14.1	8.2	5.9	-0.02	14.46
Lithuania	-9.5	39.0	-48.4	0	0	0	-0.14	11.88
Poland	1.5	-10.8	12.3	57.5	42.6	14.9	-0.50	12.38
Romania	-251	-94.5	-156	241.5	121.0	120.5	-3.80	13.50
Slovakia	-113	-66.8	-46.3	50.4	14.4	36.0	-1.79	7.30
Slovenia	-54.3	-7.0	-47.4	66.0	22.9	43.1	-0.64	7.66
Russia	53.1	-3.8	56.8	272.2	118.8	153.5	0.66	21.13
MSCI Free	-27.9	-29.1	1.2				-0.33	7.65
EMBI	94.2	66.3	27.9				1.11	5.56
Average Emerging							**-0.50**	**11.20**
World	56.3	56.1	0.2				0.66	4.05
US	98.7	89.8	8.9				1.16	4.40
Europe	63.1	81.1	-18.1				0.74	4.14
Germany	70.7	93.6	-23.0	24.9	7.9	17.0	0.83	5.76
Average Developed							**0.85**	**4.59**

Notes: The country index returns are represented with the following indices: PX50 (Czech), TALSE (Estonia), BUX (Hungary), DJRSE (Latvia), LITIN-G (Lithuania), WIG (Poland), Vanguard VAB (Romania), SAX (Slovakia), SBI20 (Slovenia), Moscow Times (Russia), MSCI Emerging Free (Emerging markets), JP Morgan Emerging Markets bond index (EMBI+), MSCI World (World), MSCI Europe, USD based (Europe) and DAX, USD based (Germany). As crisis we denote the Russian crisis in August 1998, i.e. "before crisis" means from June 1994 till July 1998, and "after crisis" means from August 1998 till June 2001

This finding contradicts the common emerging markets characteristic: high risk associated with higher average returns. Other studies on emerging markets have shown high average returns due to the survivorship bias, as most studies on emerging markets use emerging market indices composed by international institutions, e.g. International Financial Corporation (IFC) and Morgan Stanley Capital International (MSCI). When constructing these indices, it is common to choose countries and stocks that have performed best over recent years and then backtrack the returns. The local benchmark indices include more stocks and thus represent a larger share of market capitalization.

One explanation for lower returns again goes back to the ownership concentration and minority shareholder expropriation issues. If we believe that there are private benefits of control in the CEE markets (tunneling of resources to related companies or pure shirking by controlling party), the controlling owners are not interested in share price appreciation. Rather, the opposite could be true.

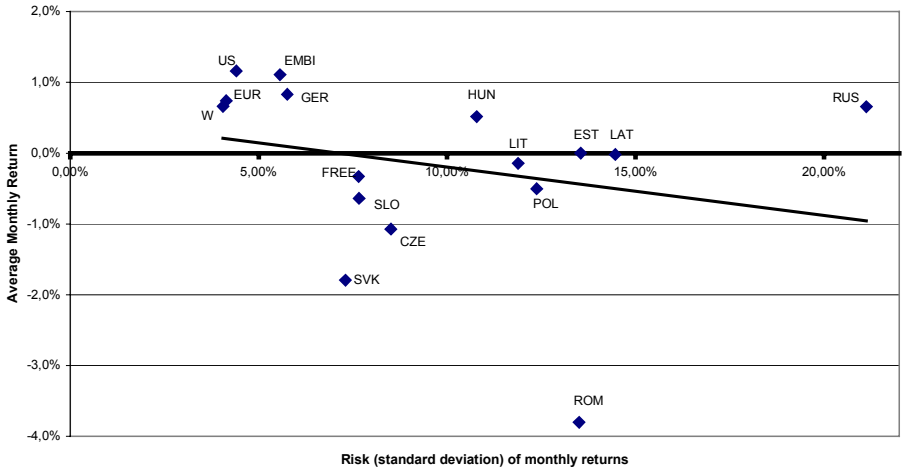
An illustrative example is a Latvian company "Ventspils Nafta" operating primarily with transit and storage of oil products. The largest owner (47% of capital) is a private company, LNT, also operating in oil business. The second largest owner is the state (43.6%), which will sell its shares in the nearest future. Moreover, there is an agreement that 5% of the company capital (currently owned by the state) is reserved for the largest owner, LNT. As a result, the share price is artificially kept below the true value (market price of equity currently is only 30% of the book value of equity), because the largest owner will have to buy the promised 5% at the stock market price on the date of the deal.

Higher risk

As expected, CEE markets are associated with higher risk (standard deviation). The highest risk has been observed in Latvia, with standard deviation of monthly returns equal to 14.5%, and the lowest in Slovakia (7.3%). Thus, remarkably, we see a negative relationship between risk and return across a selection of emerging and developed markets.

Exhibit III: Risk-return combinations of the stock index returns (averages) over the period June 1994 – June 2001

Abbreviations: US – S&P 500, GER – DAX, EUR – MSCI Europe, W –MSCI World, EMBI – JP Morgan Emerging markets bond index (EMBI+), FREE – MSCI Emerging markets Free, HUN – Hungarian BUX, SLO – Slovenian SBI20, CZE – Czech PX50, LAT – Latvian DJRSE, LIT – Lithuanian LITIN-G, ROM – Romanian Vanguard VAB, SVK – Slovakian SAX, EST – Estonian TALSE, POL – Polish WIG, and RUS – Russian Moscow Times index (all indices are expressed in USD terms)



Analyzing the risk-return relationships for each of the six full years (1995-2000), Exhibit IV (see annex), the slope is positive in 1996, 1997, 1999 and 2000, but negative in 1995 and 1998. The explanation may be that during the two years of severe crisis, there is a "flight to quality" effect - meaning that the investors move money out of emerging markets and invest in safe-haven countries, like the US and Western Europe. This tendency, therefore, increases the demand for safe-haven stocks, and naturally the stock returns in those countries rise. In the other years, the risk–return relationship reverts to the expected higher return – higher risk mix.

High correlation among CEE markets and Europe

The correlation of monthly returns between the nine emerging markets as well as the average correlation of each of the nine CEE country returns with the MSCI world index, MSCI Europe index and Emerging Markets Free MSCI index (all USD based) are presented in Table 9. Higher correlation between the markets is usually taken as a measure of the cross-country integration level, i.e. if the correlation is higher the markets are more globally integrated and tend to react similarly to global events. The correlation among the Central European markets (the Czech Republic, Hungary and Poland), as well as with the Western Europe, is higher than normally reported in cross-country correlations among emerging markets globally.

Table 9: Correlation between monthly country index USD returns, June 1994 - June 2001

Correlations

		CZECH	ESTONIA	HUNGARY	POLAND	SLOVENIA	LATVIA	Lithuania	ROMANIA	SLOVAKIA	WORLD	EUROPE	GERMANY	RUSSIA	EMBI	FREE
CZECH	Pearson Correlation	1.000	.142	.620**	.439**	.059	.136	.133	.113	.162	.258*	.302**	.319**	.325**	.371**	.390**
	Sig. (2-tailed)	.	.279	.000	.000	.594	.294	.287	.364	.204	.017	.005	.003	.003	.000	.000
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
ESTONIA	Pearson Correlation	.142	1.000	.254*	.177	.241	.324*	.368**	.312*	.148	.009	.118	.029	.381**	.038	.149
	Sig. (2-tailed)	.279	.	.050	.176	.064	.011	.004	.015	.261	.943	.367	.828	.003	.776	.255
	N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
HUNGARY	Pearson Correlation	.620**	.254*	1.000	.638**	.137	.376**	.263*	.234	.142	.583**	.602**	.575**	.544**	.545**	.598**
	Sig. (2-tailed)	.000	.050	.	.000	.211	.003	.033	.059	.266	.000	.000	.000	.000	.000	.000
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
POLAND	Pearson Correlation	.439**	.177	.638**	1.000	-.028	.294*	.148	-.005	.144	.430**	.439**	.420**	.333**	.541**	.511**
	Sig. (2-tailed)	.000	.176	.000	.	.802	.020	.237	.970	.262	.000	.000	.000	.002	.000	.000
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
SLOVENIA	Pearson Correlation	.059	.241	.137	-.028	1.000	.315*	.070	.128	.058	.010	.092	.081	-.067	-.071	-.006
	Sig. (2-tailed)	.594	.064	.211	.802	.	.013	.579	.305	.650	.929	.402	.464	.553	.516	.958
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
LATVIA	Pearson Correlation	.136	.324*	.376**	.294*	.315*	1.000	.480**	-.086	.253*	.165	.152	.098	.402**	.305*	.208
	Sig. (2-tailed)	.294	.011	.003	.020	.013	.	.000	.508	.047	.200	.238	.448	.001	.016	.105
	N	62	60	62	62	62	62	62	62	62	62	62	62	62	62	62
Lithuania	Pearson Correlation	.133	.368**	.263*	.148	.070	.480**	1.000	-.044	.195	.016	.046	-.031	.246*	.086	.137
	Sig. (2-tailed)	.287	.004	.033	.237	.579	.000	.	.729	.127	.898	.714	.806	.046	.492	.274
	N	66	60	66	66	66	62	66	66	63	66	66	66	66	66	66
ROMANIA	Pearson Correlation	.113	.312*	.234	-.005	.128	-.086	-.044	1.000	-.084	.119	.129	.133	.190	.116	.169
	Sig. (2-tailed)	.364	.015	.059	.970	.305	.508	.729	.	.512	.342	.303	.288	.127	.355	.174
	N	66	60	66	66	66	62	66	66	63	66	66	66	66	66	66
SLOVAKIA	Pearson Correlation	.162	.148	.142	.144	.058	.253*	.195	-.084	1.000	-.109	-.058	-.061	.120	-.106	-.047
	Sig. (2-tailed)	.204	.261	.266	.262	.650	.047	.127	.512	.	.397	.654	.635	.348	.408	.716
	N	63	60	63	63	63	62	63	63	63	63	63	63	63	63	63
WORLD	Pearson Correlation	.258*	.009	.583**	.430**	.010	.165	.016	.119	-.109	1.000	.874**	.743**	.407**	.584**	.687**
	Sig. (2-tailed)	.017	.943	.000	.000	.929	.200	.898	.342	.397	.	.000	.000	.000	.000	.000
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
EUROPE	Pearson Correlation	.302**	.118	.602**	.439**	.092	.152	.046	.129	-.058	.874**	1.000	.878**	.328**	.485**	.600**
	Sig. (2-tailed)	.005	.367	.000	.000	.402	.238	.714	.303	.654	.000	.	.000	.003	.000	.000
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
GERMANY	Pearson Correlation	.319**	.029	.575**	.420**	.081	.098	-.031	.133	-.061	.743**	.878**	1.000	.240*	.451**	.565**
	Sig. (2-tailed)	.003	.828	.000	.000	.464	.448	.806	.288	.635	.000	.000	.	.031	.000	.000
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
RUSSIA	Pearson Correlation	.325**	.381**	.544**	.333**	-.067	.402**	.246*	.190	.120	.407**	.328**	.240*	1.000	.605**	.628**
	Sig. (2-tailed)	.003	.003	.000	.002	.553	.001	.046	.127	.348	.000	.003	.031	.	.000	.000
	N	81	60	81	81	81	62	66	66	63	81	81	81	81	81	81
EMBI	Pearson Correlation	.371**	.038	.545**	.541**	-.071	.305*	.086	.116	-.106	.584**	.485**	.451**	.605**	1.000	.763**
	Sig. (2-tailed)	.000	.776	.000	.000	.516	.016	.492	.355	.408	.000	.000	.000	.000	.	.000
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85
FREE	Pearson Correlation	.390**	.149	.598**	.511**	-.006	.208	.137	.169	-.047	.687**	.600**	.565**	.628**	.763**	1.000
	Sig. (2-tailed)	.000	.255	.000	.000	.958	.105	.274	.174	.716	.000	.000	.000	.000	.000	.
	N	85	60	85	85	85	62	66	66	63	85	85	85	81	85	85

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Notes: The following stock indices are used as proxies for each country (region): Czech – PX50, Hungary – BUX, Poland – WIG, Slovenia – SBI20, Estonia – TALSE, Latvia – DJRSE, Lithuania – LITIN-G, Romania – Vanguard VAB, Slovakia – SAX, Europe – MSCI Europe, Russia – Moscow Times index, EMBI – JP Morgan Emerging markets bond index EMBI+, Emerging – MSCI Emerging Free, World – MSCI World, Germany – DAX. All indices are USD based.

As we can see from the Table 9, all three Central European countries (Poland, Hungary and the Czech Republic) are highly correlated. Also the stock markets in the three Baltic states (Latvia, Lithuania and Estonia) are highly correlated, though to a lesser extent than their Central European counterparts. This pattern shows that regional proximity matters, and especially if linked with close trade relations.

Hungary's stock index has showed the highest positive correlation with all the European, emerging market and world indices. So, from this perspective it is the most integrated of the CEE markets. Poland and the Czech Republic follow, also revealing strong positive correlation with world, European and general emerging market indices. Interestingly, before the crisis (June 1994 to July 1998) the Czech Republic had even a negative correlation with these indices. Now the correlation is significantly positive.

All the three Central European (CE) countries and the Baltic States have a strong positive correlation with Russian stock market performance. This again proves the importance of cross-country linkages in determining stock market performance. The Central European countries are affected by Russian market mood mainly because of international investors, who are scared that the problems in Russia during crisis may spread to the other emerging markets in the region. The Baltic State stock markets where foreign investors are not as present as in the there CE countries, on the other hand, are influenced by the direct effect on companies. Russian crisis had a severe effect on the Baltic economies, especially Latvia.

Slovenian, Romanian and Slovakian stock markets have no correlation (or even negative correlation) with the rest of the indices. One of the reasons is the low presence of foreign investors, as well as low liquidity, and high importance of local risk factors, which will be discussed in the next section.

Increased CEE market Integration within European markets

The previous section presented the average correlations over the whole period of study, which is a static approach. However, an interesting question is whether integration towards the EU (harmonization of legal, structural and policy matters) is seen in the development of the CEE stock markets. The hypothesis would be that there should be higher correlation with EU stock markets in recent years.

Exhibit V (see annex) shows how correlations between local and European stock market indices have varied over time[13]. First observation we notice is a clear peak in correlations around the beginning of 1999, i.e. the aftermath of Russian crisis, in all the country returns except Estonia and Slovakia. The reason for the peaked correlation with the European index is the common fact that stock market returns tend to move more in lock step in a decline than in a boom. Arguably, the Russian crisis also had a negative effect on the Western European stock markets.

Another observation from the graphs is true increasing trend in the correlations between the CEE country indices and the European index starting from mid-2000. Again there are two exceptions, namely Latvia and Lithuania. The recent increase in correlations between the CEE and European indices reflect the global stock market

[13] The dynamics of the importance of European risk factors is analyzed using the rolling 12-month correlations of local returns (in USD) with the European aggregate stock index returns (MSCI Europe, USD based).

downturn, which has had a negative influence both in the Western and Eastern Europe.

To conclude, we can note that the CEE countries are becoming more integrated within the European capital markets in a sense that they do react to, especially negative, market mood in the rest of Europe and the world. The increasing correlations over time indicate that cross-country diversification benefits are decreasing. Will they disappear? The answer is no: for the overwhelming majority of listed firms, the domestic market will be most important, and local risk factors are likely to determine most of the relationship between risk and return in the CEEs, before and after EU membership. In particular, differences in political cultures, tax and legal systems, and socio-demographic developments are likely to persist for the foreseeable future despite harmonization.

Financial and Political risk factors

The previous section presented an overview of the stock market development and particularly the return characteristics in the sample CEE countries. This chapter will focus on some answers to the question which risk factors determine the nature of stock returns in these countries.

In Hogfeldt & Pajuste (2000) we analyze three broad sources of risk: macro-economic and financial risk factors (such as currency fluctuations, foreign reserves, inflation), political and legal events, and institutional factors. This paper is devoted mainly to the institutional factors – corporate governance issues, which will be discussed in the next section. Nevertheless, here I will briefly recap on previous findings about the role of fundamentals in determining stock market returns.

Previous studies have shown that in emerging countries, the risk factors mostly originate in the local environment (see Harvey (1995) and references thereafter). This phenomenon is usually explained by the fact that emerging markets are to an extent segmented from the world markets. Developed markets are much more integrated and tend to be influenced by worldwide risk factors, such as US market sentiment, oil prices, global currency fluctuations, and so on.

Claessens et al (2000) find some evidence that higher macroeconomic stability (proxied by inflation and GDP per capita) during the period of transition has a

positive impact on stock market development (measured by market capitalization as a share of GDP).

Also in our sample of countries the *local* and *emerging markets* risk factors have the highest explanatory power[14]. Among the local risk factors we find that for example the *currency fluctuation* (particularly, the change in local currency versus euro) has some negative effect on stock returns (in Poland, the Czech Republic and Hungary), i.e. depreciation of local currency versus the euro causes decrease in stock index. Also *foreign reserve changes* and changes in the *trade deficit* have some effect on the stock index returns. Generally, local risk factors associated with the international macroeconomic relations are pivotal determinants of local stock returns, but the specific risk factors differ with institutional arrangements for exchange rate mechanisms and trade policies[15].

Countries with tighter economic and political links with Russia (such as the three Baltic States) are influenced by the stock market performance in Russia, especially during the turbulent periods of crisis.

The stock market returns in more developed CEE countries, namely the Czech Republic, Hungary and Poland, are more explained by the general *investment mood* towards emerging markets. In case of a global crisis, foreign investors fail to differentiate between fundamentally better or worse emerging markets; the prevailing investment attitude is "grab your money and run". Thus, the countries with the strongest foreign investor presence are affected by the turbulence in other emerging markets worldwide.

Countries with initially closed markets for foreigners (such as Slovenia, Slovakia and Romania) are almost exclusively dependent on local risk factors, especially political and legal events. There are *positive or negative events* in politics (elections, resignations of ministers) or in the law (improved corporate law, security market regulation, restrictions on capital flows). An example of a p*ositive event* would be acceptance to world-wide associations (such as the OECD or WTO), passing of

[14] Using a *multi-factor model* allows us to track how changes in economic fundamentals (e.g. inflation, trade, interest rates, exchange rates, etc.) influence stock market returns. Local stock market index monthly returns (expressed in USD) is taken as a dependent variable and regressed on various macroeconomic and financial risk factors i.e. their monthly changes. The risk factors are classified according to their geographic origination – *local* (e.g. interest rates, inflation, money supply), *emerging markets* (e.g. MSCI Emerging markets free index, EMBI, Russian index), Europe (e.g. MSCI Europe) and world (e.g. MSCI World index). For detailed model specification, as well as description of the variables, see Pajuste et al (2000).

[15] See Pajuste & Hogfeldt (2000) for more analysis of the local risk factor importance and reasons behind it.

more stringent or improved regulatory laws (on bankruptcy, banking sector, securities markets, or accounting standards), introduction of full current account convertibility, or invitation to early EU accession talks. A n*egative events* would be a currency crisis, government crisis, tightening of capital account restrictions, external debt restructuring, or severe crisis in neighboring or related countries.

The results suggest that investors *are more sensitive to negative news* than to positive news, perhaps a typical reaction for emerging markets. Emerging markets are "by definition" characterized by higher risks, so investors might exaggerate the extent and seriousness of a negative event. For example, a change of government does not usually influence stock market returns in developed countries, but in emerging markets the same event often has more influence on stock prices. The government change may bring, first, a government crisis which would then be defined as a negative event, and the stock market would react negatively because of perceived instability and uncertainty. Or, this may be a positive event if the previous government has been inefficient and the perception is that any replacement will improve the situation.

Another factor beyond the control of the country is its *size*. As Claessens et al (2000) argue, the size of a market will play a large role in the perspective of stock market viability. If there are only a few large companies suited for public listing (like in Estonia, Latvia, Lithuania, Slovenia, Romania), the question of a long-term existence of an independent local stock market becomes an issue. The economies of scale are still alive – the recent cross-border mergers of large stock exchanges show that costs of running a stock exchange may become high (technology, trading systems, analysis, etc.). Therefore, it is quite realistic that the experiment of small, local stock exchanges will end as they are 'eaten up' by the larger regional exchanges. Already now larger CEE companies prefer to list in the foreign exchanges, so the consolidation of regional stock markets is just a matter of time.

Corporate Governance and Stock Market returns

Numerous recent studies on transition economies have emphasized the relevance of law, judicial efficiency, corporate governance and the regulatory framework[16]. Moreover, it has been shown that the *enforcement* of law and regulations has much

higher explanatory power for the level of equity and credit market development than the quality of the law on the books, see Pistor et al (2000) and Coffee (1999).

One of the earlier corporate governance papers by LLSV argued that the common law countries have better minority shareholder protection than the civil law countries (see e.g. LLSV, 1997). That does not help very much in explaining anything about the stock markets in the sample CEE countries since most of them are based on civil law practice, particularly, German civil law. More applicable hypothesis is presented by Coffee (1999) who notes that the differences in corporate law may be less important than the differences in the level of regulation that different countries impose on their securities markets.

The different methods and speed of security market supervision chosen by the CEE countries explain some of the variation in stock returns. An instructive, but by now probably worn-out example, is the contrast between the Czech Republic and Poland (Johnson & Shleifer, 2000, Coffee, 1999) until late 1999. From similar starting points (early privatization, successful reforms, economic stability), the three most advanced CEE countries, the Czech Republic, Hungary and Poland, showed significantly different stock market performance (see for example, Table 4 for market turnover comparison). Up until late 1999, the Czech market turnover was continuously stagnating while Hungarian and Polish – rising. The main difference between these countries were their transparency, legal frameworks and enforcement mechanisms regarding the stock market regulations, as well as for monitoring of financial intermediaries.

The situation has changed recently. Actually, as of beginning 2001 when the country introduced stricter stock market regulations, the Czech Republic stands the highest on a comparative study of the implementation of the EU *Large Holdings Directive*[17]. That means that the information availability and transparency of the listed Czech companies is better than in other CEE countries.

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[16] See e.g. Lombardo and Pagano (1999), Pistor (1999, 2000), Coffee (1999), LLSV (1997, 1999), Johnson and Shleifer (2000), Johnson et al (1998).

[17] The EU directive of 12 December 1988 "On the information to be published when a major holding in a listed company is acquired or disposed of" (88/627/EEC) generally aims to provide investors with explicit information on the voting power in the listed companies. See Olsson (2001) for a detailed assessment of implementation of Large Holdings Directive in the CEE countries.

Development of the stock market regulations

The nine CEE countries can be classified into four groups according to the way they have proceeded with the capital market regulations (see Table 10). The first group includes Poland and Hungary, who have both chosen strict regulatory mechanisms aimed at investor protection from management or large blockholder fraud. These two countries have also put considerable effort into enforcement mechanisms, often the most deficient part of the legal framework in transition economies. Comparing these two countries, Hungary has weaker regulation than Poland, but its stock market performance is boosted by the specific choice of privatization method, that is relying heavily on sales of controlling stakes to foreigners. This method has increased foreign control of local companies and interest in these stocks, and brought more liquidity to the market due to the presence of larger number of wealthy investors.

Table 10: Development of capital market regulations

Capital market regulations	Country*
Strict rules; emphasis on enforcement	Poland (2), Hungary (1)
Strict rules; enforcement is lagging	Estonia (0), Latvia (0), Lithuania (2), Romania (1)
'Learning from mistakes', strict rules imposed later; enforcement also lagging	Czech (2), Slovakia (0)
Strict rules; enforcement 'not needed'	Slovenia (1)

* Current level of information transparency is given in the brackets (very good – 2, acceptable – 1, poor – 0)

Source: Author's assessment

The three Baltic states and Romania early implemented rather strict security market regulations. But the capacity of the capital market regulators to fully exercise their regulatory function has been limited, largely due to the lack of clear, legal responsibilities, resources and experience. A weak factor in Estonia and Latvia is disclosure and transparency of information, e.g. on the voting power of controlling owners, concerted action (voting agreements, corporate linkages), as well as sometimes the true identity of the owner (if it is an offshore entity). Lithuania has gone a step further in terms of information disclosure. As mentioned by Olsson (2001), the information on block holdings, structure of the blocks and concerted action is easily available.

The Czech and Slovak Republics did not pay proper attention to the regulatory framework, and has seen fraud, tunneling of resources and significant stagnation in the local stock market. The Czech securities law did not require much disclosure (shares could change hands off exchange at less than market price), there was lack of a single clearing and settlement facility, supervision of intermediaries was very lax, and minority shareholders had almost no say against any expropriation and fraud by company managers and Investment Privatization Funds working in concert with managers. The situation has been improved with the adoption of once again revised Commercial Code (as of 1 January 2001). The Slovakian case was similar; but more stringent regulations will come in force only by 1 January 2002.

Slovenia stands out in this discussion. The Slovenian method of privatization granted large amounts of shares to employees, former employees and state-controlled public funds. Besides, Slovenian law provides employees with substantial corporate governance rights, including the representation on boards.

The large presence of government control (in form of state controlled funds) in the Slovenian privatized corporations is a major obstacle to "normal" capital market development in Slovenia. This may subordinate corporate decisions to political goals, including the individual goals of political parties, Bohinc & Bainbridge (2000). Large state interest has also protected the capital markets from foreigners. For example, only in January 1999 were foreign banks allowed to establish branches in Slovenia, and only in July 1999 were branches and subsidiaries of foreign securities firms allowed to enter the market. As a result, even though the level of institutional and technical development of the stock market in Slovenia is quite advanced, the local market remains segmented from the world market due to capital market restrictions and a "semi-socialistic" corporate governance structure (employee and state control).

The importance of corporate governance factors

In general, CEE corporate governance mechanisms have improved over the last 10 years. The level of minority shareholder protection here is proxied by the LEGAL INDEX, which is a combination of three variables coded by Pistor et al (2000), namely *Voice*, *Exit* and *Stock Market Integrity index*. *Voice* generally shows the level of voting and information power available to minority shareholders. The *Exit* variable measures how easy and fairly shareholders may liquidate their holdings in case they

are not satisfied with the way company is managed. *Stock Market Integrity index* is a proxy for the level of overall security market regulation.

We can see from the Table 11 that the minority shareholder protection has strengthened in the period from 1994 to 1998. The country with the highest level of legal protection of minority shareholders in 1998 was Estonia, followed by Poland, Slovenia and Hungary. The Slovak Republic came in last.

Table 11: Legal index[18]

	1994	1996	1998
Czech Republic	7.50	11.00	12.00
Estonia	9.75	15.50	15.50
Hungary	10.75	10.75	12.25
Poland	13.25	13.25	13.25
Slovenia	12.25	12.25	13.25
Latvia	9.25	9.25	9.25
Lithuania	11.75	11.75	11.75
Romania	7.75	7.75	7.75
Slovakia	7.00	7.00	7.00
Average	***9.92***	***10.94***	***11.33***

Source: Pistor et al (2000); author's calculations

To assess the effect of the level of the Legal index on the stock market returns I run a simple one-to-one OLS regression. The average returns over 1995[19], 1996-1997 and 1998-1999 are regressed on the Legal index at the end of 1994, 1996 and 1998, respectively. As Exhibit VI, Figure A (see annex) reveals, a higher Legal index has a positive, though not very significant, effect on stock market returns in the sample countries (the adjusted R^2 is 6.5%).

The market capitalization to GDP ratio as a dependent variable was not significant, which is not surprising. The market capitalization does not reflect the real situation as it includes many illiquid shares (e.g. in Slovakia, Lithuania, Romania). More meaningful measure of market activity is the market turnover as a percent of market capitalization (see Table 5). The average turnover over 1995, 1996-1997 and 1998-1999 is regressed on Legal index at the end of 1994, 1996 and 1998, respectively. As Exhibit VI, Figure B (see annex) shows, a higher Legal index has a

[18] See annex for the description of this variable.
[19] Only one year returns are taken in 1995 (not an average between 1994-1995), because there is not a full data set.

significant positive effect on the stock market activity in the sample countries (the adjusted R^2 is 34%).

As noted earlier, the enforcement of laws and regulations (effectiveness) in the transition economies usually lags behind the quality of law (extensiveness). This pattern is clearly seen from the Table 12 which shows the extensiveness and effectiveness of financial regulations indices compiled by the EBRD. The commercial law extensiveness and effectiveness ratios show a similar pattern, i.e. effectiveness indices lag behind the extensiveness. But the commercial law indices are not as significant in explaining stock market returns and turnover as financial regulations indices, therefore I do not include them here. This is in line with Coffee (1999) who claims that the basis for security market development lies in system of security market regulation rather than simply origin of corporate law (civil versus common law system).

Table 12: EBRD index (Financial Regulations)

	Financial Regulations ***Extensiveness***			Financial Regulations ***Effectiveness***		
	1998	**1999**	**2000**	**1998**	**1999**	**2000**
Czech Republic	3.3	3.3	4	2.7	2.3	2.7
Estonia	3.3	4	4	2.7	3.3	2.7
Hungary	4	4	4	4	4	4
Poland	4	4	4	3	4	4
Slovenia	3.3	3.3	4	2.7	3.3	4
Latvia	3.3	3	3	2.3	2	3
Lithuania	2.7	2.7	4	2	2	3.7
Romania	3	3	4	2.7	2.7	3
Slovakia	3	4	3	2	3.3	2.7
Average	***3.32***	***3.48***	***3.78***	***2.68***	***2.99***	***3.31***

Source: EBRD Transition report 1999, 2000

The financial regulations *effectiveness*, i.e. enforcement, has the highest power in explaining the stock market return variations in the sample countries. EBRD financial effectiveness index explains 10% of the variation in returns in 1998-2000[20], Exhibit VI, Figure C (see annex). Financial regulations *extensiveness* also had a positive impact on stock returns, but to a lower extent (adjusted R^2 of 7%). Commercial law indices were not significant.

[20] Returns in 1998, 1999 and 2000 were regressed on EBRD Financial Regulations effectiveness indices in the respective years.

Financial regulations (FR) effectiveness had a high explanatory power on stock market activity, too. FR effectiveness index explains 22% of the variation in market turnover (as percent of market capitalization) among the sample CEE countries.

As a caveat one should still keep in mind that the aggregate indices used in the quantitative analysis presented above are rather subjective and often not hundred percent correct. Nevertheless, the role of financial regulations and their enforcement *has been* arguably important. Why 'has been' and not 'is'? The situation is changing and as most of the CEE countries close chapter after chapter in their accession talks to the EU, the regulatory framework becomes more in line with the western standards.

The assessment of Large Holdings Directive implementation in the CEE countries concludes that by late 2001 the LHD would be more or less transposed in all of the accession countries[21]. Still, in the first half of 2001 we can see a decline in market capitalization, trading activity and the number of issued securities. Why?

I find three explanation for the stock market decline in the CEE. First, as already mentioned, is the increasing ownership concentration, i.e. not enough shares in public circulation. Moreover, the control concentration very often is linked to the extraction of private benefits. As a result, the controlling owner has no interest in increasing the stock market value of a company because the returns are generated elsewhere. Second reason could be an increasing role of debt financing from banks or other corporations. Finally, the local market activity is reduced by the tendency of big companies to list on the foreign exchanges. As they need large capital resources which are hard to raise locally, they seek (and find) equity financing abroad.

Conclusions

The main contribution of this paper is the comparative approach on the Central and Eastern European stock markets after the first decade of transition. Keeping in mind that all the countries in the sample are sooner or later heading towards the EU, the issue of the role of the local stock markets is important.

The results show that during the last seven years, the CEE stock markets have brought the investors lower returns than in the developed markets, partly because of the local currency depreciation. Moreover, the volatility of returns has been higher. Resultantly, this risk-return relation should scare away any rational investor. Why still

somebody invests in these markets? One reason, indirectly shown by the increasing ownership concentration, is that the controlling owners (including foreign entities) gain from other sources rather than stock price appreciation, e.g. private benefits, cross-company subsidization etc.

Evidence from the nine CEE countries suggests that the enforcement of financial regulations (e.g. security market supervision) has been very important in determining better or worse performing stock markets. The level of minority shareholder protection, measured by a variable including voting and information rights of minority owners, ease of exit and security market integrity, has had a strong positive relation to the stock market activity (turnover as a share of market capitalization) in the CEE countries. The stock market performance in terms of stock index returns has been influenced the most by the effectiveness of financial regulations.

The recent downturn of market capitalization, as well as of the number of listed securities in the CEE markets signals a need for consolidation. Currently there is what we can call a vicious circle. Security market regulations do matter in attracting investors (supply side of the capital), but, on the other hand, more stringent regulations scare away companies (demand side of the capital), because they become less competitive (more costs, transparency) as compared to the unlisted rivals. As a result, one of the policy implications to increase the stock market attractiveness (especially regarding medium size enterprises) would be to make the regulations of listed and unlisted companies more congruent. Another solution in order to retain the stock markets is regional consolidation, which is already under way.

[21] See Olsson (2001) who presents a survey on Large Holdings Directive implementation in the same nine countries as in this report, plus Bulgaria.

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Annex

Exhibit I: Local stock market indices

Development of stock market indices for the Czech Republic (PX50), Estonia (TALSE), Slovenia (SBI20), Poland (WIG), Latvia (DJRSE), Lithuania (LITIN-G), Romania (Vanguard VAB), Slovak Republic (SAX) and Hungary (BUX) during the period between June 1994 and June 2001 (the dashed line represents the index in local currency, but the continuous line - in U S dollars)

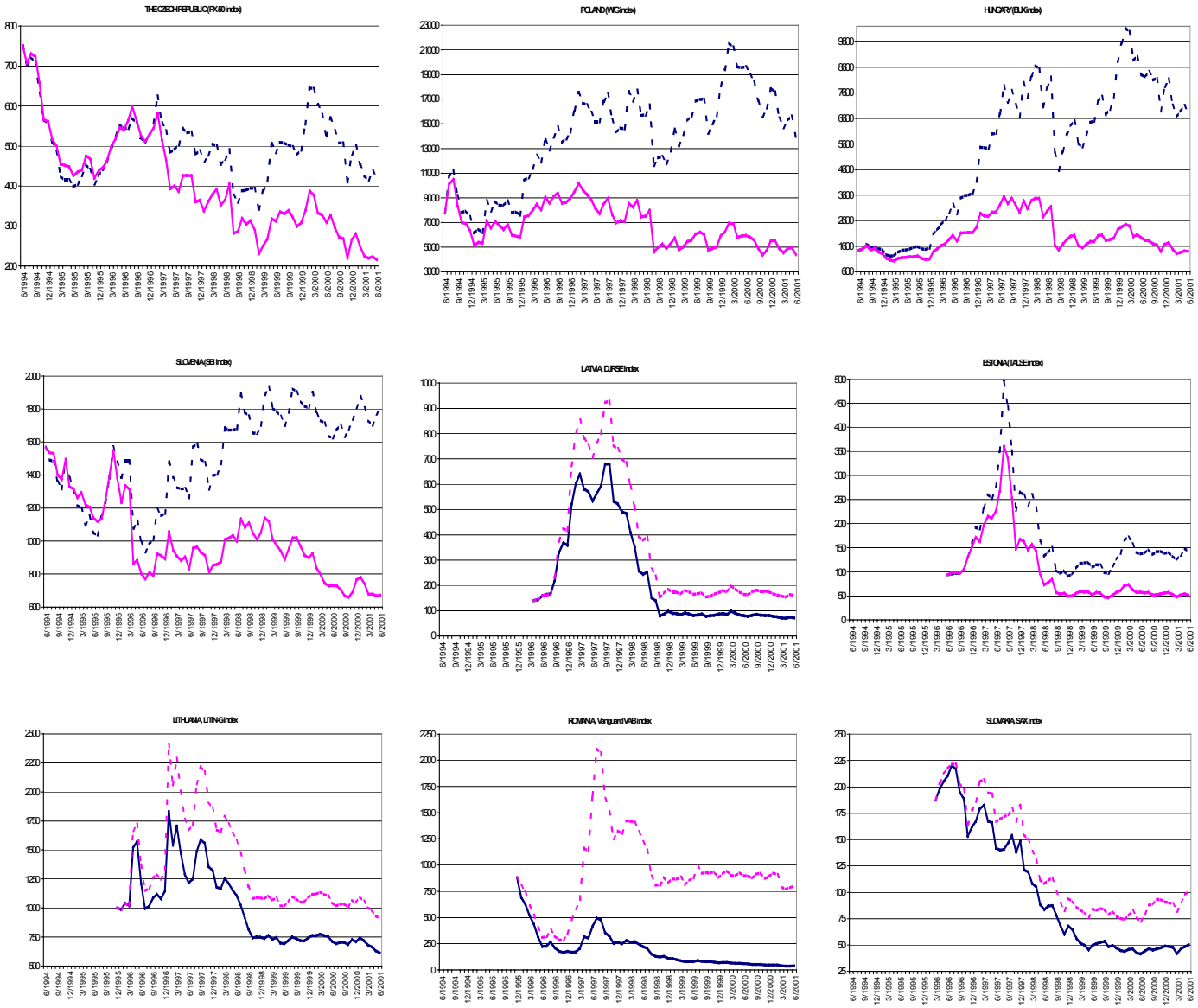
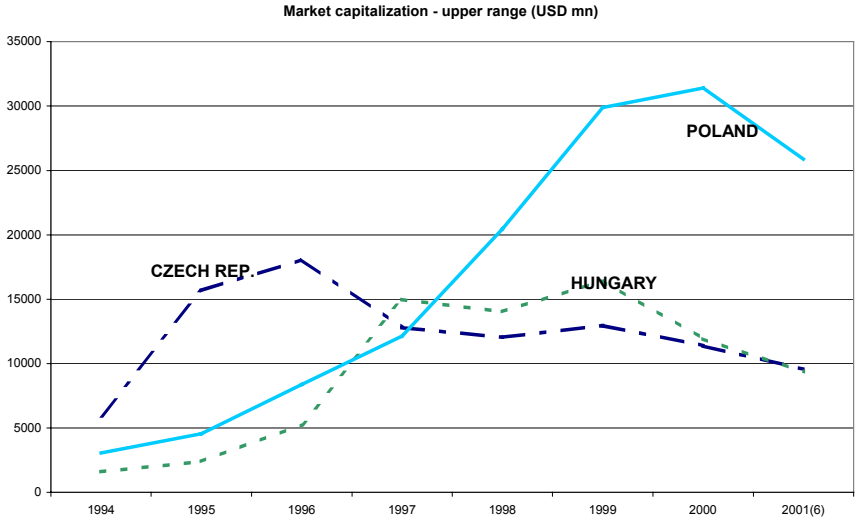
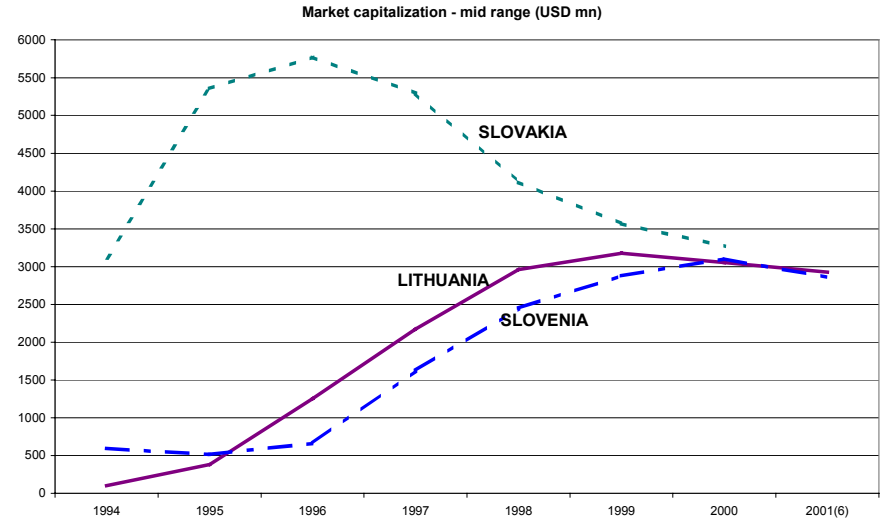


Exhibit II: Local stock market capitalization, in million US dollars





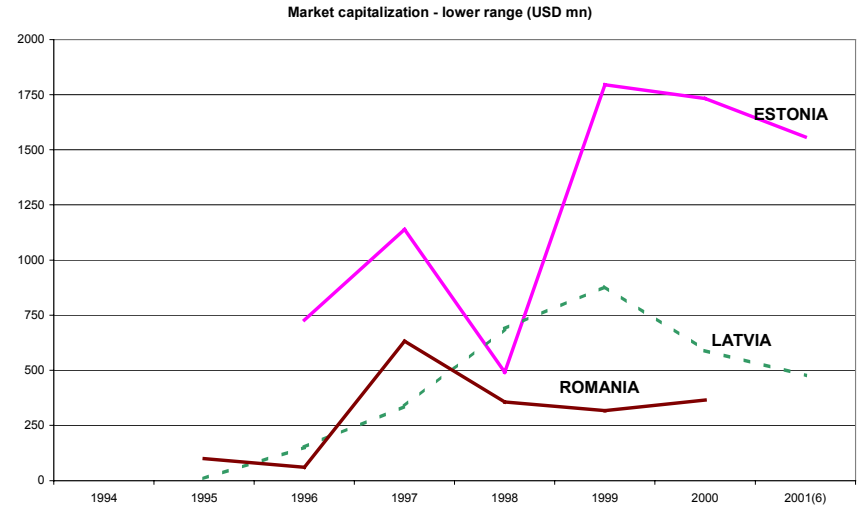
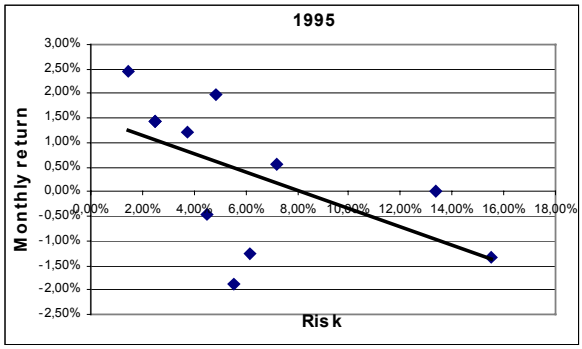
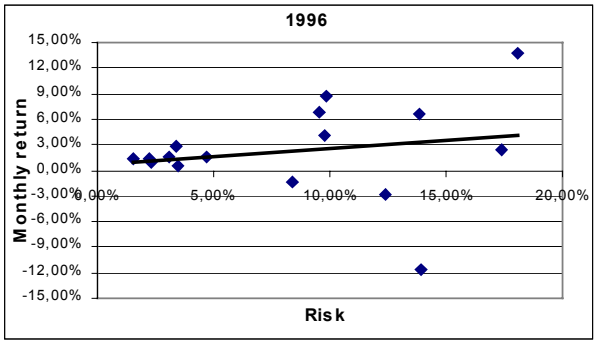
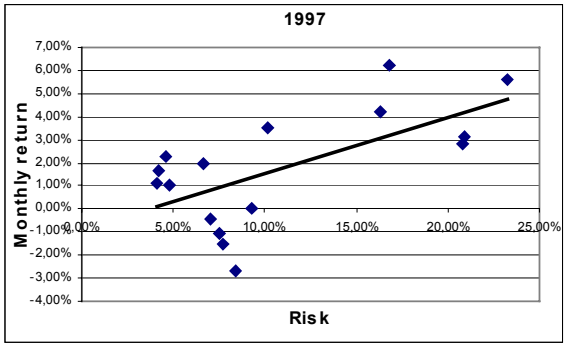


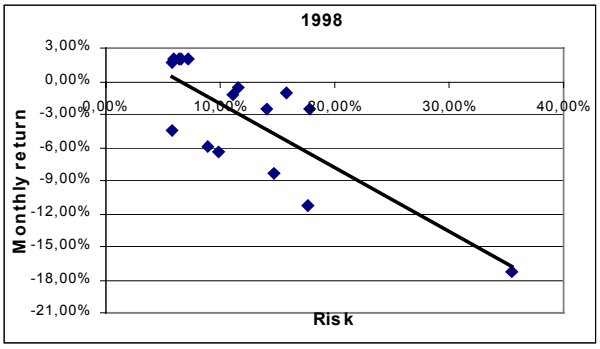
Exhibit IV: Risk-return combinations of the stock market indices

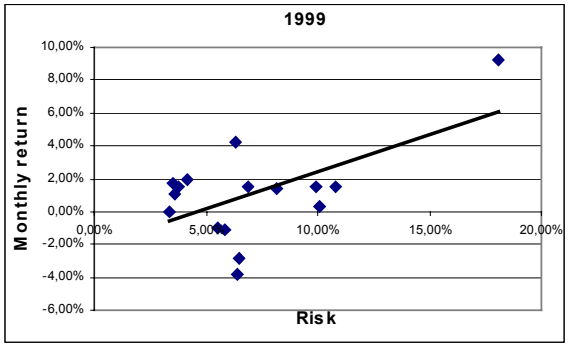
The country index returns are represented with the following indices: PX50 (Czech), TALSE (Estonia), BUX (Hungary), DJRSE (Latvia), LITIN-G (Lithuania), WIG (Poland), Vanguard VAB (Romania), SAX (Slovakia), SBI20 (Slovenia), Moscow Times (Russia), MSCI Emerging Free (Emerging markets), JP Morgan Emerging Markets bond index (EMBI+), MSCI World (World), MSCI Europe, USD based (Europe) and DAX, USD based (Germany). Monthly return is average monthly return in a particular year. Risk is measured by the standard deviation of monthly returns in a particular year.











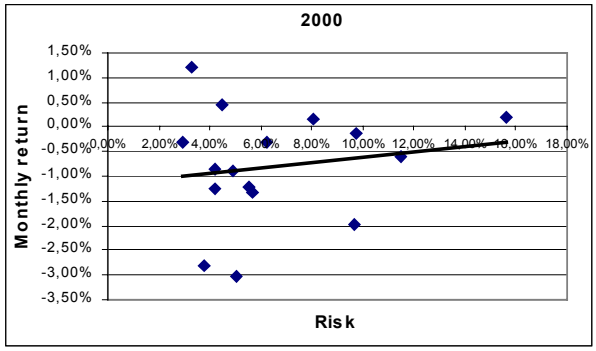
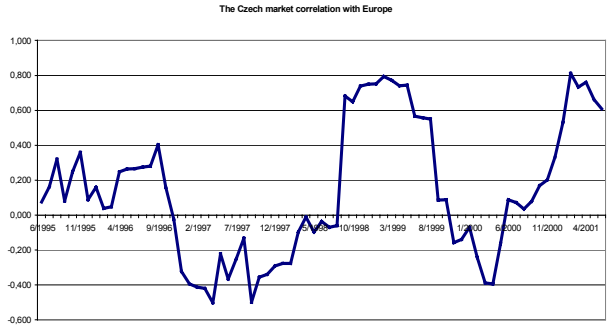
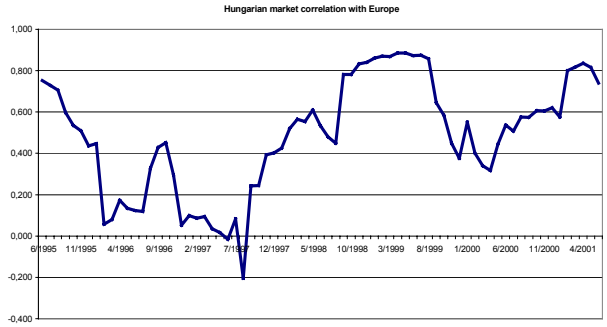
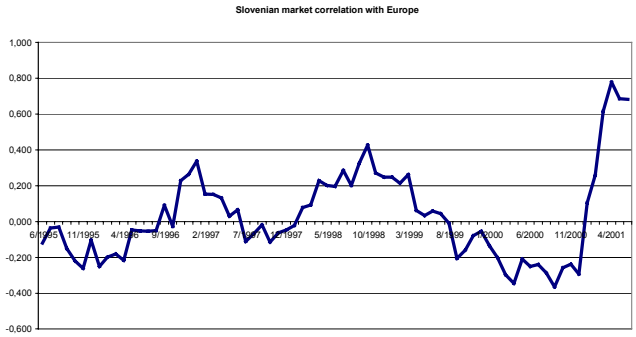


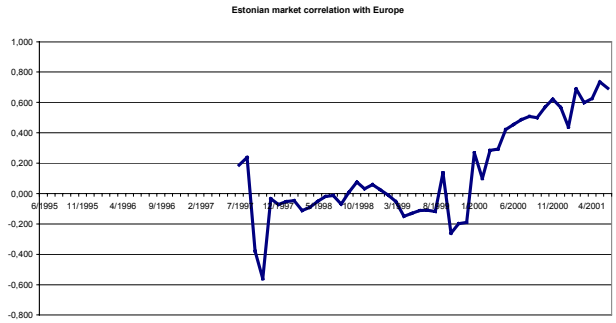
Exhibit V: Rolling 12-month correlation between local stock market returns and European index returns

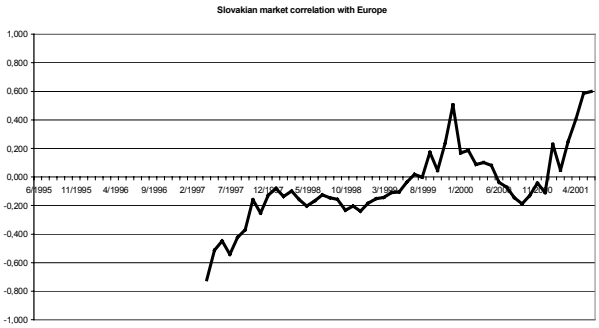
The country indices are: PX50 (Czech), TALSE (Estonia), BUX (Hungary), DJRSE (Latvia), LITIN-G (Lithuania), WIG (Poland), Vanguard VAB (Romania), SAX (Slovakia), SBI20 (Slovenia) and MSCI Europe, USD based for Europe.

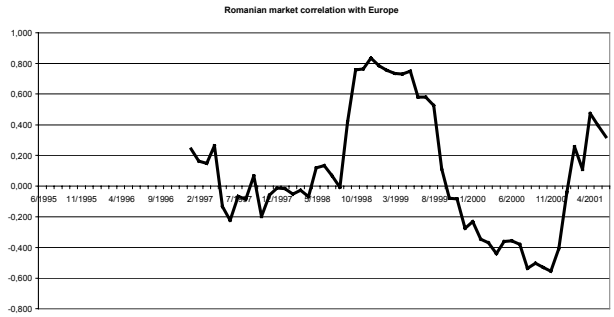












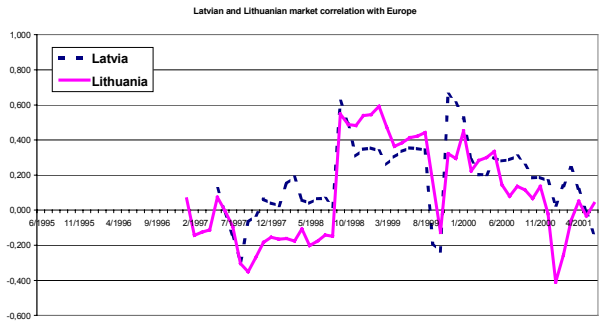


Exhibit VI: Effect of legal index and financial regulation effectiveness index on stock returns and turnover

Figure A.

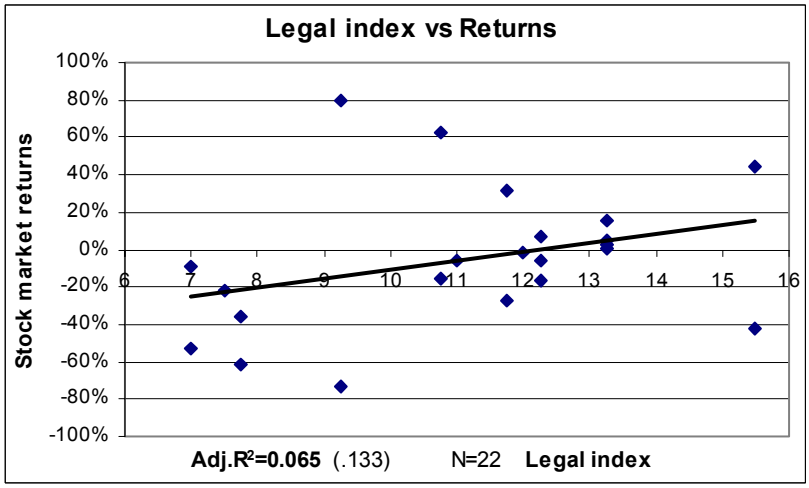


Figure B.

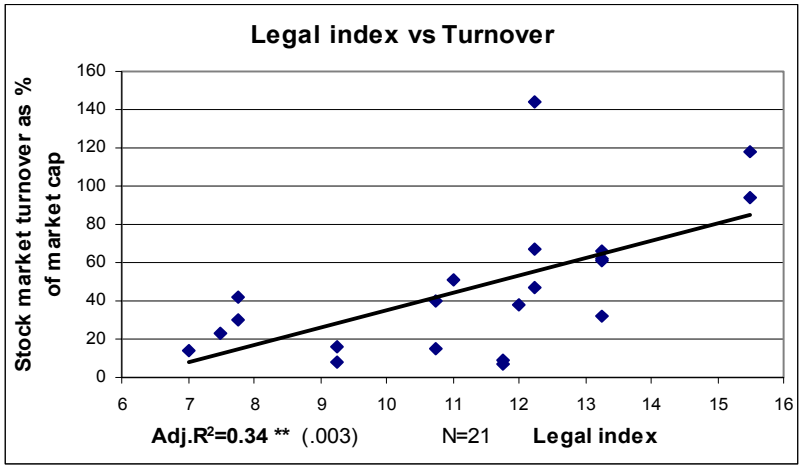
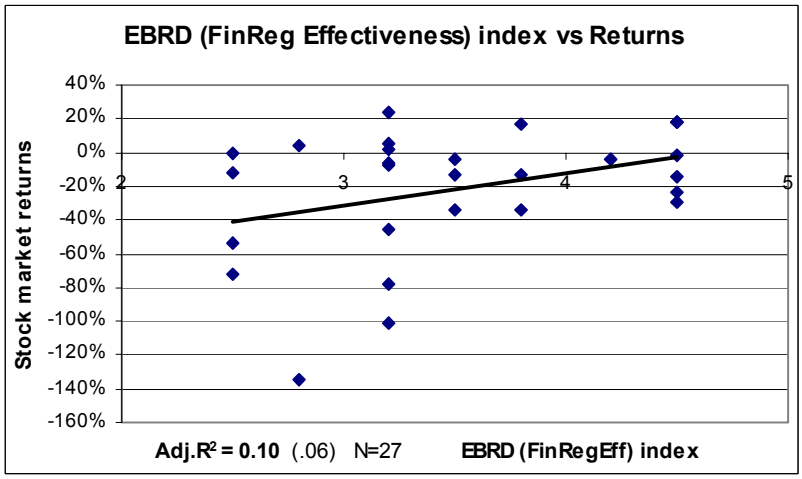


Figure C.



Variable definition

Variable[22]	Indicator	Value	Maximum
LEGAL INDEX:		Sum of the variables VOICE, EXIT and SMINTEGR	23
VOICE (0-13)	Mandatory One-Share-One Vote Rule	1/0	1
	Proxy by mail	1/0	1
	Shares NOT blocked before the meeting	1/0	1
	NO registration cut-off date before the meeting	1/0	
	Cumulative voting for election of members of board (supervisory board)	1/0	1
	Other rules to ensure proportional board representation	1/0	
	Shareholder may take judicial recourse against decisions by executives, (supervisory) board	1 = direct and/or derivative suit by individual shareholder or minority group (not more than 10%) 0,5 if legal claim is limited to nullifying decisions of the board and does not include liability of management 0 if shareholders cannot sue or have to request supervisory board to sue	1
	Shareholders may take judicial recourse against decisions taken by the Shareholder Meeting	1 = judicial recourse provided 0 = no such provision	
	Current shareholders have a preemptive right in case new shares are issued by company	1 = preemptive right mandated by law, which may be changed only by decision of shareholders 0 = no preemptive right, or only optional	1
	Shareholders, representing not more than 10% of total shares may demand convocation of extraordinary shareholder meeting	10% = 1 20% = 0,5 0 = more than 20% of shares required for calling extraordinary shareholder meeting	1
	Executives (incl. General Directors) are appointed/ dismissed by the board (supervisory board) rather than the shareholder meeting	1 0,5 if board appoints, but general meeting dismisses 0 if shareholder meeting appoints and dismisses	1
	Members of the management/ supervisory board may be dismissed at any time without cause	1 = if law does not specify conditions for dismissal 0 = if law requires specific cause (including violation of contract)	1
	At least 50% of total voting shares must be represented at a SHM for it to take binding decisions	1 = 50% or more of total shares required for quorum 0 = less than 50% required	1
	Audit commission may be called by minority shareholder representing not more than 10% of shares	1 = if 10% of shares required 0,5 = if 20% of shares required 0 = if more than 20% required or not regulated	1
	Fundamental decisions, including charter changes, liquidation of companies, sale of major assets, require qualified majority (at least 3/4)	0,5 for charter changes and liquidation only 0,75 the above plus changes in charter capital, and/or company reorganization (incl. mergers, takeovers) 1 for the above and sale of major assets	1
	Board (supervisory) board members are elected by shareholders (no mandatory representation of employees or the public)		1

[22] The variables VOICE, EXIT, and SMINTEGR are taken from Pistor et al (2000).

EXIT (0-4)	Right to Transfer shares is not restricted by law and may not be limited by charter	1 = if the right to freely transfer shares cannot be restricted by statute 0 = if this right can be restricted, even only for bearer shares	1
	Formal requirements for the transfer of shares are limited to endorsement (bearer shares) and registration (registered shares)	1 = no additional formal requirements 0 = notarial certification, documentation of contracts etc. required for valid transfer	1
	Minority shareholders have a put option (may demand that their shares are bought by the company at fair value) in case they have voted against major transactions, including mergers, reorganization, sale of major assets, charter changes etc.	1 = put option by law 0 = not regulated	1
	Mandatory take over bid (threshold)	1 for 25% or less 0,75 for >30% 0,5 for > 50%	1
SMINTEGR (0-6)	Conflict of interest rules, including rules on disclosing conflict and abstaining from voting are included in the law	1 = transaction specific conflict of interest rules 0 = no such rules, even if some competition rules (i.e. members of the board may not serve on boards of other firms) are included	1
	Shareholder register must be conducted by independent firm (NOT the issuing company)	1 = mandatory rule for publicly traded companies, including companies exceeding a legally specified number of shareholders 0 = if register is administered by the company	1
	Insider trading prohibited by law	1 = rules against insider trading exist 0 = no insider tradingi rules	1
	Acquisition of larger blocks of shares triggers Mandatory Disclosure (threshold)	1 for 10% 0,75 for 25% 0,5 for 50% 0, 25 for more than 50% 0 if no mandatory disclosure	1
	A state agency conducts Capital Market Supervision	1 = if the task of supervising the securities market is assigned to a designated state agency	1
	Capital Market Supervision is formally independent	1 = if the agency is independent and neither part of or directly subordinate to a government ministry (i.e. ministry of finance)	1

Source: Pistor et al (2000)