

# The Integration of Eastern Europe – Effects on Stock and Bond Markets

## I Introduction

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As valuations on financial markets tend to discount future developments, we assume that European financial markets have already largely anticipated the impact of the economic integration of the Central and Eastern European countries (CEECs). However, it is difficult to single out financial market participants' precise expectations. Prices reflect not the expectations themselves, but changes in expectations and unforeseen developments as well as adjustments of agents' risk perception. Moreover, the economic integration of Austria with the CEECs has already progressed very far. Austrian companies have been doing business in the CEECs for many years, and they make good profits there. However, further economic integration is likely to entail more heated competition, with lower profit margins for these Austrian companies.

This brief presentation of the facts demonstrates how complex the factors are that have an effect on European financial markets, factors which are nearly impossible to capture by means of a top-down analysis of fundamentals. Hence, it stands to reason that the possible fundamental effects of EU enlargement to the East will be considerably smaller than the forecasting error in estimates of financial market data for long periods. Limited analytical approaches of the type stating that "if there is additional GDP growth, stock prices will rise under ceteris paribus conditions" are not very useful, as the lack of solid data permits only general statements to be made. Therefore, we broach the topic of the effects of the integration of the CEECs on stock and bond markets not by way of fundamental analysis, but use a liquidity approach<sup>2)</sup> based on benchmarks and asset allocation, which allows conclusions about financial market data to be drawn.

Of the accession countries, currently only Poland, the Czech Republic and Hungary are represented in the emerging market benchmark indices. The main benchmarks for emerging market bonds are the COBA and the EFFAS bond indices; the Morgan Stanley Capital International Emerging Markets (MSCI EM) Index<sup>3)</sup> is the key benchmark for emerging market equities. Capitalization is very low in the other accession countries, which means that even if they were represented in the indices, their impact would be small. Consequently, our

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We would like to thank the team of the Economics and Financial Markets Research Division for its kind support. Special thanks go to Peter Brezinschek, Head of the Economic and Financial Markets Research Division, and to Lydia Kranner, Head of Bond Markets/Currency Research.

2 The liquidity approach is useful in many instances: (1) for currencies: the development of the EUR/USD exchange rate tracks the development of the fundamentals less and less, at least in the short and medium run (up to 1 year), instead moving in tandem with liquidity flows; (2) for bonds: when a crisis occurs, investors become extremely risk averse in the short run and move into bonds, which are a safe haven. Investors' reactions lead to an overshooting and to a very large shift of liquidity out of stock markets; (3) for stocks: analyses on index inclusions and the literature on positive feedback theories from behavioral finance, such as those formulated by Shiller (2000) and Shleifer (2000), confirm the liquidity approach.

3 Poland joined the MSCI EM Index in 1995, Hungary and the Czech Republic followed in 1996.

analysis is limited to the impact of the integration of Poland, the Czech Republic and Hungary.

In the second section, we analyze the outlook for changes in European bond prices in the wake of EU enlargement. As the benchmark is an important signal, the extent of its change, above all the change of its weights, will have an important impact. Other developments, such as convergence with the euro area, will also influence investors strongly regardless of the weight of the converging countries in the new Europe.

In section 3, we examine the relative size of the accession countries' stock markets with those of the main European investment areas and describe the methodology used to calculate the principal European stock benchmarks. We also take a closer look at the effects of the most recent EU enlargement round and of the latest entry of a country into Economic and Monetary Union (EMU) in the light of the reclassification of a European emerging market as a developed market. We conclude with a description of the consequences of EU enlargement for European stock markets in general and for Austria's stock market in particular.

## **2 EU Eastern Enlargement and the Consequences for Europe's and Austria's Bond Markets**

### **2.1 Implications for Investors**

The advent of EMU entailed the convergence of many EU Member States' interest rates and monetary developments, in turn reducing the scope for diversification on Europe's sovereign bond markets. Spreading bond investment among countries with different currencies increases the risk-adjusted yield of a given portfolio. However, the option of spreading has diminished substantially for investors who divide their capital among Western European bonds. While other types of bonds – e.g. corporate bonds or high-yield bonds – are gaining ground and offer new diversification options, these alternatives have other risk features, and hence cannot replace government bonds. So the bond markets in the CEECs are increasingly adopting this role. Especially Poland, the Czech Republic and Hungary are liquid enough to replace the former Southern European bond markets. Before Eastern European bond markets – currently still emerging markets – are fully accepted as developed markets, they must complete the process of convergence with Western European markets. The first crucial step in this direction will be EU membership. This step will not only raise investors' confidence in the accession countries, but these countries' bonds are likely to be included in European benchmarks. The second important step will be for the accession countries to join EMU and to be included in EMU benchmarks. To a large extent, these effects resulting from convergence have already taken place. The first push toward integration into European markets occurred when these countries' sovereign rating was upgraded from BB to BBB. During the emerging markets crisis of 2000/2001, the accession countries' interest rates moved closer in line with those of Western Europe. Spreads contracted sharply, above all those of euro-denominated eurobonds. The yields of bonds denominated in local currencies, especially Hungarian and Polish bonds, still have considerable potential to come down to the much lower EU level. Most upcoming changes for eurobonds and local currency bonds are likely

to take place during the period between EU accession and EMU entry, as EMU entry will simply be a question of time once a country has joined the EU and as it is quite certain that important adjustments will take place on accession countries bond markets. Since many major European benchmarks and hence many mutual funds will cover these countries' bonds, many investors holding Western European bonds will feel the impact during this period. The magnitude and the impact of these changes depend largely on how the accession countries' bonds are weighted in the benchmarks. To monitor the changes, the most prevalent indices should be closely tracked. Moreover, the risk/return profile of the different sovereign bond markets is an equally important performance factor. Fund managers may choose to give more attractive markets a greater weight than they have in the benchmark, or such markets may be accorded a particularly strong position already during the process of strategic asset allocation by the choice or the creation of a representative benchmark. Bearing these considerations in mind, we reviewed the composition of current benchmarks and analyzed them in terms of changes which might occur upon the EU accession of the Czech Republic, Poland and Hungary. In addition, we looked at the risk, profit and diversification aspects of a range of bonds, estimating a risk- and profit-optimized portfolio with the aid of our optimization tool. We came to the conclusion that the impact of accession country bond markets on Austrian and European investors is positive, and that investors should prefer such bonds to traditional European bonds.

## **2.2 Aside: Index Methodology**

Assessing the changes caused by the inclusion of new countries in existing benchmarks requires a thorough knowledge of the conventional index calculation methods. As a rule, benchmarks use recommended methods and techniques; in addition, they fulfill the criteria of transparency and replicability. The price and performance time series as well as other index measures, such as duration or yield to maturity, are generally calculated using the formulas recommended by the European Bond Commission of the European Federation of Financial Analysts' Societies (EFFAS). The weights of the individual bonds in the index are based either on their face value or on their market capitalization. In the former case, the weights change only when bonds are introduced to or eliminated from an index, whereas market movements have no impact. In the latter case – when the index is a market-value weighted average of total bond returns – we have what is called floating weights. If a bond's price changes by comparison to that of other bonds (and thus by comparison to its market capitalization), the weight changes as well. This method is standard procedure for calculating bond index weights and has an important impact above all when prices fluctuate sharply, as is often the case with Eastern European bonds. In addition to weights, the criteria a bond must fulfill to be included in the index represent another important factor in index calculation. As a rule, only liquid straight bonds with a remaining life of over one year are included in the index. Countries with a lower volume of bonds or new issues are frequently not represented in benchmark indices. This criterion may also have an influence on whether Eastern European countries, whose total issuing volume is small by international standards, are included in benchmarks.

### 2.3 An Analysis of Benchmark Options

The weighting of benchmarks after including Czech, Polish and Hungarian bonds is of prime interest to investors who seek to spread their investment across Europe. To this end, we have drawn up possible weighting scenarios for various European benchmarks and have analyzed the differences compared to the current weights.

#### 2.3.1 Market Capitalization

To calculate market capitalization, we used only bonds which fulfill the above-mentioned prerequisites for inclusion in a bond index (such as liquidity or a large issue size). The comparison between the market capitalization of the Czech Republic, Poland and Hungary and that of the EU as a whole indicates that the admission of these three countries into EU-wide benchmarks will have little impact: These countries together would account for no more than just over 1% of total European capitalization. The basic question arises whether these three countries are large enough to be included in the indices at all. There is no clear answer to this question, as it depends on the respective policy behind the construction of a benchmark. In its Global European Benchmark, JPMorgan includes only countries with a significantly higher capitalization than that of these three accession countries. However, the debt of the applicant countries is very likely to rise further in the near future, increasing capitalization. This may mean that at least Poland, the country with the highest market capitalization, would be integrated into this index. Salomon Smith Barney's (SSB's) European World Government Bond Index (WGBI) and European Government Composite Index already cover countries with very low bond issuing volumes, such as Ireland or Switzerland. It is quite likely that new EU members will also be represented in these benchmarks. Table 1 shows the different capitalization and weights of possible benchmarks after the EU entry of the Czech Republic, Poland and Hungary. Chart 1 indicates possible compositions of a European benchmark after the accession of these three countries. Quite obviously, because these countries will account for such a small share, they will have only a minor impact on benchmark characteristics.

A comparison of the accession countries to the EU countries outside the euro area shows that the accession countries account for a significant portion of a conceivable benchmark. Hence, after these three countries join the EU,

Table 1

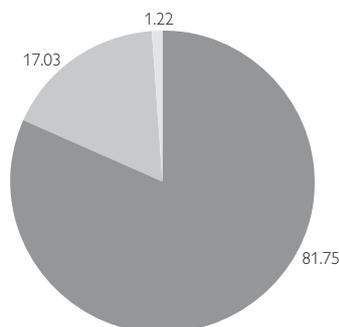
<b>Bond Market Capitalization</b>					
	Face value		Market value		
	EUR million	%	EUR million	%	
Euro area	2,409.3	82.34	2,551.0	81.75	
Denmark	69.1	2.36	69.1	2.21	
Norway	12.7	0.43	12.8	0.41	
Sweden	54.7	1.87	58.4	1.87	
Switzerland	36.9	1.26	38.8	1.24	
United Kingdom	305.9	10.45	352.2	11.29	
Poland	21.0	0.72	20.4	0.65	
Hungary	13.0	0.45	13.7	0.44	
Czech Republic	3.6	0.12	4.0	0.13	
Total	2,926.1	100.00	3,120.4	100.00	

Source: RZB, Thomson Financial Datastream, Reuters.

Chart 1

**Feasible Weights of an EU-Wide Index after Czech, Hungarian and Polish EU Accession<sup>1)</sup>**

%



■ Euro area    ■ EU excl. euro area    ■ Accession countries

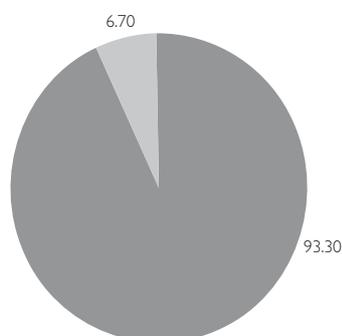
Source: RZB, Thomson Financial Datastream, Reuters.

<sup>1)</sup> Weighted by the market capitalization of January 2002.

Chart 2

**Feasible Weights of an EU-Wide Index (Excluding the Euro Area) after Czech, Hungarian and Polish EU Accession<sup>1)</sup>**

%



■ EU excl. euro area    ■ Accession countries

Source: RZB, Thomson Financial Datastream, Reuters.

<sup>1)</sup> Weighted by the market capitalization of January 2002.

measures of non-euro area countries will change more strongly than overall European indices and will thus provide new opportunities for diversification. Chart 2 presents an option for a composite benchmark covering EU countries outside the euro area countries exclusively.

**2.4 Convergence with the Euro Area**

Although a performance forecast for Czech, Polish and Hungarian bonds would have to consider a number of factors and would therefore be relatively inexact over the long-term horizon, we may reliably pinpoint one factor that will have a positive effect on bond performance: The need for the accession countries' interest rates to converge with those of the euro area as a prerequisite for joining EMU will induce local currency indices to appreciate. While this effect is partly being anticipated already now, we believe that is likely to accelerate at the latest

upon the EU entry of the Czech Republic, Poland and Hungary. Once the countries have become EU members, EMU entry will simply be a matter of time, and the further convergence of interest rates to euro area levels will be certain to occur. We expect that as EMU members the Czech Republic, Poland and Hungary will exhibit a spread to the Bund<sup>1)</sup> similar to that Greece displays. As the level of interest rates between the three accession countries currently diverges, the impact of the interest rate convergence will differ among the countries. Whereas interest rates in the Czech Republic have nearly converged to the euro area level, the gap is still large in the case of Hungary and especially Poland. While the average yield to maturity of liquid bonds in the Czech Republic is only 0.06% higher than the Greek average, the differential is 2.72% in the Hungarian case. At 4.25%, Poland exhibits the largest spread to the Greek average. The price gains following the convergence of bond yields also depend on the average duration of the bonds, which also diverge considerably. At 4.53, the Czech Republic has the highest modified duration, followed by Poland (3.07) and Hungary (2.81). Even though the duration is low compared to that of the euro area, investors should take into account that the spread of liquid maturities is very large among the individual bonds. While market capitalization in Hungary is high in the short- and medium-term segment (maturities of between 1 and 5 years), the total duration is low; however, Hungary will chalk up the highest price gains during the period of convergence with the euro area in the long- and very long-term segment (maturities of between 9 and 15 years) where the duration is high. Capitalization is also highest in the short- and medium-term segment in Poland. In addition, Poland has some bonds in the long maturity segment (7- and 8-year maturities), but has no ultra long-term bonds. Czech bond maturities and weights are more evenly distributed than those of their Hungarian and Polish counterparts and cover a broad range from 1 to 14 years.

Assuming unchanged interest rates in the euro area and disregarding exchange rate fluctuations, the convergence pattern would lead to the following total performance in the three applicant countries: Poland 13.04%, Hungary 7.63%, and the Czech Republic 0.26%. Table 2 contains more detailed information about the calculation.

Table 2

<b>Selected Index Data and Interest Rate Convergence Calculation</b>			
	Czech Republic	Poland	Hungary
	%		
Coupon (in % of the face value)	6.68	6.35	8.74
Yield to maturity	5.17	9.36	7.83
	in years		
Modified duration	4.53	3.07	2.81
	%		
Interest rate differential to the euro area	0.06	4.25	2.72
Appreciation of the index	0.26	13.04	7.63

Source: RZB, Reuters.

1 Spread to the Bund: Spread between a bond (such as a Greek government bond) and a German Bundesanleihe.

Growing liquidity and expanding market capitalization in the Czech Republic, Poland and Hungary during the period in which interest rates converge make it quite likely that benchmarks with fairly high capitalization standards will also include these countries. During this period, the convergence effects are bound to entail high capital inflows into these countries. After the accession countries join the euro area, the integration of their bond markets is expected to engender further liquidity surges and capital inflows.

## 2.5 Estimates of Capitalization on EMU Entry

Market capitalization in the Czech Republic, Poland and Hungary may augment at a faster rate than that of the longer-established European bond markets, because bustling issuing activity is expected to raise nominal market capitalization and because bond prices will go up in the wake of interest rate convergence. We took these two factors into account in devising a scenario and in calculating the new market capitalization of the three applicants. We based our scenario on a rise in government debt in conformity with the Maastricht criteria, assuming an annual debt increase of 5%. In all likelihood, the process of convergence to the euro area will end with EMU membership. We chose 2006 as the earliest possible date of membership and based our calculations for Western European government bonds on the current level of interest rates, because we deem this a realistic reference value for a long-term average and because exact forecasts for the period analyzed are impossible to make. Additionally, we assumed a constant nominal market capitalization. The market value of the established markets thus remains unchanged, whereas the capitalization of the applicant countries augments, consequently increasing their weight within Western Europe and the EU. In our scenario, the benchmark weight of the Czech Republic, Poland and Hungary would advance from 1.22% (chart 1) to 1.64%, which is tantamount to a 35% rise, but capitalization still remains very low.

## 2.6 Diversification of Investment Throughout Europe after EU Enlargement

### 2.6.1 Correlations

For this analysis, we used three-month correlations. These correlations show that European investors' diversification on the Czech, Polish and Hungarian market has positive effects. The correlations between the Czech, Polish and Hungarian bond markets are very weak, coming to less than 0.22. The highest correlation between these markets and the European bond market is 0.43, which is also low. The currency correlations also exhibit clear diversification effects resulting from investment in EU accession countries. While the corre-

Table 3

#### Correlation Matrix: Bonds<sup>1)</sup>

	Czech Republic	Hungary	Poland	Euro area	U.S.A.
Czech Republic	1.00	0.21	0.08	0.30	0.07
Hungary		1.00	0.20	0.43	0.25
Poland			1.00	0.30	0.17
Euro area				1.00	0.70
U.S.A.					1.00

Source: RZB, Thomson Financial Datastream.

<sup>1)</sup> Three-month correlations of the respective local currency indices on a euro basis.

Table 4

<b>Correlation Matrix: Currencies<sup>1)</sup></b>							
	U.S. Dollar	Swiss Franc	Pound Sterling	Norwegian Krone	Polish Zloty	Hungarian Forint	Czech Koruna
U.S. dollar	1.00	0.11	0.67	0.56	0.50	0.15	0.10
Swiss franc		1.00	0.10	0.35	0.21	-0.01	-0.17
Pound sterling			1.00	0.34	0.35	0.17	-0.05
Norwegian krone				1.00	0.41	0.25	-0.04
Polish zloty					1.00	0.31	-0.12
Hungarian forint						1.00	0.15
Czech koruna							1.00

Source: RZB, Thomson Financial Datastream.

<sup>1)</sup> Three-month correlations of selected exchange rates to the euro.

lations between the Western currencies – except for the Swiss franc – are generally above 0.5, which is not low, they are below 0.5 in the case of the Czech koruna, the Polish zloty and the Hungarian forint. According to empirical observations, Eastern European currency and bond correlations are very stable, so that no abrupt changes are likely to occur in the near future.

### 2.6.2 Risk

We used annualized 90-day daily volatilities as a risk measure. Both bond and exchange rate volatility should be taken into account to ensure comparability between the different markets. With their exchange rate risk, foreign currency bonds are more volatile, but a comparison of bond risk in the three applicant countries to foreign currency bond risk in EU member countries reveals quite similar figures. At 5.66%, Hungary exhibits less volatility than the UK at 7.76%. The Czech Republic displays even lower figures. Only Poland stands out with a high volatility of 10.87%, which is comparable to that of the U.S.A. (10.07%). The reason bond volatility is high in Poland is because the Polish zloty has a volatility of 9.62%. However, this figure should diminish at the latest immediately following Poland's EU entry as a result of preparation for EMU membership and should decline to the volatility levels of the pound sterling (6.34%) or the Swedish krona (6.33%). Factoring out the currency component, the bond indices of the Czech Republic, Poland and Hungary are already less volatile<sup>1)</sup> than those of EU Member States. As a case in point, at 5.5% UK bond volatility substantially surpasses Czech (3.79%), Polish (3.61%) or Hungarian (2.45%) bond volatility.

Despite their lower ratings, these three countries' default risk is hardly higher than that of the EU.

### 2.6.3 An Optimized Portfolio for European Investors

Both the diversification effects on account of lower correlations and the expected revaluation of the indices on account of the convergence of interest rates justify a higher weighting of bonds from these countries in a portfolio diversified across Europe than that resulting from the replication of the benchmark.

<sup>1)</sup> This fact may be traced to the lower duration of these three benchmark indices compared to the EMU benchmarks.

To illustrate this, we calculated a portfolio with an optimum yield-to-risk ratio using our optimization tool. This tool optimizes a portfolio by comparison to a set benchmark, maximizing the benefit to the investor. The concept is based on the assumption that outperforming the benchmark increases the benefit while a higher risk decreases the benefit. Tracking error is used as the risk measure. As long as the outperformance benefit is higher than the risk disadvantage, the investor will deviate from the benchmark. Risk aversion expressed in terms of the weight the risk carries also influences how much an investor will deviate from the benchmark. We assumed a risk-averse investor in our calculations. The model requires performance and risk data for the investment period covered as input for portfolio optimization. We targeted 2006 as the earliest possible date for the first accession countries' EMU entry. In calculating the performance of all countries, we assumed a steady interest rate curve, taking into account expected price gains on account of interest rate convergence in the case of the Czech Republic, Poland and Hungary. The long time period also warrants an extrapolation of the long-term volatilities. To this end, we used three-year volatilities, as they contain both market and exchange rate volatility. However, volatility, above all exchange rate volatility, is bound to diminish as convergence with the EU, especially with the euro area, progresses. As a result of the optimization, a strong underweight position for the euro area shows a clear preference of the optimization tool for a stronger diversification by building higher-risk positions. The reasons are the relatively long time horizon within which risk rises more slowly than earnings and the expectation that some non-euro area countries will post a better performance. The Czech Republic, Poland and Hungary are overweighted most against the benchmark. Here, additional performance triggered by convergence with the euro area is a key factor. Sweden and the UK are also overweighted by our optimization tool; by contrast, no positions in Norwegian kroner and Swiss francs are taken. Within the euro area, countries with higher spreads to the Bund, such as Greece and Austria, are overweighted. At 7.57%, the portfolio risk clearly lies below the benchmark risk of 8.36%; at the same time, the portfolio outperforms the benchmark by 2.5 percentage points. Table 5 provides a detailed account of these figures.

Table 5

### Optimized Portfolio Allocation

	Benchmark	Optimization Tool	Deviation
	%		Percentage points
Euro area	83.97	62.57	-21.40
Norway	0.41	0.00	- 0.41
Sweden	1.87	6.41	+ 4.54
Switzerland	1.24	0.00	- 1.24
United Kingdom	11.29	13.83	+ 2.54
Czech Republic	0.68	5.46	+ 4.78
Hungary	0.42	5.10	+ 4.68
Poland	0.13	6.63	+ 6.50
Performance	21.46	23.99	+ 2.53
Volatility	8.36	7.57	..

Source: RZB.

### 3 EU Enlargement to the East and the Consequences for European Stock Markets in General and Austria's Stock Market in Particular

The integration of Eastern European countries has two types of impact on liquidity. On the one hand, changes in important stock benchmarks entail an adjustment of the portfolio weights to the altered benchmark, in turn leading to strong liquidity flows. This is why we took a closer look at the methodology and purpose of various Europe-wide and international indices. On the other hand, the stepped-up integration of Eastern European countries makes it possible to widen the investment spectrum and to improve risk diversification, which may trigger liquidity flows that are higher than those caused by the adjustment of benchmark weights.

#### 3.1 The Main Supraregional Stock Benchmarks and Their Methodology

The principal supraregional stock benchmarks are offered and calculated by Morgan Stanley Capital International (MSCI), Financial Times Stock Exchange (FTSE) International, Dow Jones (DJ) and Standard & Poor's (S&P). Since the end of May 2002<sup>1)</sup> all these benchmarks have been weighted essentially<sup>2)</sup> according to the market capitalization of the free float shares. Table 6 compares the market capitalization of the three most highly developed stock markets in Eastern Europe with those of different European regions. The resulting matrix indicates the respective accession country's share in the general investment of various European investment regions. For example, in the case of investment on the basis of market capitalization the benchmark weight of the applicant countries (total) would come to 0.73% upon EU entry. On joining EMU, the joint weight would be 1.13% (based on market capitalization and not taking into account additional floats and differences in relative performance).

Table 6

#### Possible Shares of Eastern European Stock Markets Weighted by Stock Market Capitalization

	Market capitalization <sup>1)</sup>	Poland	Czech Republic	Hungary	Total
	USD billion				
Market capitalization <sup>1)</sup>	x	27.3	11.6	11.2	50.2
	USD billion	%			
EU	6.862	0.40	0.17	0.16	0.73
Europe	8.326	0.33	0.14	0.13	0.60
Europe (excl. United Kingdom)	6.866	0.40	0.17	0.16	0.73
EU (excl. euro area)	2.456	1.09	0.46	0.45	2.00
Europe (excl. euro area)	3.920	0.69	0.29	0.28	1.26
Euro area	4.406	0.61	0.26	0.25	1.13

Source: RZB, World Federation of Exchanges (FIBV), local stock exchanges.

<sup>1)</sup> Data: March 2002.

- 1 In May 2002 the MSCI concluded the second part of its structural rebalancing process with a free float weighting and the extension of the free float market coverage.
- 2 In the MSCI indices, marginal discrepancies may occur on account of the fact that the MSCI follows the goal of an 85% free float market coverage and as well as an 85% free float sector coverage. GDP-weighted versions of the MSCI Europe and MSCI EMU Indices are available as well.

As the free float share (the ratio of free float market capitalization to total market capitalization) of the Eastern European stock markets is far lower at roughly 38%<sup>1)</sup> than that of the EU (79%)<sup>2)</sup>, the weight of the three applicants would just come to about 0.35% if they joined the EU immediately and if weighting were on the basis of free float market capitalization. Using the same weighting formula and assuming immediate EMU entry, the three applicant countries' benchmark weight would be 0.61%.

Table 7

**Possible Shares of Eastern European Stock Exchanges**

**Weighted by Free Float Market Capitalization**

	Free float market capitalization <sup>1)</sup>	Poland	Czech Republic	Hungary	Total
	USD billion				
Free float market capitalization <sup>1)</sup>	x	9.6	3.5	5.9	19.0
	USD billion	%			
EU	5.449	0.17	0.06	0.11	0.35
Europe	6.687	0.14	0.05	0.09	0.28
Europe (excl. United Kingdom)	5.048	0.19	0.07	0.12	0.37
EU (excl. euro area)	2.280	0.42	0.15	0.26	0.83
Europe (excl. euro area)	3.605	0.26	0.10	0.16	0.52
Euro area	3.091	0.31	0.11	0.19	0.61

Source: RZB, World Federation of Exchanges (FIBV), local stock exchanges.

<sup>1)</sup> Data: March 2002.

At the international level, MSCI is the predominant benchmark provider. According to the first International/Global Asset Manager Survey conducted by Pensions & Investments magazine, 95% of respondents named MSCI as their primary international<sup>3)</sup> index provider (thereof, 80.4 percentage points applied to the Morgan Stanley Capital International Europe Australasia Far East Index, MSCI EAFE). In a further question, 86% of the respondents considered MSCI indices the primary global benchmarks. In mainland Europe, the MSCI indices have a “market share” of 69%, ahead of the FTSE International (16%) and the Dow Jones Index (15%).<sup>4)</sup>

**3.2 The Establishment of European Benchmarks**

A “European” attitude toward stock investment did not truly arise until the second half of the 1990s, bringing with it a need for European benchmarks. The main trigger for the creation of European indices was the knowledge that the euro would be introduced on financial markets at the beginning of 1999. Backed by Deutsche Börse and the Swiss exchange (who jointly founded the subsidiary STOXX), the Dow Jones (Euro) STOXX family of

1 We estimate a free float share (free float market capitalization/market capitalization) of some 35% for Poland, 30% for the Czech Republic and 53% for Hungary.

2 Approximated on the basis of the aggregation of the free float market capitalization of the DJ STOXX (600) with the end-2000 profile (when the DJ STOXX was still weighted on the basis of market capitalization).

3 In this context, international means supranational, not worldwide.

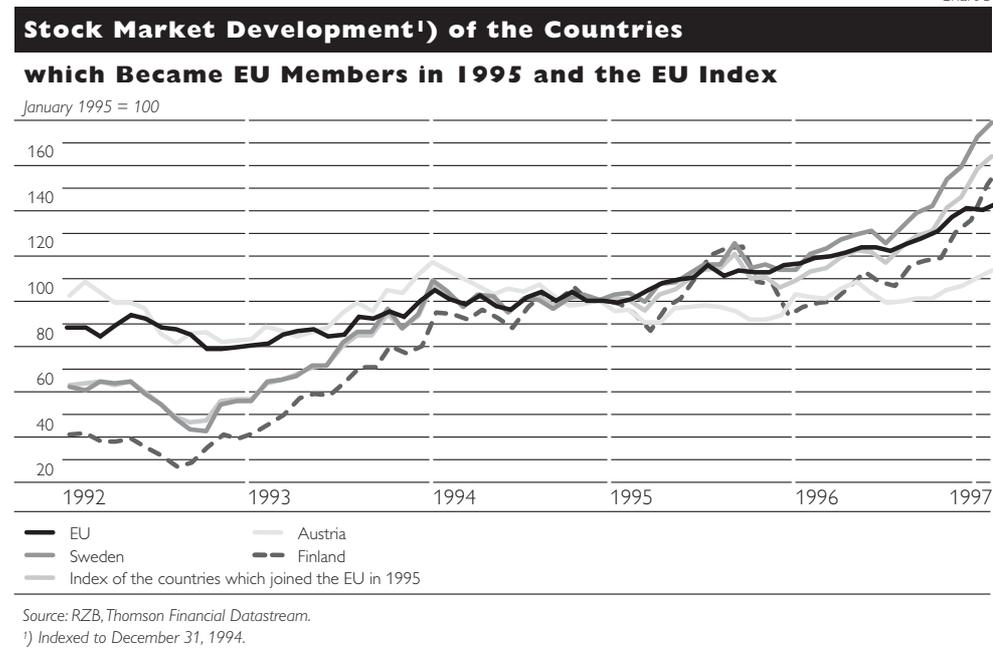
4 See Pensions & Investments, July 10, 2000 (Source: Reuters Business Briefing) and MSCI Newswatch, August 2000.

indices became a hit with the media from February 1998.<sup>1)</sup> The MSCI EU Index is the only one of the indices which covers exclusively EU Member States.<sup>2)</sup>

### 3.3 EU Membership and Benchmarks

The last EU enlargement round at the beginning of 1995 resulted in the membership of Austria, Sweden and Finland. Chart 3 shows the development of the Datastream (DS) stock market indices<sup>3)</sup> of those accession countries and of the EU Member States referenced to the 1995 entry date. In addition, we calculated an “index of the countries which joined the EU in 1995” that sums up the indices of those three countries (weighted by market capitalization). This index is designed to offset or buffer country-specific influences (such as the below-average performance of Austria’s stock market after the dissipation of the hope that the opening up of Eastern Europe would trigger a boom).

Chart 3



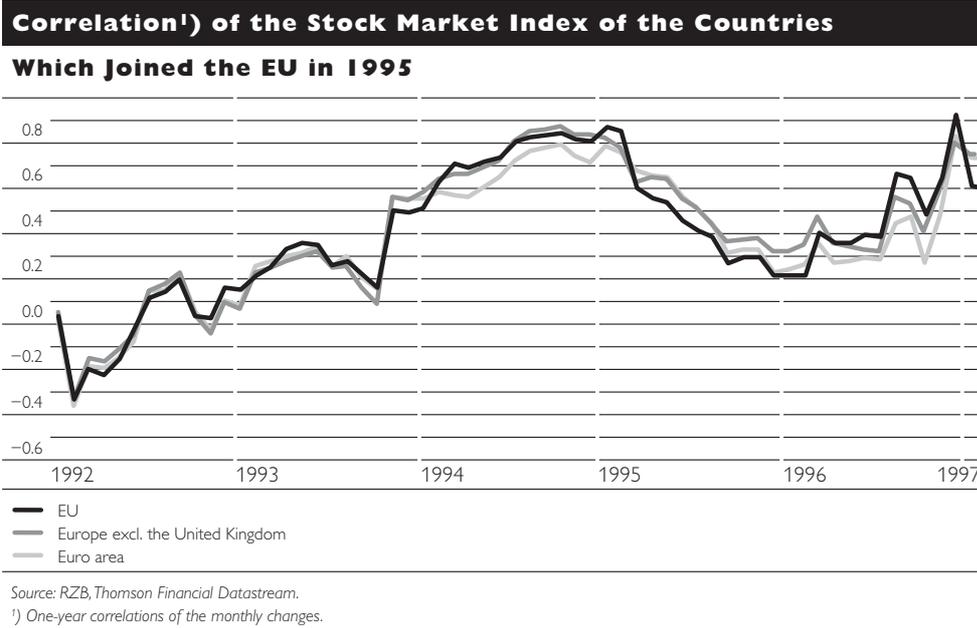
This synthetic index exhibited strong parallels between stock prices in the new member countries and in the EU in the year before these countries acceded to the EU. A notable feature is that the countries which became EU members in 1995 significantly outperformed EU members between fall 1992 and the end of 1994 and underperformed after EU entry in 1995. It is also interesting that the correlation against the EU index increases considerably. However, the outperformance has to be seen against the background of the fact that between fall 1992 and the end of 1994, the countries merely offset their previous under-

1) The disproportionately frequent citation in articles and reports (German and English reports in Reuters Business Briefing) confirms this claim.  
2) Interestingly enough, the FTSE offers a Financial Times European Union ex EMU Index (Source: Bloomberg).  
3) Datastream calculates the total market time series of the countries or regions, so the data are based on a uniform methodology.

performance: Both the index of the three acceding countries and the EU index started out from roughly the same level at the beginning of the 1990s. To a certain degree, this development is the result of a relatively high share of cyclically sensitive sectors (industry, banks) and the more pronounced recession in the Scandinavian countries in 1992/93 compared to the remainder of Europe.

To minimize this effect, we analyzed the performance and correlation development against other European index aggregates, such as that of Europe without the UK and of the later euro area, and found the same results. However, the MSCI EU Index is not likely to be the most important index in the family, as Switzerland, a major established market, is not included in the index.<sup>1)</sup>

Chart 4



The inclusion of countries in the main European benchmarks (MSCI Europe, the FTSE World Europe family, Dow Jones STOXX) is not governed by the concept of EU membership, but largely by the classification of the stock market as a developed market (as compared to an emerging market).

In this classification, MSCI also occupies a top position. According to the current MSCI classification, the stock markets of the following European countries are considered developed markets, and hence are represented in the MSCI Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK. The MSCI Emerging Markets (EM) Europe includes the Czech Republic, Hungary, Poland, Russia, and Turkey.

Table 8 shows that Denmark, the UK, Spain, Sweden and Austria have been classified as developed markets since 1969, though they joined the EU

<sup>1</sup> Moreover, the media hardly use this index: Reuters Business Briefing (RBB) did not mention the MSCI EU or MSCI European Union index prior to October 13, 1998. In 1999, RBB contains only 257 references in German and English.

Table 8

EU Membership and MSCI Classification			
Year of Accession	Country	MSCI membership as	
		Emerging Market from	Developed Market/MSCI Europe from
1995	Austria		1969
	Sweden		1969
	Finland		1987
1986	Spain		1969
	Portugal	1989	1997
1981	Greece	1989	2001
1973	United Kingdom		1969
	Ireland		1990
	Denmark		1969
Founding member	Luxembourg		1990

Source: RZB, Reuters Business Briefing.

later. Conversely, Portugal and Greece were already EU members when they were classified as emerging markets, and were reclassified as developed markets 11 years (Portugal) and 20 years (Greece) after becoming EU members.<sup>1)</sup> Only Ireland and Luxembourg were classified directly as developed markets in 1990 without having been carried as emerging markets beforehand.

### 3.4 The Reclassification from an Emerging Market to a Developed Market and Its Relationship to EMU Entry

The most recent reclassification from emerging to developed market status was of the Greek market in 2001. Prices and volumes on this stock market accelerated noticeably from 1997, a development which cumulated in a doubling between the beginning of 1999 and September 1999. Although the chart is reminiscent of the technology-heavy Nasdaq index, this development was influenced only very little by the TMT (technology, media and telecommunications) bubble. At roughly 26% at the end of 2000,<sup>2)</sup> Greece's share of TMT stocks more or less matched that of the remainder of European countries.

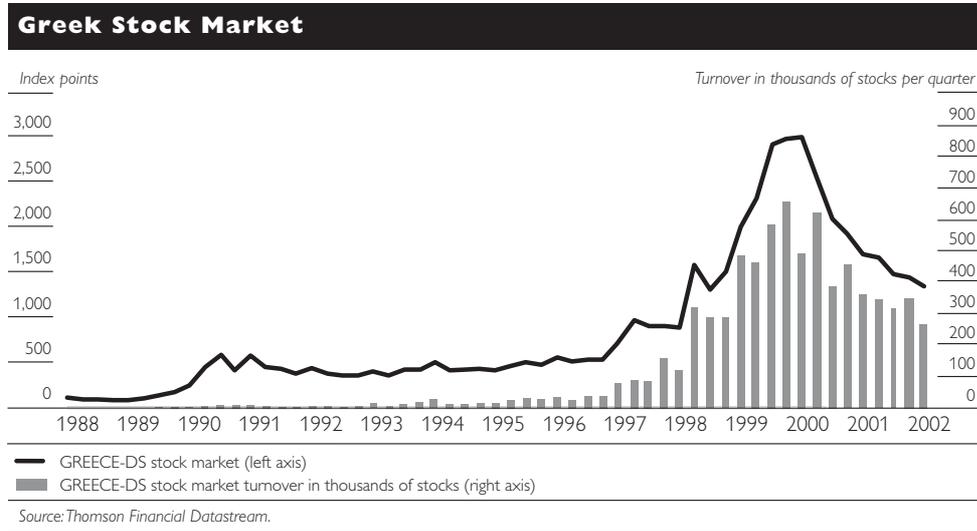
Much rather, this trend resulted from the convergence of interest rates, which provided the Greek banking sector with a positive impetus. Greece's largest commercial bank, the National Bank of Greece, managed to boost its share value tenfold between the beginning of 1997 and September 1999.<sup>3)</sup> This argumentation corroborates the assumption that the market considers formal EMU entry far less important than prior convergence required for actual EMU entry. The increased probability of reclassification to developed market status on EMU entry was a prime factor in boosting investors' interest.

1 An analysis of the 1986 enlargement round, while fundamentally interesting, does not allow any parallels to the enlargement of the EU toward the East. Moreover, in 1986 there was no general European investment consciousness. As a case in point, the stock market index for Portugal, the Lisbon BVL General Index (BVLX), has only been calculated since January 1988.

2 We do not have more precise figures for September 1999 and the beginning of 2000. However, we may assume that the share of TMT stocks surpassed the overall European level (30%) by several percentage points.

3 Also, Greek construction stocks outperformed the average.

Chart 5



MSCI cites the comparatively high degree of the Greek economy's and stock market's development gauged on the basis of several factors as reasons for the reclassification. Greece's per capita income, e.g., exceeded the bottom limit of the high income countries as defined by the World Bank. Moreover, Greece took measures to ensure the country's economic, fiscal and monetary health and to qualify for EMU entry. In the years named, the Greek stock market grew substantially, and its liquidity and operational efficiency (clearing and settlement) improved markedly.<sup>1)</sup> The Greek stock market's development in 1997/98 reflects the anticipation of Greece's joining of EMU in 2001. Translated to Europe's stock markets, this means that the accession countries' EMU convergence is a key issue already now.

#### 4 Conclusions

The range of European investment opportunities in bonds is widened by the EU accession of the Czech Republic, Poland and Hungary, which also enlarges diversification among government bonds. We consider it highly likely that the new Member States will be integrated into existing European benchmarks. As these countries will account for only a minimal share of the benchmarks, the positive diversification effect will be very weak. However, the prospect of joining EMU will entail a convergence of interest rates with those of the euro area. As the three analyzed countries' market capitalization is low, it is not to be expected that EMU entry will change euro area interest rates. Hence, it stands to reason that Czech, Polish and Hungarian interest rates will converge toward euro area interest rates. Bond prices in these countries are relatively certain to rise as long as this effect lasts, that is until the countries become EMU members. During this period, the time at which these countries will in fact join EMU and currency risk represent the greatest sources of uncertainty. Positive diversification effects along with an above-average, risk-adjusted performance compared to Western European bonds make Czech, Polish and Hungarian bonds attractive

1 See MSCI press release of July 31, 2000.

for Austrian and European investors. However, as the weighting of the three accession countries will be very low in the Europe-wide benchmarks, it will not suffice for investors who wish to profit from these countries' performance to orient their strategic asset allocation on these benchmarks. To enjoy the full benefit of the accession bonus, investors should give these markets a greater weight in their strategic asset allocation than the European benchmarks, and if necessary even give them an overweight position in their tactical asset allocation.

From the perspective of the stock markets, the integration of the accession countries will not trigger any sudden and massive liquidity flows between EU Member States, in particular Austria, because the free-float market capitalization of the prospective applicants is comparatively low. Much rather, the integration process will be a gradual one. The integration has important implications for investors who operate with a more comprehensive definition of Europe. The growing integration of Eastern European countries broadens the range of investment options, a circumstance that investors who wish to anticipate a future benchmark weighting will use to invest in the largest and most liquid accession country instruments. EU membership and the convergence triggered by the prospect of joining EMU soon after (above all in the case of the Czech Republic, Poland and Hungary) have an impact, as does the hope that these countries' markets will then be upgraded from emerging market<sup>1)</sup> to developed market status. The examples of EU convergence analyzed in this study (Austria, Sweden and Finland) and the upgrading of Greece to developed market status suggest an overweighting of the accession country stock markets in European, regional and international portfolios, just like in the case of an optimized bond portfolio.<sup>2)</sup> The Austrian market, which at times in fact has a higher correlation with the Hungarian than with the German market,<sup>3)</sup> offers investors who do not wish to move beyond the developed market limit in their portfolios (at least not yet) the opportunity to benefit from Eastern Europe's EU and EMU convergence at a lower risk.<sup>4)</sup> The liquidity flow such an investor policy would trigger could boost the value of Austrian companies (and the Austrian stock market) compared to European companies of the same size and in the same sector. As the regions become more closely knit, above all following Eastern European countries' EU and EMU entry, the Austrian market will lose importance as a surrogate for an exposure in Eastern Europe and the markup bonus will dissipate.

1) However, this has not only positive implications, as an upgrade will trigger outflows from emerging market funds.

2) Optimizing a portfolio that includes accession country equities (by analogy to an optimized bond portfolio) would require a number of assumptions and would thus exceed the scope of this paper.

3) Measured by the respective MSCI country indices.

4) No currency risk and the advantages of a developed market (according to the MSCI definition).

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