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Time varying regional integration in emerging stock market

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Abstract

Abstract This paper studies the regional stock market integration process. First, we estimate the time-varying world market risk price and the price of currency risk using an international CAPM with segmentation effects. Second, we study the time varying integration with Markov Switching Model. Finally, we relate the obtained results to important facts and economic events.

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1. Introduction

The degree of integration of stock markets around the world increased significantly during the late 1990s and 2000s. A key factor underlying this process has been the increased globalization and of investment seeking higher rates of return and the opportunity to diversify risk internationally. The globalization process is thus more strikingly displayed on the financial markets. This ever-growing globalization of the financial markets results on the one hand from the intensity of cross-border capital mobility, and on the other from the increased openness of national economies. Besides the accelerating wave of deregulation affecting the financial markets in almost every country, their ability to communicate directly, made possible by the technologic revolutions in information and communications, has enabled a substantial integration of national financial markets.

In parallel with the movement towards the globalization of national markets, a number of economic areas have continued to develop their institutional aspects, as shown by the growing number of regional economic agreements .These regional trade agreements result in part from a greater openness of the member countries, and a desire to become more competitive in world markets by mobilizing their joint efforts and synergies. Several emerging regions such as Asia, Central and Eastern Europe, and Latin America are also in keeping with this dynamics, both on the regional and global levels. However, the links between global and regional integration are not the same in every area. In some regions international integration preceded the regional integration, as happened in Asia, whereas the reverse approach is seen in other areas such as Latin America. Moreover, the speed of this financial integration process may vary over time, and differs from one region to another.

Although previous studies have provided a general understanding of the global integration process of individual emerging markets over the recent decades (Bekaert and Harvey, 1995; Carrieri et *al.*, 2007), little attention has been paid to the dynamics of the integration of emerging market regions into the world market, which has now become an undeniable trend. Moreover, on the methodological level, the potential time-varying shifts in the integration process that governs stock-market return dynamics, resulting from the structural reforms undertaken by emerging countries, have rarely been considered. This then leads to a biased assessment of the degree of financial integration.

This study contributes to the existing literature by developing a dynamic international capital asset pricing model (ICAPM) allowing for smooth transition between different integration regimes. These studies provided detailed analysis of the ICAPM taking into account two sources of risk, the one that is related to the international financial market and the other that is related to the local market. Bekaert and Harvey (1995) were the first to propose a version of ICAPM incorporating both sources of risk, international and local, giving them a coefficient which is related to the degree of financial integration in the global market. They do not impose a preliminary assumption on the degree of integration, which can vary between 0 (complete segmentation) and 1 (perfect integration).

Indeed, according to Bekaert and Harvey (1995) the two polar cases of perfect integration and strict segmentation of markets do not exist in practice and remain purely theoretical. Their model has several advantages, leading to robust results concerning the modeling of the global risk premium. They also determine the dynamics of integration and its impact on the contribution of each risk premium, international or local, to the formation of the global risk premium.

Carrieri et al. (2007) extend the model of Errunza and Losq (1985) to assess the integration levels of eight emerging markets using an aggregated measure of financial asset substitution. They argue that full integration is achieved if we can construct a diversified portfolio from all the eligible assets, whose returns mimic those of a portfolio composed of all the assets in an ineligible segment. Conversely, full segmentation corresponds to a null correlation between these two portfolios. The results obtained show that the local pricing factor continues to be relevant in the valuation of emerging market assets, but none of the markets considered is completely segmented from the world market. The authors also question the use of correlations of market-wide indices as an indicator of financial integration, because they significantly underestimate such integration.

Chambet and Gibson (2008) attempt to estimate the degree of integration in 25 emerging markets by using a dynamic model that not only incorporates local and global pricing factors, but also a systematic risk factor for emerging markets. The conditional variances are allowed to fluctuate according to a multivariate GARCH (1, 1)-in-Mean process. This paper is particularly interesting in that the authors attempt to explain their integration measure by several economic variables, including the degree of openness and market concentration. The results show that a number of emerging markets still remain segmented, and that the level of segmentation is negatively correlated with the degree of market openness and the diversification of a country's trade structure.

Following the suggestion by Bekaert et *al.* (2007) that the price-to-earnings ratio of an industry must be the same across countries if the growth opportunities are assessed on fully-integrated markets, Bekaert et *al.* (2009) measure a country's degree of segmentation by the weighted average of the absolute differences between the global and local price-to-earnings ratios for industries. According to these authors, the segmentation level of emerging markets remains significant, even if it tends to fall over time.

This study contributes to the existing literature by developing a dynamic international capital asset pricing model (ICAPM) allowing for smooth transition between different integration regimes. Specifically, expected returns may move from a perfectly-segmented regime to a perfectly-integrated one, depending on a certain number of national and international factors that are likely to drive the process of financial integration. Our study differs from past studies in that we investigate the integration of emerging market regions into the world market, rather than individual emerging markets, using actual real exchange rates as a common source of risk, in addition to world and domestic sources of risk.

The remainder of the article is organized as follows. Section 2 describes the empirical approach which we employ to measure and investigate the level of emerging market integration over time. Section 4 presents and discusses the results obtained. Section 5 provides some concluding remarks.

2. Empirical approach

Under integration, an international conditional version of the CAPM can be written as follows (Adler and Dumas (1983), and Harvey (1991))

$$E_{t-1}(R_{it}^{r}) = \delta_{m,t-1} Cov\ (R_{it}^{r}, R_{mt}) \tag{1}$$

where $E_{t-1}(R_{it}^{r})$ is the excess return of security *r*, issued in country *i*, conditionally on a set of information ψ_{t-1} that is available to investors up to time *t*-1. R_{mt} is the return on the world market portfolio. $\delta_{m,t-1}$ refers to the conditionally expected world price of covariance risk. When aggregating at the national level,

Equation (1) is written as

$$E_{t-1}(R_{it}^{r}) = \delta_{i,t-1} Cov\ (R_{it}^{r}, R_{it}) \tag{2}$$

Equation (2) shows that the expected excess return on security r depends upon its conditional covariance with the return on a national market portfolio R_{it} and the price of the local risk $\delta_{i,t-1}$. Let $Var_{t-1}(R_{it})$ be the conditional variance of national market return, the pricing relationship in Equation (2) at the national level is given by

$$E_{t-1}(R_{it}) = \delta_{i,t-1} Var\ (R_{it}) \tag{3}$$

However, recent studies suggest that returns should be influenced by both global and local factors (Bekaert and Harvey (1995), and Carrieri et al. (2007)). In this partially segmented framework, the returns are given by

$$E_{t-1}(R_{it}) = \Omega_{t-1}^{i}(\delta_{m,t-1} Cov\ (R_{it}, R_{mt})) + (1-\Omega_{t-1}^{i})\delta_{i,t-1} Var(R_{it}) \tag{4}$$

Ω_{t-1}^{i} is the conditional probability of transition between segmentation and integration states, which falls within the interval [0,1] and can be thus interpreted as a conditional measure of integration of market i into the world market. If Ω_{t-1}^{i}= 1, only the covariance risk is priced and the strict segmentation hypothesis is rejected. If Ω_{t-1}^{i}= 0, the unique source of systematic risk is the variance and the pricing relationship in a strictly segmented market applies. Otherwise, we have an asset pricing model for partially integrated markets. In their study, Bekaert and Harvey (1995) model the integration measure Ω_{t-1}^{i} by a logistic transition function of instrumental variables that are likely to affect the integration level. $\delta_{m,t-1}$ and $\delta_{i,t-1}$ are allowed to vary over time according to a set of information variables that reflect economic fluctuations and investors' expectations[1].

So far we assume that the purchasing power parity (PPP) holds across countries. If this condition is violated, the model in Equation (5) must then incorporate rewards for exchange rate risk (Adler and Dumas, 1983; Carrieri et *al.*, 2007; Tai, 2007), and is expressed as

$$E_{t-1}(R_{it}^{c}) = \Omega_{t-1}^{i}(\delta_{m,t-1} Cov\ (R_{it}^{c}, R_{mt}^{c}) + \sum_{k=1}^{L} \delta_{k,t-1} Cov\ (R_{it}^{c}, R_{kt}^{c})) + (1-\Omega_{t-1}^{i})\delta_{i,t-1} Var_{t-1}(R_{it}^{c}) \tag{5}$$

R_{kt}^{c} is the return on the exchange rate of the currency of country k against the currency of the reference country c. $\delta_{k,t-1}$ expresses the expected price of the exchange risk for currency k, conditionally on the information available up to t-1. L is the number of markets included in the sample. Exponent c indicates that returns are expressed in the currency of the reference country.

[1] Bekaert and Harvey (1995) employ four global instrumental variables: the dividend yield of the world market in excess of the 30-day Eurodollar interest rate, the default premium (differences between yields on Aaa and Baa bonds as quoted by Moody's), the change in the term premium (yield on ten-year US Treasury bonds minus yield on 3-month US Treasury bills), and the change in the 30-day Eurodollar interest rate. The local information variables include returns on the local stock market, changes in the local exchange rate, local dividend yields, and the ratio of market capitalization to the gross domestic product (GDP).

At the empirical stage, the pricing formula in Equation (5) will be simultaneously estimated for the world market and for four emerging market regions. That is, we have a system of five equations where the expected return on the world market portfolio is given by

$$\begin{aligned}
&E(R^c_{mt}-R^c_{ft}/\Psi_{t-1})=\lambda_{mt}Var(R^c_{mt})+\lambda_{ALt}Cov(R^c_{mt},R^c_{ALt})+\lambda_{St}Cov(R^c_{mt},R^c_{St})\\
&+\lambda_{PCt}Cov(R^c_{mt},R^c_{PCt})+\lambda_{MOt}Cov(R^c_{mt},R^c_{MOt})\\[2ex]
&E(R^c_{ALt}-R^c_{ft}/\Psi_{t-1})=\lambda_{ALt}Var(R^c_{ALt})+\lambda_{mt}Cov(R^c_{ALt},R^c_{mt})+\lambda_{St}Cov(R^c_{ALt},R^c_{St})\\
&+\lambda_{PCt}Cov(R^c_{ALt},R^c_{PCt})+\lambda_{MOt}Cov(R^c_{ALt},R^c_{MOt})\\[2ex]
&E(R^c_{St}-R^c_{ft}/\Psi_{t-1})=\lambda_{St}Var(R^c_{St})+\lambda_{mt}Cov(R^c_{St},R^c_{mt})+\lambda_{ALt}Cov(R^c_{St},R^c_{ALt})\\
&+\lambda_{PCt}Cov(R^c_{St},R^c_{PCt})+\lambda_{MOt}Cov(R^c_{St},R^c_{MOt})\\[2ex]
&E(R^c_{PCt}-R^c_{ft}/\Psi_{t-1})=\lambda_{PCt}Var(R^c_{PCt})+\lambda_{mt}Cov(R^c_{PCt},R^c_{mt})+\lambda_{St}Cov(R^c_{PCt},R^c_{st})\\
&+\lambda_{PCt}Cov(R^c_{PCt},R^c_{PCt})+\lambda_{MOt}Cov(R^c_{PCt},R^c_{MOt})\\[2ex]
&E(R^c_{MOt}-R^c_{ft}/\Psi_{t-1})=\lambda_{MOt}Var(R^c_{MOt})+\lambda_{mt}Cov(R^c_{MOt},R^c_{mt})+\lambda_{St}Cov(R^c_{MOt},R^c_{St})\\
&+\lambda_{PCt}Cov(R^c_{MOt},R^c_{PCt})+\lambda_{ALt}Cov(R^c_{MOt},R^c_{MOt})\\[2ex]
&E(R^c_{it}-R^c_{ft}/\Psi_{t-1})=\Omega^i_{t-t}(\lambda_m Cov(R^c_{it},R^c_{mt}/\Psi_{t-1})+\lambda_{AL}Cov(R^c_{it},R^c_{ALt}/\Psi_{t-1})\\
&+\lambda_S Cov(R^c_{it},R^c_{St}/\Psi_{t-1})+\lambda_{PC}Cov(R^c_{it},R^c_{PCt}/\Psi_{t-1})+\lambda_{MO}CovR^c_{it},R^c_{MOt}/\Psi_{t-1}))\\
&+(1-\Omega^i_{t-1})\lambda_{it}Var(R_{it}/\psi_{t-1})
\end{aligned}\tag{6}$$

with i = AL (Latin America), S (Asia), PC (Southeastern Europe), and MO (Middle East). In system (6), $R^c_{ALt}, R^c_{St}, R^c_{PCt}$ and R^c_{MOt} are respectively the returns on the real exchange rate indices of the four regions under consideration, and $\lambda_{AL,t-1}, \lambda_{S,t-1}, \lambda_{PC,t-1}$ and $\lambda_{MO,t-1}$ refer to the expected prices of the exchange rate risk.

The system (6) incorporates the price of a risk related to the international market, to the exchange rate and to the local market. De Santis and Gerard (1997) and Gerard and *al.* (2003) show that these prices vary over time. The risk price of the international market reflects the aggregation of the risk aversion of all investors. The later, being supposed adverse to risk, the price should be positive whatever the time t (see for example, Adler and Dumas, 1983). Consequently, it is modelized as an exponential function of some information variables related to aggregate macroeconomic and financial global market: $\lambda_{m,t-1} = Exp(\delta'_m X_{m,t-1})$. The regional market risk can be modeled as $\lambda_{i,t-1} = Exp(\gamma'_i X_{i,t-1})$

The price of currency risk can theoretically take positive values or negative ones. It is supposed to vary as a linear function of instrumental variables (Hardouvelis et *al.*, 2006): $\lambda_{k,t-1} = (\delta'_k X_{m,t-1})$. The degree of integration of region i into the world market, Ω^i_{t-1}, is modeled by using an exponential function that satisfies the condition $0 \le \Omega^i_{t-1} \le 1$, as follows

$\Omega^i_{t-1} = Exp(-|\alpha_0 + \alpha_i X_{i,t-1}|)$. $X_{i,t-1}$ is the vector of information variables available at time *t*-1 that are susceptible to drive the integration degree of region *i*.

More specifically, the econometric specification of the model to be estimated, i.e., system (6), is characterized by the following system of equations:

$$\begin{aligned}
R_{it} &= \lambda_{0,i} + \Omega^i_{t-1}(\lambda_{m,t-1}h_{im,t} + \lambda_{L,t-1}h_{iL,t} + \lambda_{A,t-1}h_{iA,t} + \lambda_{E,t-1}h_{iE,t} + \lambda_{M,t-1}h_{iM,t}) \\
&\quad + (1-\Omega^i_{t-1})\lambda_{i,t-1}h_{ii,t} + \varepsilon_{it} \\
\varepsilon_t &= (\varepsilon_{mt}\varepsilon_{Lt}, \varepsilon_{At}, \varepsilon_{Et}, \varepsilon_{Mt}) / \psi_{t-1} \sim N(0, H_t) \\
H_t &= C^{*}{}'C^{*} + \sum_{i=1}^{k} A^{*}{}'\varepsilon_{t-1}\varepsilon^{*}{}_{t-1}{}'A^{*} + \sum_{i=1}^{k} G_k{}^{*}{}'H_{t-1}G \\
\lambda_{m,t-1} &= Exp(\delta'_m X_{m,t-1}); \lambda_{i,t-1} = Exp(\gamma'_i X_{i,t-1}); \lambda_{k,t-1} = (\delta'_k X_{m,t-1}); k = L, A, E, M \\
\Omega^i_{t-1} &= Exp(-|g'_i X_{i,t-1}|)
\end{aligned} \tag{7}$$

where R_{it} refers to the vector of excess returns which are assumed to be normally distributed. H_t is the variance-covariance matrix of returns at time *t*.

Following Hardouvelis et *al.* (2006), we adopt a 2-stage procedure to estimate the pricing system (7).

We first estimate a subsystem of five equations for excess returns on world market and four real exchange rate indices. This stage allows us to obtain the conditional variance of world market and real exchange rate indices, their conditional covariance as well as the prices of world market and exchange rate risks. In the second stage, we use Markov regime switching models with variable transition probabilities to study the dynamics of financial integration.

3. Data and Results

The emerging areas composed as follows: Asia (Malaysia, Singapore, Sri Lanka and Thailand), Southeastern Europe (Bulgaria, Poland, Romania and Czech Republic), Latin America: Argentina, Brazil, Chile and Mexico and Middle East (Egypt, Jordan, Israel and Turkey).

The stock market returns are calculated with dividend reinvestment in excess of the 1 month Euro-dollar rate. Stock returns of each zone are calculated from a geometric average of the returns series of its four countries weighted by the series of market capitalization, also taken from Datastream. Real exchange rates series of emerging countries are expressed against the U.S. dollar. These data are from the Federal Reserve Bank of Saint Louis. The real exchange rate of each emerging area is calculated as a weighted sum of the exchange rates of its four countries, the weights being their respective share in GDP.

Global instrumental variable are used to explain changes in the prices of international market end foreign exchange rate. We use the following variables: a constant, the first lag of the global market dividend yield in excess of the 1–month Eurodollar deposit rate (RDIVW), the first lag of the change in the term spread (SPRDT), the first lag of the default spread (SPRMD) and the first lag of return on a U.S treasury certificate to 1 month (TRUSS).Concerning the risk of local market of each area, we retain: a constant, the first lag of excess equity returns (EXR), the local dividend yields (RMDIV) and the first lag of the inflation rate (VINF). The dividend yield of each zone is calculated from a geometric average

of the four countries weighted by market capitalization series. As for the inflation rate of each area, it represents the average of standard rates of inflation in four countries.
We consider the degree of trade openness (DOPNS) and the difference in dividend yields (ECARD) as the most significance factors of integration. The trade openness is calculated from a geometric average of the sum of exports and imports of the four countries representing the zone, weighted by their share in industrial production. The second variable is measured by the difference between the dividend yield of each area and the global market.

3.1 *Dynamic of Price of risk*

Table I reports the estimation results of the world market risk price and the price of currency risk due to the unexpected fluctuations of real exchange rates of each area vis-à-vis the U.S. dollar. In addition to the constant, two other instrumental variables significantly explain the price of currency risk: the U.S. term spread (SPRDT) and the first lagged return on a U.S. A one month treasury certificate (TRUS). We now analyze the price of risk portfolio of the world market. The results of the exponential regression in function to international instrumental variables are reported in Table I. These variables explain 86.87% of the variance of the model. Their coefficients are statistically significant at the 1% significance level except for the first lag of the change in the term spread (SPRMD).
According to Fig.1, the price of risk is very volatile. The application of the Hodrick-Prescott filter reveals two phases of expansion in 1999 and from 2002 until the end of the period.

3.2 *Markov Switching Model and Dynamic of regional integration*

The degree of integration $\Omega_{t-1}^{i} = Exp(-\left|\alpha_0 + \alpha_i X_{i,t-1}\right|)$ is estimated using the Markov Switching Model (Hamilton, 1988, 1989, 1990; Bekaert and Harvey, 1995; and Gray, 1995, 1996). The Markov regime switching model allows studying the dynamics of a variable over time and determining the probability of transition from one regime to another. In fact, according to Hamilton (1988), most financial series in first difference follow a nonlinear stationary process. This nonlinearity arises from a different behavior of the series when it passes through various phases. Hamilton (1988) proposed to determine the probability that a variable is in a given regime (expansion or recession) at time t, knowing the regime characterizing the instant (t-1). We apply the same principle to financial integration dynamics. Knowing that its level varies between 0 and 1, we determine at each time t, the probability that the level of integration is 1 (respectively to 0) taking into account its position at time (t-1).

Globally, the results are significant and consistent with the financial and economic reality of each emerging area. Fig.4 shows the dynamics of integration for the Latin American region. It is characterized by a level close to 0 (partial segmentation) between 1996 and 1998 followed by several phases of expansion which have occurred just after the economic crises, and financial policies in 1998, 1999 and 2001. These episodes can have a twofold explanation. On the one hand, relying on the previous analysis about the dynamics of the risk prices, we find that for the Latin America area, the price of currency risk is negative throughout the period. This is a favorable factor in opening the local market to international investors and the free mobility of capital. On the other hand, the expansion phases would be nothing else that the mirror of economic and financial shocks on the Latin American market, related to the various crises in the late 1990s and early 2000s. Table III presents the estimation results of the regime switching model. It reports the value of the probability of transition from one regime to another as well as the average level of integration of the area during the whole period. It is of the order of 0.69, corresponding to a partial integration of markets in the Latin American zone.

The dynamics of integration for the Asian area (Fig.2) differs from the previous case. Two phases of evolution can be distinguished. The first, from 1997 until 2001, is marked by a level of integration superior to 0.5 and approaches 1 (perfect integration) especially during economic and financial crises. The second is characterized by financial integration close to 0 (partial segmentation) and takes effect from 2002 until the end of the considered period. Table III indicates a mean level of integration of about 0.27, much lower than that found for the Latin American zone. This can be explained by the importance of the price of currency risk in the Asian region making it less secure for foreign investors. Also, according to income level using the classification of the World Bank, Malaysia and Thailand are countries with middle-income. In a first phase 1996-2003, the level of integration is very close to 1 and marked by some relatively large fluctuations, notably for countries of Southeastern Europe. The second phase, 2003-2007, is characterized by a level of integration that is decreasing and converges to the situation of partial segmentation. This second period also presents a relatively few high peaks with a level of integration that can exceed the threshold of 0.5, especially the area of Southeastern Europe in 2004-2005. For the latter, these fluctuations can be explained by its integration into the European Union (2004), which represents a first step towards the opening to the international market and the possibility of diversification of capital portfolio.

Concerning the Middle East countries, the fluctuations in the level of integration known during the 2003-2007 period are weak but fairly frequent and can be explained by the political instability and lack of security for foreign investors, mainly because of the war sparked in 2003 against Iraq. Table III indicates a mean integration degree of about 0.59, which is the same for the two emerging areas, Southeastern Europe and Middle East. This relatively high level should be considered in large part as a consequence of various financial, economic and political crises, involving asymmetric shocks which have a long-term impact on these markets.

4. Conclusion

The objective of this study is to analyze the dynamics of the regional integration process of four emerging market into the world market, while taking into account the importance of exchange rate and world and local market risk. An ICAPM suitable for partially integrated markets and departure from purchasing power parity was developed in the spirit of Bekaert and Harvey (1995)'s regime-switching model in order to explain the time-variations in expected returns on regional emerging market indices. We find that the level of market integration varies widely over time and is satisfactorily explained by degree of trade openness and the difference in dividend yields as the most significance factors of integration. Even though it reaches fairly high values during several periods, and exhibit an upward trend towards the end of the estimation period, the emerging market regions considered still remain substantially segmented from the world market.

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Appendices

Table I: Estimation of the price of currency risk and international market based on instrumental variables

	L. America	Asia	S. Europe	Middle East	World
Constant	-0,105***	0,648***	-0,118***	1,333***	-0,444***
	(0,025)	(0,111)	(0,024)	(0,102)	(0,057)
TRUSS	0,009***	0,006	0,004	0,004	0,013***
	(0,003)	(0,005)	(0,003)	(0,004)	(0,004)
SPRDT	0,0001**	0,000	0,000	0,002***	0,000*
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
RDIVW	0,003	0,003	-0,003	0,015**	0,020***
	(0,005)	(0,008)	(0,005)	(0,007)	(0,006)
SPRMD	-0,002	-0,001	0,003	-0,004	-0,016***
	(0,005)	(0,007)	(0,004)	(0,006)	(0,005)

Table II: Estimation of the degree of integration based on information variables

	L. America	Asia	S. Europe	Middle East
Constant	0,492**	0,826**	-1,044***	1,294***
	(0,198)	(0,327)	(0,309)	(0,219)
ECARD	0,032***	-0,002*	0,000	-0,024*
	(0,010)	(0,001)	(0,004)	(0,140)
DOPNES	0,002***	0,000	0,003**	-0,005
	(0,001)	(0,001)	(0,001)	(0,004)

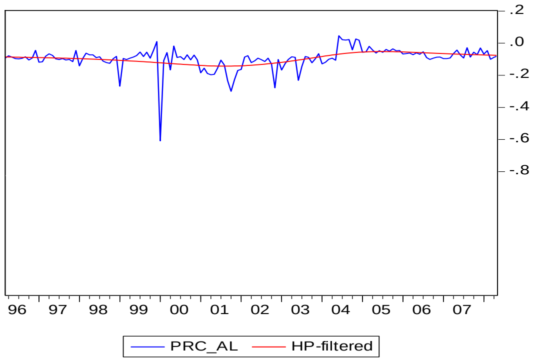
Table III: Transition probability and level of average integration

	L. America	Asia	S. Europe	Middle East
Transition probability				
P(1,1)	0,973***	0,963***	0,972***	0,992***
	(0,021)	(0,032)	(0,023)	(0,010)
P(1,2)	0,058	0,011	0,038	0,009
	(0,045)	(0,012)	(0,031)	(0,011)
Degree of integration				
Average	0,697	0,273	0,592	0,593

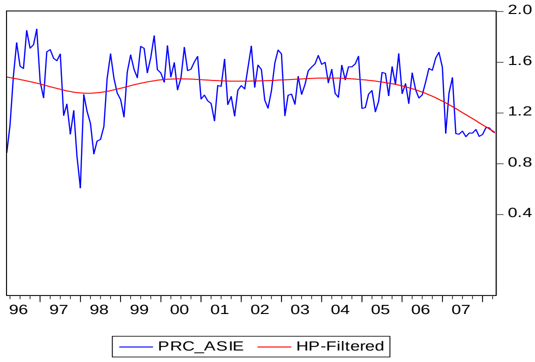
*, **, and *** indicate that the coefficients are significant at the 10%, 5%, and 1% levels respectively. Numbers in parenthesis are the associated standard deviations.

Figure 1: Price of Exchange Risk

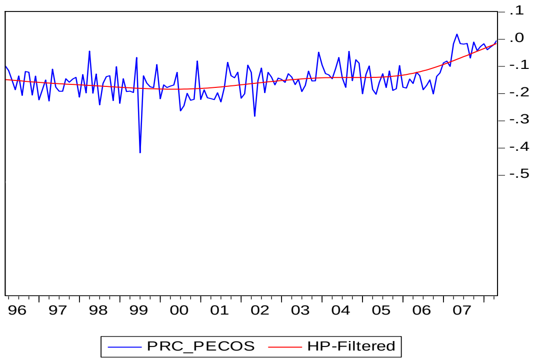
1.1 - Latin America



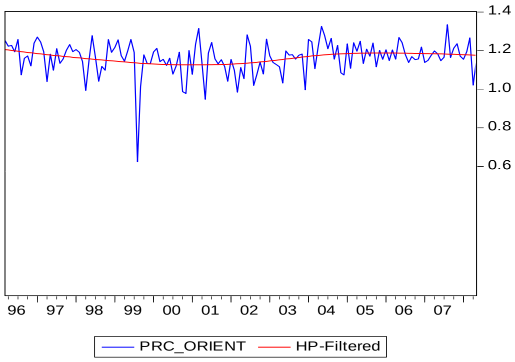
1.2 - Asia



1.3 - Southeastern Europe



1.4 - Middle East



1.5 - Price of global market risk

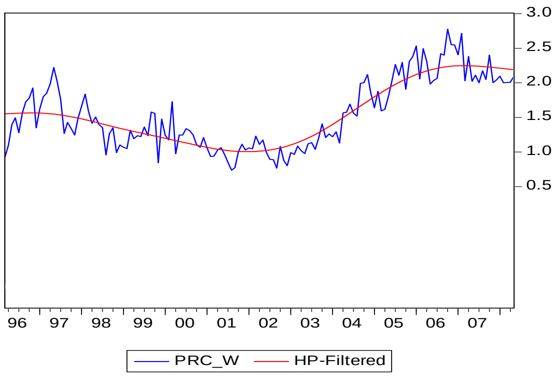
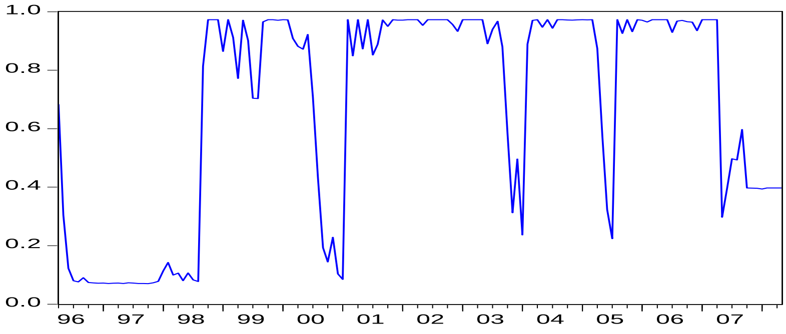
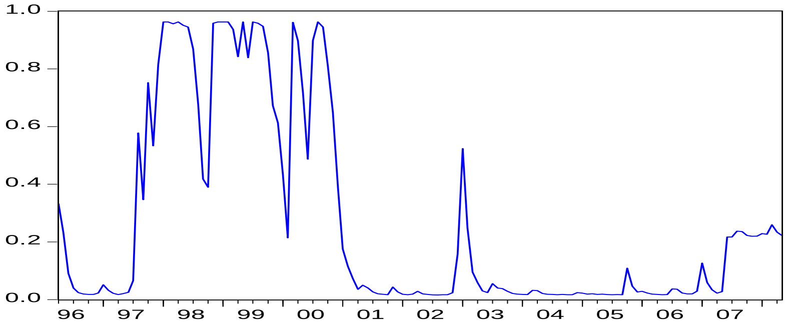


Figure 2: Dynamic integration of emerging market regions into the world market

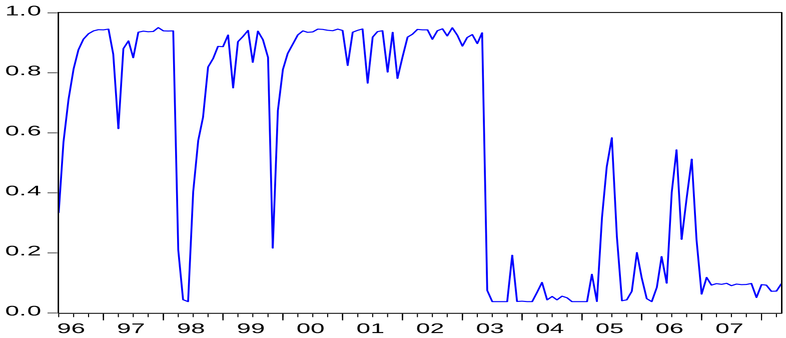
2.1 Latin America



2.2 Asia



2.3 Southeastern Europe



2.4 Middle East