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Faculty of Economics and Business Administration

Finance Department

PHD. THESIS

-SUMMARY-

FINANCIAL LIBERALIZATION AND THE IMPACT ON FINANCIAL MARKET

SCIENTIFIC COORDINATOR

Professor IOAN NISTOR, PhD.

PhD. CANDIDATE,

Maria-Lenuța ULICI

(married CIUPAC-ULICI)

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INTRODUCTION

In the late 1970s and early 1980s, most developing countries were in a crisis of economic policy. Due to adverse circumstances and the deteriorating economic and financial conditions, the financial system proved to have many deficiencies and was unable to generate economic growth. Based on financial aid from the World Bank and International Monetary Fund, many developing countries in Asia, Europe, Latin America and Africa have undertaken economic reforms to create a suitable investment environment and develop the private sector through a economic system based on market mechanisms. Apparently the result of these reforms was to transform developing economies of many emerging economies, where economic growth is underpinned by strong private sector growth and rapid maturation of capital markets.

Financial liberalization was an important component of the reforms mentioned above. The reforme of financial liberalization means to give central banks more authority to conduct monetary policy, to privatize and restructure the banking sector, to liberalize interest rates, to waive the direct loans and, more generally, to develop and promote the role of financial markets in financing the economy. The main objective is to enable emerging economies to emerge from recession, and later to develop rapidly.

State of knowledge. Many studies have been made to highlight the impact of financial liberalization on financial sector and overall economic performance in emerging economies. Thus, some authors praise the benefits of financial liberalization. It had been shown that financial liberalization contributes, on the one hand, to strengthen the functioning of financial systems, to improve the competitiveness of banking and financial sector and to transform savings into funds available for financing the economy. On the other hand, helps to promote international diversification and access to global capital market. For example, Kim and Single (2000) argue that the abandonment of controls on financial sector leads to more efficient capital markets in emerging economies, allows the guidance of existing funds and national economies to most productive investments. Levine and Zervos (1998), Stulz (1999) and Mishkin (2001) argue that liberalization will improve transparency and reduce liquidity problems in emerging countries. Other authors, such as Bekaert and Harvey (2000) and Henry (2000), argue that, especially, participants in emerging markets can enjoy new gains from international diversification and reduce

capital costs, after market liberalization. However, Bekaert et al. (2001) argue that economic growth tends to be improved as a result of financial deregulation.

However, financial liberalization is not a risk free process. Financial crises of the 1990s demonstrates this. Indeed, the banking system was fragile and collapsed in several emerging economies. Economies, where there was high growth rates were turned into economies characterized by severe recessions. And that's not all. A negative phenomenon is to increase the risk of financial instability, which is caused by the free movement of capital.

Research objectives. This thesis attempts to provide relevant answers to the questions of great interest in literature, which is why the thesis involves a structure that is designed primarily to those living far controversy for which there is no consensus yet. The difference in views on the expected impact of liberalization in emerging economies may result from the fact that some articles are focused on short-term effect of liberalization, while others are focused on its long-term effect. The authors point out further that in most cases, empirical studies neglect the idea that liberalization is dynamic and progressive, and thus should not be allowed to reach definitive conclusions. Therefore the objectives of this study are to:

- explain the concept of liberalization;
- identify the impact of capital account liberalization on economic growth;
- highlight and model the behavior of conditional volatility in emerging markets;
- analyze the impact of financial liberalization on stock market volatility, respecively on the weak form efficiency in emerging markets;
- identify the politico-economic recommendations for decision makers in emerging countries to prevent and / or reduce financial vulnerability associated with the wave of financial liberalization.

Research methodology. Documentation bibliography, a component of the scientific documentation process, has a decisive importance to this, because that enables us, through literature, to know the scientific heritage, assumptions used to explain economic phenomena, methods of analysis and estimation, scientific findings and theories in the field. Further, the scientific explanation of economic phenomena is achieved by a aggregate complex, varied methods, means, techniques and tools. This requirement results

not only from the complexity of economic phenomena studied, but also due to imperfect character of any research methods.

To measure the economic and logical means of assumptions we used: induction and deduction, but also quantitative measurement methods. Another method of analysis is represented by various econometric models built using statistical databases: Datastream, Eurostat, World Bank, International Financial Statistics and World Development Indicators, respecively specialized computer software that: EViews, R and Matlab WinRats.

The motivation and importance of research. Delicate and difficult at the same time, financial and monetary field always attracted attention of researchers worldwide, the most illustrious of them basing their theories and forming around them reputable schools, always adapted to the progress of economic life and the need to maintain and restore monetary and general economy equilibrium. One of the challenges of contemporary capitalism, financial liberalization, is a process that also can bring enormous benefits or pose serious obstacles to development and economic prosperity. Financial liberalization is a financial innovation, dereglementation, booming capital market, ie a trend towards financial deleveraging. The effects of capital mobility fueling instability by taking speculative positions and imitative behavior, which causes overadjusting reactions of exchange rates and financial asset prices. In addition, financial liberalization limits the leeway of national decision makers in terms of economic policy formulation. One solution would be to set up and compliance with prudential disposals and information transparency. Prudential provisions are preventive and are distinguished from curative actions occurring after crisis (intervention of any lender). Than rejected, financial liberalization must be accompanied by a prudential policy increase. Too rapid liberalization in a country does not mean the appearance of speed problems in absolute sense, but in a relative sense: in many cases instability occurred because of the difference between impressive speed of financial liberalization and slow adjustment of prudential disposals, banking and financial regulations, respectively monetary policy action.

The need to study and knowledge of both the process itself and its effects on financial markets has emerged as a result of a small number of studies and inconclusive results

regarding the impact of financial liberalization in developing countries in Central and Eastern Europe.

Structure thesis. The paper is structured in five chapters. In seeking answers to fundamental questions, the conducted research will allow a better understanding of the role of financial liberalization on the evolution of capital flows, the impact of capital account liberalization on economic growth, respectivlly the impact of financial liberalization on stock market volatility and efficiency in six European emerging countries (denoted EU6 countries: Hungary, Poland, Czech Republic, Slovenia, Slovakia and Romania).

Chapter 1 "**Theoretical approaches on financial liberalization**" highlights some aspects of financial liberalization process. I made an identification of the advantages, disadvantages of the process, an overview of liberalization methods and indicators used. Moreover, I illustrated methods of measuring intensity of the liberalization process, challenges that arise in measuring the effects of the process, some fundamental questions that are present in the literature regarding the impact of financial liberalization on the cost of capital, informational efficiency and volatility in emerging markets.

Chapter 2 "**Dynamics of capital flows liberalization**" presents the phasing of capital flows, which was made by two economists, Ishii and Habermaier, and some basic rules that a country must meet before the liberalization of capital flows. I also described the evolution process of liberalization in the analyzed countries, the steps that had to go through to complete the process, the evolution of investment flows in the pre-, respectively post-liberalization period, and the factors influencing the decision to liberalize the foreign direct investment flows.

In Chapter 3 "**Capital account liberalization in EU6 countries**", I have described the concept of capital account liberalization, respecively the relationship between crisis and capital account liberalization. As many studies have focused on the impact of capital account liberalization on economic growth (GDP), in this chapter I have approaches this issue. In the absence of a theoretical model that provides a clear explanation of the impact, I built a linear regression where the dependent variable is GDP, and the

independent variables are inflation, interest rate, exchange rate, financial account and a dummy variable related liberalization.

In Chapter 4 "**Financial liberalization and stock market volatility**" I analyzed the impact of financial liberalization on capital market volatility. In the first part of this chapter I presented some theoretical aspects and scientific studies on the concept of volatility. Since emerging markets are known to have a much higher volatility than developed markets, in the second half of the chapter I used econometric GARCH and IGARCH models to capture the impact of liberalization on volatility and I presented some preventive measures against the risk of financial instability generated by liberalization process.

Chapter 5 "**The impact of financial liberalization on stock market efficiency**" shows the impact of liberalization on weak form efficiency in six emerging markets. I used unit root tests of structural breaks (Zivot-Andrews test and Lee-Strazicich test), variance ratio tests (Automatic Variance Ratio test and Wright test) and the generalized Hurst exponent for testing long memory property. Since the liberalization of stock markets, there was the hope that the presence of foreign investors, leading to increased liquidity and transparency of markets and ensuring competition between prices, will increase the informational efficiency.

1. THEORETICAL APPROACHES ON FINANCIAL LIBERALIZATION

Financial liberalization is not a contemporary phenomenon. For decades, Western countries and companies were operating in a free economy. Thus, it is difficult to identify the beginnings of financial liberalization, on which is based the economy liberalization. It is sufficient to recall the role of Italian bankers in Renaissance Europe, the importance considered in the nineteenth century of English and French capital in the world, particularly in the colonial empires in Russia, and the influence of American capital movements from the crisis of 1929.

In the late 1970s the phenomenon of deregulation in the U.S. appears to be the object of widening freedom to innovate and take in a system of pure competition, by reducing or scrapping rules authoritarian, which tended: to strictly regulate the operation and access to different markets capital, to strictly regulate the role and freedom of financial intermediaries action to impose limits framework lending operations by their nature, duration, taxation or object.

Financial liberalization includes several elements, as it reflects a variety of restrictions that were imposed. This can include:

- capital account liberalization;
- banking sector liberalization;
- stock market liberalization (table 1).

Table 1: Financial liberalization elements

Capital account liberalization	**Banking sector liberalization**	**Stock market liberalization**
Criteria for full liberalization		
Borrowing abroad by banks and corporations	*Lending and borrowing interest rates*	*Acquisition by foreign investors*
Banks and companies are allowed to borrow abroad. They must inform the authorities, but an authorization is granted almost automatically. Reserves requirements are less than 10%. Minimum maturity of not more than two years.	There are no controls on interest rates.	Foreign investors are allowed to hold domestic equity without any restrictions.
and	and	and
Multiple exchange rates and other restrictions	*Other indicators*	*Repatriation of capital, dividends, and interest*
There are not special exchange rates, both for current account transactions, and capital account transactions. There are no restrictions on capital outflows.	There are no controls on lending (subsidies to certain sectors or certain credit allocations). Deposits in foreign currencies are permitted.	Capital, dividends and interest can be repatriated freely within two years from initial investment.
Criteria for partial liberalization		
Borrowing abroad by banks and corporations	*Lending and borrowing interest rates*	*Acquisition by foreign investors*
Banks and companies are allowed to borrow abroad, but there are certain restrictions. Reserves	There are controls on interest rates or loan or deposit.	Foreign investors are allowed to have up to 49% of the capital of each company. It may be some restrictions to

requirements may be between 10% and 50%. Minimum maturity might be between two and five years.		participate in certain sectors. Also occur indirect ways to invest on the stock market, such as through investment funds.
or	and	or
Multiple exchange rates and other restrictions	*Other indicators*	*Repatriation of capital, dividends, and interest*
There are special rates of exchange for current account and capital account transactions. There may be some restrictions on capital outflows.	There may be some controls of credit allocation (subsidies to certain sectors or certain credit allocations). Deposits in foreign currency could not be allowed.	Capital, dividends and interest can be repatriated, but not before the period of 2-5 years from initial investment.
Criterii pentru non – liberalizare		
Borrowing abroad by banks and corporations	*Lending and borrowing interest rates*	*Acquisition by foreign investors*
Banks and corporations, most often, do not have permission to borrow abroad. Reserves requirements may be greater than 50%. Minimum maturity might be longer than five years. Restrictions are more for some sectors.	There are controls on both the rates on loans and the rates on deposits.	Foreign investors can not hold domestic equity.
or	and	or
Multiple exchange rates and other restrictions	*Other indicators*	*Repatriation of capital, dividends, and interest*
There are special rates of exchange for current	There are controls in the allocation of loans and	Capital, dividends and interest may be returned, but no

account and capital account transactions. There is an increase of the number of restrictions for capital outflows.	deposits in foreign currency are not allowed.	sooner than five years from initial investment.

Source: Souza (2004)

Financial liberalization can be recognized by official data and the occurred effects of liberalization, such as the introduction of ADR and investment funds, respectively a significant increase in U.S. capital flows. To better understand this reform, it is imprortant a thorough study of the effects occurred. This analysis seeks, first, to show to what extent indicators of liberalization may cause changes in emerging markets, and second, to identify the theoretical basis for constructing necessary measures of liberalization.

Henry (2000), Bekaert and Harvey (2000) and Kim and Singles (2000) states that "financial liberalization is not determined by a single event but a sequence of events".

Measuring the intensity of financial liberalization process is of great interest to investors, since they can understand the openness of the market in emerging countries. The most important thing to note is that the intensity of liberalization is not identical for all emerging countries, because each of them has differently liberalized their capital markets.

In finance, the most often cited method is proposed by Bekaert (1995) regarding concerns about the intensity of liberalization. Construction of the indicator is based on eligible indices of IFC. Thus, for each emerging market, the indicator (investment rate = IR_{it}) is constructed by dividing the market capitalization of S&P / IFC Investable Index to S&P / IFC Global index, after as follows:

$$IR_{it} = \frac{MC_{it}^{IFCI}}{MC_{it}^{IFCG}};$$

where:

MC = market capitalization at the time *t* of the considered two indices for each emerging market;

S&P / IFCG = total domestic market capitalization;

S&P / IFCI = percentage of the national market, which is legally available to foreign investors.

An investment rate equal to one indicates that emerging markets are fully liberalized. Conversely, if the market is completely closed to foreign investors, the rate will be zero. This rate investment reflects only market deregulation reforms progress, because it relies on the theoretic level of foreign equity. Edison and Warnock (2003) attempts to measure the intensity of controls on capital flows by deducting the investment rate of Bekaert (1995) from value one. The mew value obtained is in the range [0,1], where zero reflects an open market with a low capital control and the value of one indicates a high degree of capital controls.

The impact of financial liberalization has been studied by many papers of financial literature. Financial liberalization is a key factor in the spectacular growth in emerging markets. However, liberalization produces structural changes in developing countries, helping to accelerate the development of stock markets. Thus, emerging markets tend to approach to the structure of developed markets. However, the impact of liberalization is not only limited to positive effects, among others, to stimulate economic growth, to reduce of capital costs and interest rates on international diversification in a global market. In fact, for some time, the fragility of the financial system to which are associated frequent financial crisis, concernes not only decision makers from countries that have liberalized markets, but also the market participants. Thus, existing questions in the financial literature are:

- does the cost of capital reduce?
- does market efficiency strengthen?
- is stock volatility enhanced?
- does transmission volatility increase?

Financial literature has not yet provided satisfactory answers to previous questions. This explains the reasons of empirical studies from the following chapters. I consider these questions as basic as they are at the heart of decision makers in emerging markets.

2. DYNAMICS OF CAPITAL FLOWS LIBERALIZATION

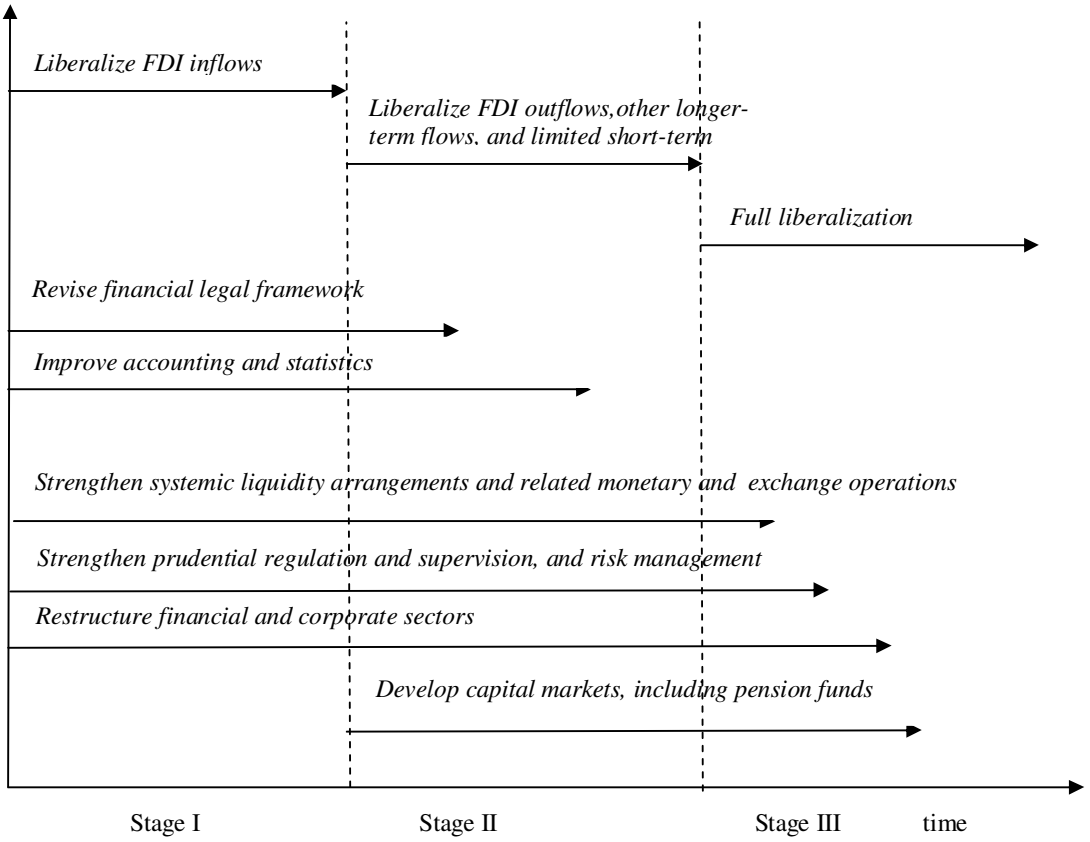
Perfect market models suggest that international capital flows generate benefits both debtors and creditors. Since international investment is the inter-temporal trade, the commercial trade between periods and international transactions of the countries that have similar effects on the welfare economy. The case of an open capital account is similar to the case of free trade, but the model indexes differ. Looking from another point of view, the case of international financial coincides with the case liberalization of domestic financial liberalization. If domestic financial markets can be considered as a means of efficient allocation of resources, which can not be considered and international financial markets?

The answer could be that the efficient markets paradigm is fundamentally misleading when applied to capital flows. Limits for capital movements are a distortion.

The stages of capital flows liberalization

A proposal for the sequencing of capital flows was made by two IMF economists, Ishii and Habermaier (2002) (Figure 1). The fundamental principle is that short-term flows should not be liberalized before the country obtain effective control over monetary and foreign exchange operations. It is unclear in the original diagram if full liberalization can be admitted before the introduction of prudential regulations and efficient systems of managenent risk. In our opinion, the answer should be negative. In general, non-cooperative behavior of banks and other financial institutions may determine to accept risks above the optimum level. It is a known fact in economics that, on monopolistic markets, noncooperativ behavior leads to a sub-optimal social equilibrium; the dominant presence of foreign ownership may cause large allocative inefficiencies, as competition policy has a lesser impact on these firms. Prudential measures (laws, regulations and procedures imposed by the government) aimed at limiting the margin for non-cooperative behavior by imposing rules of risk management, corporate governance and market performance. They are all the more necessary as the country liberalized their capital flows. Efficient allocation of resources through market mechanisms requires high quality information.

Figure 1: Sequencing capital flows liberalization



Source: Ishii and Habermaier (2002)

Ca urmare a crizei asiatice, în rândul economiştilor s-a răspândit pe scară largă opinia conform căreia o economie emergentă nu ar trebui să liberalizeze fluxurile de capital dacă nu sunt îndeplinite câteva condiţii fundamentale. Liberalizarea fluxurilor de capital poate să conducă la creşterea concentrării pe piaţă şi a puterii de piaţă a unor firme. Totodată, ea poate genera condiţiile creşterii instabilităţii economice, când perioadele de entuziasm şi dezvoltare accelerată sunt urmate de crize puternice şi de stagnare.

Following the Asian crisis, among economists has widely spread the view that emerging economies should not liberalize capital flows if some basic conditions are not met. Liberalization of capital flows can lead to increased market concentration and market power of firms. However, it can generate the conditions for increasing economic instability, when periods of excitement and accelerated growth are followed by deep crisis and stagnation.

As a basic rule, a country should not proceed to full liberalization of capital flows if that fails to:

- maintain under control the inflations, to stabilize the exchange rate and to obtain sufficient foreign economic credibility;
- budget deficit and state extra-budgetary commitments to be within reasonable limits;
- external indebtedness (public and private) are not excessive;
- financial system have sufficient development and efficient prudential rules to be implemented;
- competition policy should be strengthened;
- introduce a statistical information system and efficient.

Transition economies of Central and Eastern Europe have already experienced net inflows of capital (Table 2). They can expect a significant increase in these flows, according to internal developments and progress towards European integration. The European Union has imposed on all countries to open their capital account until accession moment. For the first wave of countries such as Czech Republic, Poland, Hungary, this was a matter of two or three years. Most of these countries have made important progress on macroeconomic stabilization, structural reform and in particulary domain of the creation of a solid financial system. For them, the risks associated to current account openness appear diminished. Other economies in transition had to overcome considerable difficulties.

Table 2: Stages of capital flows liberalization in EU6 countries

	Romania	Czeck Republic	Hungary	Poland	Slovenia	Slovakia
Begining the capital flows liberalizatin process	2001	1994	1991	1991	1992	1996
Liberalization of residents' access to bank deposits in national currency	2003	1995	2001		2001	1995
Liberalization of residents' access to bank deposits abroad	2003	2001	2001	2001	2001-pers. fizice 2003– pers. juridice	2004
Full liberalization of residents' access to money market operations	2004	1999	2001	2001	2002	2003
Complete liberalization of capital flows	2006	2001	2001	2001	2003	2004

Source: EU6 countries central banks

Less developed countries in transition could take into account the possibility of applying selective measures of capital controls. After the Chilean model, mandatory unpaid short-term reserves for any input of capital could be particularly attractive, to promote long-term investments at the expense of short-term financing. Also, these countries should be able to prevent speculation on its currency, especially if the central bank pursues a target exchange rate. Therefore, they could build a set of controls on sudden outflows and massive capital, even if such controls would not ever come to be applied, it is mainly to give a credible signal. Finally, some may wish to limit the penetration degree of foreign capital in the banking sector to reduce the mobility of capital outflows near a crisis. Competition policy must be sufficiently strong to prevent the formation of powerful monopolies.

Capital flows liberalization in EU6 countries

During the 1990s, EU6 countries were in transition period from command to market economy and a first step consists in establishing a policy on current account convertibility. Obligations of Article VIII of the IMF have been accepted by all EU6

countries in the period 1994 - 1996. Capital flows liberalization approach was more heterogeneous reasons, to each country had corresponded a certain data for process implementation, respectively different macroeconomic conditions and developments during the transition period.

Two main groups can be distinguished between EU6 countries: the country with rapid liberalization process - Czech Republic - and cautious liberalization process countries - Hungary, Poland, Slovakia, Slovenia and Romania. Different starting conditions played an important role in the development of a country's liberalization strategy. For example, because of the relatively high external debt of Hungary and Poland, these countries became more vulnerable to external shocks, and their authorities have adopted a cautious attitude towards the liberalization of capital flows.

An important feature of the liberalization process in EU6 countries was that countries tended to liberalize inflows before outflows. This approach was due to the initial uncertainty about the transformation success. In the early years of transition, the authorities feared that high inflation and currency depreciation could trigger sudden capital outflows. Relatively rapid macroeconomic stabilization in most countries removed this fear, and in the second half of the 1990s capital inflows caused more difficulties than potential outflows.

3. CAPITAL ACCOUNT LIBERALIZATION IN EU6 COUNTRIES

Cobbam (2001) defines capital account liberalization as the process of removing restrictions from international transactions related to the movement of capital. It can involve the removal of controls on both domestic resident of international financial transactions and on investments in the home country by foreigners.

The impact of capital account liberalization on economic growth

Capital account liberalization is one of the most controversial and less understood policies of our days. One of the reasons is the fact that different theoretical perspectives have various implications on the opportunity of capital flows liberalization. Another aspect is that empirical analysis could not provide yet relevant conclusions on this topic.

In this chapter I propose to analyze the impact of capital account liberalization and some variables (inflation, monetary policy interest rate, exchange rate and financial account), considered to be the main key vulnerabilities of EU6 economies associated to capital account liberalization, on gross domestic product.

In the absence of a theoretical model able to provide a clear explication on the capital account liberalization, the following regression was conceived:

$$\mathbf{PIB_{i,t}= c+ \beta_1 *I_{i,t} + \beta_2 *Rd_{i,t} + \beta_3 * C_{Si,t} + \beta_4 *C_{Fi,t} + \beta_5 *LIB_{i,t}+\varepsilon_{i,t}}$$

where:

$PIB_{i,t}$ - gross domestic product at the market price of country *i* at moment *t*, expressed as a pro rata increase comparative with the previous period

$I_{i,t}$ – monthly inflation rate (annual increase rate) of country *i* at moment *t*

$Rd_{i,t}$ - interest rate (percentage) of country *i* at moment *t*

$C_{Si,t}$ - exchange rate (exchange rate of national currency / EURO) of country *i* at moment *t*

$C_{Fi,t}$ - financial account expressed in millions of EURO of country *i* at moment *t*

$LIB_{i,t}$ – dummy variable that is equal with one when the capital account is liberalized and which is equal with zero when the capital account is not liberalized.

LIB is included within the regression in order to study the effect of capital account liberalization on GDP and on the other variables of the regression. The main objective is to estimate the LIB coefficient, which will indicate by its significant positive or negative value the GDP evolution consecutive to liberalization.

The analyzed period is of ten years for each country and taking into consideration the date when the capital account liberalization process took place. Therefore, were studied the following periods: 2001-2011 (Romania), 1996-2005 (Czech Republic), 1996 Q3 - 2006 Q2 (Hungary), 1997-2006 (Poland), 1998-2002 (Slovenia) and 2004-2008 (Slovakia). The official date of capital account liberalization is considered the breaking rupture (Table 3).

All the data that were utilized are quaterly. For three variables (GDP, inflation, and financial account), data were obtained from Eurostat database. Data concerning interest rate were obtained from IMF database and for the exchange rate evolution were used data obtained from Eurostat and from the official websites of EU6 countries central banks as well.

Table 3: **The analyzed sample period for each country**

	Official data of capital account liberalization	Analyzed period
Romania	September 2006	2001-2011
Czech Republic	January 2001	1996-2005
Hungary	June 2001	1996Q3 - 2006Q2
Poland	October 2002	1997Q4 - 2006Q3
Slovenia	January 2003	1998 - 2007
Slovakia	January 2004	1999 - 2008

Source: EU6 countries central banks

Each sample contains 40 observations.

EU6 countries have used various policy responses to capital inputs. Two main factors have determined these policy responses: the nature of influxes and the main macro economical objectives. Macro economical objectives are different from one country to another and from time to time: some of these economies extended the struggle with inflation, while others were more concern about the economic growth, consecutive to the success of inflation diminishing. For the most part, the regulators confronted with

multiple challenges and were constrain to establish very clear the priorities. At the same time, it is important to notice that continuous improvement in prudential supervision and regulation was crucial to the capital account liberalization in EU6 countries.

Monetary policy and exchange rate policy were the most common responses to capital influxes towards Central Europe. The main response to foreign direct investments was sterilized intervention, which can be associated with flexible or fixed exchange rates. Fix exchange rates have been maintain by Czech Republic until 1997 and by Slovakia until 1998. Slovenia maintained a powerful exchange rate during the entire period, while the exchange rate from Poland and Hungary has fluctuated strictly within the variation until 2000 and 2001. The monetary authoritie had need to find a delicate equilibrium between continuation of disinflation, minimization of sterilization costs and maintaining external competitiveness.

Crossing from a more flexible exchange rate was partially motivated by the increasingly capital flows. As an effect of the currencies fluctuations, the monetary authorities have differences their responses based on the nature of the capital flow. After 1990, Czech Republic and Slovakia received large amounts of foreign direct investments. They react especially by sterilized intervention. Poland and Hungary have attracted large amounts of major capital influxes dependent on the exchange rate. Both of these countries have renounced at sterilized intervention and permitted significant appreciations of the nominal exchange rates. In the same time, the interest rate become more active in four countries - Czech Republic, Hungary, Poland, and Romania. All of these four countries have introduced an inflation-targeting official regime.

Within the inflation-targeting regime, Poland, Hungary, Romania and Czech Republic have followed different strategies. In Poland, interest rate was used strictly for inflation aiming, taking into consideration capital flows that succeeded and exchange rates evolution. The non-intervention policy transferred the volatility costs of capital flows on the participants market and discouraged foreign exchange transactions. On the other hand, Hungary and Romania have utilized interest rate in order to maintain the exchange rate within a short variation, which was considered to be in concordance with inflation aim objectives. Settling disinflation within the process of inflation aim was a great success and inflation it is expressed with a single number since 2002 in Poland and since 2005 in

Romania an Hungary. Nevertheless, one of the consequences was major capital influxes dependent on interest rate and accompanied by a firm monetary policy. In the Czech Republic, the interest rate was less active, because it lead to a low level of inflation in short time after the inflation aim regime was introduced.

Before liberalization, inflation had a positive impact but also insignificant on Poland's GDP. The impact on other countries' GDP was also negative, but in the same significant for countries like Romania and Czech Republic. Interest rate positively and insignificantly influences the GDP of Romania, Hungary, Poland, and Slovenia; it negatively and insignificantly influences the GDP of Czech Republic and Slovakia. Evolution of national currency interest rate in relation with Euro had a positive and significant impact only on Romania's GDP. Financial account does not represent a positive impact on GDP before the capital account liberalization process took place. Dummy variable reveals that the presence of controls regarding capital account had a positive and significant influence on the GDP of Romania, Hungary, Poland, and Slovenia (Table 4).

Table 4: The impact of inflation, interest rate, exchange rate and financial account on GDP

	Before capital account liberalization					
	c	I	Rd	C_S	C_F	LIB
Romania	2.083683* (5.664624)	-0.043632* (-3.209093)	1.541115 (1.20363)	11.37341** (2.58976)	-0.028576 (-0.516872)	1.275*** (4.182652)
Czech Republic	1.028493** (2.513234)	-0.129465** (-2.25595)	-0.37929 (-0.534034)	-9.167078 (-1.323545)	0.000876 (0.083808)	0.195 (1.110002)
Hungary	1.231512* (4.905606)	-0.011705 (-0.586457)	0.496525 (0.306556)	1.725008 (0.386227)	-0.013008 (-0.448443)	1.07*** (16.90707)
Poland	0.39869 (0.607626)	0.053636 (0.763736)	1.35927 (0.476717)	6.095748 (1.125511)	-0.006553 (-0.164532)	0.805*** (4.922277)
Slovenia	2.971194** (2.408437)	-0.164567 (-1.061181)	3.234552 (1.80375)	-42.35812 (-1.482587)	0.058755 (1.356128)	1.045*** (5.976052)
Slovakia	0.747736 (0.788362)	-0.065206 (-0.560702)	-3.132392 (-0.339208)	11.18103 (0.597503)	-0.080828 (-0.688629)	0.51 (1.566808)

Source: Author processing in Eviews

Note: *, ** and *** is the confidence values 1%, 5%, respectively 10%. In parentheses are t- Student values.

Elimination of controls on capital account caused inflation to have a negative impact on GDP in Czech Republic, in other countries the impact is insignificant. Interest rate on monetary policy positively affects the GDP in Romania and Czech Republic. As regards exchange rates, the evolution of RON / EUR exchange rate has a negative impact on

GDP. The financial account does not affect GDP, even after capital account liberalization. The process of liberalization positively affects GDP of all countries EU6 (except for Romania) (Table 5).

Table 5: The impact of inflation, interest rate, exchange rate and financial account on GDP

	After capital account liberalization					
	c	I	Rd	C_S	C_F	LIB
Romania	0.655909 (0.334333)	-0.002812 (-0.009127)	5.931669*** (1.766573)	-21.95963*** (-1.966933)	0.618034 (1.097365)	0.5 (1.497342)
Czech Republic	1.394086* (6.100808)	-0.191358*** (-2.117582)	3.048644** (2.440765)	-7.956804 (-1.107587)	-0.003362 (-0.066121)	0.965*** (5.493086)
Hungary	0.839619** (2.78785)	0.03008 (0.548479)	0.111845 (0.166306)	1.332054 (0.286408)	-0.179185 (-1.358544)	0.97*** (15.32697)
Poland	1.816302* (4.48768)	-0.252296 (-1.429274)	1.827526 (0.839241)	-0.850392 (-0.161681)	0.009759 (0.185049)	1.275*** (7.796153)
Slovenia	2.099722* (5.725406)	-0.241025 (-2.025261)	-0.008455 (-0.007277)	-9.94219 (-0.19634)	0.011843 (0.447191)	1.195*** (6.833859)
Slovakia	2.594611* (3.119247)	-0.198457 (-1.157812)	3.254889 (1.152339)	1.173327 (0.070108)	0.119622 (0.563707)	1.765*** (5.422383)

Source: Author processing in Eviews

Note: *, ** and *** is the confidence values 1%, 5%, respectively 10%. In parentheses are t-Student values.

4. FINANCIAL LIBERALIZATION AND STOCK MARKET VOLATILITY

Modern financial theory shows that the volatility of financial assets should be analyzed in order to build efficient portfolios. The concern dedicated to volatility is due to the fact that investment decisions depend not only by the expected returns, but also by the risks of various assets comprising the portfolio. In emerging markets, stock market volatility issues raise some questions. Thus, it was necessary to study the volatility of emerging markets and, in particular, the importance of analyzing the relationship between financial liberalization and volatility. Currently, most used models to study the conditional volatility are ARCH / GARCH models.

To test various aspects of behavior indexes, following the implementation process of capital market liberalization I used daily closing prices of six indices from european emerging stock markets: Hungary (BUX), Poland (WIG), Czech Republic (PX), Slovenia (SIB), Slovakia (SAX) and Romania (BET). Analyzed time begins from the first day publication of each stock market index and ends on June 30, 2011 (except for Slovenia's stock market index). All of values are collected from Datastream database. These indices are denominated in local currency.

Volatility analysis by heteroscedastic models

Construction of ARMA-GARCH models requires that the return series to be stationary, respectively those stock exchange indices to be integrated of order 1.

To test the stationarity / nonstationarity of return series I used Augmented Dickey-Fuller test (ADF) and Kwiatkowski-Phillips-Schmidt -Shin test (KPSS).

Augmented Dickey-Fuller test and Kwiatkowski-Phillips-Schmidt-Shin were applied throughout the period under review, respectively on the unadjusted data. I applied the two tests with constant model and I found that the return series of six indices are stationary.

In order to analyze the existence of dependencies in the return series I used ARMA(p,q) model. Establishing ARMA model was based on three criteria: the Akaike information

criteria (AIC), Ljung-Box statistics and the analysis of correlograme of residuals. ARMA model with the smallest value of AIC, for which the portemanteau test does not show significant results, is used to remove the linear dependences from return series. These structures were removed in the case of three indices: BET, PX and SAX. McLeod-Li test statistics of squared residuals is significant to 1%, which shows us the presence of nonlinear dependencies in the return series.

To analyze the impact of liberalization on return volatility of the six indices series, I used GARCH model in which Iintroduced a dummy variable related to liberalization. Thus, the GARCH model is:

$$\sigma_t^2 = \omega + \sum_{i-1}^{p} \alpha_i \cdot \varepsilon_{t-i}^2 + \sum_{j-1}^{q} \beta_j \cdot \sigma_{t-j}^2 + \gamma \cdot D_t$$

where D_t is the dummy variable that takes the value zero for the pre-liberalization period, respectively one for post-liberalization period.

The results in table 6 shows that financial liberalization has a positive impact on the volatility of stock markets in Hungary and Czech Republic, respectively a negative impact on stock market volatility in Poland.

Table 6: GARCH(p,q) Model

	BET	BUX	PX	SAX	SBI	WIG
MODEL	GARCH(3,1)	GARCH(2,1)	GARCH(1,1)	GARCH(2,1)	GARCH(4,1)	GARCH(2,1)
α_1	0.345582*	0.294876*	0.148982*	0.089856*	0.34496*	0.130253*
α_2	-0.14876*	-0.186334*		-0.040701*	-0.147693*	-0.036349***
α_3	-0.100925*				-0.160198*	
α_4					0.030758*	
β_1	0.899688*	0.877626*	0.83002*	0.939613*	0.934224*	0.891199*
$\Sigma\alpha_i + \Sigma\beta_i$	0.995585	0.986168	0.979002	0.988768	1.002051	0.985103
$Q_{ss}(5)$	2.8175	2.0932	3.3066	7.508	0.5815	6.4741
$Q_{ss}(10)$	5.0102	5.5029	5.9783	9.562	1.1242	9.8182
Dummy	-0.000000244	0.00000159*	0.00000239*	0.000000238	-0.0000000111	-0.00000352*

Source: Author processing in Eviews
Note: $Q_{ss}(k)$ is McLeod-Li statistic.
*, ** and *** is the confidence values 1%, 5%, respectively 10%.

As a part of linear dependencies have been removed, it is necessary to analyze whether in the return series are present nonlinear dependencies. For this I applied the BDS test on standardized residuals of GARCH model.

Probabilities resulting from BDS test are above the threshold of acceptance of the null hypothesis of 10%, only in the case of return series of polish stock exchange index, which means that the standardized residuals of GARCH(2.1) model are independent and identically distributed. Nonlinear dependencies are maintained in the other returns series.

The persistence of volatility induced by shocks ($\Sigma\alpha_i + \Sigma\beta_j$) seems to be permanent, because the values are close to unity. Therefore I applied the Integrated GARCH test. IGARCH model mathematical expression looks as follows:

$$\sigma_t^2 = \sum_{i-1}^{p} \alpha_i \varepsilon_{t-i}^2 + \sum_{j-1}^{q} \beta_j \sigma_{t-j}^2$$

According to table 7, financial liberalization has a positive impact on return stock market indices volatility in Hungary, Czech Republic, Poland and Slovakia. For the other two stock markets the impact is insignificant.

Table 7: IGARCH Model

	BET	BUX	PX	SAX	SBI	WIG
MODEL	IGARCH(3,1)	IGARCH(2,1)	IGARCH(1,1)	IGARCH(2,1)	IGARCH(4,1)	IGARCH(2,1)
α_1	0.273486*	0.292305*	0.11894*	0.110187*	0.296574*	0.152116*
α_2	-0.114137*	-0.244847*		-0.070027*	-0.1276*	-0.079901*
α_3	-0.103651*				-0.138371*	
α_4					0.015749	
β_1	0.944303*	0.952541*	0.88106*	0.959839*	0.953647*	0.927786*
$\Sigma\alpha_i + \Sigma\beta_j$	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
$Q_{ss}(5)$	1.7854	4.2916	2.0645	31.857	0.8357	2.695
$Q_{ss}(10)$	7.3542	8.7496	4.5608	37.63	1.3167	4.937
Dummy	0.00000106	0.00000131*	0.00000233*	0.00000107*	0.000000326	0.0000011*

Source: Author processing in Eviews
Note: $Q_{ss}(k)$ is McLeod-Li statistic.
*, ** and *** is the confidence values 1%, 5%, respectively 10%.

I applied the BDS test on the standardized residuals of IGARCH model, too. Existence of nonlinear dependency issues do not disappear. Compared with results obtained by applying the BDS test on standardized residuals of GARCH model, it appears that fewer nonlinear dependencies have been removed.

The financial crisis that began in the U.S. prime mortgage market in 2007 and spread rapidly in Europe became a global crisis that affects the financial systems worldwide, and economic activity in almost all countries. Global financial turmoil has caused a deep crisis in several emerging European markets. The results obtained from rolling window

methodology show an increase in volatility due to the occurrence of financial crisis in emerging markets. Therefore I applied the GARCH and IGARCH models on the time period that does not take into account the related crisis. Thus, the periods analyzed are: 1 July 2001-23 July 2007 (Hungary), 1 January 2001 - June 7, 2007 (Poland), 1 January 2001 - 15 October 2007 (Czech Republic), 1 January 2002 - 31 August 2007 (Slovenia), 1 January 2001 - 26 March 2008 (Slovakia) and 1 January 2006 – 25 August 2008 (Romania).

Applying ARMA model I obtain lower values for AIC. In addition, linear structures are removed only for two stock markets (Romania and Slovakia) and nonlinear dependencies remain at 1% significance level for all indices.

GARCH model results show that financial liberalization leads to lower volatility in stock markets in Hungary, Czech Republic and Poland (table 8). By applying the BDS test on standardized residuals of GARCH models, a large number of nonlinear structures were removed. Null hypothesis is rejected by stock index WIG; in almost all cases, it is rejected by BET and BUX; and in half of cases by the PX and SAX index.

Table 8: GARCH(p,q) Model

	BET	BUX	PX	SAX	SBI	WIG
MODEL	GARCH(3,1)	GARCH(2,1)	GARCH(1,1)	GARCH(4,1)	GARCH(4,1)	GARCH(2,1)
α_1	0.335822*	0.320384*	0.141082*	0.131668*	0.343557*	0.160062*
α_2	-0.132165*	-0.200307*		-0.016615	-0.154039*	-0.058354*
α_3	-0.108216*	0.120077*		-0.017751	-0.15103*	
α_4				-0.047227*	0.038352*	
β_1	0.893965*	0.865266*	0.830202*	0.939767*	0.927267*	0.876254*
$\Sigma\alpha_i + \Sigma\beta_i$	0.989406	0.985343	0.971284	0.989842	1.004107	0.977962
$Q_{ss}(5)$	1.2942	1.2811	5.0369	4.2723	0.5607	4.9736
$Q_{ss}(10)$	5.5465	4.435	9.6144	12.917	1.0808	8.6971
Dummy	-0.000000919	-0.00000125***	-0.00000274*	-0.000000342	0.0000000153	-0.00000396*

Source: Author processing in Eviews
Note: $Q_{ss}(k)$ is McLeod-Li statistic.
*, ** and *** is the confidence values 1%, 5%, respectively 10%.

The results of IGARCH model show that the liberalization has a positive and significant impact on two capital markets (Slovakia and Slovenia). For the other four stock markets, financial liberalization leads to a decrease in volatility (table 9). BDS test does not eliminate the nonlinear dependencies (except for WIG index).

Table 9: IGARCH Model

	BET	BUX	PX	SAX	SBI	WIG
MODEL	IGARCH(3,1)	IGARCH(2,1)	IGARCH(1,1)	IGARCH(4,1)	IGARCH(4,1)	IGARCH(2,1)
α_1	0.259532*	0.30023*	0.106389*	0.140252*	0.282327*	0.179679*
α_2	-0.093068*	-0.253765*		-0.024107	-0.12829*	-0.10853*
α_3	-0.121494*			-0.015519	-0.128751*	
α_4				-0.071989*	0.020625**	
β_1	0.95503*	0.953535*	0.893611*	0.971363*	0.954089*	0.928851*
$\Sigma\alpha_i + \Sigma\beta_j$	1.000000	1.000000	1.0000000	1.0000000	1.0000000	1.0000000
$Q_{ss}(5)$	1.3529	3.683	2.5911	6.0798	0.8081	3.635
$Q_{ss}(10)$	7.7933	7.5755	5.6863	9.245	1.2612	6.8362
Dummy	-0.00000062*	-0.00000128*	-0.00000203**	0.000000593*	0.000000343**	-0.00000136*

Source: Author processing in Eviews
Note: $Q_{ss}(k)$ is McLeod-Li statistic.
*, ** and *** is the confidence values 1%, 5%, respectively 10%.

The results from the econometric models presented correspond to those obtained in the graphs by applying the rolling window methodology. The results are consistent with those of Bekaert and Harvey (1997), Cuñado et al. (2006) and Nguyen and Bellalah (2008).

A priori, it would be better for developing countries to liberalize their capital markets in order to allow domestic investors to benefit from financial integration, such as diversification of risk and reduction of capital cost, respectively to make stock markets more efficient, more liquid and competitive.

However, the increase in volatility after financial liberalization is not always a negative element. This may reflect a consolidation of informational efficiency of stock markets, which increases asset price fluctuations on arrival of new information, due to feedback from investors. Therefore, creating a transparent investment environment is essential to reduce the negative effects of herding behavior and lack of investor confidence.

5. THE IMPACT OF FINANCIAL LIBERALIZATION ON STOCK MARKET EFFICIENCY

Capital market liberalization may have a favorable impact on the economy in many aspects. For example, several empirical studies have shown that liberalization had a positive effect on developing economies, led to lower impact of capital cost, increase profitability and investment by individuals. However, liberalization can make a country be sensitive to some economic "turbulence" and foreign policy, leading, ultimately, in a higher volatility of domestic markets. Some researchers argue that, in part, because of policies of stock market liberalization, the Asian crisis of 1997 is an example of "turbulence" on domestic markets [Laopodis, (2004)].

In empirical studies, the authors attention is focused mainly on changes in the weak form efficiency in stock market before and after liberalization. Date of financial liberalization is used to separate the two sub-periods.

Methods for estimating the informational efficiency

A. Unit root tests with structural breaks

In financial literature can be found classical unit root tests and tests that take into account the existence of possible structural changes. From classical tests were used Augmented Dickey- Fuller test and Kwiatkowski-Phillips-Schmidt -Shin test, and from the tests with structural changes I used Zivot - Andrews and test Lee -Strazicich.

B. Variance ratio tests

Variance ratio tests include: classical tests, such as Lo-MacKinlay and Chow-Denning and improved variants based on wild bootstrap (Choi) and signs and ranks (Wright), which were shown to have superior properties for finished samples.

C. Long memory process: Generalizaed Hurst Exponent

Generalized Hurst exponent is a robust statistical tool. Hurst exponent is a method of measuring fractal distribution. In this distribution there is no characteristic time scale. Hurst exponent values fall in the interval [0,1].

Financial liberalization and the impact on informational efficiency in emerging markets

I analyzed the stock market informational efficiency of six stock markets in pre-, respectively post-liberalization period using daily closing price indices from the previous chapter.

The premises from which the unit root classical tests start do not include the possibility of one or more structural breaks. And as most of the time series show such breaks and their failure to take into account generates adverse effects on outcomes, I used structural break tests [Zivot-Andrews test (model C), allowing only one break, and Lee-Strazicich test with two stuctural breaks (model AA and CC model)]. I found that the data of stuctural breaks does not coincide with the official date of stock market liberalization.

Wright test

Observed values of joint Wright test present a multiple version of Wright's ranks and signs test. Holding periods coincide with those of previous tests (k = 2,5,10,20,40). Statistics R1, R2 and S1 for Wright variance ratio test are significant at 1% significance level.

Before liberalization, according to table 10, the calculated values of JR1, JR2 and JS1 statistics for unadjusted returns are above critical values, which means a rejection of the null hypothesis, and therefore the rejection the hypothesis of random walk and market efficiency. After correcting the effects of thin trading, all analyzed indexes accept the null hypothesis, so a random walk process acceptance.

Table 102: The result of Wright test on pre-liberalization period

Index	Nonadjusted returns								
	JR1			JR2			JS1		
	Test value	Confidence value		Test value	Confidence value		Test value	Confidence value	
		5%	1%		5%	1%		5%	1%
BET	11.42252**	2.41072	3.03042	12.29164**	2.43152	3.06297	8.294612**	2.43129	2.96259
BUX	9.704389**	2.42121	3.01490	8.844853**	2.43225	2.93131	9.459191**	2.37408	2.94281
PX	14.04162**	2.37411	2.76855	15.13875**	2.42651	2.85239	12.12287**	2.39810	2.93694
SAX	3.726784**	2.40049	2.89019	3.006699**	2.39224	2.95884	3.546513**	2.36225	2.93445
SBI	12.86881**	2.37244	3.01920	13.13007**	2.44718	3.03001	10.84057**	2.39104	2.84649
WIG	11.3644**	2.41401	3.00547	12.73783**	2.40582	2.96150	6.890773**	2.40891	3.15932
	Adjusted returns								
	JR1			JR2			JS1		
	Test value	Confidence value		Test value	Confidence value		Test value	Confidence value	
		5%	1%		5%	1%		5%	1%
BET	1.61467	2.36187	2.79863	1.26974	2.40719	2.88506	1.25861	2.40853	2.93676
BUX	0.80282	2.36658	2.94246	0.99193	2.35721	3.01677	0.95529	2.42385	2.80492
PX	1.16235	2.36396	2.86626	0.93275	2.40379	3.06028	2.471022**	2.33660	2.97774
SAX	0.77647	2.35118	2.92209	0.80151	2.42244	2.91911	0.69056	2.38698	3.04481
SBI	1.93050	2.34414	2.86648	2.18511	2.34976	2.90206	1.35814	2.39749	2.95188
WIG	2.07731	2.33567	2.99415	2.07833	2.39332	2.95337	0.39637	2.41856	3.08587

Source: Author processing in R

Note: *, ** and *** is the rejection of null hypothesis for confidence values 1%, 5%, respectively 10%.

After the implementation process, the Hungarian stock market index accepts the null hypothesis based on unadjusted returns, and later (taking into account the adjusted returns) all indices follow a random walk, ie accept the hypothesis of weak form efficiency (Table 11).

I find that by eliminating the effects of thin trading, return series of analyzed stock market indice support the null hypothesis for both subperiods (before liberalization, that after liberalization). But if I apply the joint Wright test only on unadjusted returns, I see that financial liberalization has a positive impact on BUX index. Therefore, the Hungarian capital market is weak form efficient as a result of the liberalization process.

Table 11*:* The result of Wright test on post-liberalization period

Index	Nonadjusted returns								
	JR1			JR2			JS1		
	Test value	Confidence value		Test value	Confidence value		Test value	Confidence value	
		5%	1%		5%	1%		5%	1%
BET	2.694863**	2.45349	3.05520	2.941675**	2.44232	3.11841	1.65048	2.40877	2.98171
BUX	0.95546	2.42361	2.86047	1.77111	2.39210	2.96683	1.09435	2.28797	2.95582
PX	1.76070	2.38705	2.97006	2.260393*	2.43501	2.94976	2.987089**	2.35542	3.01726
SAX	5.123964***	2.37812	2.92568	4.669875***	2.36843	2.73990	16.78193***	2.39791	2.93971
SBI	14.82957***	2.39137	2.76540	14.18169***	2.35170	2.84371	10.611***	2.37137	2.81924
WIG	2.319782**	2.29326	2.99708	3.536858***	2.37127	2.90385	1.74990	2.38303	2.80533
	Adjusted returns								
	JR1			JR2			JS1		
	Test value	Confidence value		Test value	Confidence value		Test value	Confidence value	
		5%	1%		5%	1%		5%	1%
BET	1.52650	2.43013	2.95771	1.76963	2.38692	2.99345	1.29019	2.37060	3.10860
BUX	0.63011	2.43721	2.89394	0.61635	2.45241	2.89900	0.53269	2.35811	2.97081
PX	0.90494	2.45003	3.05041	1.40625	2.43692	3.03178	1.86511	2.36076	3.03416
SAX	0.79941	2.39871	2.99700	0.59606	2.34919	3.05110	0.80923	2.47580	3.06530
SBI	1.40688	2.59863	3.10556	1.15202	2.55122	3.10274	1.48336	2.41070	2.97156
WIG	1.74057	2.30304	2.89805	1.65009	2.29290	2.90032	0.49092	2.37713	2.85424

Source: Author processing in R

Note: *, ** and *** is the rejection of null hypothesis for confidence values 1%, 5%, respectively 10%.

Automatic Variance Ratio test

For AVR test I used "wild bootstrap" for the distribution with two points of Mammen and a sample of 1000 iterations. Test values confirm the results obtained in previous tests.

The test results are presented in table 12: for unadjusted data only SAX index supports the hypothesis of unit variances, ie random walk (as the probability for the test are above the threshold of significance of 5% and is within the confidence interval given); as regards the adjusted returns, all the indices support the null hypothesis of random walk.

Table 12*:* The result for AVR test on pre-liberalization period

	Nonadjusted returns			
	z-stat	p-value	Confidence intervals	
Indici			2.50%	97.50%
BET	8.2890	0.000	-2.4972	2.9340
BUX	4.3209	0.023	-3.4230	3.5716
PX	17.6879	0.000	-4.1751	5.8486
SAX	-0.4329	0.512	-1.5212	1.6377
SBI	6.4203	0.001	-2.9535	3.5695
WIG	8.7242	0.000	-2.7374	2.9793
Adjusted returns				
BET	0.8986	0.159	-1.2403	1.4720
BUX	0.3366	0.579	-1.4482	1.5538
PX	-0.4948	0.417	-1.2973	1.5093
SAX	-0.2170	0.641	-1.2929	1.5962
SBI	-0.7574	0.242	-1.4426	1.4857
WIG	0.0708	0.775	-1.4954	1.3879

Source: Author processing in R

Based on data from table 13, we can say that stock market liberalization had a positive impact, as all indices support the hypothesis of random walk (with the exception of the Polish index, but the result is influenced by the effect of thin trading).

Table 133*:* The result for AVR test on post-liberalization period

	Nonadjusted returns			
	z-stat	p-value	Confidence intervals	
Indici			2.50%	97.50%
BET	1.1816	0.351	-2.6438	2.9801
BUX	0.1904	0.807	-2.5614	3.1330
PX	0.2945	0.794	-3.2941	4.3363
SAX	0.1603	0.725	-1.6055	1.7286
SBI	3.7290	0.106	-4.8259	4.6343
WIG	3.0610	0.003	-1.7255	1.7134
Adjusted returns				
BET	1.1201	0.122	-1.3386	1.4806
BUX	-0.2243	0.637	-1.4568	1.5642
PX	0.7187	0.275	-1.4334	1.5177
SAX	-0.0217	0.885	-1.3281	1.5251
SBI	1.2405	0.074	-1.3807	1.3751
WIG	0.4970	0.438	-1.4052	1.3969

Source: Author processing in R

I made an identification of generalized Hurst exponent, which shows the type of memory. Generalized Hurst exponent of time series is always greater than 0.5, so the six markets have a persistent time series, and therefore presents Joseph and Noah effects. Long-term behavior of the market does not have a well defined Hurst exponent, but instead, is characterized by cycles. Since Hurst exponent stability is closely linked with memory time series, the markets have a long memory, but finite.

The fact that stock markets have become more efficient in recent years is an encouraging sign for decision makers in emerging markets. This shows that they have managed to create a favorable environment for investment, leading to increased informational efficiency. Financial liberalization is recommended for developing countries, as without this reform, it would take more time to meet the necessary conditions for weak form efficiency.

CONCLUSIONS AND RESEARCH PROSPECTS

Reform of financial liberalization is a complex and long-term phenomenon. This implies that the impact of this reform on the financial markets should not be immediate, but rather gradually, over a long period. It is also important to note that liberalization does not manifest uniform in markets. Each country, according to his calculations about the economic climate and the specific of financial markets, has set differently the evolution of liberalization process. There are many potential research on the impact of liberalization on:

- stock market performance;
- return-risk ratio;
- liquidity;
- volatility;
- portfolio investment flows;
- risk premium.

My research stopped to analyze the impact of liberalization on volatility and weak form efficiency in stock markets, namely the impact of capital account liberalization on economic growth.

Regarding the effect of liberalization in emerging markets, has been shown, on the one hand, that liberalization reduces the cost of capital, help to integrate emerging markets in the world market, improves growth and allow emerging markets to become more mature. On the other hand, liberalization has a very ambiguous and inconclusive impact on informational efficiency and volatility in emerging markets. In addition, a further opening of domestic markets may strengthen the interdependence of markets and therefore lead to the risk caused by volatility transmission.

However, the arguments for financial liberalization, both theoretical and empirical, are relatively fragile, and there are many reasons for skepticism about claims made by proponents of these measures. Indeed, there is good reason to ask us questions about the extent and type of financial liberalization, which is promoted. In many cases, social and economic effects were negative for the poor, who had suffered from poorer conditions during periods of "financial boom", but usually have been hardest hit during a financial

crisis. It is also worth noting that the extreme forms of liberalization are neither effective nor necessary, and that a variety of alternative measures and different degrees of liberalization are not only possible, but can be observed in several developing countries.

In this work I wanted to give a better understanding of the role of financial liberalization and its impact on a sample of six emerging countries.

Capital account liberalization has a positive impact on GDP (except from Romania). Therefore, these results are sharing the same conclusions with those obtained by Quinn's (1997), Edwards (2001) and Klein&Olivei (1999). Liberalization has not had a positive effect on Romania's GDP and the exchange rate RON/EUR had a negative effect on Romania's GDP. We appreciate that capital account liberalization influenced the manner in which the financial crisis manifests in Romania. The current crisis has brought a number of sensitive issues of the global market. One of them, frequently invoked by financial analysts at the moment was capital account liberalization. Free movement of capital adopted by developed countries, then gradually extended to emerging markets has not been without major incidents throughout modern financial history. It can be seen that the first major international financial crisis coincide with the liberalization started almost simultaneously in Latin America and South-East Asia. Capital account liberalization by emerging markets is considered as one the factors that caused the rapid spread of crisis from American market to the global level, which amplifies the harmful effects of this crisis. In the absence of capital account liberalization, the crisis impact at global level would have been significantly diminished.

Financial liberalization leads to a decrease in volatility in capital markets analyzed sample. Based on GARCH model, it shows a decrease in volatility on stock markets in Hungary, Czech Republic and Poland. Since the GARCH model shows a persistence of volatility, I used IGARCH model. I achieve a reduction in volatility for stock markets in Romania, Hungary, Czech Republic and Slovakia, and for capital markets in Slovakia and Slovenia there is an increase in volatility. The results are consistent with those of Bekaert and Harvey, Cuñado et al. and Nguyen and Bellalah.

The results of Augmented Dickey-Fuller test and Kwiatkowski-Phillips-Schmidt-Shin test show that return series are stationary. Since most of the time series show such breaks and

their failure to take into account generates adverse effects on outcomes, I used structural change tests [Zivot-Andrews test (model C), allowing only a structural break and Lee-Strazicich test with two structural breaks (AA model and CC model)]. I found that the data of structural breaks do not coincide with the official data of stock market liberalization.

Regarding the report of variances tests, I used improved versions (Automatic Variance Ratio test and test Wright), which were shown to have superior properties for finite samples. Previous studies draw our attention on thin and infrequently trading, a feature of emerging markets, it induces a series of errors among the results, too. Thus, the variance ratio tests were applied to unadjusted and corrected returns, respectively before and after the implementation of financial liberalization. There is a difference between the outcomes obtained for unadjusted and corrected data of return series, confirming the fact that the six analyzed countries sufferfrom the phenomenon of thin trading. As a result of financial liberalization, the six emerging markets have a weak form efficiency. Study results are those obtained in the analysis of alinează Cajueiro et al. and Kim and single.

Successful transition economies must learn to live with considerable capital inflows related to real convergence, ie to try to mitigate the size and interest rate volatility that depends on these inputs. Considering the growing number of open capital accounts, interest rate capital inflows will raise some difficulties in monetary and exchange rate policy until the interest margin is reduced or eliminated. Taking into consideration the expectations regarding the long-term appreciation of exchange rate (Ballasa-Samuelson effect), margin interest shall be eliminated by depressing nominal interest rates on internal market. Based on the experience of the EU6 countries, which are confronting with massive capital inputs, the following conclusions can be identified for countries with similar circumstances:

- Although *monetary and exchange rate policies* were the main policy instruments for reacting at capital inputs in EU6 countries, the interest rate is less efficient on influencing the internal demand in emergent economies than in mature markets and the independence of monetary policy and exchange rate are not as strong as they appear. Interest rate transmission mechanism is weak, even in inflation targeting regimes, due to the low level of indebtedness of the private sector, easy

availability of loans in foreign currency, high structural demand for loans, respectively the excess liquidity in the financial system. Exchange rate regime is important in influencing capital inflows, because it can mitigate or exacerbate the gaps of price risk [Lipschitz, Lane and Mourmouras (2005)]. As a result of exchange rate fluctuations, there have occurred extended periods of appreciation (or depreciation) in several transition countries. It is important that the authorities do not contribute to encourage speculation through implied warranties or allusions to targeted levels.

- Given the need to reduce domestic nominal interest rates and uncertainties about the interest rate transmission mechanism, it was found that the solution lies in the speed of disinflation. If disinflation is slow, portfolio inflows will be persistent, given the extended period of substantial interest rate margins (a phenomenon that was discovered in Hungary, Romania and Poland). This can lead to increased lending and a large current account deficit. The experience of Czech Republic shows, that an inflation which stands at the same level on mature markets or less over them can be done relatively quickly, and interest rate capital inflows will fall on short or medium term. Thus, the mix of policies should focus on relatively fast and sustainable disinflation, in order to minimize risks associated to current account, financial stability and economic growth.

- Taking into consideration that the efficiency of monetary policy is limited and the openness to global capital markets reduces the possibilities of intervention for *monetary policy, tax and income policies* shall play a major role in the managing of demand. Tax and income discipline become essential, if the disinflation is rapidly realized. Although several countries have maintained prudent fiscal policies, fiscal tightening was seldom used as a direct response to capital inflows in EU6 countries, and this has contributed to the slow rithm of disinflation and increased current account deficits in some countries. Even in countries with significantly lower deficits than the EU6 countries, tightening fiscal and wage policy is an important tool to reduce imbalances in developing countries, relying exclusively on a tighter monetary policy. However, it is highly unlikely that a government changes the fiscal stance in a magnitude and a needed speed to compensate for large changes in capital account.

- The prudent approach on *capital account liberalization* seems to be utilized by many of the vulnerable countries of EU6 group. Therefore, Hungary and Poland, two countries having slow disinflation and a high number of securities on stock exchange are advised to precautionary open their capital account. As regard the effect of introducing capital controls, it is preferable that these controls to be limited and temporary within an economy with intensive foreign participation in financial and non-financial sectors.

- Finally, other policy measures related to *managing debt, banking supervision and regulation* can be useful in order to complete the monetary policy and tax measures. Maintaining the incomes obtained from privatization within the inter-banking system (the case of Czech Republic) or paying the precocious external debt (the case of Hungary and Poland) may lead to the decrease of pressure put on the exchange rate. In cases where financial flows are higher even in the absence of interest margins - for example, the desire to gain some market share in retail banking - administrative measures can be the most efficient policy tool. Banking regulatory measures, such as tightening of reserve requirements for foreign liabilities may help to reduce the large financial flows, which causes the credit boom.

During the capital account liberalization process, all transitional countries had applied the above-mentioned measures, which were adapted to the very specific macroeconomic situation of each of them. Those countries who have adopted a precautionary liberalization had received much more portfolio influxes than countries that have preferred an accelerated liberalization process. This result can be partially explained by the existing differences on the liberalization conditions (high internal public debt) and partially by macro economic evolutions during the transition period (a slow disinflation). Each country adopted its own liberalization rhythmus depending on the how it perceived vulnerability at capital inputs. Despite of massive influxes and the increasing lack of restriction efficiency, the precautionary approach of the liberalization had some advantages. Restrictions related to accessing a credit in national currency by non-residents credit and financial derivative instruments have attenuate capital flow volatility and the scope of speculative attacks. In general, restrictions have increased transaction costs and in the same time, they reduce the revenue obtained from interest differences.

REFERINȚE BIBLIOGRAFICE

1. Abeysekera, S. (2001), Efficient Market Hypothesis and the Emerging Capital Markets in Sri Lanka: Evidence from the Colombo Stock Exchange - A Note, *Journal of Business Finance & Accounting*, vol. 28, no. 1 & 2, pp. 249-261
2. Abraham, A., Seyyed, F. J. şi Alsakran, S. A. (2002), Testing the Random Walk Behavior and Efficiency of the Gulf Stock Markets, *The Financial Review*, vol. 37, pp. 469-480
3. Abrosimova, N., Dissanaike, G. şi Linowski, D. (2005), Testing the Weak- Form Efficiency of the Russian Stock Market, *Social Science Research Network* (SSRN) Working Paper
4. Akinkugbe, O. (2005), Efficiency in Botswana Stock Exchange: An Empirical Analysis, *The Business Review*, vol. 4, no. 2: 223-230
5. Alesina, A., & Guido, T. (1989), External Debt, Capital Flight, and Political Risk, *Journal of International Economics*, vol. 27, issue 3-4:199-220
6. Alesina, A., Grilli, V. şi Milesi-Ferretti, G.M. (1994), The Political Economy of Capital Controls, In Leonardo Leiderman and Assaf Razin (eds.), Capital Mobility: The Impact on Consumption, Investment and Growth, *Cambridge: Cambridge University Press*
7. Altar, M., Albu, L., Dumitru, I şi Necula, C. (2006), Impactul Liberalizării Contului de Capital asupra Cursului de Schimb şi a Competitivităţii Economiei Româneşti, *Institutul European din România* – Studii de Impact (PAIS III), no. 2
8. Andrews, D.W.K. (1991), Heteroskedasticity and autocorrelation consistent covariance matrix estimation, *Econometrica,* vol. 58, pp. 817–858
9. Antoniou, A., Ergul, N. şi Holmes, P. (1997), Market efficiency, thin trading and non-linear behavior: evidence from an emerging market, *European Financial Management*, vol. 3, no. 2, pp. 175-190
10. Appiah-Kusi, J. & Menyah, K. (2003), Return predictability in African stock markets, *Review of Financial Economics*, vol. 12, pp. 247-270
11. Arouri, M. El H., Jawadi, F. şi Nguyen, D.K. (2010), *The Dynamics of Emerging Stock Markets*, Physica-Verlag GmbH & Co, France
12. Arouri, M. & **Ulici, M.** (2012), Bank stock returns in Romania: crisis, volatility spillovers and hedging effectiveness, Working Paper
13. Arteta, C., Eichengreen, B. şi Wyplosz, C. (2001), When Does Capital Account Liberalization Help More Than It Hurts?, *NBER Working Paper* No. 8414, Cambridge, Mass
14. Bachelier, L. (1900), Théorie de la spéculation, *Annales Scientifiques de l'École Normale Supérieure 3*, vol. 17, pp. 21–86
15. Bai, C.-E. & Wei, S.-J. (2000), Quality of Bureaucracy and Open Economy Macro Policies, *NBER Working Paper* 7766. National Bureau of Economic Research, Cambridge, Mass
16. Baley, W. & Jagtiani, J. (1994), Foreign ownership restrictions and stock prices in the Thai capital market, *Journal of Financial Economics*, vol. 36, issue 1: 57-87
17. Barnes, P. (1986), Thin Trading and Stock Market Efficiency: The case of the Kuala Lumpur Stock Exchange, *Journal of Business Finance & Accounting*, vol. 13, no. 4: 609-617
18. Barro, R.J. (1997), Determinants of Economic Growth: A Cross-Country Empirical Study, Cambridge, Mass. MIT Press
19. Bassil, C. (2008), Unit Roots and Structural Breaks in the American Federal Funds and Inflation rates, *Thema-UMR CNRS 8184*, Université de Cergy-Pontoise
20. Beju, D.G. (2007), *Banca Naţională a României – Banca Centrală a Ţării*, Editura Casa Cărţii de Ştiinţă, Cluj-Napoca, p. 222
21. Bekaert, G. & Harvey, C.R. (1995), Time-Varying World Market Integration, *Journal of Finance*, vol. 50, issue 2: 403-444
22. Bekaert, G. & Harvey, C.R. (1995), Time-Varying World Market Integration, *Journal of Finance*,
23. Bekaert, G. & Harvey, C.R. (1997), Emerging Equity Market Volatility, *Journal of Financial Economics*, vol. 43, issue 1, pp. 29-78
24. Bekaert, G. & Harvey, C.R. (2000), Foreign Speculators and Emerging Equity Markets, *Journal of Finance*, vol. 55, issue 2, pp. 565-613
25. Bekaert, G. & Harvey, C.R. (2003), Emerging Markets Finance, *Journal of Empirical Finance*, vol. 10, issue 3, pp. 3-55
26. Bekaert, G. & Harvey, C.R. (2003), Research in Emerging Market Finance: Looking to the Future, Emerging Markets Review, vol. 3, issue 4, pp. 429 - 448
27. Bekaert, G. (1995), Market Integration and Investment Barriers in Emerging Equity Markets, *The World Bank Economic Review*, vol. 9, issue 1: 75-107
28. Bekaert, G., Harvey, C.R. şi Lumsdaine, R. (2002), Dating the Integration of the World Equity Markets, *Journal of Financial Economics*, vol. 65, issue 2: 203-248

29. Bekaert, G., Harvey, C.R. şi Lundblad, C. (2001), Emerging Equity Markets and Economic Growth, *Journal of Development Economics*, vol. 66, issue 2: 465-504
30. Bekaert, G., Harvey, C.R. şi Lundblad, C. (2003), Equity Market Liberalization in Emerging Markets, *Journal of Financial Research*, vol. 26, issue 3: 275 – 299
31. Belaire-Franch, G. & Contreras, D. (2004), Ranks and signs-based multiple variance ratio tests, *Working paper*, University of Valencia
32. Bernhard, W. & Leblang, D. (1999), Democratic Institutions and Exchange Rate Commitments, *International Organization*, vol. 53, issue 1, p.71-97
33. Bertolini, L. & Drazen, A. (1997a), Capital Account Liberalization as a Signal, *American Economic Review*, vol. 87, issue 1, p. 138-54
34. Bertolini, L. & Drazen, A. (1997b), When Liberal Policies Reflect Shocks, What Do We Learn?, *Journal of International Economics,* vol. 42, issue 3-4, p. 249-273
35. Bhattacharya, U., Daouk, H., Jorgenson, B. şi Kehr, C.H. (2002), When Event is not an Event: The Curious Case of an Emerging Market, *Journal of Financial Economics*, vol. 55, issue 1: 69-101
36. Binder, J.J. & Merges, J.M. (2001), Stock Market Volatility and Economic Factors*, Review of Quantitative Finance and Accounting,* vol. 17, issue 1, pp. 5-26
37. Black, F. (1986), Noise, *Journal of Finance*, vol. 41, issue 3, pp. 529-543
38. Bollerslev, T. (1986), Generalized Autoregressive Conditional Heteroscedasticity, *Journal of Econometrics*, vol. 31, pp. 307-327
39. Bollerslev, T., Engle, R. F. şi Nelson, D. (1994), ARCH Models, in Engle, R. F., and McFadden, D. L.(eds.), Handbook of Econometrics, vol. 4, Ch. 49, Amsterdam: North-Holland
40. Bordo, M. & Eichengreen, B. (1998), Implications of the Great Depression for the Evolution of the International Monetary System, In Bordo, M., Goldin, C. şi White, E. (eds.), *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*, Chicago: University of Chicago Press
41. Borensztein, E.R. & Gelos, R. G. (2000), A Panic-prone Pack? The Behavior of Emerging Market Mutual Funds, Working Paper, International Monetary Fund
42. Brecher, R. & Diaz-Alejandro, C. (1977), Tariffs, Foreign Capital and Immiserizing Growth, *Journal of International Economics*, vol. 7, issue 3-4, p. 317-322
43. Brecher, R. (1983), Second-Best Policy for International Trade and Investment, *Journal of International Economics,* vol. 14, issue 3-4, p. 313-320
44. Brune, N., Garrett, G., Guisinger, A. şi Sorens, J. (2001), The political economy of captial account liberalization, (New Haven: Yale University), mimeo
45. Buch, C. & Lusinyan, L. (2002), Short-Term Capital, Economic Transformation and EU Accession, *Bundesbank Discussion* Paper 02/02
46. Butler, C. K. & Malaikah, S. J. (1992), Efficiency and inefficiency in thinly traded stock markets: Kuwait and Saudi Arabia, *Journal of Banking and Finance*, vol. 16, pp. 197-210
47. Cajueiro, D.O., Gogas, P. şi Tabak, B.M. (2009), Does financial market liberalization increase the degree of market efficiency? The case of the Athens stock exchange, *International Review of Financial Analysis*, vol. 18, pp. 50-57
48. Calvo, S., & Reinhart, C. (1996), Capital Flows to Latin America: Is there Evidence of Contagion Effects?, Policy Research Working Paper
49. Caprirolo, G. & Lavrac, V. (2002), Managing Capital Inflows in Slovenia: Experience and Options, *ICEGEC Working Papers* No. 3
50. Chan, K., Gup, C., Benton, E. şi Ming-Shiun, P. (1992), An Empirical Analysis of Stock Prices in Major Asian Markets and United States, *The Financial Review*, vol. 27, pp. 289-307
51. Chandrasekhar, C.P. (2004), Financial liberalization and the macroeconomics of poverty reduction, Draft Thematic Summary on Financial Liberalization for the Asia-Pacific Programme on the Macroeconomics of Poverty Reduction, May
52. Chang K. P. & Ting, K. S. (2000), A variance ratio test of the random walk hypothesis for Taiwan's stock market, *Applied Financial Economics*, vol. 10, no. 5
53. Chang, T., Fawson, C., Glover, T. F. şi Fang, W. (1996), The weak-form efficiency of the Taiwan share market, *Applied Economics Letters*, vol. 3, pp. 663-667
54. Cheung, Y-L., Wong, K-A. şi Ho, Y-K. (1993), The Pricing of Risky Assets in two Emerging Asian Markets-Korea and Taiwan, *Applied Financial Economics*, vol. 3, pp.315-324
55. Choi, I. (1999) Testing the random walk hypothesis for real exchange rates, *Journal of Applied Econometrics*, vol. 14, pp. 293–308
56. Chow, K.V. & Denning, K.C. (1993), A simple multiple variance ratio test, *Journal of Applied Econometrics,* vol. 58, pp. 385–401

57. Christensen, J. (2004), Capital Inflows, Sterilization, and Commercial Bank Speculation: The Case of the Czech Republic in the Mid-1990s, *IMF Working Paper* 04/218
58. Claessens, S., Dasgupta, S. şi Glen, J. (1995), Return Behavior in Emerging Stock Markets, *World Bank Economic Review*, vol. 9, issue 1, pp. 131-151
59. Claessens, S., Dasgupta, S., şi Glen, J. (1995), Return Behavior in Emerging Stock Markets, *World Bank Economic Review*, vol. 9, issue 1: 131-151
60. Clark, J. & Berko, E. (1997), Foreign Investment Fluctuations and Emerging Market Stock Returns: The Case of Mexico, Staff Report, vol. 24, Federal Reserve Bank of New York, New York
61. Cohen, B.J. (1996), Phoenix risen: the resurrection of global finance, *World Politics*, vol. 48, issue 2, pp. 268-296
62. Cooper, R. (1999), Should Capital Controls Be Banished?, *Brookings Papers on Economic Activity 1*, Washington, D.C.: Brookings Institution
63. Corsetti, G., Roubini, N. şi Pesenti, P. (1999), What Caused the Asian Currency and Financial Crises, *Japan and the World Economy*, vol. 11: 305-373
64. Cottarelli, C., Dell'Ariccia, G. şi Vladkova-Hollar, I. (2003), Early Birds and Sleeping Beauties: Bank Credit Growth to the Private Sector in Central and Eastern Europe and in the Balkans, *IMF Working Paper* 03/123
65. Cristea, H., Pirtea, M., Enache, C. (2000), Determinarea situaţiei financiare a întreprinderii, Editura Mirton, Timişoara
66. Cuñado, J. et al. (2006) Changes in the Dynamic Behavior of Emerging Market Volatility: Revisiting the Effects of Financial Liberalization, Facultad de Ciencias Económicas y Empresariales Universidad de Navarra, *Working Paper no.01*
67. Daianu, D., Dragulin, I., Voinea, L. şi Vranceanu, R. (2002), Deschiderea contului de capital în România: Cât de mult şi cât de repede, *Institutul European din România - Studii de Impact* (PAIS I), no. 2
68. Dailami, M. (2000), Managing Risks of Global Financial Market Integration, In Charles A., Litan, R. şi Pomerleano, M. (eds.), *Managing Financial and Corporate Distress*, D.C.: Brookings Institution, Washington
69. De Gregorio, J., Edwards, S. şi Valdes, R. (1998), Capital Controls in Chile: An Assessment, *Paper presented to the Interamerican Seminar on Macroeconomics*, Rio de Janeiro
70. DeSantis, G. & Imrohoroglu, S. (1997), Stock Returns and Volatility in Emerging Financial Markets, *Journal of International Money and Finance*, vol. 16, pp. 561-579
71. Dhir, P. (2007) The Impact of Stock Market Liberalization on Emerging Equity Market Volatility, *Honors Projects*, Paper 5
72. Di Matteo, T., Aste, T. şi Dacorogna, M. M. (2005), Long-term memories of developed and emerging markets: Using the scaling analysis to characterize their stage of development, *Journal of Banking and Finance*, vol. 29, pp. 827–851
73. Dickinson, J. P. & Muragu, K. (1994), Market Efficiency in Developing Countries: A case study of the Nairobi Stock exchange, *Journal of Business Finance and Accounting*, vol. 21, no. 1: 133-150
74. Dooley, M.P. (1996), A Survey of the Academic Literature on Controls over International Capital Transactions, *IMF Staff Papers*, vol. 43, issue 4, p. 639-687
75. Dragota, V. & Mitrica, E. (2004), Emergent Capital Markets' Efficiency: The Case of Romania, *European Journal of Operational Research*, vol. 155, pp. 353-360
76. Drazen, A. (1989), Monetary Policy, Capital Controls and Seigniorage in an Open Economy, In Cecco, M. & Giovannini, A. (eds.), *A European Central Bank?,* Cambridge University Press, Cambridge
77. Drazen, Al. (1997), Policy Signaling in the Open Economy: A Re-Examination, *NBER Working Paper* 5892
78. Edison, H. & Reinhart, C.M. (1999), Stopping Hot Money, *Board of Governors of the Federal Reserve System*, D.C. and University of Maryland, College Park. Processed, Washington
79. Edison, H. & Warnock, F. (2003), A Simple Measure of Intensity of Capital Controls, *Journal of Empirical Finance,* vol. 10: 83-105
80. Edison, H.J. & Warnock, F.E. (2003), A simple measure of the intensity of capital controls, *Journal of Empirical Finance*, vol. 10, issue 1-2: 81– 103
81. Edwards, S. (1999), How Effective Are Capital Controls?, *Journal of Economic Perspectives,* vol. 13, issue 4, p. 65-8
82. Edwards, S. (2001), Capital Flows and Economic Performance: Are Emerging Economies Different?, *NBER Working Paper* 8076, Cambridge, Mass
83. Efron, B., Tibshirani, R.J., (1993), An Introduction to the Bootstrap, *Chapman and Hall*, New York
84. Eichengreen, B. & Wyplosz, C. (1993), The Unstable EMS, *Brookings Papers on Economic Activity,* D.C.: Brookings Institution, Washington

85. Eichengreen, B. (2001), Capital account liberalization: what do cross-country tell us?, *The World Bank Economic Review*, vol. 15, no. 3
86. Eichengreen, B., Musa, K., Dell' Ariccia, G., Detragiache, E., Mihesi-Ferretti, G.M. şi Tweedie, A. (1998), Capital Account Liberalization: Theoretical and Practical Aspects, *IMF Occasional Paper* 172
87. Engle, R.F. (1982), Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of
88. Epstein, G. & Schor, J. (1992), Structural Determinants and Economic Effects of Capital Controls in OECD Countries, *Financial Openness and National Autonomy*, Clarendon Press, Oxford
89. Errunza, V. (1979), Efficiency and the Programs to Develop Capital Markets, Journal of Banking and Finance, vol. 3, issue 4: 355-382
90. Errunza, V. (2001), Foreign Portfolio Equity Investments, Financial Liberalization, and Economic Development, *Review of International Economics*, vol. 9, issue 4: 703-726
91. Errunza, V. şi Miller, D.P. (2000), Market segmentation and the cost of capital in international equity markets*, Journal of Financial and Quantitative Analysis*, vol. 35: 577-600
92. Erruza, V., Senbet, L. şi Hogan, K. (1998), The pricing of country funds from emerging markets: theory and evidence, *International Journal of Theoretical and Applied Finance*, vol. 1: 111-143
93. Fama, E.F. (1965), The Behavior of Stock-Market Prices, *The Journal of Business*, vol. 38, no. 1: 34-105
94. Fama, E.F. (1970), Efficient Capital Markets: A Review of Theory and Empirical Works, *Journal of Finance*, vol. 25, issue 2: 383-417
95. Fernald, J.G. & Babson, D.B. (1999), Why Has China Survived the Asian Crisis So Well? What Risks Remain?, *International Finance Discussion* Paper 633
96. Filip, M.A., Beju, D.G., Pochea, M.M. şi **Ulici, M.** (2011), Cost Of Capital Estimation For Major Corporations. Evidence On Best Practice, Theoretical and Applied Economics, Asociația Generală a Economiştilor din Romania - AGER, vol. 5, pp. 273-277
97. Fischer, S. (2003), Globalization and its challenges: Ely Lecture presented at the American Economic Association, mimeo
98. Fisher, I. (1930), *The Theory of Interest*, Macmillan, New York
99. Fondul Monetar Internațional (2001), International Capital Markets: Developments, Prospects and Key Policy Issues
100. Fondul Monetar Internațional (Aprilie, 2009), Global Financial Stability Report
101. Forbes, K. & Rigobon, R. (2002), No Contagion, only Interdependence: Measuring Stock Market Co-mouvements, *The Journal of Finance*, vol. 57, issue 5: 2223-2261
102. Frenkel, J.A. & Razin, A. (1996), *Fiscal Policies and Growth in the World Economy* 3d ed., Mass.: MIT Press, Cambridge
103. Froot, K.A., O'Connell, P.G.J. şi Seasholes, M. S. (2001), The Portfolio Flows of International Investors, *Journal of Financial Economics*, vol. 59, issue 2: 151-194
104. Furman, J. & Stiglitz, J. (1998), Economic Crises: Evidence and Insights from East Asia, *Brookings Papers on Economic Activity 2*, Washington
105. Garrett, G. & Mitchell, D. (2000), Globalization, Government Spending, and Taxation in the OECD, *European Journal of Political Research Business*, vol. 46, pp. 434-453
106. Garrett, G. (1995), Capital Mobility, Trade, and the Domestic Politics of Economic Policy, *International Organization*, vol. 49, issue 4, p. 657-687
107. Garrett, G. (1998), *Partisan Politics in the Global Economy*, Cambridge University Press, Cambridge
108. Garrett, G. (2000), Capital Mobility, Exchange Rates and Fiscal Policy in the Global Economy, *Review of International Political Economy,* vol. 7, issue 1, p. 153-170
109. Garrett, G. (2000), The causes of globalization, *Comparative Political Studies*, vol. 33, issue 6, pp. 941-991
110. Garrett, G., Guisinger, A. şi Sorens, J.P. (2000), The Political Economy of Capital Account Liberalization, *Department of Political Science*, Yale University
111. Gastanaga, V.M., Nugent, J.B. şi Pashamova, B. (1998), Host country reforms and FDI inflows: how much difference do they make?, *World Development*, vol. 26, issue 7, pp. 1299-1314
112. Ghosh, J. (2005), The Economic and Social Effects of Financial Liberalization: A Primer for Developing Countries, DESA Working Paper No. 4
113. Gilmore, C. G. & McManus, G. M. (2003), Random Walk and Efficiency Tests of Central European Equity Markets, *Managerial Finance*, vol. 29, no. 4, 42-61
114. Glick, R. & Hutchinson, M. (2000), Stopping 'Hot Money' or Signaling Bad Policy? Capital Controls and the Onset of Currency Crises, *Federal Reserve Bank of San Francisco and University of California*
115. Globerman, S. & Shapiro, D. (2003). Governance infrastructure and U.S. foreign direct investment, *Journal of International Business Studies*, vol. 34, pp. 19-39

116. Golub, S.S. (2003), Measures of restrictions on inward foreign direct investment for OECD countries, *OECD Economic Studies*, vol. 36, pp. 88-122
117. Granero, M.A.S., Segovia, J..E.T. şi Perez, J.G. (2008), Some comments on Hurst exponent and the long memory processes on capital markets, *Physica A*, vol. 387, pp. 5543-5551
118. Griffin, J.M., Nardari, F. şi Stulz, R. (2002), Daily Cross-Border Equity Flows: Pushed or Pulled?, *Working Paper*, The Ohio State University
119. Grilli, V. & Milesi-Ferretti, G.M. (1995), Economic Effects and Structural Determinants of Capital Controls, *IMF Staff Papers,* vol. 42, issue 3, p. 517-551
120. Groenewold, N., & Ariff, M. (1998), The Effects of Deregulation on Share-Market Efficiency in the Asia-Pacific, *International Economic Journal*, vol. 12, issue 4: 23-47
121. Hamilton, J. & Lin, G. (1996), Stock Market Volatility and the Business Cycle, *Journal of Applied Econometrics*, vol. 11, pp. 573-593
122. Harvey, C. R. (1995), Predictable Risk and Return in Emerging Markets, *Review of Financial Studies*, vol. 8, no. 3: 773-816
123. Hassan, K. M., Al-Sultan, W. şi Al-Saleem, J. A. (2003), Stock Market Efficiency in the Gulf Cooperation Council Countries (GCC): The Case of Kuwait Stock Exchange, *Scientific Journal of Administrative Development*, vol. 1, no. 1
124. Hassan, K. M., Haque, M. şi Lawrence, S. (2006), An Empirical Analysis of Emerging Stock Markets of Europe, *Quarterly Journal of Business and Economics*, vol. 45, no. 1 & 2, pp. 31-52
125. Henry, P.B. (2000), Stock market liberalization, economic reform and emerging market equity prices, *The Journal of Finance*, vol. 55, issue 2: 529-563
126. Henry, P.B. (2007), Capital Account Liberalization: Theory, Evidence, and Speculation, *Journal of Economic Literature,* vol. 45, issue 4
127. Henry, P.B. (2007), Do Stock Market Liberalizations Cause Investment Booms?, *CDDRL Working Papers*, nr. 77
128. Huang, B. N. (1995), Do Asian stock markets follow random walks: Evidence from the variance ratio test, *Applied Financial Economics*, vol. 5, no. 4: 251-256
129. Iwata, S. & Wu, S. (2009), Stock Market Liberalization and International Risk Sharing*, Journal of International Financial Markets, Institutions & Money,* vol. 19, issue 3, pp. 461–476
130. Javorick, B.S. (2004), Does foreign direct investment increase the productivity of domestic firms: in search of spillovers through backward linkages, *American Economic Review*, vol. 94, issue 3, pp. 605-627
131. Jayasuriya, S. (2005), Stock market liberalization and volatility in the presence of favorable market characteristics and institutions, *Emerging Markets Review*, vol. 6, issue 2, pp. 170–191
132. Jefferis, K. & Okeahalam, C. (1999), An Event Study of the Botswana, Zimbabwe and Johannesburg Stock Exchanges, *South African Journal of Business Management*, vol. 30, pp. 131-140
133. Johnston, R.B. & Tamirisa, N.T. (1998), Why Do Countries Use Capital Controls?, *IMF Working Paper* no. WP/98/181
134. Kaminsky, G. & Reinhart, C. (1999), The Twin Crises: The Causes of Banking and Balance-of-Payments Problems, *American Economic Review*, vol. 89, issue 3: 473-500
135. Kaminsky, G.L. & Schmukler, S.L. (2003), Short-Run Pain, Long-Run Gain: The Effects of Financial Liberalization, *IMF Working Paper*, 59 pages
136. Karemera, D., Ojah, K. şi Cole, J. A. (1999), Random walks and market efficiency tests: Evidence from emerging equity markets, *Review of Quantitative Finance and Accounting*, vol. 13, no. 2: 171-188
137. Karolyi, A. (1998), Why Do Companies List Their Shares Abroad? A Survey of the Evidence and Its Managerial Implications, New York University
138. Kawakatsu, H. & Morey, M. R. (1999), Financial Liberalization and Stock Market Efficiency: An Empirical Examination of Nine Emerging Market Countries, *Journal of Multinational Financial Management*, vol. 9: 353-371
139. Kendall, D.G. (1953), Stochastic Processes Occurring in the Theory of Queues and their Analysis by the Method of the Imbedded Markov Chain, *Annals of Mathematical Statistics*, pp. 24, issue 3, pp. 338–354
140. Khaled, M. & Islam, A. (2005), Test of Weak-Form Efficiency of the Dhaka Stock Exchange, *Journal of Business Finance & Accounting*, vol. 32, no. 7 & 8, pp. 1613-1624
141. Khambata, D. (2000), Impact of Foreign Investment on the Volatility and Growth of Emerging Stock Markets, Multinational Business Review, vol. 8, issue 1: 50-59
142. Kim, E. H. & Singal, V. (1993), Mergers and Market Power: Evidence from the Airline Industry, *The American Economic Review*, vol. 83, issue 3, pp. 549 – 569

143. Kim, E. H. & Singal, V. (2000), Stock Market Openings: Experience of Emerging Economies, *Journal of Business*, vol. 73, pp. 25-66
144. Kim, J.H. & Shamsuddin, A. (2008), Are Asian stock markets efficient? Evidence from new multiple variance ratio tests, *Journal of empirical finance*, vol.15, pp. 518-532
145. Klein, M. & Olivei, G. (1999), Capital Account Liberalization, Financial Depth, and Economic Growth, *NBER Working Paper 7384*
146. Koot, R.S. & Padmanabhan, P. (1993), Stock market liberalization and the distribution of returns on the jamaican stock market, *Global Finance Journal*, vol. 4, issue 2, pp. 171-188
147. Kraay, A. (1998), In Search of the Macroeconomic Effects of Capital Account Liberalization, *World Bank*, Development Economics Research Group
148. Krugman, P. (1998), Saving Asia: It's Time to Get Radical, *Fortune*, Sept. 7, pp. 74-80
149. Kwan, F.B. & Reyes, M.G. (1997), Price Effects of Stock Market Liberalization in Taiwan, *The Quarterly Review of Economics and Finance*, vol. 37, pp. 511-522
150. Laopodis, N. (2004), Financial market liberalization and stock market efficiency: Evidence from the Athens Stock Exchange, *Global Finance Journal*, vol. 15
151. Laurence, M., Cai, F. şi Qian, S. (1997), Weak-form efficiency and causality tests in Chinese stock markets, *Multinational Finance Journal*, vol. 1, no. 4: 291-307
152. Lazăr, D. (2011), Econometrie financiară, Editura Casa Cărţii de Ştiinţă , Cluj- Napoca
153. Leblang, D.A. (1997), Domestic and Systemic Determinants of Capital Controls in the Developed and Developing World, *International Studies Quarterly*, vol. 41, issue 3, p. 435-454
154. Leblang, D.A. (1999), Domestic Political Institutions and Exchange Rate Commitments in the Developing World, *International Studies Quarterly*, vol. 43, issue 4, p. 599-620
155. Lee, J. & Strazicich, M.C. (2001), Break Point Estimation and Spurious Rejections with Endogenous Unit Root Tests, Oxford Bulletin of Economics and Statistics, vol. 63, pp. 535-558
156. Lee, J. & Strazicich, M.C. (2003), Minimum Lagrange Multiplier Unit Root Test with Two Structural Breaks, The Review of Economics and Statistics, Vol. 85, No. 4, pp. 1082-1089
157. Lee, J. & Strazicich, M.C. (2004) Minimum LM unit root test with one structural break, Mimeo.
158. Levine, R. & Renelt, D. (1992), A Sensitivity Analysis of Cross-Country Growth Regressions, *American Economic Review,* vol. 82, issue 4, p. 942-963
159. Levine, R. & Zervos, S. (1998), Capital Control Liberalization and Stock Market Development, *World Development,* vol. 26, issue 7, p. 1169-1183
160. Levine, R. (1997), Financial Development and Economic Growth: Views and Agenda, *Journal of Economic Literature*, vol. 35, issue 2, p. 688-726
161. Levine, R. (1999), *International Financial Liberalization and Economic Development*, University of Virginia, Department of Economics, Charlottesville
162. Lins, K., Strickland, D. şi Zenner, M. (2000), Do Non-U.S. Firms Issue Equity on U.S. Stock Exchanges to Relax Capital Constraints?, Fisher College of Business, Ohio State University
163. Lipschitz, L., Lane, T. şi Mourmouras, A. (2005), Real Convergence, Capital Flows, and Monetary Policy: Notes on the European Transition Countries, *Euro Adoption in Central and Eastern Europe: Opportunities and Challenges*, International Monetary Fund
164. Lo, A.W. & MacKinlay, A.C. (1988), Stock market prices do not follow random walks: evidence from a simple specification test, *The Review of Financial Studies,* vol. 1, pp. 41–66
165. Lo, A.W. & MacKinlay, A.C. (1989), The size and power variance ratio test in finite samples: a Monte Carlo investigation, *Journal of Econometrics*, vol. 40, 203–238
166. Loree, D.W & Guisinger, S.E. (1995), Policy and non-policy determinants of U.S. Equity foreign direct investment, *Journal of International Business Studies*, vol. 26, issue 2, pp. 281-300
167. Lupu, R. & Lupu, I. (2005), Competitivitatea firmelor listate la BVB folosind metoda studiului econometric de eveniment, *Revista OEconomica*, vol. 4: 137-150
168. Malkiel, B. (1992), Efficient Market Hypothesis, în Peter Newman, Murray Milgate şi John Eatwell (eds.), *New Palgrave Dictionary of Money and Finance*, Macmillan, London
169. Mammen, E. (1993), Bootstrap and wild bootstrap for high dimensional linear models, *The Annals of Statistics*, vol. 21, 255–285
170. McKinnon, R. (1973), *Money and Capital in Economic Development*, Brooking Institutions, Washington DC
171. Merton, R.C. (1980), On Estimating the Expected Returns on the Market: An Exploratory Investogation, *Journal of Financial Economics*, vol. 8, pp. 323-361
172. Miles, W. (2002), Financial Deregulation and Volatility in Emerging Equity Markets, *Journal of Economic Development*, vol. 27, issue 2, pp. 113-126
173. Milesi-Ferretti, G.M. (1998), Why Capital Controls? Theory and Evidence, *Positive Political Economy: Theory and Evidence,* Cambridge University Press, Cambridge

174. Miller, D.P. (1999), The market reaction to international cross-listings: evidence from Depositary Receipts, *Journal of Financial Economics*, vol. 51: 103-123
175. Miller, M. H., Muthuswamy, J. şi Whaley, R. E. (1994), Mean reversion of Standard and Poor's 500 index basis changes: arbitrage-induced or statistical illusion, *Journal of Finance*, vol. 49, pp. 479-513
176. Mishkin, F. (2001), Financial Policies and the Prevention of Financial Crises in Emerging Market Contries, NBER Working Paper, No. 8087
177. Mobarek, A. & Keasey, K. (2002), Weak-Form Market Efficiency of and Emerging Market: Evidence from Dhaka Stock Market of Bangladesh, http://www.bath.ac.uk/centers/CDS/Enbs-papers/Mobarek_new.htm
178. Montiel, P. & Reinhart, C. (1999), Do Capital Controls and Macroeconomic Policies Influence the Volume and Composition of Capital Flows? Evidence from the 1990s, *Journal of International Money and Finance,* vol. 18, issue 4, p. 619-635
179. Mood, A.M. (1940), The distribution theory of runs, Annals of Mathematical Statistics, vol. 11, pp. 367-392
180. Moran, T.H. (1998), Foreign Direct Investment and Development: The New Policy Agenda for Developing Countries and Countries in Transition (Washington: Institute for International Economics)
181. Morisset, J. & Neso, O.L. (2002), Administrative barriers to foreign investment in developing countries, *Transnational Corporations*, vol. 11, issue 2, pp. 99-120
182. Morisset, J. & Pirnia, N. (2001), How tax policy and incentives affect foreign direct investment: a review, in *Using Tax Incentives to Compete for Foreign Investment: Are They Worth the Costs?* eds. L. T. J. Wells, N. J. Allen, J. Morisset and N. Pirnia. (Washington: Foreign Investment Advisory Service), pp. 69-108
183. Moustafa, M. A. (2004), Testing the Weak-Form Efficiency of the United Arab Emirates Stock Market, *International Journal of Business*, vol. 29, no. 3: 310-325
184. Muth, J.F. (1961), Rational Expectations and the Theory of Price Movements, *Econometrica,* vol. 29, pp. 315–335
185. Nan, A., Borza, G., **Ulici, M.** (2009), Impactul Integrării În Uniunea Europeană Asupra Agriculturii Româneşti, Conferința Internațională cu tema DEZVOLTARE ŞI INTEGRARE EUROPEANĂ, Sighet, 16-17 octombrie 2009
186. Neely, C.J. (1999), An Introduction to Capital Controls, *Federal Reserve Bank of St. Louis Review*, vol. 81, issue 6, p. 13-30
187. Nelson, D. (1991), Conditional Heteroskedasticity in Asset Returns: a New Approach, *Econometrica*, vol. 59, 349-370
188. Nguyen, D.K. & Bellalah, M., (2008) Stock market liberalization, structural breaks and dynamic, changes in emerging market volatility, *Review of Accounting and Finance*, vol. 7, issue 4, pp. 396-411
189. Nishiotis, G.P. (2002), Investment Barriers and International Asset Pricing: Evidence from Closedend Country Funds, *Working Paper*, Tulane University, LA
190. Nistor, I. & **Ulici, M.** (2009), Impact of financial crisis over the evolution of banks from the capital market, Finance - Challenges of the Future, University of Craiova, Faculty of Economics and Business Administration, vol. 1, issue 10, pp. 22-31
191. Nistor I., Pintea M.-O, **Ulici, M.** (2009), The International Financial Crisis and the Challanges for the Romanian Capital Market, The Financial and Economic Crisis. Causes, Effects and Solutions, Editura Alma Mater, Cluj-Napoca, p. 210-216
192. Nistor, I. & **Ulici, M.** (2009), Impact of financial crisis over the companies of bet index composition, Annals of Faculty of Economics, University of Oradea, Faculty of Economics, vol. 3, issue 1, pp. 281-287
193. Nistor, I., Pintea, M. & **Ulici, M.** (2009), Criza financiară internațională şi provocările pentru piața românească de capital, în cadrul conferinței „Criza financiară şi economică - cauze, efecte, soluții".
194. Nistor, I., **Ulici, M.** şi Pintea, M.O. (2009), The global financial crisis and its implications on the Romanian banking systems, Finance - Challenges of the Future, University of Craiova, Faculty of Economics and Business Administration, vol. 1, issue 9, pp. 160-167
195. Nistor, I. & **Ulici, M.** (2009), The Financial Crisis And The Impact Over The Sectors Of Economy, Annals of Faculty of Economics, University of Oradea, Faculty of Economics, vol. 3, issue 1, pp. 288-293
196. Nistor, I., Pintea, M. & **Ulici, M.** (2009), The Implications Of The Global Crisis On The Financial Performances Of The Romanian Banking System, Analele Ştiintifice ale Universității "Alexandru Ioan Cuza" din Iaşi - Ştiințe Economice, Alexandru Ioan Cuza University, Faculty of Economics and Business Administration, pp. 149-160

197. Nistor, I., **Ulici, M.** & Schiau, L.L. (2010), Impact Of Financial Crisis On Construction Firm`S Cost Of Capital, Annals of Faculty of Economics, University of Oradea, Faculty of Economics, vol. 1, issue 2, pp. 616-622
198. Nistor, I. & **Ulici, M.** (2010), The impact of Lehman Brothers on Romanian banks listed on BVB, Finance - Challenges of the Future, University of Craiova, Faculty of Economics and Business Administration, vol. 1, issue 12, pp. 21-28
199. Nistor, I. & **Ulici, M.** (2010), Banking crisis. Case of U.S. banks versus UK banks, Finance - Challenges of the Future, Finance - Challenges of the Future, University of Craiova, Faculty of Economics and Business Administration, vol. 1, issue 11, pp. 26-34
200. Nistor, I., Ulici, M. şi Schiau, L. (2010), Financial Crisis And The Impact On The Capital Markets, Financial Trends in the Global Economy, Editura Casa Cărţii de Ştiinţă ,Cluj-Napoca, pp. 59 -70
201. Nistor, I., **Ulici, M.L.** şi Gherman, M.C. (2011), Do financial liberalization affect stock market efficiency?, Globalization and higher education in economics and business administration, Editura Universităţii "Alexandru Ioan Cuza", Iaşi, pp. 684 - 690
202. Noorbakhsh, F., Paloni, A. şi Youssef, A. (2001), Human captial and FDI flows to developing countries: new empirical evidence, *World Development*, vol. 29, issue 9, pp.1593-1610
203. Nord, R. (2003), The Liberalization of the Capital Account in Hungary: Experiences and Lessons, *Capital Liberalization in Transition Countries: Lessons from the Past and for the Future*, Massachusetts: Edward Elgar, p. 195-208
204. Nunnenkamp, P. & Spatz, J. (2002), Determinants of FDI in developing countries: has globalization changed the rules of the game?, *Transnational Corporations*, vol. 11, issue 1, pp. 1-34
205. Officer, R.R. (1973), The Variability of the Market Factor of New York Stock Exchange, *Journal of*
206. Ojah, K. & Karemera, D. (1999), Random Walk and Market Efficiency Tests of Latin American Emerging Equity Markets: A Revisit, *The Financial Review*, vol. 34, no. 2: 57-72
207. Oprițescu, M., Manta, A.G., Perpelea, M. (2010), European monetary integration: between hope and fulfillment, *Finance - Challenges of the Future,* University of Craiova, Faculty of Economics and Business Administration, vol. 1, issue 12, pp. 12-20
208. Oprițescu, M., Manta, A.G., Perpelea, M. (2010), Quantifying the effects of the macroeconomic variables on the loan portofolio quality for the romanian banking system using the var model, *Finance - Challenges of the Future*, University of Craiova, Faculty of Economics and Business Administration, vol. 1, issue 11, pp. 14-20
209. Pagano, M. (1989), Endogenous Market Thinness and Stock Price Volatility, *The Review of Economic Business*, vol. 46, pp. 434-453
210. Pagano, M. (1989), Trading Volume and Asset Liquidity, *The Quarterly Journal of Economics*, vol. 104, issue 2, pp. 255-274
211. Parkinson, J. M. (1987), The EMH and CAPM on Nairobi stock Exchange, East Africa Economy Review, vol. 3, no. 2: 105-110
212. Patnaik, P. (2003), The humbug of finance, *In The Retreat to Unfreedom*, Tulika, New Delhi
213. Phylaktis, K. (1999), Capital Market Integration in the Pacific Basin Region: An Impulse Response Analysis*, Journal of International Money and Finance*, vol. 18, issue 2: 267-287
214. Poshakwale, S. (1996), Evidence on Weak Form Efficiency and Day of the Week Effect in the Indian stock Market, *Finance India*, vol. 10, no. 3: 605-616
215. Prasad, E., Rogoff, K. Wei, S. şi Kose, M. (2003), Effects of financial globalization on developing countries: some empirical evidence, Mimeo
216. Quinn, D.P. & Inclan, C. (1997), The Origins of Financial Openness: A Study of Current and Capital Account Liberalization, *American Journal of Political Science,* vol. 41, issue 3, p. 771-813
217. Quinn, D.P. (1997), The Correlates of Changes in International Financial Regulation, *American Political Science Review,* vol. 91, issue 3, p. 531-551
218. Quinn, D.P. (2000), Democracy and International Financial Liberalization, *McDonough School of Business*, Georgetown University
219. Reinhart, C. & Smith, R.T. (1998), Too Much of a Good Thing: The Macro- economic Effects of Taxing Capital Inflows, *Managing Capital Flows and Exchange Rates: Perspectives from the Pacific Basin,* Cambridge University Press, Cambridge
220. Reinhart, C.M. & Smith, T. (2002), Temporary Controls on Capital Inflows, *Journal of International Economics*, vol. 57, issue 2: 327-351
221. Richards, A.J. (2002), Big Fish in Small Ponds: The Momentum Investing and Price Impact of Foreign Investors in Asian Emerging Equity Markets, *IMF Staffs Paper*, Washington DC
222. Rodrik, D. & Velasco, A. (1999), Short Term Capital Flows, *NBER Working Paper* 7364

223. Rodrik, D. (1998), Who Needs Capital-Account Convertibility?, *Should the IMF Pursue Capital Account Convertibility? Essays in International Finance* no. 207, Princeton University Press. Princeton
224. Rossi, M. (1999), Financial Fragility and Economic Performance in Developing Countries: Do Capital Controls, Prudential Regulation, and Supervision Matter?, *IMF Working Paper* WP/99/66
225. Sachs, J. (1981), The Current Account and Macroeconomic Adjustment in the 1970s., *Brookings Papers on Economic Activity 1*, Brookings Institution, Washington
226. Sadowska-Cieslak, E. (2003), Capital Account Liberalization in Poland, *Capital Liberalization in Transition Countries: Lessons from the Past and for the Future*, p. 225-243
227. Samuelson, P. (1965), Proof That Properly Anticipated Prices Fluctuate Randomly, *Industrial Management Review*, vol. 6, pp. 41-49
228. Saucier, P., Nistor, I., Masca, S.G., Ulici, M., (2010), How Foreign Participation Impacts Companies Performance: Evidence from Romania, Conferința Internațională European Economics and Finance Society, 9th Annual Meeting of the EEFS International Conference, cu tema "Global Imbalances, Financial Institutions, and Reforms in the Post-Crisis Era", 3 - 6 June 2010
229. Schiau, L.-L. & **Ulici, M.** (2009), Fiscal Policy Response During The Economic Crisis: Evidence From The Flat Tax Counties In The European Union, Conferinta „Challenges Of Contemporary Knowledge-Based Economy - Third Edition", Alba Iulia, 13-14 noiembrie 2009
230. Schwert, G.M. (1990), Stock Volatility and the Crash of '87, *Review of Financial Studies*, vol. 3, issue 1, pp. 77-102
231. Schwert, G.W. (1989), Why Does Stock Market Volatility Change Over Time?, *Journal of Finance*, vol. 44, issue 5, pp. 1115-1153
232. Sentana, E. (1995), Quadratic Arch Models, *Review of Economic Studies*, vol. 62, pp. 639-661
233. Shaw, E. (1973), Financial Deepening in Economic Development, Oxford University Press, New York
234. Shiller, R. J. & Grossman, S. J. (1981), The Determinants of the Variability of Stock Market Prices, *Rational Expectations in Practice,* vol. 71, issue 2, pp. 222-227
235. Shiller, R. J. (1990), Market Volatility and Investor Behavior, *American Economic Review*, Papers and Proceedings, vol. 80, pp. 58-62
236. Simmons, B. & Elkins, Z. (2000), Globalization and Policy Diffusion: Explaining Three Decades of Liberalization, University of California
237. Sin, C.Y. & Leung, W.F. (2001), Impacts of FDI liberalization on investment inflows, *Applied Economic Letters*, vol. 8, pp. 253-256
238. Smith, G. & Ryoo, H. J. (2003), Variance ratio tests of the random walk hypothesis for European emerging stock markets, *The European Journal of Finance*, vol. 9, pp. 290-300
239. Smith, G., Jefferis, J. şi Ryoo, H-J. (2002), African Stock Markets: Multiple Variance Ratio Tests of Random Walks, *Applied Financial Economics*, vol. 12, pp. 475-484
240. Smith, K. & Sofianos, G. (1997), The Impact of a NYSE Listing on Global Trading of Non-U.S. Stocks, *Working Paper* 97-02, New York Stock Exchange
241. Soto, C. (1997), Controles a los Movimientos de Capitales: Evaluacion Empirica del Caso Chileno, Central Bank of Chile, Santiago
242. Souza, LV (2004), Financial Liberalization and Business Cycles: The Experience of New EU Member States in the Baltics and Central Eastern Europe, Discussion paper Series 1 / Volkswirtschaftliches Forschungszentrum der Deutschen Bundesbank, no. 23
243. Stiglitz, J. (2000), Capital Market Liberalization, Economic Growth and Instability, *World Development*, vol. 28, issue 6, p. 1075-1086
244. Stiglitz, J. E. (2002), Capital Account Liberalization and Exchange Rate Regimes: Risk without Reward, *The ANNALS of the American Academy of Political and Social Science,* vol. 579, pp. 219-248
245. Stiglitz, J.E. (2000), Capital market liberalization, economic growth and instability, *World Development,* vol. 28, issue 6: 1075-1086
246. Stoll, H.R. & Whaley, R.E (1990), Program Trading and Individual Stock Returns: Ingredients of the Triple-Witching Brew, The Journal of Business, University of Chicago Press, vol. 63, issue 1, pp. 165-192
247. Stoll, H.R. & Whaley, R.E. (1991), Expiration-day Effects: What has Changed?, *Financial Analysts Journal*, pp. 58-72
248. Stulz, R. (1999), International Portfolio Flows and Security Markets, In: Feldstein, M. (Eds.), International Capital Flows, NBER and University of Chicago Press, pp. 257-293
249. Stulz, R.M. (1995), Globalization and the Cost of Capital: The Case of Nestle, *European Financial Mangment,* vol. 8, issue 1, p. 30-38
250. Stulz, R.M. (2005), The Limits of Financial Globalization, *Journal of Finance*, vol. 60, issue 4

251. Swank, D. (1998), Funding the Welfare State: Globalization and the Taxation of Business in Advanced Market Economies, *Political Studies*, vol. 46, issue 4, p. 671-692
252. Tandon, K. (1994), External Financing in Emerging Economies: An Analysis of Market Responses, *World Bank*, Washington
253. Tandon, K. (1997), External Financing in Emerging Markets: An Analysis of Market Responses, *Emerging Markets Quarterly,* vol. 1, issue 2: 63-74
254. Tas, O. & Dursonoglu, S. (2005), Testing random walk hypothesis for Istanbul Stock Exchange, *International Trade and Finance Association Conference Papers Studies*, vol. 56, issue 2, pp. 269-287
255. Tauchen, G. E. & Pitts, M. (1983), The Price Variability- Volume Relationship on Speculative Markets, *Econometrica*, vol. 51, pp. 485-505
256. Taylor, C.T. (2000), The impact of host government policy on U.S. multinational investment decisions, World Economy, vol. 23, issue 5, pp. 635-647
257. Thiel, E. (2003), Recent Codes-Based Liberalization in the OECD, *Capital Liberalization in Transition Countries: Lessons from the Past and for the Future*, p. 85-104
258. Todea, A. (2005), *Eficiența informațională a piețelor de capital*, Editura Casa Cărții de Știință, Cluj-Napoca
259. Todea, A. & Zoicaş-Ienciu A. (2008), Episodic Dependencies in Central and Eastern Europe Stock Markets, Applied Economics Letters, vol. 15, issue 13-15, pp. 1123-1126
260. Todea, A., **Ulici, M.** şi Silaghi, S. (2009), Adaptive Markets Hypothesis - Evidence from Asia-Pacific Financial Markets, The Review of Finance and Banking, Academia de Studii Economice din Bucureşti, România / Facultatea de Finanțe, Asigurări, Bănci şi Burse de Valori / Catedra de Finanțe, vol. 1, issue 1, pp. 7-13
261. Todea, A., **Ulici, M.** şi Filip, A. (2011), Capital Account Liberalization in Romania, 18th International Economic Conference – IECS 2011 intitulată "Crises after the crisis. Inquiries from a national, european and global perspective", Sibiu, 19-20 mai 2011
262. Trevino, L.J., Daniels, J.D. şi Arbelaez, H. (2002), Market reform and FDI in Latin America: an empirical investigation, *Transnational Corporations*, vol. 11, issue 1, pp. 30-48
263. Truong, D.L., Lanjouw, G. şi Lensink, R. (2008), Stock-market efficiency in thin trading markets: The case of the Vietnamese stock market, Applied Economics, vol. 42, issue 27, pp. 3519-3532
264. UK Inflation, *Econometrica*, vol. 50, pp. 987-1008
265. **Ulici, M.L.,** Popa, A.D şi Mutu, S. (2011), Impact of capital account liberalization on gross domestic product, Globalization and higher education in economics and business administration, Editura Universităţii "Alexandru Ioan Cuza", Iaşi, pp. 727 - 736
266. United Nations Conference on Trade and Development (UNCTAD) (2003), World Investment Report 2003: FDI Policies for Development: National and International Perspectives (New York and Geneva: United Nations)
267. Urrutia, J. L. (1995), Tests of random walk and market efficiency, *Journal of Financial Research*, vol. 18, pp. 299-309
268. Valdes-Prieto, S. & Soto, M. (1998), The Effectiveness of Capital Controls: Theory and Evidence from Chile, *Empirica,* vol. 25, issue 2, p. 133-164
269. Williamson, J. & Mahar, M. (1998), A Survey of Financial Liberalization, *International Finance* 211, Princeton University, Princeton N.J.
270. Williamson, J. (2000), What should the World Bank think about the Washington Consensus, *The World Bank Research Observer*, vol. 15, issue 2, pp. 251-264
271. Wint, A.G. (1992), Liberalizing foreign direct investment regimes: the vestigial screen, *World Development*, vol. 20, issue 10, pp. 1515-1529
272. Wright, J.H. (2000), Alternative variance-ratio tests using ranks and signs, *Journal of Business and Economic Statistics*, vol. 18, pp. 1–9
273. Wyplosz, C. (1999), Financial Restraints and Liberalization in Postwar Europe, *Graduate Institute of International Studies*, Geneva
274. Zivot, E. & Andrews, D.W.K. (1992), Further Evidence on the Great Crash, the Oil-Price Shock, and the Unit-Root Hypothesis, *Journal of Business & Economic Statistics*, Vol. 10, No. 3: 251-270

Bibliografie electronică

1. http://data.worldbank.org/data-catalog/world-development-indicators
2. http://english.mnb.hu/arfolyam-lekerdezes
3. http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/
4. http://www.bank.lv/en/monetary-policy/exchange-rate-policy/overview-of-exchange-rates
5. http://www.bsi.si/en/financial-data.asp?MapaId=810

6. http://www.cnb.cz/miranda2/m2/en/financial_markets/foreign_exchange_market/exchange_rate_fixing/selected_form.jsp?error=no_data&month=0&year=1998&code=EUR&format=xls
7. http://www.lb.lt/exchange/HResults.asp?Lang=E&id=20334&ord=1&dir=ASC&MB=1&DB=1&YB=1993&M=6&D=29&Y=2011&Cid=XEU&vykdyti=Submit&S=csv&x=7458
8. http://www.nbp.pl/homen.aspx?c=/ascx/archen.ascx
9. http://www.stat.si/eng/index.asp
10. www.bnr.ro
11. www.imf.org