

Financial Liberalization and Business Cycles: The Experience of Future EU Member States in the Baltics and Central Eastern Europe

by

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Abstract: This paper extends the work of Kaminsky and Schmukler (2003) to the Baltic and Central Eastern European future Member States of the European Union, to test if the same short-run increase in cyclical volatility arising from financial integration is observed in this specific sample of “emerging markets”. This work finds signs that, contrary to other emerging markets, this does not happen: for the future Member States, financial integration, similarly to the outcome observed in mature market economies, reduces cyclical volatility both in the short and in the long run. Weak indications are found that this may happen partially due to the anchoring of expectations provided by the EU Accession, and to the more robust institutional framework imposed by this process onto the countries in question.

Keywords: Enlargement, European Union, financial liberalization, booms, busts, cycles, volatility.

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1. Introduction

Financial and capital flows' liberalization can play a fundamental role in increasing growth and welfare. Typically, emerging or developing economies seek foreign savings to solve the inter-temporal savings-investment problem. On the other hand, current account surplus countries seek opportunities to invest their savings. To the extent that capital flows from surplus to deficit countries are well intermediated and, therefore, put to the most productive use, they increase welfare.²

Liberalization can, however, also be dangerous, as has been witnessed in many past and recent financial, currency and banking crises. It can make countries more vulnerable to exogenous shocks. In particular, if serious macroeconomic imbalances exist in a recipient country, and if the financial sector is weak, be it in terms of risk management, prudential regulation and supervision, large capital flows can easily lead to serious financial, banking or currency crises. A number of recent crises, like those in East Asia, Mexico, Russia, Brazil and Turkey (described, for example, in IMF (2001)), and, to some extent, the Argentinean episode of late 2001, early 2002, have demonstrated the potential risks associated with financial and capital flows liberalization.³

Central Eastern Europe has a somewhat different experience, when compared to other emerging regions, concerning the financial liberalization process, as the process there seems to have been much less crisis-prone than in, for instance, Asia or Latin America. This maybe, at least partially, because the current high degree of external and financial liberalization in the Central Eastern European countries (CEECs),⁴ beyond questions of economic allocative efficiency, must be understood in terms of the process of Accession to the European Union.⁵

The EU integration process implies legally binding, sweeping liberalization measures –not only capital account liberalization, but investment by EU firms in the domestic financial services, and the maintenance of a competitive domestic environment, giving this financial liberalization process strong external incentives (and constraints). Those measures were

²The opening up and liberalization of financial services in developing countries would yield, in principle, both static and dynamic gains: static, one-shot efficiency gains from optimally allocating the available resources (i.e., developed, capital abundant nations would export capital to the developing, capital scarce ones; also domestically, deeper, more effective financial systems would facilitate the linkages between domestic savers and investors, reducing information asymmetries and scale problems), and dynamic ones because the growth rate would be shifted upwards by the increased capital stock created by the greater investment (temporarily, later adjusting again to the long run growth trend).

³A good example of a recent work that supports this cautious line on financial liberalization *for emerging markets*, published by no other organization than the IMF itself, and actually co-authored by its' them Chief Economist, Kenneth Rogoff, see Prasad et al., 2003.

⁴For capital mobility indicators for the Eastern European countries, in an index from 0 to 100, where 100 indicates full liberalization (see IMF, World Economic Outlook 2000), Estonia and Latvia score 97.6, Lithuania 85.7, the Czech Republic, 73.7, Hungary 59.5, while a "larger" economy like Poland scores 55.3, Slovenia, 40.5, Bulgaria 35.3, Slovakia, 23.7 and Romania, the less liberalized in the group, a mere 12.5: the average, non-GDP weighted, is 58.14. Nevertheless, it must be noted that the index above was computed in 1997 and that now it is certainly higher, especially among the relative laggards like Bulgaria, Slovenia and Slovakia (but with the possible exception of Romania), given that, among other things, capital account liberalization is also a (pre)-requisite for EU membership.

⁵In March 31, 1998, the European Commission launched official Accession processes with Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia (see Vinhas de Souza at all, 1999). All those Eastern European countries –bar Bulgaria and Romania, for which the expected date is 2007, plus Cyprus and Malta, shall become members of the European Union in early May 2004.

implemented parallel to the development of a highly sophisticated regulatory and supervisory structure, again based on EU standards. This whole process happened also with the EU's technical and financial support, through specific programs –like the PHARE one, for these so-called Accession, and now Acceding Countries (ACs), and the TACIS, for the former Soviet Union ones- and direct assistance from EU institutions, like the European Commission, the European Parliament and the European Central Bank (also, on a very early stage of the transition process, the influence of the IMF in setting up policies and institutions in several countries in the region –an intervention widely considered to have been successful- was very important: see Hallerberg et al., 2002).

Additionally, EU membership in the near future seems to act as an anchor to market expectations (see Vinhas de Souza and Hölscher, 2001), limiting the possibilities of self-fulfilling financial crises and regional contagion (see Linne, 1999), which had the observed devastating effects in both Asia and Latin America (even a major event, like the Russian collapse of 1998, had very reduced regional side effects). Several regional episodes of financial systems' instability did happen (see Vinhas de Souza, 2002(a) and Vinhas de Souza, 2002(b)), but none with the prolonged negative consequences observed in other regions (which was also due to the effective national policy actions undertaken after those episodes).

This study's main aim is to expand the Kaminsky and Schmukler database (see Kaminsky and Schmukler, 2003), from now on indicated as K&S, to include the Accession and Acceding Countries from Eastern Europe (namely, for Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). In their original work, K&S build an extensive database of external and financial liberalization, which includes both developed countries and countries from emerging regions (but not from Eastern Europe).⁶ With that, they create different indexes of liberalization (capital account, banking and stock markets: see Table I below) and using them individually and in an aggregate fashion, test for the effects and causality of this process on financial and real volatility, for the existence of differences between regions, and for the effects of the ordering of the liberalization process. With the extended database built in this paper, a similar set of regressions –to enable comparability- has been run for the CEECs, and the results are contrasted with those for the other regions included in the K&S original study.

One underlying hypotheses of this work is that the existing regulatory and institutional framework in Eastern Europe, plus a more sustainable set of macro policies, played an important role in enabling liberalization to largely deliver the welfare enhancing outcomes that it is supposed to. Such an “anchoring” role of the European Union in the CEECs, through the process of EU membership, and through the effective imposition of international standards of financial supervision and regulation, may indicate that, beyond multilateral organizations like the IMF or the OECD, a greater, pro-active regional stabilizing role in emerging markets by regional actors, for instance, the United States, or by some regional sub-grouping, like Mercosur, may also be welfare enhancing for other “emerging” regions.

This work is structured as follows: firstly, the individual components of the index will be described for my sample of countries. Afterwards, the constructed index and its components will be presented, for the sample as whole and for its individual country

⁶Namely, their index covers the period 01:1973-06:1999, for the following 28 countries: Argentina, Brazil, Chile, Colombia, Hong Kong, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Taiwan, Thailand, and Venezuela (emerging markets) and Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Norway, Portugal, Spain, Sweden, United Kingdom and United States (mature economies).

members, and compared with K&S's original index. In the next section, K&S-compatible core regressions are run. Afterwards, alternative specifications are estimated. Finally, the work ends with a conclusion.

Table I: K&S Liberalization Index

| Capital Account Liberalization | Financial Sector Liberalization | Stock Market Liberalization |
|---|--|---|
| <p>Criteria for Full Liberalization <i>-Borrowing abroad by banks and corporations</i> Banks and corporations are allowed to borrow abroad mostly freely. They may need to inform the authorities, but the authorization is granted almost automatically. Reserve requirements might be in place but are lower than 10%. The required minimum maturity is not longer than two years.</p> <p>And <i>-Multiple exchange rates and other restrictions</i> There are no special exchange rates for either current account or capital account transactions. There are no restrictions to capital outflows.</p> <p>Criteria for Partial Liberalization <i>-Borrowing abroad by banks and Corporations</i> Banks and corporations are allowed to borrow abroad, subject to certain restrictions. Reserve requirements might be between 10 and 50%. The required minimum maturity might be between two and five years. There might be caps in borrowing and certain restrictions to specific sectors.</p> <p>Or <i>-Multiple exchange rates and other restrictions</i> There are special exchange rates for current account and capital account transactions. There might be some restrictions to capital outflows.</p> <p>Criteria for No Liberalization <i>-Borrowing abroad by banks and Corporations</i> Banks and corporations are mostly not allowed to borrow abroad. Reserve requirements might be higher than 50%. The required minimum maturity might be longer than five years. There might be caps in borrowing and heavy restrictions to certain sectors.</p> <p>Or <i>-Multiple exchange rates and other restrictions</i> There are special exchange rates for current account and capital account transactions. There might be restrictions to capital outflows.</p> | <p>Criteria for Full Liberalization <i>-Lending and borrowing interest rates</i> There are no controls (ceilings and floors) on interest rates.</p> <p>And <i>-Other indicators</i> There are likely no credit controls (subsidies to certain sectors or certain credit allocations). Deposits in foreign currencies are likely permitted.</p> <p>Criteria for Partial Liberalization <i>-Lending and borrowing interest rates</i> There are controls in either lending or borrowing rates (ceilings or floors).</p> <p>And <i>-Other indicators.</i> There might be controls in the allocation of credit controls (subsidies to certain sectors or certain credit allocations). Deposits in foreign currencies might not be permitted.</p> <p>Criteria for No Liberalization <i>-Lending and borrowing interest rates</i> There are controls in lending rates and borrowing rates (ceilings and floors).</p> <p>And <i>-Other indicators.</i> There are likely controls in the allocation of credit controls (subsidies to certain sectors or certain credit allocations). Deposits in foreign currencies are likely not permitted.</p> | <p>Criteria for Full Liberalization <i>-Acquisition by foreign investors</i> Foreign investors are allowed to hold domestic equity without restrictions.</p> <p>And <i>-Repatriation of capital, dividends, and interest</i> Capital, dividends, and interest can be repatriated freely within two years of the initial investment.</p> <p>Criteria for Partial Liberalization <i>-Acquisition by foreign investors</i> Foreign investors are allowed to hold up to 49 % of each company's outstanding equity. There might be restrictions to participate in certain sectors. There might be indirect ways to invest in the stock market, like through country funds.</p> <p>Or <i>-Repatriation of capital, dividends, and interest</i> Capital, dividends, and interest can be repatriated, but typically not before two and not after five years of the initial investment.</p> <p>Criteria for No Liberalization <i>-Acquisition by foreign investors</i> Foreign investors are not allowed to hold domestic equity.</p> <p>Or <i>-Repatriation of capital, dividends, and interest</i> Capital, dividends, and interest can be repatriated, but not before five years of the initial investment.</p> |

2. Capital Account

The achieving of capital account liberalization happened rather swiftly in most of the countries in my sample: by the mid 1990s, all bar Bulgaria and Romania had been declared Article VIII compliant (for those two countries, this happened in 1998: see Table II below).

Table II: Capital Account Liberalization

| Countries | EU Association Agreements: Date of entry into force | Article VIII Compatibility | OECD Membership |
|-------------------|---|---|--------------------------|
| Bulgaria | -Europe Agreement: 2/95 (signed 3/93). A "Europe" Trade Agreement also signed in 3/93. -Application for EU membership: 12/95 | -IMF entry: 25/9/90. Article VIII: 24/9/98. | |
| Czech Rep. | -Czechoslovakia break-up: 1/1/93. -(New) Europe Agreement: 2/95 (old one signed in 12/91, new in 10/93). A "Europe" Trade Agreement since 3/92 (signed in 12/91). -Application for EU membership: 1/96. | -IMF entry: 20/9/90 (as the Czech and Slovak Federal Republic, and, since 1/93, as separate states). Article VIII: 1/10/95. | -12/95: OECD membership. |
| Estonia | -Independence: 20/8/91 -Europe Agreement: 2/98 (signed: 6/95). -Free Trade Agreement with the EU signed in 7/94. -Application for EU membership: 11/95. | -IMF entry: 25/5/92. Article VIII: 15/8/94. | |
| Hungary | -Europe Agreement: 2/94 (signed: 12/91). A "Europe" Trade Agreement since 3/92 (also signed in 12/91). -Application for EU membership: 3/94. | -IMF entry: 05/06/1982. Article VIII: 1/1/96. | -5/96: OECD Membership. |
| Latvia | -Independence: 21/8/91. -Europe Agreement: 2/98 (signed: 6/95). -Free Trade Agreement with the EU signed in 7/94. -Application for EU membership: 10/95. | -IMF entry: 19/5/92. Article VIII: 10/6/94. | |
| Lithuania | -Independence: declared in 11/3/90, only accepted by URSS in 6/9/91. -Europe Agreement: 2/98 (signed: 6/95). -Free Trade Agreement with the EU signed in 7/94. -Application for EU membership: 12/95 | -IMF entry: 29/4/92. Article VIII: 3/5/94. | |
| Poland | -Europe Agreement: 2/94 (signed: 12/91). A "Europe" Trade Agreement since 3/92 (also signed in 12/91). -Application for EU membership: 4/94. | -IMF entry: 06/12/86. Article VIII: 1/6/95. | -11/96: OECD Membership. |
| Romania | -Europe Agreement: 2/95 (signed in 2/93). A "Europe" Trade Agreement (also signed in 2/93). -Application for EU membership: 6/95 | -IMF entry: 15/12/72. Article VIII: 25/3/1998. | |
| Slovakia | -Czechoslovakia break-up: 1/1/93. -(New) Europe Agreement: 2/95 (signed: 10/93). A Trade Agreement since 3/92 (signed: 12/91). -Application for EU membership: 6/95 | -IMF entry: 20/9/90 (as the Czech and Slovak Federal Republic, and, since 1/93, as separate states). Article VIII: 1/10/95. | -8/00: OECD Membership. |
| Slovenia | -Independence: 25/6/91. -Europe Agreement: 2/99 (signed 6/96). -Application for EU membership: 6/96 | -IMF entry: 14/12/92. Article VIII: 1/9/95. | |

One of the main driving forces behind this was the process of European Integration, for which external liberalization is a pre-requisite: in the early to mid-1990s, all the countries had signed Association Agreements with the European Union (frequently preceded by trade liberalization agreements with the EU, also called “Europe” trade agreements, usually with years given to the countries to prepare for their full implementation) and formally applied for EU membership.

Another additional factor supporting liberalization was IMF and OECD membership: four of the larger countries in my sample became OECD members during the second half of the 1990s. Another factor to be considered, as will become clear with the regressions analysis, is the *endogenous* decision process to liberalize in a sustainable fashion.

3. Banking Sector

Financial integration, in the form of the opening up the banking sector to foreign banks, is seen as being positive, on a micro level, as foreign banks are usually better capitalized and more efficient than their domestic counterparts (of course, the domestic banking sector eventually catches-up: for an indication of this process at the ACs, see, among others, Tomova et al., 2003). Also from a macroeconomic perspective, financial integration maybe positive for the Eastern European countries, both for long run growth and, as there are indications that foreign banks do not contract either their credit supply nor their deposit base, in helping to smooth the cycle (see de Haas and Lelyveld, 2003: they find some indication that this is linked to the better capitalization base and prudential ratios, as better capitalized domestic banks behave similarly to foreign banks). Given the bank-centered nature of virtually all the financial systems of the future Member States, this is particularly important for them.

In most of the future member states, the initial stage of the creation of the two-tier banking system,⁷ modelled on the Western European “universal bank” system,⁸ was characterized by rather liberal licensing practices⁹ and limited supervision policies (aimed at the fast creation of a *de novo* commercial, private banking sector: see Fleming et al., 1996, Balyozov, 1999, Enoch et al., 2002, Sörg et al., 2003). This caused a mushrooming of new banks in those countries in the early 1990s.

Parallel to this, a series of banking crises, of varied proportions, affected most of those *de novo* banking systems, due to this lax institutional framework, inherited fragilities from the command economy period (the political need to support state-owned, inefficient industries, with the consequent accumulation of bad loans and also the financing of budget deficits),

⁷In the Baltic states, already in 1987, as part of the Gorbachov reforms, the monobank Gosbak (which formed the financial system, together with an emissions bank) had spun-off five specialized banks in all URSS republics (Savings, Agriculture, Social, Industry and Construction, and Foreign Trade: a somewhat similar specialization was to be found in most other centrally planned economies, with, at least, a “central bank”, a savings bank and a foreign trade one).

⁸Levine (2002), after performing a panel analysis of large number of countries, concludes that either bank or market-based (i.e., via stock markets) financial systems can be growth-enhancing: what actually is relevant is the overall development of financial sector and, specially, *the quality and effectiveness of the institutional framework* (contract enforcement, investor protection, etc.).

⁹Sometimes almost comically so: as an example, in the early 1990s, Latvia allowed the creation of a bank – appropriately called Olympia Bank– just to finance the Latvian Olympic team.

macroeconomic instability, risky expansion and investment strategies and also sheer inexperience, both from the investors and from regulators. Progressively, the re-capitalization, privatization and internationalization of the banking system (mostly into the hands of EU financial conglomerates), coupled with the implementation of a more robust, EU-modeled institutional framework, did away with most of those problems.

Two of the worst cases where the set of Baltic banking crises and the Bulgarian episode, which are described in more detail on Box I below. Other smaller banking crises happened in Estonia in 1994 and 1998, and in Latvia in 1994. Caprio and Klingebiel, 2003, report smaller episodes of “financial sector distress” in the Czech Republic (94-95), Hungary (93), Poland (91-93),¹⁰ Romania (98-00), Slovakia (97) and Slovenia (92-94).

The initial proliferation of banks was, quite naturally, followed by a process of consolidation and strengthening –parallel to the privatization of the remnant state-owned components of the financial system– of the banking sector in most of those economies (in Bulgaria, from 81 banks in 1992 to 35 in 2001, in the Czech Republic from 55 in 1995 to 38 in 2001, Estonia, from 42 in 1992 to 7 currently, while Hungary had 33 banks in 2002, showing only a very slight decrease from the early 1990s,¹¹ Latvia from 56 in 1994 to 23, Lithuania from 27 in 1993 to 13,¹² in Poland from 81 in 1995 to 71 in 2001,¹³ in Romania from 45 in 1998 to 41 in 2001,¹⁴ in Slovakia from 22 in 2000 to 19 in 2001, and in Slovenia, where the number fell from 25 to 21 during 2001 alone¹⁵).

This consolidation process was frequently led by foreign companies, which now hold the majority of the assets of the banking system in virtually all of them –contrary to the situation in the current EU Member States– bar Slovenia.¹⁶ This process now has a component of regional expansion of the Eastern European banks themselves, or, more precisely in most cases, the regional expansion of Western banks via some of their locally-owned subsidiaries (see Sörg et al., 2003, *ibid*). The share of banking assets to GDP, nevertheless, is still far below the Euroarea average (which stood at around 265% of GDP by end 2001), compared with 47% in Bulgaria, 136% in the Czech Republic, 72% in Estonia and Latvia, 32% in Lithuania, 63% in Poland, 60% in Hungary, 30% in Romania, 96% in Slovakia and 94% in Slovenia (data also for 2001).¹⁷

¹⁰Reininger et al., 2002, estimate the costs of the re-capitalization programs to have reached 12% of the GDP for the Czech Republic, 7% for Hungary and 1.4% for Poland, for the late 1990s. Caviglia et al., 2002, quotes much higher numbers (25%, 13% and 8%), but those figures are for the whole 1990s.

¹¹Plus 8 credit institutions, and 191 savings and credit cooperatives.

¹²Plus 41 credit unions.

¹³Plus 642 cooperative banks.

¹⁴Plus 925 credit cooperatives and an astonishing 4,439 credit unions.

¹⁵Plus 45 savings and loans institutions.

¹⁶In Bulgaria, around 80% of the assets of the banking system are foreign owned, 95% in the Czech Republic, 63% in Hungary, 70% in Poland, 55% in Romania, 83% in Slovakia. In the Baltic republics, around 98% of assets in Estonia, 68% in Latvia, and 87% in Lithuania are foreign owned (see Sörg et al., 2003, *ibid*). Especially for Estonia, where 82% of the assets are Swedish-held, this may imply a higher likelihood of exposure of its financial system to parent bank country-specific shocks (which also depends on the degree of diversification of assets of the parent bank: see IMF, 2003(b)). Slovenia is the “laggard”, with 25.3% of the banking system still state-owned (Romania has the highest share of state-ownership, with 42%), and only 28% foreign owned – which, nevertheless, was an almost doubling of the share, just between 2001 and 2002.

¹⁷Part of this financial shallowness is due to the fact that a substantial part of the investment financing for companies is done via inter-company financing, due to the large share of foreign ownership, and due to direct commercial financing with non-resident banks. The latter also happens, to smaller degree, with commercial credit to households (see Reininger *at al*, 2002, *ibid.*, and Caviglia *at al.*, 2002, *ibid.*)

Another peculiar feature of the banking system in the region is that foreign currency lending –usually euro-denominated¹⁸– to *residents* is very high, especially in the Baltic republics: with 80% of total loans in Estonia, 56% in Latvia and 61% in Lithuania. Also, the Baltic countries have substantial shares of deposits by non-residents, with over 10% in Estonia and Lithuania and close to 5% in Latvia (Latvia, with its close trading ties to Russia, has a particular strategy of selling itself as a stable financial services center to CIS depositors: see IMF, 2003(b), *ibid*).

The supervision system has also substantially improved, and, following recent international –and EU- best practice, is now centered in independent universal supervisory agencies in the most advanced of those countries¹⁹ (Reininger et al., 2002, *ibid*., estimate that the *formal* regulatory environment for the Czech Republic, Hungary and Poland is actually above the EU, and that its *actual* enforcement level is at its average; Liive, 2003, gives a description of the Estonian experience that culminated in the creation of the EFSA –Estonian Financial Supervisory Authority- in January 2002).

Box I: Banking Crises in Eastern Europe

The Baltic bank crises were, to different degrees, linked to liquidity difficulties related to relations with Russia (in the November 1992 Estonian case, by the freezing of assets held by some Estonian banks in their former Moscow headquarters, while the Latvian and Lithuanian episodes of, respectively, March and December 1995, were caused by the drying-up of lucrative trade-financing opportunities with Russia, whose export commodities, at that time, were still below world price levels) and regulatory tightening (Latvia, Lithuania), compounded by the elimination of credit opportunities with the implementation of the Estonian and Lithuanian CBAs (Currency Board Arrangements). In Lithuania, as in Bulgaria, the financing of the budget deficit also played a role. In the Estonian and Latvian cases, around 40% of the assets of the banking system were compromised, in the Lithuanian and Bulgarian cases, around a third.

The Bulgarian 1996-1997 crisis eliminated a third of its banking sector, and led the country to hyperinflation (reaching over 2000% in March 1997, see Yotzov, 2002). Its roots lie in the political instability that preceded it (which, on its turn, led to inadequate real sector reform, with state-owned, loss making enterprises being financed via the budget deficit or through arrears with the, at the time, still mostly state-owned part banking sector: those arrears were, in turn, partially monetized by the Bulgarian National Bank –BNB- and the largest state bank, the State Savings Bank -SSB). Periodic foreign exchange crises (March 1994, February 1997) and bank runs (late 1995, late 1996, early 1997) were part of this picture. The implementation of tighter supervisory procedures during 1996 (giving the BNB the power to close insolvent banks), and a tightening of policy actually led to more bank runs. A caretaker government in February 1997 (before a newly elected government took power in May) paved the way to longer lasting reform and the implementation of the CBA, with its tighter budget constraints towards both the government and the banking sector. This reform process happened with the support from multilateral institutions (namely, the IMF).

¹⁸The potential exposure to currency risk caused by this is somewhat limited by the fact that several of the ACs – namely, Bulgaria, Estonia and Lithuania– have euro-based currency boards and all of the ACs are, of course, prospective members of the euro area.

¹⁹Garcia Herrero and Del Rio, 2003, find no significant difference in terms of financial sector stability between central bank-centered and independent financial supervisory authorities. Schinasi, 2003, describes the rationale for central bank-centered financial supervisory authorities.

4. Stock Markets

The existence of stock markets is assumed to be beneficial for economic performance. In principle, it provides a way for companies to raise capital at lower costs than through simple banking intermediation, and because it is not as restricted a source of capital as internal financing. Also, it is assumed that the existence of alternative modes of finance may reduce the likelihood of credit crunches caused by problems with the banking sector (see Greenspan, 2000). Additionally, the existence of external ownership is (or was, given the recent problems with market-based governance in the US and the EU, and the shift towards a more regulated environment) assumed to provide better governance for the management of firms. The majority of economic analyses seem to support the position that a diversified financing mix is positive for economic growth and stability.

As described in the previous section, all the financial sectors in the future Member States are bank-centered, with stock markets playing marginal roles in most of them (and, in some, a *very marginal* role: in Bulgaria, Slovakia and Romania, their average market capitalization in GDP terms is below 5%: see Figure I below).

Table III: Date of (Re-)Creation of Stock Exchanges.

| Country | Date of Creation of Stock Exchange |
|-------------------|--|
| Bulgaria | -5/92: First Stock Exchange begins trading (up to 20 regional ones created); 10/97: The Bulgarian Stock Exchange-Sofia (resulting from the consolidation of the previous ones) opened. Stock index available from 1/98 |
| Czech Rep. | 4/93: Current Stock Exchange begins trading. Stock index available from 5/94 |
| Estonia | -5/96: Foundation of Tallinn Stock Exchange; 2/02: Merge with Helsinki Stock Exchange (HEX). Stock index available from 6/96 |
| Hungary | -6/90: Stock Exchange (re-) established. Stock index available from 2/91 |
| Latvia | -12/93: Stock Exchange established. 8/02: Finnish HEX acquires Riga Stock Exchange and Depository. Stock index available from 2/96 |
| Lithuania | -9/93: Stock Exchange trading begins. Stock index available from 1/96 |
| Poland | -4/91: Warsaw Stock Exchange re-opened. Stock index available from 5/91 |
| Romania | -11/95: Stock Exchange begins to operate. Stock index available from 5/98 |
| Slovakia | -4/93: Stock Exchange begins trading. Stock index available from 9/93 |
| Slovenia | -12/89: Stock Exchange established. Stock index available from 1/94 |

All of these countries had (re-)established stock markets²⁰ by the mid-90s²¹ (see Table III above). About half of the future Member States used them to drive the initial process of re-privatisation, either via mass issues of voucher certificates for residents (the most famous case of this strategy was the Czech Republic), or via IPOs (Initial Public Offerings) re-privatisation processes,²² to lock-in domestic and foreign strategic investors (see Claessens at al., 2000). In the voucher-driven privatization, the initial large number of investors and traded stocks in those stock markets was soon concentrated in a rather limited number of institutional investors –domestic and foreign- and “blue chip” stocks.²³ In the IPO-driven markets, the

²⁰One must not forget that those were mostly integrated market economies before the disruptions caused by the Second World War and the posterior Russian occupation: The Warsaw Stock Exchange was created as early as 1817, and the first Prague stock market was created in 1871 (see Bhattacharya and Baouk, 2002).

²¹The former Federal Republic of Yugoslavia, of which Slovenia was a part, combined from early on elements of a market economy with its command system: its stock market, was, therefore, (re)created sooner, in 1989.

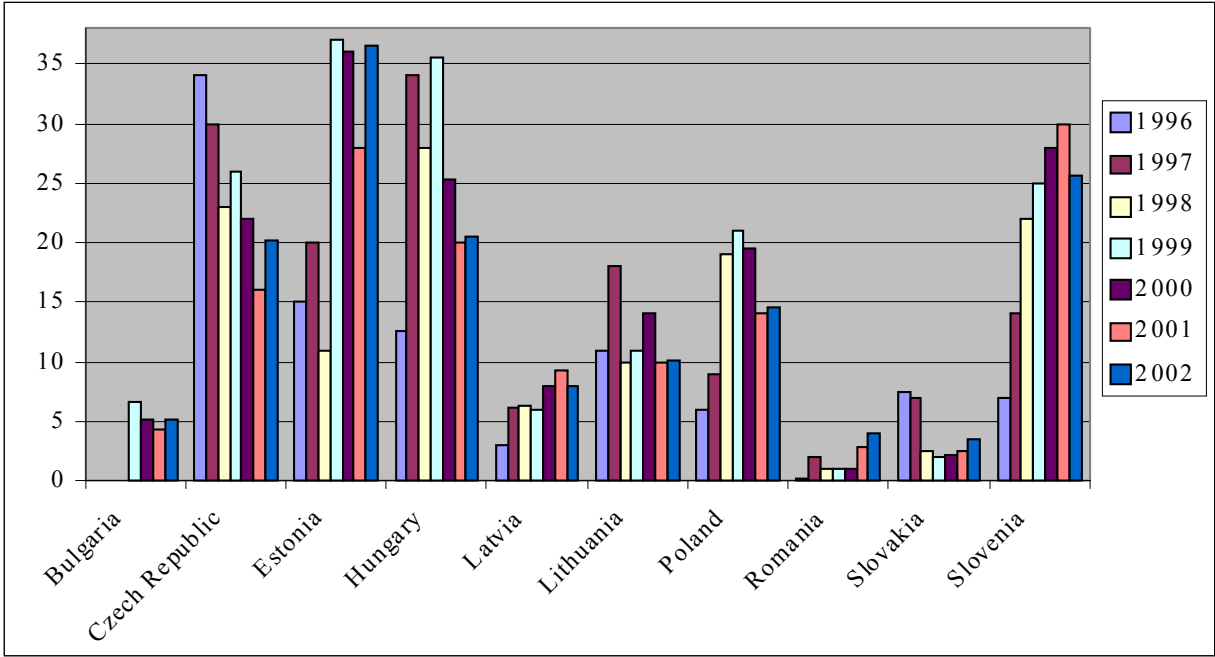
²²Namely, in Estonia, Latvia, Hungary, Poland and Slovenia.

²³Due to this, Ichnat and Prochazka, 2002, put the *real* Czech equity market capitalization at about *half* of its apparent GDP share.

number of stocks and investors actually tended to increase with time, albeit from a rather concentrated base.

Even in the largest ones, nevertheless, market capitalisation, as a GDP share, was and remains rather low (see Figure I below), and far below the EU average (around 72% of GDP). Only in the Czech Republic, Estonia²⁴, Hungary and Slovenia the average market capitalization is above a 20% GDP share, while in Romania is *below* 1% in several years.²⁵ Also, the average market turnover is equally below the one observed in comparable EU economies. Similarly to what is observed in the banking sector, the initial regulatory environment was deliberately lax, and the regulators were plagued by much the same problems of inexperience and limited number of staff and resources.²⁶

Figure I: Equity Market Capitalization as a GDP Share, 1996-2002.



Source: Claessens et al., 2003, modified by the author.

This does not mean that domestic agents in those countries lack access to the financial services supposed to be provided by stock markets: the very process of opening up, the increase in cross-border trade in financial services, the harmonization of rules for capital trading with the EU (including the ongoing efforts of the Lamfalussy Committee towards a single European market for securities: according to the current proposal, small and medium size firms would be able to use a simplified prospectus valid throughout the EU and choose the country of its approval), plus the development of information technology, all imply that is not actually necessary –nor economically optimal, given economies of scale– for each

²⁴Estonia, with the highest share, close to 40% of GDP, above even Hungary, an “early reformer”, is an interesting case, especially when one considers that this was done basically by attracting strategic foreign investors via IPOs (as indicated above) and *without any significant market for government debt* –contrary to Latvia and Lithuania– as Estonia is constitutionally required to hold a balanced budget (see IMF, 2003(b), *ibid.*). On the other hand, in the Central European economies with larger stocks of public debt and average public deficits (see Vinhas de Souza and Borbély, 2003), the existence of a public debt market may have helped those stock markets (see Reininger et al., 2002, *ibid.*).

²⁵Pogonaru and Apostol, 2002, blame this dismal performance on a failed “voucher” mass privatization process and on a general policy inconsistency towards reforms.

²⁶In some cases, the regulatory structure was not even created, as was the initial situation in the Czech Republic.

individual country to have its own separate stock market.²⁷ One must also recall that the current national stock markets in the mature developed economies are themselves the result of process of consolidation –and closing- of smaller *regional* stock markets (as was observed in Bulgaria in the early 1990s), which still today coexist with larger, dominant national stock exchanges even in some mature markets, like Germany and the US.

Nevertheless, the observed tendency of *domestic* larger companies, with presumed better growth prospects, to list abroad (see Table IV below), due to the obvious cost²⁸ and liquidity advantages of the larger international stock markets, does seem, on balance,²⁹ to deprive those stock markets of liquidity (see Claessens et al., 2003). On the other hand, non-residents seem to play a major role in most of those markets (accounting for 77% of the capitalization in Estonia, 70% in Hungary and half of the *free-float* capitalization in Lithuania).

Table IV: Listed Firms and Cross Listings

| | Market capitalization of Internationally Listed firms/Total Market Capitalization (%) | Value Traded Abroad/Value Traded Domestically | Number of Cross Listed Firms | Share of Cross Listed Firms | Total Number of Listed Issuers |
|-----------------------|---|---|------------------------------|-----------------------------|--------------------------------|
| Bulgaria | N.A | N.A | N.A | N.A | 30* |
| Czech Republic | 98.90 | 11.8 | 40 | 36 | 111 ^P |
| Estonia | 95.30 | 84.7 | 8 | 44.4 | 18 |
| Hungary | 99.80 | 14.6 | 52 | 74.3 | 70 |
| Latvia | 0.30 | 0.6 | 2 | 12.5 | 16 |
| Lithuania | 42.40 | 337.3 | 5 | 11.4 | 44 [§] |
| Poland | 81.30 | 62.5 | 30 | 12.2 | 246 ^N |
| Romania | N.A | N.A | N.A | N.A | 63 |
| Slovakia | 76.20 | N.A | 6 | 23.1 | 26 |
| Slovenia | 7.00 | 5.9 | 2 | 1 | 189 |
| Average | 62.60 | 73.9 | 14.5 | 26.9 | 81.3 |

Source: Claessens et al., 2003, modified by the author; *In the “Official Market”, in the “Free Market” for small caps, another 372 (in 2001); ^PIt is estimated that only 15 shares are actively traded; [§]In the “Official Market” only six companies are listed; ^NDue to legal reasons, major foreign-owned banks are forced to list on the Warsaw Stock Exchange: they are believed to be responsible for a full third of the market capitalization, while 90% of the “free float” is done by just 20 stocks.

²⁷As a matter of fact, two of the stock markets in my sample, Estonia and Latvia, had their Stock Exchanges acquired by the Helsinki Stock Exchange –HEX- in 2002. There are also several overlapping regional associations and linkages with other EU stock markets, like the i) co-operation between all Baltic stock exchanges formalized by a memorandum of understanding signed in April 1999, which quotes a joint list of Baltic companies, ii) the establishment of a joint index of Central European Stock Exchanges, known as CESI Index, which has been calculated by Budapest Stock Exchange since July 1996 and comprises the most liquid securities from the Bratislava, Budapest, Prague and Warsaw exchanges, or iii) the NEWEX, established in November 2000 as a joint venture of the Frankfurt and Vienna Stock Exchanges to list Central Eastern European stocks. The Bulgarian Stock Exchange and the Athens Stock Exchange also signed a memorandum of understanding in 2001.

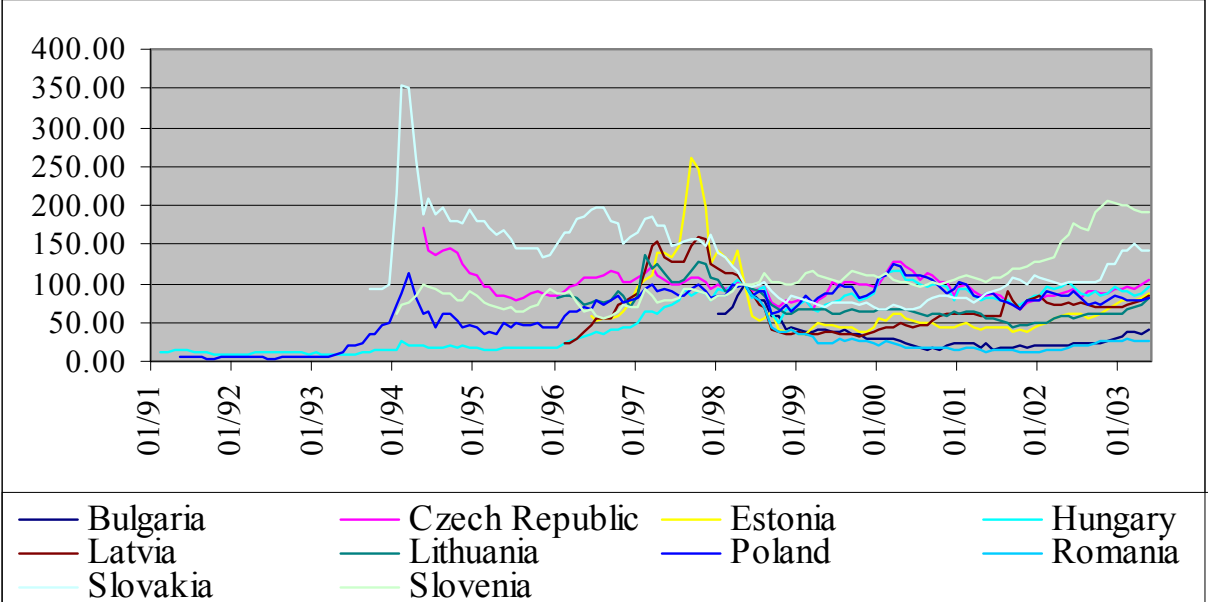
This actually mirrors developments among stock markets in the more mature EU markets, like the merger of the Belgian, Dutch, French and Portuguese national stock exchanges that resulted in the creation of the EURONEXT, or the more loose association of four of the five Scandinavian stock exchanges –bar the Finnish HEX, which opted to expand by directly acquiring the smaller Baltic exchanges– that resulted in the NOREX.

²⁸Domowitz et al., 2000, estimates that the total trading costs in the Stock Markets of Budapest and Prague were *three times* higher than the ones observed in Germany and the US.

²⁹On the other hand, a foreign listing may also increase domestic trading, if this foreign listing is perceived by domestic investors a sign of quality of a particular stock. Also, foreign stock trading may, in principle, also be unwound at the domestic stock market itself.

All the specific questions described above concerning the way those stock exchanges were founded and their later developments, plus their relative smallness and shallowness, affect the dynamics of their stock market indexes (SMI),³⁰ and are clearly reflected by them (as one may see in Figure II, below). This, coupled with the rather limited duration of the series, may affect their adequacy as proxies of financial cycles, as one will see on Section 7.

Figure II: Stock Market Indexes



Source: Datastream, modified by the author. The price indexes here were converted to US Dollars and re-based to a common reference period where they equal 100, May of 1998. The country codings are as described in the Annexes.

6. Estimated Indexes

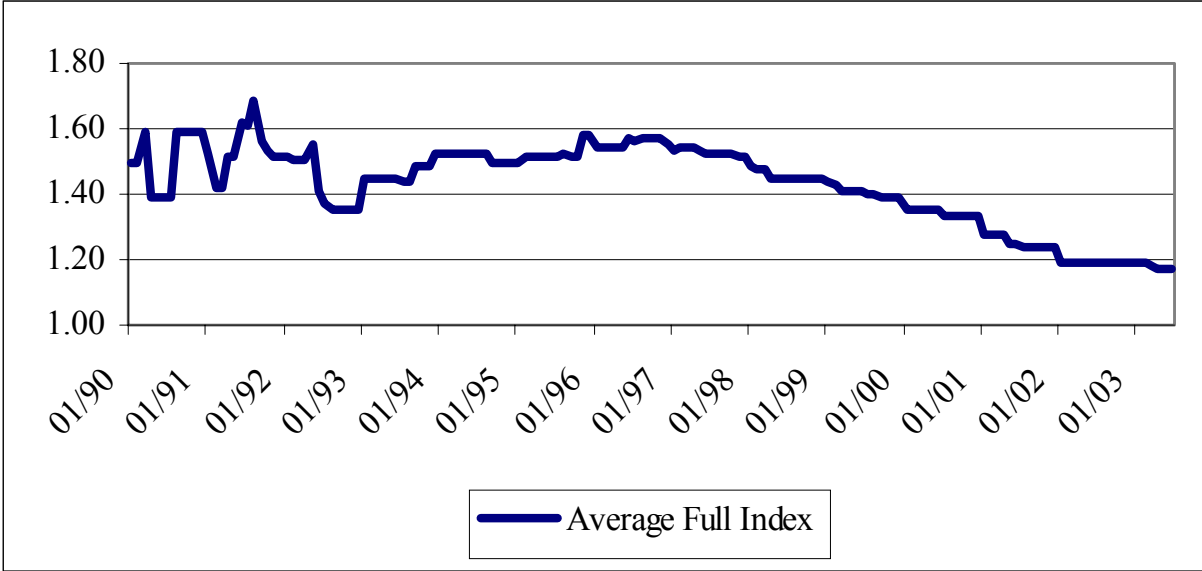
The construction of the index for this new sample of countries was the core of this work. A comprehensive effort was done to crosscheck the information collected from papers and publications with national sources.³¹ Below I present the estimated monthly index, for the period January 1990 to June 2003 (see Figure III). The base data for its construction was collected from IMF and EBRD publications, then exhaustively verified both with national sources and with works written about the individual countries and the region. This is an index that falls with liberalization, where maximum liberalization equals *one* and minimum *three* (in

³⁰Reininger et al., 2002, *ibid.*, estimate that for the Czech Republic, Hungary and Poland, *five* stocks are responsible for 50% of the weight of the respective stock market indexes.

³¹The author would like to thank the Austrian National Bank (Jarko Fidrmuc), Bank of Bulgaria (Nikolay Nenovsky), Czech National Bank (Vit Barta and Michal Slavik), Bank of Estonia (Raoul Lättemäe), National Bank of Hungary (Ágnes Csermely and Zoltán Szalai), Bank of Latvia (Zoja Medvedevskiha and Martins Prusis), Bank of Lithuania (Violeta Klyviene), Bank of Poland (Mariusz Jarmuzek), Bank of Romania (Dorina Antohi), National Bank of Slovakia (Juraj Janosik), Bank of Slovenia (Janko Tratnik and Karmen Juren), Bratislava Stock Exchange (Andrea Hippova and Monika Zabadalova), Budapest Stock Exchange, Ljubljana Stock Exchange (Barbara Meza), Prague Stock Exchange (Eva Hoskovcová), Riga Stock Exchange (Inese Purgaile), Sofia Stock Exchange (Pantaley Karasimeonov), Tallinn Stock Exchange (Sandra Meigas), National Stock Exchange of Lithuania (Arminta Saladziene), Warsaw Stock Exchange (Monika Matlak) for their help in the construction of the liberalization index used here.

this sense, one could actually see it as an index of financial *repression*). As an additional robustness check, the year-end value of the index here constructed was regressed on the combined EBRD’s yearly indexes of banking sector reform and non-banking financial sector reform. The results from a panel regression with the index constructed here on the LHS and the EBRD index on the RHS yield a coefficient of .60, and correlations among the individual country-specific index series range from -0.91 to -0.35.

Figure III: Average Full Liberalization Index.

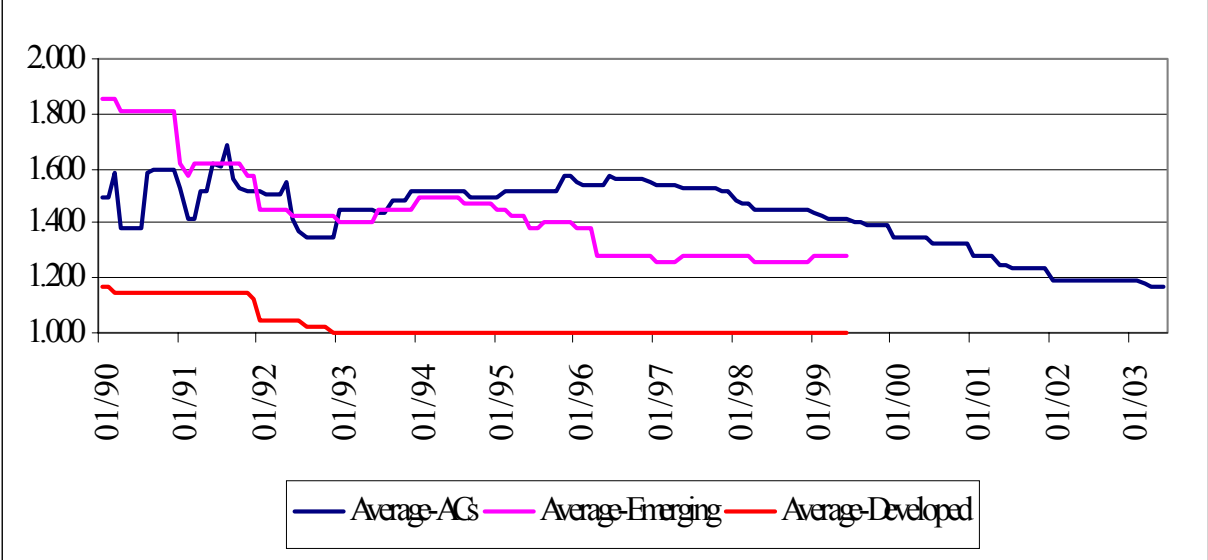


As one may see from Figure III above, the process of integration and liberalization was almost continuous throughout the 1990s and early 2000s. The spikes in the “Full Liberalization Index” in the early 1990s do not indicate reversals: they merely reflect the entry into the sample of the newly independent Baltic republics. As former members of the Soviet Union, they “enter” the world as highly closed economies, but those countries introduced liberalization reforms almost immediately from the start. After this, a slight increasing trend, that does reflect a mild liberalization reversal, is observed, starting mid-1994 and lasting *until* early 1997, from when a continuous liberalization trend is observed: this reversal will be explained below. Noteworthy here is the fact that *virtually none* of the obvious candidates for a reversal of liberalization (the 1997 Asian Crisis, the collapse of the Czech monetary arrangement in 1997, the collapse of the Bulgarian monetary arrangement in 1996/97, the 1998 Russian Crisis, the 1999-2001 oil price shocks –as all those economies are highly dependent of imported energy sources) seems to have driven these mild liberalization reversals.

Comparing the Full Index constructed here with the one constructed by K&S, for similar time samples, one may observe that the ACs start substantially below the average level of other emerging markets –i.e., they are *more* liberalized, but both the “entry” of the initially less liberalized former Soviet republics, plus continuous liberalization efforts in the emerging market K&S set reverse this situation. A similar liberalization reversal trend in both the ACs and the merging market set is observed from early 1994, but it is actually slightly stronger on the ACs sample, until its reversal in 1996. By the end of my sample, the ACs are clearly below the final value for the emerging set in K&S’s sample. This sort of remarkably fast pattern of the ACs’ “leap-frogging” towards best international practice is also observed in several types of institutional frameworks, like, for instance, monetary policy institutions and

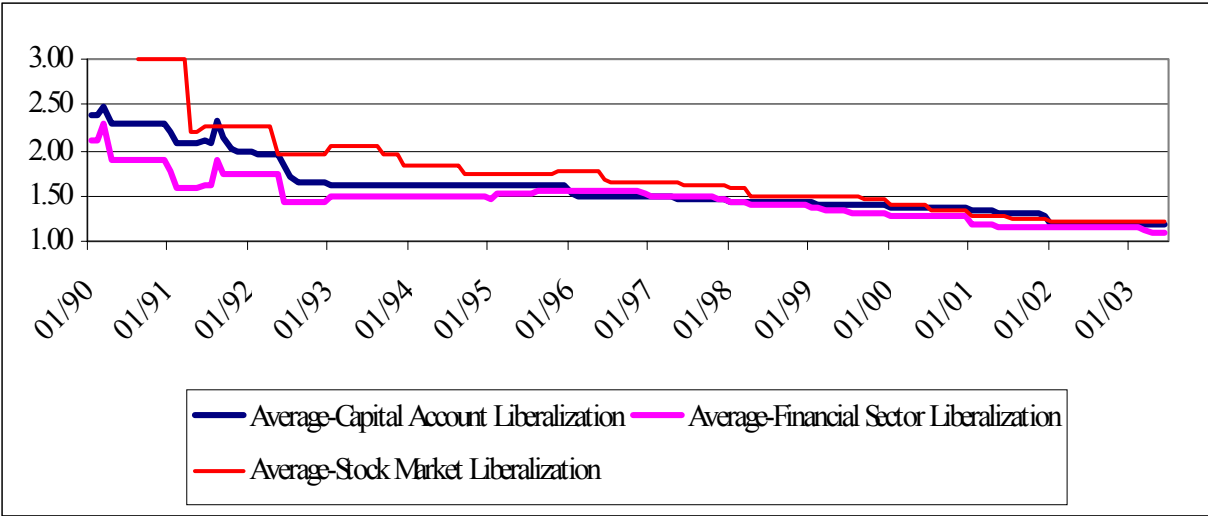
instruments (see Vinhas de Souza and Hölscher, 2001): a process that virtually took decades for Western central banks was compressed in a half a dozen years in the Future Member States. Nevertheless, by the end of the sample, both emerging and ACs are still above the level of mature, developed economies.

Figure IV: Comparing the Liberalization Indexes



Analyzing the individual components of the index (see Figure V next page), one may see that, abstracting again from the initial spikes in the index, which are, as explained above, caused by the addition of new countries to the sample, the 1994/1997 reversal of liberalization was essentially driven by the *Financial Sector* liberalization component. As will become clear with the country specific analysis below, this was related, in most cases, to –and here it must be stressed that those were rather limited reversals- to the banking crises that plagued several countries in my sample in the early to mid 1990s.

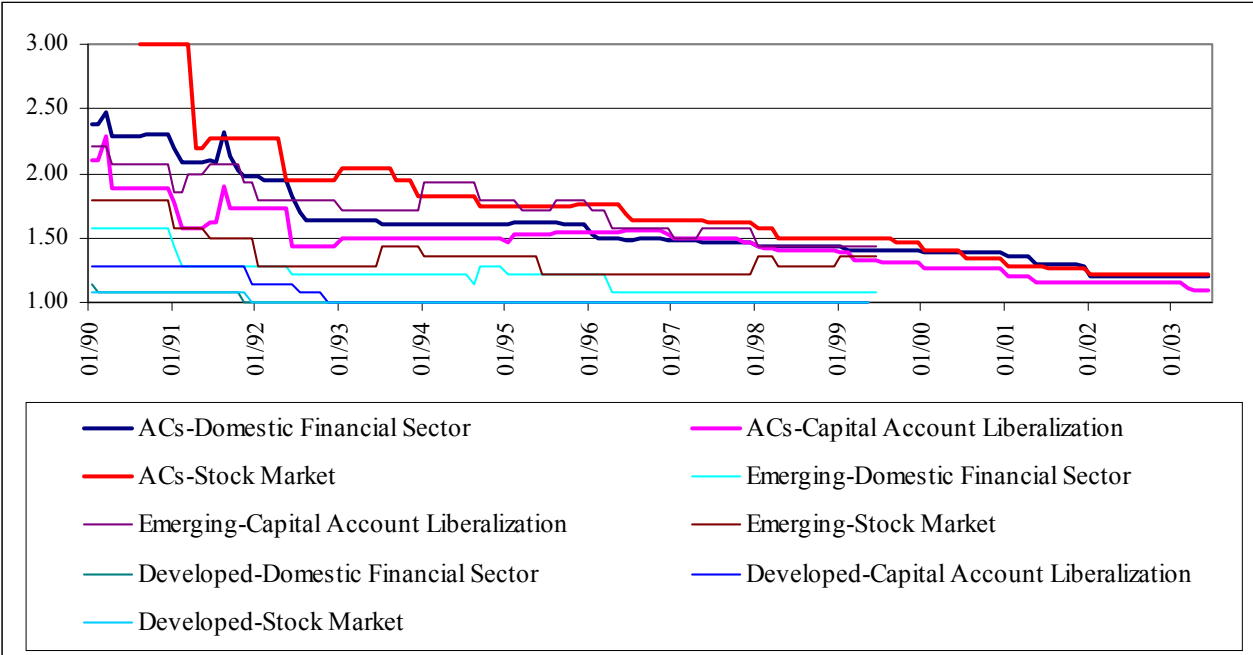
Figure V: Individual Components of the Liberalization Index



Comparing now the individual components of the Full Index constructed here with the ones from K&S, again for emerging and mature economies, it becomes clear that the reversals observed in Figure IV were driven by different sources in the emerging set (increase in capital

account restrictions) and ACs set (financial sector): see Figure VI below. All the indexes for mature economies are, again as one would expect, substantially lower.

Figure VI: Comparing Individual Components of the Liberalization Indexes



One could, in principle, aggregate the countries in my sample in three different groups: rapid liberalizers (the ones that followed a “big bang” early approach, without major reversals: Bulgaria, Estonia, Latvia, Lithuania), consistent liberalizers (the ones that followed a more delayed path, but also without major roll backs: the Czech Republic, Hungary, Poland) and cautious liberalizers (the ones whose liberalization path was either openly inconsistent or downright mistrustful: Romania, Slovakia, Slovenia). A brief country-by analysis is on Box II below, and the individual country graphs are on Annex I.

Table V: Values of the Full Index by Country

| | Bulgaria | Czech Rep. | Estonia | Hungary | Latvia | Lithuania | Poland | Romania | Slovakia | Slovenia |
|------------------------|----------|------------|---------|---------|--------|-----------|--------|---------|----------|----------|
| Average Index | 1.17 | 1.21 | 1.53 | 1.81 | 1.21 | 1.35 | 1.68 | 2.05 | 1.93 | 1.92 |
| Initial Value of Index | 2.37 | 1.30 | 3.00 | 2.47 | 3.00 | 3.00 | 2.30 | 2.83 | 2.40 | 2.13 |
| Final Value of Index | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.20 | 1.53 | 1.60 | 1.30 | 1.07 |

Box II: Country-by-Country Liberalization Path.

-In Bulgaria, virtually no sign of a liberalization reversal is observed, even during the substantial stress experienced by the country during the banks runs of 1996/97 and the ultimate collapse of the floating regime in 1997 (beyond *ad hoc* restrictive measures adopted by the banks themselves, as described on Annex II). As in most of the countries in my sample, the stock market is the last one to liberalize, but does so in a faster fashion. Nevertheless, this is in most cases a data *quasi-artifact* that arises from the later (re-)constitution of the stock exchange itself.

-In the Czech Republic, a limited reversal of the *financial sector liberalization* is observed from late 1995 to late 1997, namely, via the imposition of limits on banks' short-term open positions towards non-residents, as a way to limit the exposure of the financial sector to the inflows brought about by the hard peg and the potential gains with interest rate differentials. After the peg was replaced by the current float regime, this restriction is duly removed.

-In Estonia, again, virtually no sign of a liberalization reversal is observed, even during the bank runs of the early 1990s, the unwinding of the 1997 bubble, nor during the 1998 Russian crisis. Again, the stock market is the last one to liberalize, but one more time, this arises from the later constitution of the stock exchange.

-In Hungary, also no signs of any liberalization reversal are observed. Hungary was an early reformer, introducing some liberalization measures already during the late 1980s, but the profile of its reform path is much more discounted through time, as compared, for instance, with the Baltic countries.

-In Latvia, a rather limited reversal of the *financial sector liberalization* is observed from mid 1996 all the way to early 2003: resulting from the 1996 banking crisis, specific aggregate lending limits to regions (i.e., limits on exposure to non-OECD countries, bar the other Baltic republics) are imposed.

-In Lithuania, a limited reversal of the *financial sector liberalization* is observed from early 1998, also resulting from the experienced banking crisis: reserve requirements on deposits on foreign accounts by non-resident are introduced;

-In Poland, no signs of any liberalization reversal are observed. Similarly to Hungary, the profile of its reform path is much more discounted through time;

-In Romania, no signs of any liberalization reversal are observed, but the reform path is a decidedly slow and cautious one: at the end of the sample, it has the highest (i.e., less liberalized) score for the "Full Index" of all countries in the sample: 1.60 (see Table V).

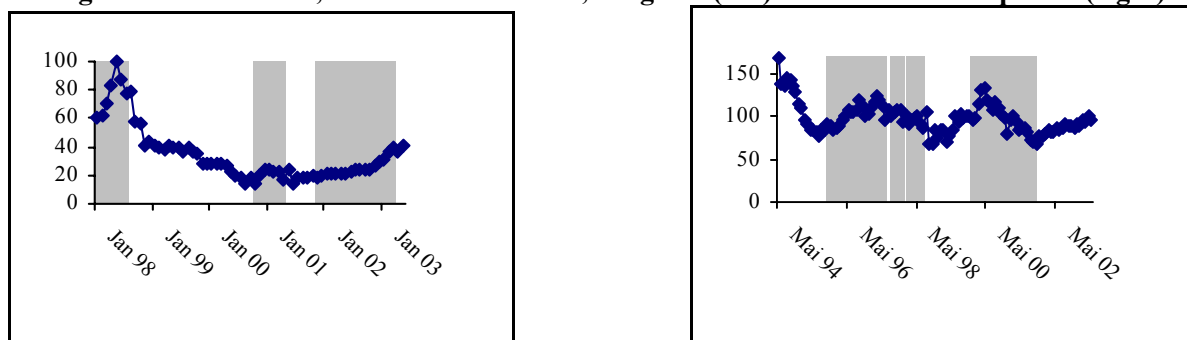
-In Slovakia, no signs of any liberalization reversal are observed. Here, the reform path is characterized by a broad stagnation since the Czechoslovak partition till 1998/1999, when, after a change in the political leadership, reforms are re-started, reaching after that levels similar to the other "Visegrad" countries in a rather quick fashion.

-In Slovenia, one of the most consistently cautious future Member States concerning the advantages of integration and liberalization, *reversals are indeed observed in all three indexes*, since early 1995 in the capital account and financial sector components, and from early 1997 in the stock market one. Since early 1999, with the entry in effect of the EU Association Agreement, across-the-board further (re)liberalization measures have been introduced.

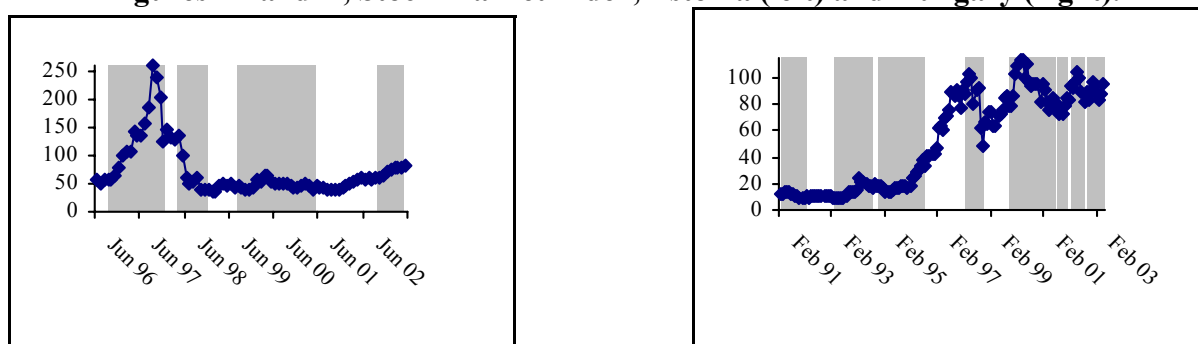
6. Financial Cycles and Liberalization

The financial cycle coding which is used by K&S defines cycles as a at least twelve month-long strictly downwards (upwards) movement, followed by a equally upwards (downwards) 12-month movement from the through (peak) of a *stock market index*, measured in USD, as they should reflect returns from the point of view of an international investor. As described in the stock market section of this work, one must be warned that there are specific factors in the countries in my sample that may affect the effectiveness of a stock market index as an adequate proxy of financial cycles, at least for the sample here considered. Beyond that, these series have a rather limited time extension (my sample covers the 01:1990-06:2003 period).³² Adapting K&S criteria to the limited time dimension of my sample, I use a less stringent definition of “cycle”, the same algorithm as above but with a 3-month window for the cycle (Edwards et al., 2003, use a 6-month window). With this I get 118 observations for all countries in my sample. Of these 118 cycles, 61 are upward, with an average of 7.51 months duration, and 57 are downward, with an average of 8.20 months of duration (see Figures VII to XVI, next pages)³³.

Figures VII and VIII, Stock Market Index, Bulgaria (left) and the Czech Republic (right).



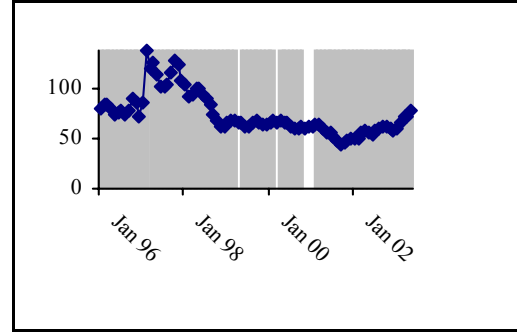
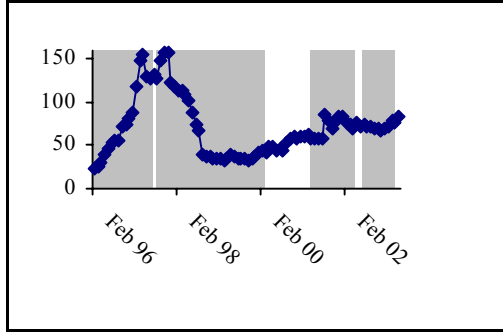
Figures IX and X, Stock Market Index, Estonia (left) and Hungary (right).



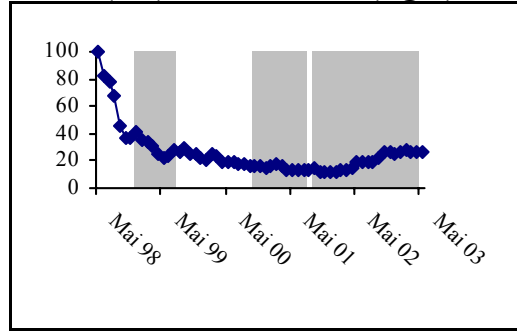
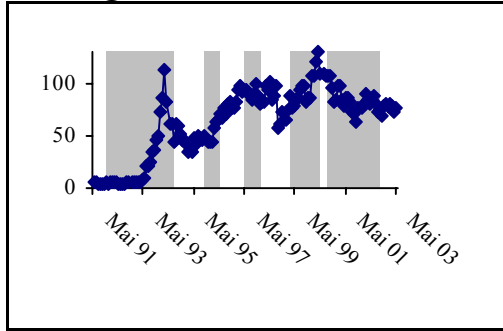
³²Questions concerning the adequacy of this measure are not restricted to emerging markets: for instance, after the end of the longest recorded continuous expansion and the “bursting of the bubble” in the US in 2000, the Dow Jones index lost over 3000 points between January 2000 and December 2002 (conveniently after the end of K&S’s sample), or over a full quarter of its value, without any changes in financial liberalization in the US. Other major stock indexes suffered even greater –and almost continuous– losses: in a similar time period, the UK’s FTSE-100 fell from over 6750 to below 3500, while the German DAX fell from over 7500 to below 2500, also without changes in liberalization.

³³Full dating and country distribution of cycles are available from the author upon request.

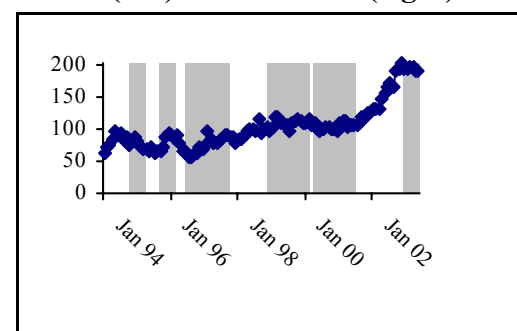
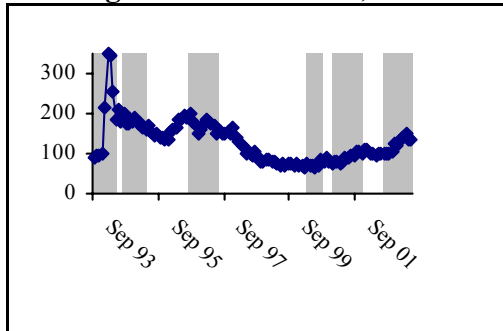
Figures XI and XII, Stock Market Index, Latvia (left) and Lithuania (right).



Figures XIII and XIV, Stock Market Index, Poland (left) and Romania (right).



Figures XV and XVI, Stock Market Index, Slovakia (left) and Slovenia (right).



These cycles would be spurious if the stock market indexes here followed a random walk. To try to prove that a random walk does not captures the features of these series, I estimate random walks with drifts, using parameters derived from the data. Then, for each country, a specific model is simulated 100 times. The data is then filtered with the same algorithm above and the cycles compared. The table below shows the results, indicating that the differences of the means of the actual and simulated series are statistically significant.

Table VII: Test of Equality of Means between Actual and Simulated Data

| | Random Walk (mean) | Actual Data (mean) | |
|--------------|--------------------|--------------------|-------------------------------|
| Phase | Duration in months | | Difference of means (F-value) |
| Booms | 6.48 | 7.51 | 0.01 |
| Crashes | 6.44 | 8.20 | 0.00 |

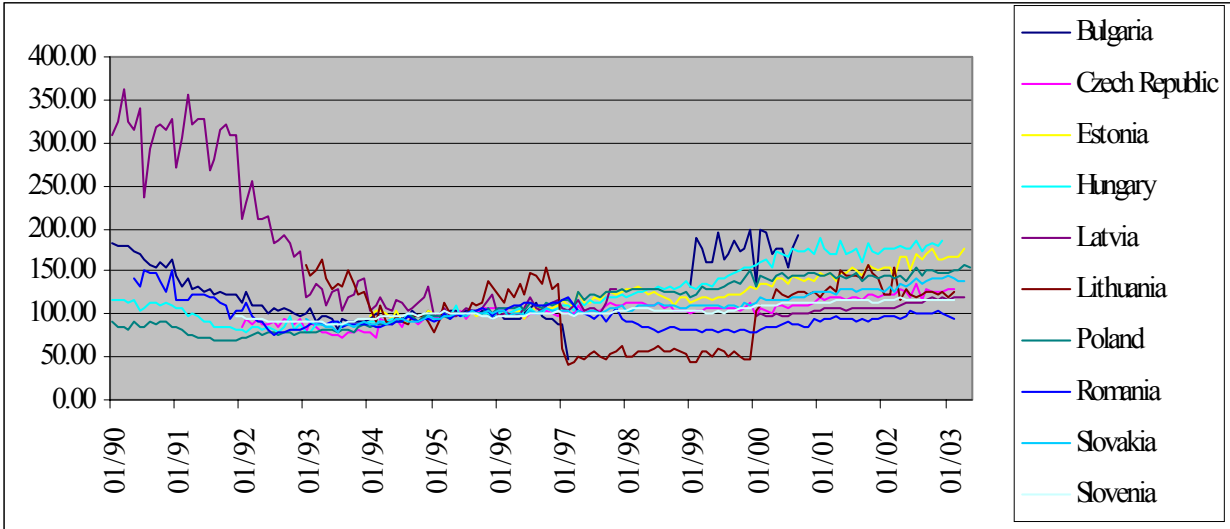
After this test procedure, following K&S, I estimate their core regression, given by

$$amplitude_i = \alpha X_i + \rho_1 d_i^r + \beta_1 d_i^{sr} + \lambda_1 d_i^{lr} + \varepsilon_i \quad (1)$$

where the variable *amplitude* is two series with the amplitudes of the downwards or upwards movement of a stock market index, calculated as the depth of the contraction (height of the expansion). Following K&S, this is estimated as the change between peak (trough) and the following trough (peak) of the cycle identified as above, and them as a percentage of the average value observed during this cycle for country *i*. X_i is a matrix of control variables (which includes the world real interest rate –here defined as the US Prime Lending Rate minus the CPI inflation in time *t*, world output growth, here represented by a linear combination of the monthly log industrial production series for the US, Germany and Japan, and domestic output growth, here proxied by the monthly log industrial production series for each country) with their average value during the cycle, while d_i^r is a dummy variable that equals one if the cycle occurs during “non-liberalized” periods, while d_i^{sr} is the “short-run” dummy that equals one if the cycle occurs shortly after liberalization, and while d_i^{lr} is a “long-run” dummy that equals one if the cycle occurs a longer time after liberalization.³⁴

Again, one must be warned about some features concerning the industrial production indexes for this sample of countries: beyond their short time span, they are affected by the so-called “transition” recession: the *stylised* pattern of post-reform growth of a transition economy is characterized by a sharp initial fall followed by recovery and growth.³⁵ The opening-up and the onset of market prices made some sectors uncompetitive virtually overnight. This, coupled with the traditional “over-industrialization” of the former centrally-planned economies, plus the early collapse of their Eastward-biased trade linkages had substantial effects on the level and composition of their industrial output (in Lithuania, the most extreme case in my sample, for instance, the industrial production index lost almost 70% of its original value). This instability can be clearly seen in Figure XVII below.

Figure XVII: Industrial Production Indexes



Source: Datastream and National Statistical Offices, modified by the author.

³⁴K&S use the –admittedly arbitrary– windows of 48 months and 60 months (4 and 5 years) to characterize their short and long runs. They state that their results are robust to the change in dimension of those “windows”. As the aim of this work is to extend theirs, I use the same short and long run windows.

³⁵For a stylized description of this general post-transition “U-shaped” growth trajectory (with some exceptions, like Belarus), see Havrylyshyn et al., 1998, Fischer and Sahay, 2000 and Bakanova et al., 2004. Most of the ACs had reached their “pre-transition” GDP levels –and some surpassed them- by the early 2000s.

6.1. Estimations

With the provisos above, I perform a heteroskedasticity-consistent OLS estimation. The results are shown in Table VIII below³⁶. As one may see, the R^2 is high, there are minor signs of heteroskedasticity, world output is significant in both types of cycles with a positive sign, while the other variables in the control set are non-significant, and all have rather small point estimates³⁷. Concentrating on the coefficients of main interest to this analysis, the financial repression variable (here represented by a dummy that equals one in periods without partial or full liberalization, defined as above, and zero otherwise) is strongly significant in both types of cycles, as are the short and long run dummies. Financial liberalization increases the amplitude of upward cycles by around 3% in the short run (the K&S estimate for emerging markets is 37%, and 51% in mature ones) and by 6.6% in the long run, when compared to the period of financial repression (the K&S estimate for emerging markets is a long run *decrease* of 25%, and of 10% in mature ones)³⁸. On the other hand, crashes decrease with liberalization by 1.3% in the short run (in K&S, crashes in emerging markets *increase* their amplitude by 28% in the short run, and decrease by 20% in mature markets), but they *increase* in the long run by 0.9% (in K&S, crashes decrease by 12% in emerging markets and by 43% in mature markets in the long run).

Table VIII

| Included observations: 61(up) 57 (down) | Upward Cycle | | Downward Cycle | |
|--|--------------|------------|----------------|------------|
| | Coefficient | Std. Error | Coefficient | Std. Error |
| Variables | | | | |
| World Real Interest Rate | 0.01 | 0.01 | -0.02 | 0.02 |
| World Output | -0.02* | 0.00 | -0.02** | 0.01 |
| Domestic Output | -0.00 | 0.00 | -0.00 | 0.00 |
| Financial Repression Dummy | 1.97* | 0.56 | 2.35* | 0.86 |
| Short Run Liberalization Dummy | 2.02* | 0.56 | 2.32* | 0.83 |
| Long Run Liberalization Dummy | 2.09* | 0.57 | 2.37* | 0.83 |
| Constant now show. * and ** indicate significance at the 1% and 5% levels, respectively. | R^2 : 0.80 | DW: 2.07 | R^2 : 0.89 | DW: 2.51 |

As a general conclusion, one can say that the K&S inference that financial liberalization has short run costs for emerging markets is not observed in my ACs sample. The results are surprisingly strong, especially given the limited number of observations, and the fact that the series were buffeted by country specific (for instance, “transition” itself, which happened in different moments for different countries, the banking crises described above) and common shocks (the Asian, Russian and oil price shocks).

³⁶Those results are from regressions after the correction of three “outliers” detected after the inspection of the residuals of a regression with all observations (corresponding to one Polish upward and one Polish downward cycles, almost right at the beginning of the sample, and to a Latvian upward cycle during the height of the “Asian Crisis”). The elimination of these three “outliers” almost *trembles* the R^2 of the regressions, *halves* its standard error and improves significantly the Durbin-Watson statistic, but without changing *qualitatively* the significance or sign of the variables. *Quantitatively*, the estimated value of the duration increase of the upwards cycles and of the decrease of the downward cycles post-liberalization falls substantially.

³⁷The usage of a German “world” real interest rate makes this variable positive significant with a substantially larger point estimate, but in the “upward” cycle regressions only, and without affecting significantly the other variables.

³⁸Edwards et al., 2003, confirms those significant “excess returns” emerging markets when compared to mature ones, and considered them to be a necessary reward for the higher volatility.

6.2. Institutional Reform and EU Accession

The institutional underpinnings of the liberalization process are essential to the analysis performed here, as one of the aims of this work is to test if the EU institutional framework imposed by the Accession process is what enabled them to derive the previous welfare-enhancing results from liberalization. K&S, in their work, represent the “quality of institutions” via a dummy series based on the monthly ICRG (International Country Risk Guide) “Law and Order” index, which assumes a value of one if the index is growing or at its maximum (the ICRG index itself has a maximum value of six, with three granted to the “law” component and three to the “order” one). K&S also use information on insider trading laws and enforcement, taken from Bhattacharya and Baouk, *ibid*, 2002. This work uses also the ICRG index, but not the data from Bhattacharya and Baouk, as the information in that paper doesn’t fit neither the knowledge of this author concerning the level of legal enforcement in the sample of countries here used, nor with the conclusions of works like Reininger et al., 2002, *ibid*. Therefore, a modified version of K&S equation (2) is estimated, as given by

$$amplitude_i = \alpha X_i + \rho_1 d_i^r + \beta_1 d_i^{sr} + \lambda_1 d_i^{lr} + \tau_1 d_i^{L\&O} + \varepsilon_i \quad (2)$$

where the new variable $d_i^{L\&O}$ is the dummy based on the ICRG Law and Order index. The results are shown on Table XI below. They do not change qualitatively or quantitatively and the new “Law and Order” dummy is not significant in either type of cycle.

Table IX

| Included observations: 61(up) 57 (down) | Upward Cycle | | Downward Cycle | |
|--|-----------------------|------------|-----------------------|------------|
| | Coefficient | Std. Error | Coefficient | Std. Error |
| World Real Interest Rate | 0.01 | 0.01 | -0.02 | 0.01 |
| World Output | -0.02* | 0.01 | -0.02* | 0.01 |
| Domestic Output | 0.00 | 0.00 | 0.00 | 0.00 |
| Financial Repression Dummy | 2.53* | 0.62 | 2.75* | 0.96 |
| Short Run Liberalization Dummy | 2.60* | 0.64 | 2.72* | 0.94 |
| Long Run Liberalization Dummy | 2.65* | 0.62 | 2.75* | 0.94 |
| Law and Order Dummy | -0.03 | 0.06 | -0.06 | 0.06 |
| Constant not show; * indicates significance at the 1% level. | R ² : 0.86 | DW: 2.18 | R ² : 0.91 | DW: 2.65 |

To specifically verify the hypothesis that the EU integration process was the main force driving the liberalization process, the same regression as on section 6.1 was run with dummies for the periods after i) the Europe Association Agreements were signed (EU_{ts}), ii) the date of official application for EU membership (EU_a) and iii) the date in which they entered into force (EU_t). The results are rather similar to the previous ones: upwards cycles significantly increase with liberalization and downward cycles decrease in the short run (albeit with somewhat stronger estimated effects, specially for the EU_t dummy regression). All those coefficients are significant. Again, the new dummies are not significant, with one exception, the EU_a dummy in upwards cycles: it significantly *decreases* them. Those are perhaps intuitive results, as one would expect some of the effects of the EU and Law and

Order dummies to be captured by the liberalization dummies, but the assumption concerning the importance of the EU Enlargement process is *not* confirmed³⁹.

Table X

| Included observations: 61(up) 57 (down) | Upward Cycle | | Downward Cycle | |
|--|-----------------------|------------|-----------------------|------------|
| Variables | Coefficient | Std. Error | Coefficient | Std. Error |
| World Real Interest Rate | 0.02 | 0.01 | -0.02 | 0.02 |
| World Output | -0.02* | 0.01 | -0.02** | 0.01 |
| Domestic Output | -0.00 | 0.00 | 0.00 | 0.00 |
| Financial Repression Dummy | 2.00* | 0.56 | 2.31* | 0.74 |
| Short Run Liberalization Dummy | 2.04* | 0.55 | 2.28* | 0.73 |
| Long Run Liberalization Dummy | 2.11* | 0.56 | 2.37* | 0.83 |
| Europe Association Agreements Dummy | 0.09 | 0.08 | -0.07 | 0.07 |
| Constant now show. * and ** indicate significance at the 1% and 5% levels, respectively. | R ² : 0.81 | DW: 2.06 | R ² : 0.89 | DW: 2.51 |

Table XI

| Included observations: 61(up) 57 (down) | Upward Cycle | | Downward Cycle | |
|---|-----------------------|------------|-----------------------|------------|
| Variables | Coefficient | Std. Error | Coefficient | Std. Error |
| World Real Interest Rate | 0.02*** | 0.01 | -0.02 | 0.02 |
| World Output | -0.01 | 0.01 | -0.02* | 0.01 |
| Domestic Output | -0.00 | 0.00 | -0.00 | 0.00 |
| Financial Repression Dummy | 1.17* | 0.56 | 2.31* | 0.74 |
| Short Run Liberalization Dummy | 1.24** | 0.56 | 2.28* | 0.73 |
| Long Run Liberalization Dummy | 1.34** | 0.56 | 2.33* | 0.73 |
| EU Application Dummy | -0.23** | 0.12 | -0.03 | 0.20 |
| Constant not show; *, ** and *** indicates significance at the 1%, 5% and 10% levels. | R ² : 0.82 | DW: 2.26 | R ² : 0.89 | DW: 2.51 |

Table XII

| Included observations: 61(up) 57 (down) | Upward Cycle | | Downward Cycle | |
|--|-----------------------|------------|-----------------------|------------|
| Variables | Coefficient | Std. Error | Coefficient | Std. Error |
| World Real Interest Rate | 0.01 | 0.01 | -0.02 | 0.02 |
| World Output | -0.01* | 0.01 | -0.02** | 0.01 |
| Domestic Output | -0.00 | 0.00 | -0.00 | 0.00 |
| Financial Repression Dummy | 1.17* | 0.47 | 2.08* | 0.93 |
| Short Run Liberalization Dummy | 1.75* | 0.47 | 2.06* | 0.90 |
| Long Run Liberalization Dummy | 1.81** | 0.47 | 2.10* | 0.89 |
| Europe Agreement in Force Dummy | -0.07 | 0.07 | -0.10 | 0.11 |
| Constant now show. * and ** indicate significance at the 1% and 5% levels, respectively. | R ² : 0.81 | DW: 2.01 | R ² : 0.89 | DW: 2.48 |

³⁹Using together the “Law and Order” and EU dummies, these results remain mostly unchanged.

7. Beyond K&S: Alternative Estimations

Given the potential shortcomings of the previous analysis, which are derived both from limitations on the original K&S framework and from the specific features of my dataset, a set of alternative specifications was also estimated. Namely, other measures of *volatility*, both financial, real and nominal, were used as the LHS of the regressions below, namely, the standard deviation of i) the stock market index, ii) the industrial production index and iii) the changes in the nominal exchange rate, in rolling variance time-windows of 2 to 6 months (following Vinhas de Souza, 2002(b) and 2002(c)), as given by (3) below. The basic notion behind this is that liberalization and integration will affect, and in a more fundamental fashion, not just the cyclical, but also the overall real and nominal volatility of a given economy, albeit in a not unambiguous fashion (for instance, if financial integration leads to increased specialization, it could increase country-specific shocks: see Razin and Rose, 1994).

$$volatility_i = \alpha X_i + \rho_1 I_i + \varepsilon_i \quad (3)$$

Now the X_i matrix of control variables includes, beyond the world real interest rate, world output growth, domestic output growth, a domestic nominal exchange rate index (re-based to May 1998, as the other indexes), the level of the S&P 500 equity index (equally re-based to May 1998), the domestic stock market indexes, dummies for a float exchange rate regime, a hard peg regime, a sliding peg regime for the specific country/period per regime (following Vinhas de Souza, 2002(b) and 2002(c), *ibid*) and, finally, the variable I_i , for “index”, which is either the full Liberalization Index or its three components. As the index is better seen as a measure of financial restriction, a positive sign will indicate that a increase in liberalization reduces volatility. The results for the 6-months variance window using the full sample, the most robust ones, are show in Table XIII below (those results are from a fixed effects -deemed superior to a random effects one after a Hausman test- heteroskedasticity-consistent estimation)⁴⁰.

As one might see, the R^2 s are surprisingly smaller than the ones on the previous regressions, and the coefficients of the “control set” are rather small, but mostly significant (in a result similar to Vinhas de Souza, 2002(b) and 2002(c), almost all exchange rate frameworks significantly reduce the volatility of the stock market and nominal exchange rate variables, but increase the one of the industrial production series). Concentrating the analysis on the liberalization index variables, the full index significantly *decreases* the volatility of both the stock market and the industrial production index, but the point estimate is only truly substantial for the industrial production series⁴¹. When the index is disaggregated on its components, one may see that the variability reducing effects are driven by capital account liberalization component, which has the highest point estimate of all components (bar the financial sector liberalization component on the industrial production regression), while the stock market and the financial sector components significantly increases volatility. These results tend to remain the same using a post-1996 sample. The main changes are that, beyond

⁴⁰The variables for world real interest rate, world output growth and the level of the S&P 500 equity index were replaced in the control set by the German real interest rate, the German Industrial production index and the DAX index. The results for those variables were almost always non significant when this was done.

⁴¹This is very likely related to the “transition recession” adjustment. A short sample estimation that starts on 1996, i.e., after the bulk of the industrial restructuring was done, renders this coefficient non-significant.

the one described on footnote 41, the stock market and the financial sector components become non-significantly on the stock market regression.

Table XIII

| Included observations: 920 (Stock Market), 927 (Industrial Production) and 929 (Nominal Exchange Rate). | Stock Market | Stock Market | Industrial Production | Industrial Production | Nominal Exchange Rate | Nominal Exchange Rate |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Variables | Coeff. | Coeff. | Coeff. | Coeff. | Coeff. | Coeff. |
| World Real Interest Rate | 0.0003 | 0.0002 | 0.02 | 0.02 | 0.003 | 0.00005 |
| World Output Index | -0.004* | -0.004* | 0.02 | 0.01 | 0.10* | 0.1* |
| Domestic Output Index | -0.0004* | -0.0004* | 0.01 | 0.01 | 0.004 | 0.005*** |
| Nominal Exchange Rate Index | 0.00005 | 0.00001 | 0.002 | 0.02 | -0.001 | 0.00001 |
| Standard and Poor Index | 0.01*** | 0.01** | -2.11** | -2.02** | 0.42 | 0.53 |
| Domestic Stock Market Index | 0.04* | 0.05* | 2.13** | 2.55* | -1.21* | -0.83* |
| Float Dummy | -0.005 | 0.01** | 1.86* | 1.56** | -3.12* | -2.87* |
| Hard Peg Dummy | -0.04* | -0.01 | 2.38* | 2.48** | -3.75* | -3.09* |
| Sliding Peg Dummy | -0.02* | -0.0002 | 1.76* | 1.78** | -3.32* | -2.92* |
| Full Liberalization Index | -0.01* | – | -1.31** | – | -0.38 | – |
| Capital Account Liberalization | – | 0.05* | – | 1.59** | – | 1.83* |
| Stock Market Liberalization | – | -0.03* | – | -0.66*** | – | -0.75* |
| Financial Sector Liberalization | – | -0.02* | – | -2.03* | – | -0.91* |
| Constant and country terms not show; *, ** and *** indicates significance at the 1%, 5% and 10% levels, respectively. | R ² : 0.33 | R ² : 0.37 | R ² : 0.48 | R ² : 0.48 | R ² : 0.60 | R ² : 0.60 |

Adding the EU dummies used in the previous section to the regression above shows that *all the three dummies reduce volatility significantly in most cases*, leaving the other coefficients broadly unaffected. Peculiarly, when one uses the Law & Order dummy, it is non-significant on the industrial production regressions, increases volatility significantly on the stock market ones and reduces it significantly on the exchange rate ones, while rendering the liberalization index (full and components) insignificant on the industrial production and exchange rate estimations. When this is used together with the EU dummies, these results remain, but only the EU_t and EU_a dummies are *always* significant, perhaps indicating the somewhat delayed effects of the Accession process on the legal framework and enforcement.

From a more clear theoretical point of view, financial liberalization and integration should also enable a reduction of the volatility of consumption, as it would allow better international risk-sharing opportunities (see Obstfeld and Rogoff, 1998). Given that, I also estimated the regression above using three quarters standard deviation series of consumption -both private and total, i.e., including government consumption expenditures- as a GDP share as the dependent variable. As this data is available only on a quarterly basis and for shorter time samples, the number of observations is substantially reduced. The results are on Table XIV below. As one might see, the R²s are again rather small and now also all the point estimates are rather small. More importantly, all the liberalization index variables are now non-significant, with the exception of the stock market liberalization component, which

significantly decreases volatility⁴². The EU dummies are equally non-significant (bar the EU_{ts} dummy on the total consumption regressions) and these results remain the same using a post-1996 sample.

Table XIV

| Included observations: 218. | Private Consumption | Private Consumption | Total Consumption | Total Consumption |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Variables | Coeff. | Coeff. | Coeff. | Coeff. |
| World Real Interest Rate | -0.006*** | -0.0006*** | -0.0012* | -0.0011** |
| World Output Index | -0.0016* | -0.0016* | -0.0017** | -0.0017** |
| Domestic Output Index | -0.0000 | -0.0000 | 0.0000 | -0.0000 |
| Nominal Exchange Rate Index | 0.0001* | 0.0001* | 0.0001* | 0.0001** |
| Standard and Poor Index | 0.0159*** | 0.0167** | 0.0219*** | 0.0226** |
| Domestic Stock Market Index | 0.0274* | 0.0258* | 0.0357* | 0.0337* |
| Float Dummy | 0.0164** | 0.0075 | 0.0154 | 0.0065 |
| Hard Peg Dummy | 0.0267** | 0.0191 | 0.0248 | 0.0168 |
| Sliding Peg Dummy | 0.0091** | 0.0002 | 0.0072 | -0.0018 |
| Full Liberalization Index | 0.0008 | – | -0.0006 | – |
| Capital Account Liberalization | – | -0.0111 | – | -0.0131 |
| Stock Market Liberalization | – | 0.0121** | – | 0.0119 |
| Financial Sector Liberalization | – | -0.0082 | – | -0.0074 |
| Constant and country terms not show; *, ** and *** indicates significance at the 1%, 5% and 10% levels, respectively. | R ² : 0.31 | R ² : 0.32 | R ² : 0.25 | R ² : 0.26 |

8. Conclusion

The main aim of this paper was to extend the index developed by Kaminsky and Schmukler, 2003, for a specific sample of countries, namely, the previously centrally planned economies from Central and Eastern Europe that are candidate countries for membership in the European Union, and to perform a similar analysis on them.

My results do lend some support to the basic assumption of this study: in spite of all the limitations of the time series used (their shortness, the fact that they were buffeted by several country-specific and common shocks), a re-estimation of K&S's core regressions strongly supports the notion that financial liberalization does generate benefits both in the short and in the long run, measured via the extension of the amplitude of upward cycles and its reduction for downward cycles of stock market indexes. Importantly, these results diverge from K&S, as in their work "emerging markets" experience a relative *short run* increase in the amplitude of downward cycles.

Another noteworthy feature is that only minor liberalization reversals, led by the financial sector component, were observed in the aggregate index. Also, those reversals do

⁴²Kose et al., 2003, and Prasad et al., 2003, obtains somewhat comparable results, concerning their MFI (more financially integrated) sample of emerging markets.

not seem to be driven by “contagion” from shocks in other emerging markets (like the Asian or Russian crisis), but reflect country-specific shocks. When considering the individual components of the index separately, again signs of minor reversals in financial sector liberalization are observed, related to temporary reactions to the several banking crisis observed in the region.

Concerning the importance of institutions and of the EU Accession, this paper’s initial assumption was that the mostly positive results above would come about due to the anchoring of expectation provided by the perspective of entry into the EU already by mid-2004 (or 2007, in the case of Bulgaria and Romania) for the countries here analyzed, and by the imposition of a more robust macro and institutional framework by the requirements of the Accession process itself. Signs of this are *not* found in the K&S regressions, perhaps because the liberalization index itself captures the effects of the EU Accession process.

Finally, using a different framework than K&S’s to assess the affects of liberalization on financial, real and nominal volatility, most of the econometric results seem to support the previous ones, but they seem to indicate that the *capital account liberalization* is the element that most consistently and significantly reduces volatility. On this final section, the majority the econometric results seem to support *some* specific role for the EU Enlargement process in reducing volatility.

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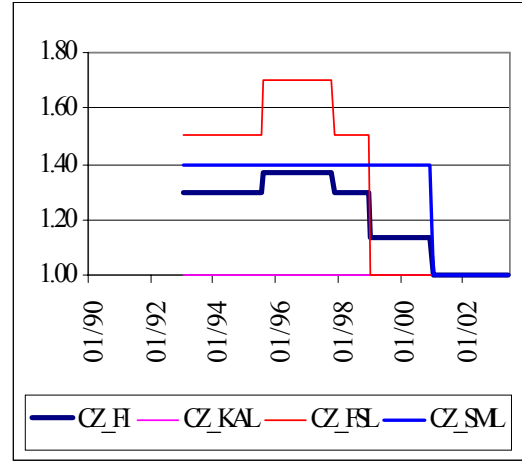
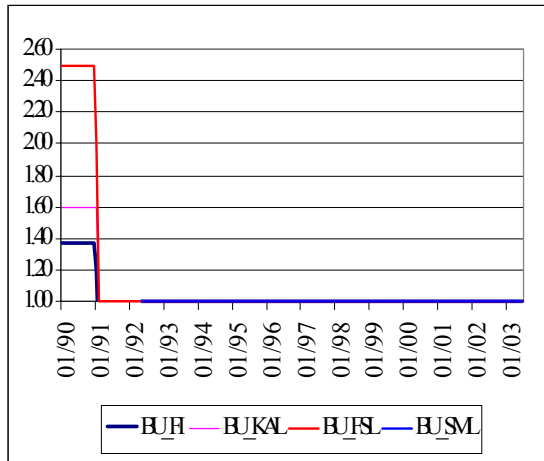
Annexes:

-Annex I: Graphs of Individual Indexes per Country.

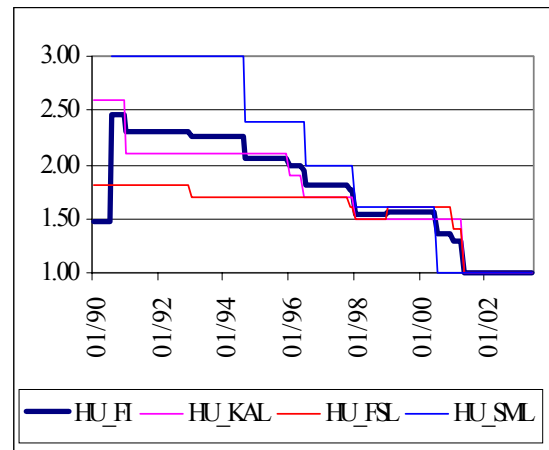
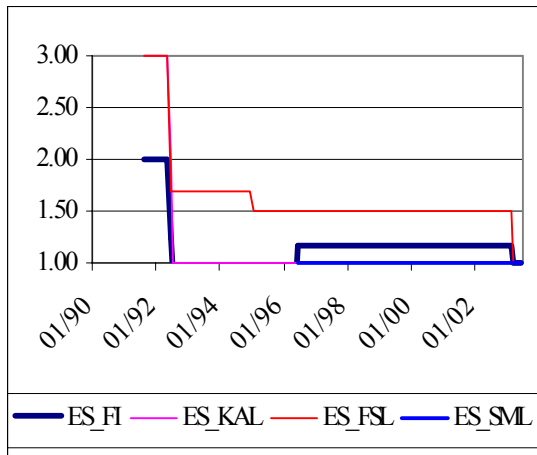
Country codings: BU: Bulgaria; CZ: Czech Republic; ES: Estonia; HU: Hungary; LA: Latvia; LI: Lithuania; PL: Poland; RO: Romania; SA: Slovakia, SE: Slovenia.

Index codings: FI: Full Liberalization Index; KAL: Capital Account Liberalization Index; FSL: Financial Sector Liberalization Index; SML: Stock Market Liberalization Index.

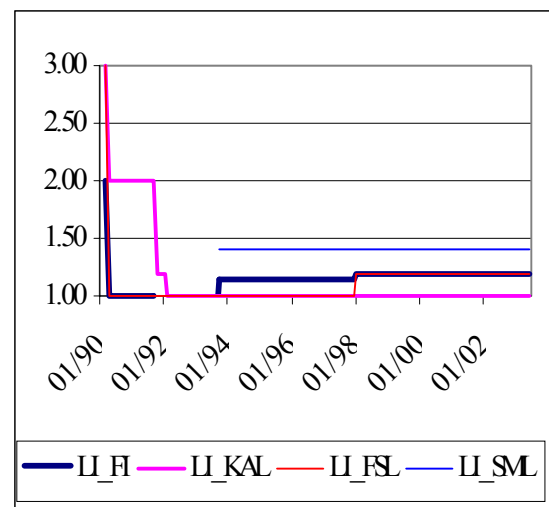
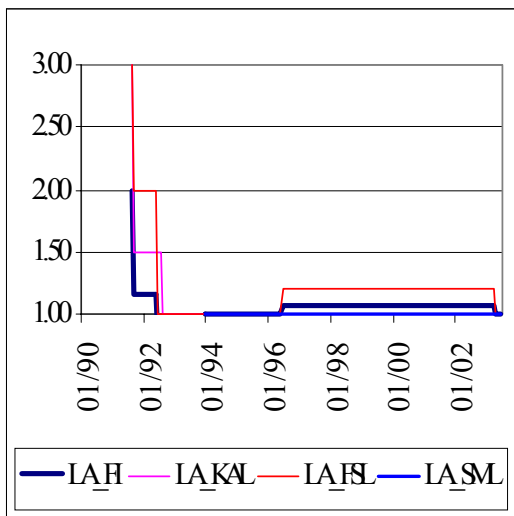
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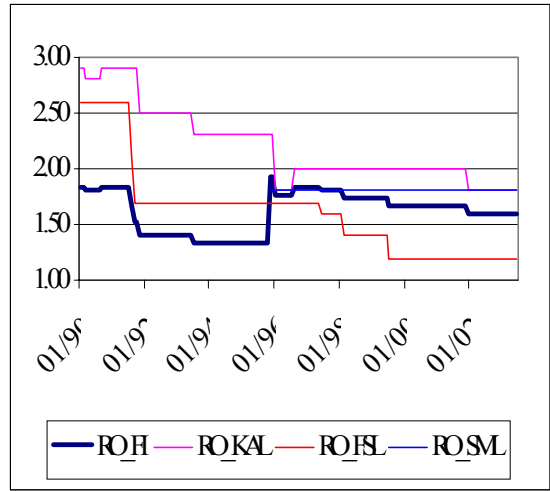
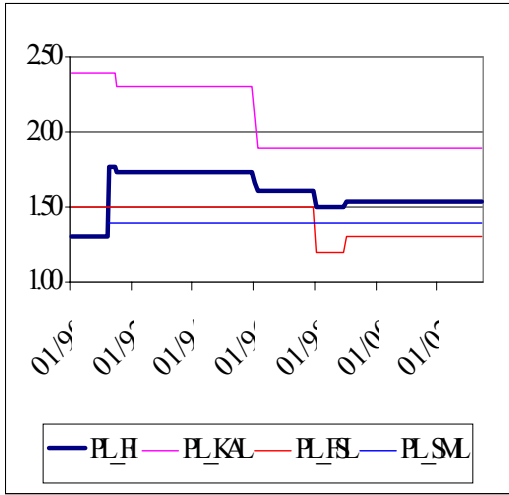
Figures A-III and A-IV, Liberalization Index, Estonia (left) and Hungary (right).



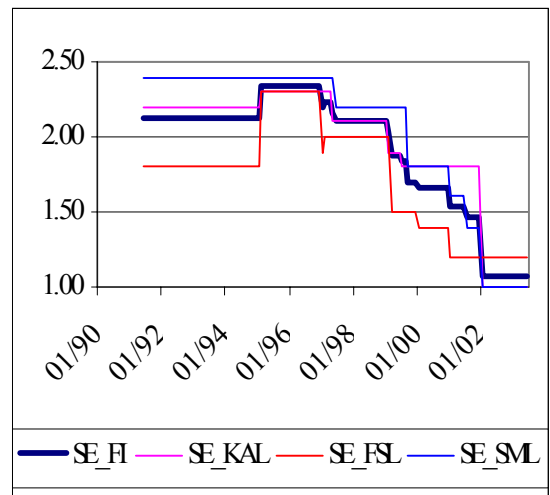
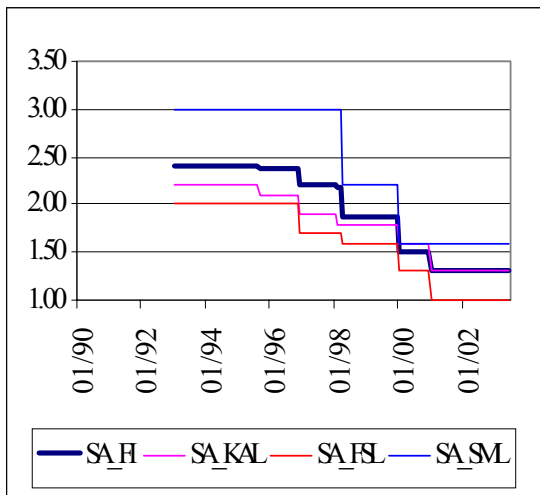
Figures A-V and A-VI, Liberalization Index, Latvia (left) and Lithuania (right).



Figures A-VII and A-VIII, Liberalization Index, Poland (left) and Romania (right).



Figures A-IX and A-X, Liberalization Index, Slovakia (left) and Slovenia (right).



Annex II: Descriptive Indexes by Country.

| Countries | Capital Account Liberalization | Domestic Financial Sector Liberalization | Stock Market Liberalization |
|-------------------|--|--|---|
| Bulgaria | <p>-2/95: EU Association Agreement</p> <p>-5/90, peg to a basket of imports' prices, two "market rates"; 2/91, float and unified exchange system; 7/97: CBA (preparations started with IMF-SbP in April);</p> <p>-Original CBA law from 6/97</p> <p>-IMF entry: 25/9/90. Article VIII: 24/9/98;</p> <p>-Borrowing abroad allowed with registration at the BNB: no apparent limits, or maturity or reserve requirements;</p> <p>-Decree n. 56 of 89: FDI allowed with registration. Capital outflows allowed with prior registration with the BNB;</p> | <p>-2/91: deposits on foreign accounts allowed (residents and non-residents: non-residents require BNB approval for transaction over 20.000 Leva): during the banking crisis of May 1996 –the runs were concentrated on foreign currency deposits, foreign deposits of the closed institutions were transferred to the Postbank, to be paid in four installments over a 2 years period (immediate payment would be possible only in Leva: as the choice was not binding, depositors could switch between them at any point in time). Banks also seem to have used a 'informal rescheduling' on the payment of foreign currency deposits; Another run started in September 1996; Limits on banks' non-Euro currency open positions;</p> <p>-credit to residents and non-residents allowed.</p> <p>-no controls on interest rates (freed in 1991);</p> | <p>-5/92: First Stock Exchange begins trading (<i>twenty</i> regional ones, consolidated in 1996);</p> <p>-6/95: Law on Securities, Exchange and Securities Companies;</p> <p>10/97: The Bulgarian Stock Exchange-Sofia (resulting from the consolidation of the previous stock exchanges) was officially licensed by the National Securities and Stock Exchange Commission in 10/97. There have never been any restrictions regarding the acquisition of shares, securities and bonds by foreign investors (over 60%of the stock market). At no time has there been any reversal of this. Also, since trading operations started there haven't been any restrictions regarding the repatriation of capital, dividends and interest by foreign investors. No periods of reversal. Prior registration with the BNB needed (10/97: Registration at the MoF abolished);</p> <p>-<i>Stock Index Available</i></p> |
| Czech Rep. | <p>-Czechoslovakia break-up: 1/1/93</p> <p>-2/95: (new) Europe Agreement (Previous Trade Agreement since 3/92);</p> <p>-12/95: OECD membership;</p> <p>-A peg to (reduced from 5 currencies to a DEM/USD in 5/93) basket since 06/81 until May 27 1997. Since then a managed float regime.</p> <p>-Original CB law from 12/92.</p> <p>-IMF entry: 20/9/90 (as the Czech and Slovak Federal Republic, and, since 1/1/1993, as separate states). Article VIII: 1/10/95;</p> <p>-1/99: most controls on capital transactions eliminated;</p> <p>-No apparent controls on borrowing abroad.</p> <p>-Capital outflows allowed</p> <p>-Unified exchange rate</p> <p>-FDI allowed</p> <p>-repatriations/liquidation free.</p> | <p>12/90: new enterprise residents foreign account need exemption from surrender requirements; non-residents foreign accounts of two types (in Koruna, whose transfers abroad require permission, and on convertible currency, free);</p> <p>-credit controls: 8/95: limits on short term (up to 1 year) banks open positions towards non-residents (removed 11/97);</p> <p>-1/99: elimination of control on financial credit operations backed by securities;</p> <p>-4/00: limits on funds abroad by credit unions, pension funds and insurance companies lifted;</p> <p>-1/01: deposits on foreign accounts (resident and non-resident) no longer need pre-approval (existed only for ones held abroad); Limits on banks' currency open positions;</p> <p>-Interest rates freed in 4/92.</p> | <p>4/93: Stock Exchange begins trading;</p> <p>-Acquisition of the shares and bonds by foreign investors is allowed since the opening of the current stock market in the Czech Republic. The only limitation concerns purchase of bank shares – CNB consent needed. No apparent limits on repatriations (after payment of income taxes);</p> <p>-4/97: permits for foreign securities no longer needed;</p> <p>-1/99: elimination of controls on <i>foreign</i> securities; 4/99 pension funds and insurance companies may place funds abroad;</p> <p>-01/01: bonds and money market instruments –MMIs- had their remaining controls for non-residents -prior approval- lifted;</p> <p>-<i>Stock Index Available.</i></p> |
| Estonia | <p>-Independence: 20/8/91</p> <p>-2/98: Europe Agreement;</p> <p>-Currency board system since</p> | <p>-12/93: residents need permission to open foreign account in foreign banks;</p> | <p>-5/95: Foundation of Tallinn Stock Exchange; Acquisition of shares, securities and bonds by</p> |

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| | <p>June 20 1992. Original CB law from 18 of May 1993.</p> <p>-IMF entry: May 25 1992. Article VIII: 15/8/94;</p> <p>-1993: FDI subject to MoF approval (and Capt. Acct. Movements to EP approval);</p> <p>-Borrowing abroad allowed;</p> <p>-Unified exchange rate;</p> <p>-capital outflow allowed;</p> | <p>deposits on foreign accounts in domestic banks allowed since 1995 (7/97: resident and non-resident: reserve requirements on net liabilities to foreign credit institutions. This was changed to the liabilities (i.e. netting with foreign assets is not permitted anymore) to foreign credit institutions in 3/03. This change is fully in line with the reserve requirement principles in the Eurosystem;</p> <p>-no controls on interest rates;</p> | <p>foreign investors and repatriation of capital, dividends and interest by foreign investors has been allowed since the beginning;</p> <p>Merge with Finnish HEX in 2/02;</p> <p><i>-Stock Index Available</i></p> |
| Hungary | <p>-3/92 (trade) and 2/94(full): EU Association Agreement</p> <p>-5/96: OECD Membership</p> <p>-From 1990, an 11-currency basket peg; 12/91 adjustable peg to a DEM/USD basket. A float within an ERM- type band (+/-15%) was introduced in 05/01.</p> <p>-Original CB law from 1991 (with new ESCB-compatible law introduced in 2001).</p> <p>-IMF entry: 05/06/1982. Article VIII: 1/1/96;</p> <p>-Unified exchange rate;</p> <p>-1/91: registration of FDI via JV eliminated (over 10% in banks still requires authorization);</p> <p>-(1/91) Borrowing abroad allowed but needs reporting, needs MNB permission for short-term capital;</p> <p>-1/96: Investment abroad allowed if over 10% of the capital on the company being invested, with some prerequisites. No controls on liquidation of FDI;</p> <p>-Full Liberalization: 05-06/01 (approval grounds for resident and no-resident accounts extended, automatic MNB transfer authorization from sales of securities by non – residents; outward FDI liberalized</p> | <p>-deposits on foreign accounts allowed with the need of pre-approval in certain cases, and restricted to juridical residents; no overdrafts on foreign currency domestic accounts; 1993: proceeds from previously non liberalized activities allowed to be deposited in non-residents accounts as non re-convertible Forint funds, same with credit to non-residents; 1/98: residents and non-residents grounds for approval of foreign currency accounts extended;</p> <p>-credit controls; 11/97: long term lending to non-residents allowed; 1/99: differential reserve requirements for non-residents in short term credits (7/01/:removed); 1/01: credit of more than 1 year to OECD non-residents allowed; 6/01: Short tem credit freed;</p> <p>-no controls on interest rates (enterprises in 1987, households in 91/92);</p> | <p>-6/90: Stock Exchange established;</p> <p>-7/96: non-residents from OECD allowed to buy debt securities of over 1 year maturity;</p> <p>-1/97: trading of OECD shares and bonds with over 1-year maturity allowed; 1/98: sales/acquisition of shares and securities from OECD companies allowed, other need authorization, while domestic acquisition of shares or MMIs by non-residents needs MNB permission (if maturity less than 1 year); 7/00: sale/issue of collective securities by residents and non-residents allowed.</p> <p>*1988: Introduction of three month T-Bills (non-residents only allowed to participate in the T-Bill market from 6/01); 1996, 2 & 3-year T-Bonds, 2001 15-year T-Bonds (by a Government Debt Management Agency); limited private bond market, due to preference for external debt (linked to the earlier exchange rate regime) and the privatization strategy (direct sales), lack of rating and hedging instruments;</p> <p><i>-Stock Index Available</i></p> |
| Latvia | <p>-Independence: 21/8/91</p> <p>-2/98: Europe Agreement;</p> <p>-Latvian ruble, temporary currency, introduced in 5/92 and co-existed with the Ruble from 5-7/92. The national currency - the lats - was introduced in 3/93.</p> <p>-Dirty float from 7/92 to 3/93.</p> | <p>-5/92: Two-tier banking system;</p> <p>-deposits on foreign accounts allowed (resident and non-resident);</p> <p>-7/92: no controls on interest rates;</p> <p>-credit controls: specific aggregate exposure limits to non-OECD countries</p> | <p>-12/93: Stock Exchange established. Acquisition and repatriations by foreign investors allowed since the beginning;</p> <p>-8/02: Finnish HEX acquires Riga Stock Exchange and Depository.</p> |

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| | <p>Basket peg to the IMF SDR since 2/94.</p> <ul style="list-style-type: none"> -Original CB law from 19/5/1992; -IMF entry: May 19 1992. Article VIII: 10/6/94; -Borrowing abroad allowed; -Unified exchange rate; -capital outflow allowed; | <p>(maximum of 25% of capital in any individual country, maximum of 200% of capital in any group of countries, bar Estonia, Latvia and Lithuania (Removed in 4/03);</p> <ul style="list-style-type: none"> -1/03: Suspension of licensing requirement for branches of the banks registered in the EU (the entry into force still to be determined by a special law). | <p><i>-Stock Index Available.</i></p> |
| Lithuania | <ul style="list-style-type: none"> -Independence: 11/3/90 (declared), 6/9/91 (accepted by URSS); -2/98: Europe Agreement; -Talonas, floating coupon currency, introduced in 5/92, and co-existed with the Ruble from 5-10/92. Litas introduced in 6/93. CBA in 10/93. -Current CB law from 1994; -IMF entry: April 29 1992. Article VIII: 3/5/1994 -Unified exchange rate; -FDI law: 12/90, amended 2/92 and 6/92: repatriation permitted (tax advantages for longer stays); -borrowing abroad allowed; | <ul style="list-style-type: none"> -9/92: Two-tier banking system; -deposits on foreign accounts allowed (resident and non-resident: for those, reserve requirements since 1/98; Bank run 12/95-3/96; Deposit insurance extended to foreign deposits in 2/96, deeper reforms of the banking sector stability problems in 12/96; -no credit controls (for either residents or non-residents) -no controls on interest rates; | <ul style="list-style-type: none"> -9/93: Stock Exchange trading begins: Acquisition and repatriations by foreign investors allowed since the stock exchange opened in September 1993; BoLi authorization still necessary for acquisition/management of banking shares: the EU has asked for replacement of this with mere notification (an early requirement limited bank's foreign share ownership to 49% of capital: BoLi may have early in the process <i>informally</i> discouraged the licensing of foreign banks, in spite of the lax and non-discriminatory licensing requirements). <i>-Stock Index Available.</i> |
| Poland | <ul style="list-style-type: none"> -2/94: Europe Agreement -11/96: OECD membership; -Peg with the USD from 1990. 5/91 crawling regime introduced. 4/00 float. -Original CB Law from 31 January 1989; -IMF entry: 06/12/1986. Article VIII: 1/6/1995. -Unified exchange rate; -7/91: New FDI law: local registration, and generalized permit, no lower limit for investment, elimination of tax credits (replacing 23/11/88 one) (annual limits of 10% of capital invested on profit transfers: after that, permission required); 2/96: NBP permit for FDI outward flows to OECD (limit 1 million ECU), no controls on profits or liquidations of inward FDI outflows; -6/95: Full current account convertibility. 1996: Foreign loans authorized to specific banks, but subject to approval; Loans to non-residents allowed, subject to approval; | <ul style="list-style-type: none"> -11/90: "ROD" foreign account for legal persons; deposits on foreign accounts allowed with permit; (resident and non-resident: for those, different reserve requirements and limits on time and dimension for convertibility of <i>domestic currency accounts</i>); -Credit controls: NBP notification, permission needed for short term credit to non-residents (lifted on 1/98), while short term financial credit from residents to non-residents above a limit prohibited: 1/99; Limits on banks' currency open positions; -1988: two-tier banking system introduced. -no controls on interest rates (freed in 1/90); | <ul style="list-style-type: none"> -4/89: First stock issue after 50 years; 4/91: Stock Exchange reopened; Acquisition and repatriations by foreign investors allowed since the beginning; -2/97: limit for investment in foreign securities issued domestically increased. Residents allowed to purchase OECD securities; -1/1/98: buying of foreign securities by banks allowed; -2001: still some controls on the acquisition by foreign investors of short-term securities (MMIs: NBP approval). Nationals may invest/sell bonds, shares and securities in OECD countries. -1/91: T-Bill (up to 52-weeks: NBP) and T-bonds (up to 10-y: NDS). Heavily regulated market (result: 98% of volume in interbank non-regulated market) |

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| | 12/98: "Foreign Exchange Law": Zloty made externally convertible; | | - <i>Stock Index Available</i> |
| Romania | <p>-2/95: Europe Agreement (Trade Agreement: 5/93);</p> <p>-1-9/90: unique fixed exchange rate; the US dollar used as a reference currency for the ROL exchange rate till 2003; 9/90-11/91: dual exchange rates; 11/91-5/92: unique managed floating; full surrender of foreign exchange proceeds; 5/92-4/94: the same basic features, but full retention of foreign exchange proceeds; 4/94-2/97: NBR's administrative interventions on the forex market; 2/97-2/98: de facto liberalisation of both exchange rate and forex market with managed floating regime being maintained; 2/98 - to date: current account convertibility of the ROL, managed floating rate regime; 3/03: Euro became the reference currency for the ROL exchange rate.</p> <p>-Original CB law from 3/4/1991, autonomy strengthened in 1998;</p> <p>-Unified exchange rate;</p> <p>-IMF entry: 15/12/1972. Article VIII: 25/3/1998;</p> <p>-3/90: FDI beyond JV allowed, repatriation in full if generated by currency proceeds, otherwise 8% of capital per year (15% since 11/90); 7/93: full repatriation and liquidation allowed; 8/96: Surrender requirements re-introduced;</p> <p>-Borrowing abroad allowed with NBR authorization; personal loans require NBR authorization. 12/01: Medium and long term commercial credit from non-residents to residents liberalized;</p> | <p>-12/90: Two-tier banking system</p> <p>-deposits on foreign accounts allowed: 1/90: residents and non-residents accounts liberalized (less restrictions on use and payment of interest allowed). The current level of reserves requirements is still differentiated (18% for ROL-denominated deposits, 25% for forex-denominated). Still the convertibility of <i>domestic currency accounts</i>, for capital account operations –type B- is limited and requires NBR approval;</p> <p>-Credit controls: 5/98: NBR permission for short term credit; 7/99: credit operation of over a year to non-residents liberalized; Limits on banks' currency open positions;</p> <p>-FDI in (for banks above 5% of capital) and out-bound requires NBR authorization.</p> <p>-no controls on interest rates since 8/91, and no credit ceilings since 9/91 (interbank market 4/91, while the official interbank market was only established in 4/95; preferential credits to the agricultural sector eliminated in 1997);</p> | <p>-11/95: Stock Exchange begins to operate; the acquisition of shares by non-residents was from the beginning fully allowed (but cumbersome approval procedure for profit repatriation before 6/97, and a minimum investment of 10.000 USD). Direct trading of short term (less than 1 year maturity) government bonds however, was and is restricted. Also, no repatriation obstacles present for shares (MMIs need NBR approval);</p> |
| Slovakia | <p>-Czechoslovakia break-up: 1/1/93</p> <p>-2/95: (new) Europe Agreement</p> <p>-8/00: OECD Membership;</p> <p>-Peg regime with intervention bands to a basket since 1/1/93. Float since October 1 1998.</p> <p>-Original CB law of 18 November 1992.</p> <p>-Unified exchange rate;</p> | <p>-4/98: deposits on foreign accounts allowed (residents require permission), non-resident accounts convertible into foreign currency are only allowed if related to current transactions);</p> <p>-Credit controls: 12/96: foreign long-term (over 3 years) borrowing by residents allowed,</p> | <p>-4/93: Stock exchange begins trading;</p> <p>-7/97: foreign exchange permits eliminated for the issue of foreign securities;</p> <p>-4/98: OECD-nationals can acquire securities; 1/00: domestic sales and purchases of bonds, shares, securities & MMIs by non-residents mostly liberalized</p> |

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| | <p>IMF entry: January 1 1993. Article VIII: 1/10/1995.</p> <p>-BoSa permit necessary for FDI outward flows, no controls on profits or liquidations of inward FDI outflows (controls on FDI and <i>domestic investment</i> in domestic banks: those are allowed only since 2/98).</p> <p>-Credits from abroad allowed, with BoSa approval;</p> | <p>financial long-term credit to non-residents (over 5 years) allowed; 1/00, permit required only for short-term –i.e., under a year, non-OECD credit residents-non-residents and vice-versa; 1/01, this limit abolished; 1/02: limits of banks' investments abroad;</p> <p>-no controls on interest rates (liberalized on 4/92);</p> | <p>for OECD residents (short-term - less than 1 year- requires permission); 1/01: sales abroad by residents liberalized.</p> <p><i>-Stock Index Available.</i></p> |
| Slovenia | <p>-6/96: EU Association Agreement (to entry in effect in 2/99);</p> <p>-Independence: 25/6/91</p> <p>-Managed Float since 8/10/1991.</p> <p>-Original CB law of 25/6/1991.</p> <p>-Unified exchange rate;</p> <p>-IMF entry: 14/12/1992. Article VIII: 1/9/1995.</p> <p>-BoSe FDI outward flows allowed with notification, 7/99 (with authorization for banks: purchase of securities by them allowed since 12/98), no controls on profits or liquidations of inward FDI outflows (controls on FDI share in financial and other types of companies).</p> <p>-3/99: Foreign bank branches allowed (foreign participation in capital of banks dependent on BoSe approval: "Foreign Exchange Act");</p> <p>-Borrowing abroad allowed (short term restricted in 2/95: BoSe required a 40% deposit for loans of less than 5 years in an unremunerated Tolar account);</p> <p>-FDI allowed since old Yugoslav federation times;</p> | <p>-deposits on foreign accounts allowed with BoSe approval (residents: reserve requirements and juridical persons not allowed to have them; 9/99; non-residents Tolar withdraws unlimited after 1/01, accounts convertible into foreign currency are only allowed if relate to current transactions);</p> <p>-credit controls: 4/92: cover – held abroad- of domestically held foreign deposits set at 5%-90% (depending on maturity); loans to non-residents only with profits from abroad; 1/97: financial credit to non-residents allowed; 2/97: limits on withdraws from non-residents (eliminated on 9/99); 5/97: obligatory interest free deposit of foreign loans removed; 2/99: permission for banks to raise external short-term credit; 1/00, permit required for short-term, non-OECD credit residents-non-residents and vice-versa; 1/01, abolished)</p> <p>-2/95: Interbank cartel on deposit rates established;</p> <p>-3/99: Interbank cartel on deposit rates formally abolished;</p> | <p>-12/89: Stock Exchange established; Purchase of shares by non-residents allowed under the FDI provisions, of bonds under credit with foreign countries provisions (no separate ones), issues or sale by non-residents not allowed (limits on foreign ownership in financial and other types of companies; permission required to acquire more than 25% of shares in large companies –over 800 mil. SIT);</p> <p>-2/97: BoSe introduced restrictive measures by requiring all new non-resident portfolio investments in Slovenian securities to be held in custody accounts. By 6/97, the CB enabled cheaper custody services for foreign portfolio investors who would commit not to sell their investments back to local investor for a period of 7 years (while free to trade off-shore).</p> <p>The entry in effect of the Association Agreement with the EU in 2/99 requires Slovenia to gradually remove of all foreign investment restrictions. The CB liberalized gradually: on 9/99 it amended investment regulations, lowering the period during which a foreign investor would not be able sell their portfolio investment back to the local market to 1 year (6 months, 1/01), unless they opt for purchases into non- restricted "hedged" custody accounts described below (unrestricted foreign portfolio investments in Slovenian securities is allowed through "hedged" custody accounts: on 7/99, the charges on these accounts were lowered from 2.5% to 0.7% per quarter). Once purchased into restricted custody accounts, securities cannot be</p> |

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| | | | <p>unblocked by transferring them to the “hedged” custody account. No restrictions apply to a foreign shareholder positions of more than 10% of a company's equity.</p> <p>9/99: Slovene entities able to make portfolio investments abroad and it become easier to make cross-border credit transactions (foreign borrowing). Foreign investors could now buy up to 10% of local bank shares without needing prior CB approval. 7/01: remaining restrictions on foreign investments lifted; 1/02: full liberalization on securities and MMIs acquisition by non-residents;</p> <p><i>-Stock Index Available.</i></p> |
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*Acquisition of land by foreigners suffers some limitations in all countries. Financial sector derogations on Accession treaties for most countries on agricultural credit unions and similar regional/local institutions.