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The finance-growth nexus and financial sector environment: new evidence from Southeast Europe

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Abstract: Recent research has established a positive and causal link between financial development and economic growth in the long run. For this reason, financial sector reform has been regarded as conducive to faster growth in transition countries. In Southeast Europe, however, reform efforts in the first half of the 1990s failed to prevent inflationary finance in many countries, ultimately contributing to crises and large output losses. Only since the late 1990s, have tightened regulations and supervision as well as the opening of domestic banking sectors to foreign investors changed the environment of the financial sector in Southeast Europe positively. Our empirical evidence confirms that the improved quality of the financial sector and its environment has borne favourably on growth, more than financial deepening per se. Indeed, we do not find evidence of a positive impact of financial deepening on growth in the region. Conversely, together with macroeconomic stability, better creditor right protection and increasing foreign bank penetration are found to have a positive and significant impact on growth.

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1. Introduction

Transition economies inherited from the socialist era financial sectors that played no role in the allocation of resources on a market basis across time and agents. Banks passively accommodated and monitored payment flows between firms or, in the case of former Yugoslavia, socially-owned enterprises. For this reason, there was widespread consensus in the early 1990s that financial sector reform could contribute importantly to the transition from plan to market and ultimately foster growth (Blommestein and Spencer, 1993; Fries and Lane, 1994). This view was also supported by a body of theoretical and empirical literature, surveyed e.g. in Levine (1997), establishing for a large sample of countries a positive and causal link between finance development and economic growth in the long run.

Against this backdrop, this paper sheds further light on the finance-growth nexus, focusing on Southeast Europe.[1] Such a regional focus is relevant for a number of reasons. First, although there is a vast literature on the role of the financial sector in transition economies (see e.g. EBRD, 1998; Bonin and Wachtel, 2002; Winkler, 2002), empirical studies on the finance-growth nexus have been relatively scarce.[2] Second, while many financial sector studies have focused on the new EU member States (see e.g. Caviglia et al., 2002), Southeast European countries have not so much come into focus. Third, in the last decade, the environment of the financial sector, identified as key to the finance-growth relation (Wachtel, 2001), has undergone significant changes in this region. Last, from an institutional perspective, Southeast European countries are embarked on a process of integration into EU structures, either through accession negotiations or within the so-called "Stabilisation and Association" process, which, in light of the acquis communautaire, has some implications on banking sector reform.

[1] There is no consensus on the exact delimitation of the region. The EU's relations with Southeast Europe in the framework of the Stability and Association Process refer only to the western Balkans, namely Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia (FYR Macedonia) and Serbia and Montenegro (formerly known as the Federal Republic of Yugoslavia). This paper uses a larger definition from the Regional Strategy Paper of the European Commission - World Bank joint office for Southeast Europe, which adds to the aforementioned countries Bulgaria, Romania (which are also EU acceding countries) and Moldova (see http://www.seerecon.org).

[2] Empirical studies on the finance-growth nexus in transition economies, albeit with no specific focus on Southeast Europe, include Berglöf and Bolton (2002) and Koivu (2002).

About 15 years after the start of transition, it is still too early to draw definitive conclusions, as the failure of financial sector reforms in the first half of the 1990s was associated with large output losses. Starting in the late 1990s, Southeast European countries have tightened regulations and supervision, albeit not simultaneously and with the same resoluteness (Cottarelli, Dell'Ariccia and Vladkova-Hollar, 2005). They have also opened up their domestic banking sectors to foreign investors. These reforms have positively changed the environment of the financial sector and contributed to its stability, credibility and liquidity. As a result, financial development in a proper sense may have just started, in particular in some countries. Preliminary empirical evidence suggests indeed that financial deepening did not have a significant impact on the growth performance of Southeast European countries over the last decade, which stands in sharp contrast with expectations and standard findings from the literature. However, estimates indicate that the recent improvements in the quality of the financial environment seem to have had a favourable bearing on growth.[3]

The remainder of the paper is set out as follows. Section 2 provides a conceptual framework to interpret the empirical evidence. Section 3 applies this framework to the experience of Southeast European countries. Section 4 presents some empirical evidence on the finance-growth nexus in Southeast Europe. Section 5 concludes.

2. A conceptual framework to interpret financial development in Southeast Europe

There is a broad consensus in the literature that financial systems arise to overcome information and transactions frictions as well as to facilitate the allocation of resources, across space and time, in an uncertain environment (Merton and Bodie, 1995). Financial systems can affect growth by promoting capital accumulation and/or by exerting a positive impact on the pace of productivity growth (Levine, 1997).[4] Indeed, financial systems serve a wide array of functions. They

[3] As capital markets in Southeast Europe are severely underdeveloped, the paper focuses on the banking sector.

[4] The theoretical debate on the relation between financial development and economic growth is long-standing. While Schumpeter argued as early as 1912 that banks actively spur technological progress by selecting and financing entrepreneurs, thereby fostering innovations of products and production processes, Robinson (1952) and Lucas (1988) claimed that the financial system responds only passively to economic growth. While growth-supporting effects of the financial system have been included in some new growth theory models (Bencivenga and Smith, 1991; Greenwood and Jovanovic, 1992; King and Levine, 1993a), they basically assume that "financial development leads to economic growth, without showing the mechanics behind this supply-leading relationship" (Hermes, 1994).

- pool savings from disparate depositors allowing for production processes that would otherwise be limited to inefficient scales;
- allocate resources through information acquisition about investment projects and selection of the most promising ones, allowing capital to flow to its highest value use;
- manage liquidity and idiosyncratic risks through aggregation and by transferring these risks to those more willing and able to bear it;
- contribute to the monitoring of managers, so that funds allocated are spent as envisaged, which facilitates the separation of management and ownership, and helps harden budget constraints.

Financial sector development is usually measured by quantitative indicators such as the monetisation ratio or the financial intermediation ratio (McKinnon, 1973; Shaw, 1973). The monetisation ratio is defined as the ratio of broad money to GDP. Together with the financial intermediation ratio, credit to the private sector to GDP, these variables are the most widely used indicators to measure financial depth, i.e. the extent to which resources are intermediated across time periods and agents via the banking system. The monetisation ratio measures the transfer of financial resources from the non-financial sector to the financial sector in terms of a monetary aggregate (broad money), while the financial intermediation ratio measures the extent of financial resources flow back to the non-financial sector.

However, the financial sector is growth-supportive only if financial institutions are subject to proper governance structures resulting, in particular, in a behaviour of banks that is incentive-compatible with that of depositors or borrowers.[5] The reason thereof is that, under asymmetric information, banks are subject to moral hazard and adverse selection problems, which are at the core of "poor" banking practices. This applies in particular to the granting of bad loans, which themselves are conducive to resource misallocation, inflationary finance, bank failures, financial crises and ultimately significant

[5] Indeed, depositors have limited information on banks' activities, as banks extend loans on the basis of private information, and are unable to exert proper governance on banks' management and owners.

output losses (Sundararajan and Balino, 1991; Caprio and Klingebiel, 1996; Caprio 1997; Ingves, 2003).[6]

In a conducive financial sector environment, banks resort to signaling, screening, monitoring, and self-selection as key instruments to overcome asymmetric information problems.[7] In practice, on the assets side of the balance sheets of banks, these instruments include the requirement that loans are extended only after borrowers have provided proper information (e.g. balance sheet data, business plans, data on market and socio-economic position) and/or assets (e.g., collateral, reputation, own funds) to the bank (Gertler and Rose, 1994). Moreover, loan portfolios need to be sufficiently diversified (Diamond, 1984). On the liabilities side, equity (Leland and Pyle, 1977) and reputation (Diamond, 1989; Breuer, 1995; Hellmann and Murdock, 1998) have been identified as devices that banks may resort to, in order to ensure that incentive-related problems in the relation between banks and depositors are minimised.

Resorting to mechanisms that ensure incentive-compatibility is costly and, hence, cannot be taken for granted. In this respect, the recent finance-growth literature started to focus on financial sector environment, as the quality of the latter may crucially affect the impact of finance on growth. This relates most importantly to (1) banking regulation and supervision as well as (2) the overall institutional and legal framework governing contractual relationships between economic agents.

1) Banking regulation and supervision are regarded as a key policy device to set out and enforce standards that provide banks with the required incentives or simply force them to resort to mechanisms that mitigate moral hazard and adverse selection (Dewatripont and Tirole, 1994). The main instruments, e.g. as laid down in the Basel standards, include capital adequacy, loan classification and provision requirements, limits on large exposures and connected lending, as well as requirements for liquidity, credit and market risk management.
2) Growth-enhancing effects of finance depend to a significant extent on agents' trust that financial contracts shall be respected. Thus, a proper legal and accounting framework is needed to establish

[6] In general, banking crises entail three types of costs (World Bank, 2001): (i) the stock of unrecoverable loans that were, as revealed by banks' insolvency, wasted for unproductive purposes; (ii) the public finance cost related to the bailing out of banks and (iii) real output losses triggered by a drop in investment further to either a general loss of confidence or a restricted access to credit.

[7] Classic references are Akerlof (1970), Stiglitz and Weiss (1981) and Diamond (1984).

and enforce property rights as well as to provide reliable information. Indeed, econometric evidence (Levine, Loayza and Beck, 2000) suggests that countries with legal systems that give a high priority to secured creditors rights, rigorous contract enforcement and high-quality accounting standards tend to have better-developed financial intermediaries.

To wrap up, qualitative indicators need to complement quantitative indicators when analysing the degree of financial development in a country or region. Financial development cannot be growth-supportive when the institutional and legal framework – together with market participants' incentives – is not appropriate.

This is illustrated in the four quadrants of table 1. The top left quadrant describes an economy where the financial sector is not developed, both at the quantitative and qualitative level, i.e. shallow and with a poor environment. The top right quadrant describes a financially deep economy with a poor environment. In a market economy, this situation is not sustainable, as banks would end up overburdened with bad loans, which would lead either to a financial crisis and bank failures or to inflationary finance if bank recapitalisation is financed by money printing. The lower left quadrant describes an economy with a stable financial sector, with a good environment, but too shallow to actively support growth. The lower right quadrant depicts the optimal situation: the financial sector is both deep and characterised by a good environment.

In this framework, growth-supportive financial development can be considered as an evolution whereby the economy's financial deepening is either based on a good environment (from the lower left to the lower right quadrant), or is at least going hand-in-hand with its improvement (from the top left to the lower right quadrant), as indicated by the arrows.

3. Financial development and growth in Southeast Europe: the descriptive evidence

Up to the late 1990s: deep financial sector, but poor environment

Financial sector development in transition countries started from a situation where the central planner had the leading role in resource allocation, while the financial sector was only passively responding to the planner's requests. This also applied to Southeast Europe. As financial sectors did not play a part in the allocation of resources,[8] there was also no need for banking supervision and regulation, or for an appropriate legal framework. At the same time, however, financial sectors were relatively deep, with monetisation ratios at the outset of transition reaching more than 70% of GDP in Albania, Bulgaria and Moldova and 50% in Romania (EBRD, 1998). Hence, the financial system in the socialist era was characterised by the top right quadrant of table 1.

At the start of transition, many countries began to overhaul their financial sectors. As a result, the largest part of the 1990s is characterised by substantial reforms. However, these failed to improve adequately the quality of financial sectors' environment. The main deficiencies were:

- Insufficient restructuring and poor governance of state-owned banks. There was a widespread consensus in the early 1990s on the need to give priority to the restructuring and privatisation of state-owned commercial banks, as state-owned banks were "little more than an accounting construction and were run by segments of the old bureaucratic network and staff" (Berglof and Bolton, 2002). However, due in particular to political economy reasons (Bokros, 2002), these efforts were delayed or failed by not addressing banks' deeply-rooted governance problems (Keren and Ofer, 2002).[9] Indeed, state-owned banks were subject to political pressure to extend loans to non-profitable stated-owned enterprises in so-called "priority sectors", which triggered a rise in bad loans and favoured resource misallocation (EBRD, 1998).

[8] With the exception of former Yugoslavia, in most socialist countries commercial banks were created after the break-up of the monobank system in the late 1980s and early 1990s. Former Yugoslavia had already created a two-tier banking system in the 1960s. However, this reform softened budget constraints by *de facto* making captive a large number of financing companies (i.e. banks) that lent money to their socially-owned enterprise owners on non-commercial terms (Gomel, 2002).

[9] For instance, as late as 1997, state-owned banks accounted for 90% of total banking assets in Albania, 84% in Bosnia and Herzegovina, 66% in Bulgaria, 33% in Croatia and 80% in Romania (EBRD, 2002). Only in FYR Macedonia and Moldova state-owned banks had a much smaller share.

- Lax regulation on licensing new private banks and connected lending. Authorities opened the banking market to private-owned institutions, expecting it to strengthen competition and the sector's efficiency. However, in a number of countries the outcome proved to be an unregulated free-for-all, as minimum capital requirements were either deliberately set at very low levels or became low in real terms due to high inflation. Companies exploited this situation by founding banks that would only serve as their finance department. Most of the newly-founded banks proved therefore to be "agent" or "pocket" banks (World Bank, 1989 and 1993), i.e. banks created to grant bad loans to the companies of their owners. As a result, rather than promote growth, finance led to (i) inefficiency costs related to resources misallocation and (ii) reputation costs as "pocket banks" severely undermined private sector confidence in the whole banking sector.
- Lack of human capital and credit technology. Banks overall were not accustomed to credit risk assessment and risk management, nor to resort to loan security, credit monitoring and other key elements of financial intermediation (Gelb and Honohan, 1991; Caprio, 1995). As a result, most institutions were unable to use best professional practices.
- Inadequate banking supervision. Given that banking regulation and supervision had to be created from scratch, most supervisory departments were not able to set out and enforce international standards guaranteeing sound finance, regarding in particular loan loss provisioning, and limits to exposure and connected lending. Staff was moreover limited in number, often neither experienced nor adequately trained, and unable to deal with an increasing number of banks. Finally, since state-owned banks were still dominant players, banking supervision was further weakened with governments being reluctant to see supervisors act decisively to liquidate troubled banks.
- Poor institutional and legal environment. Although parliaments passed legislation and governments adopted regulations pertaining to financial contracts, their effectiveness was jeopardised by inconsistencies with other legislation, often inherited from the socialist rule, and not fully implemented by courts, mainly in the areas of insolvency, bankruptcy and collateral.

In a nutshell, financial sectors' environment continued to be poor, so that they remained typical of situations described in the top right quadrant of table 1. This could last as long as inflation soared like

in Bulgaria, Croatia, FYR Macedonia and Serbia,[10] easing the debt burden of insolvent borrowers as it was accompanied by highly negative real interest rates.

The crises years: shallower financial sector, persistently poor environment

When the first attempts of macroeconomic stabilisation took hold, the granting of "false credit" (McKinnon, 1992) triggered an increase in non-performing loans and finally of financial crises. Some countries, such as Bulgaria in 1997 and Croatia in 1998/1999, faced outright banking crises; a number of banks went bankrupt and were eventually closed down or sold (Gomel, 2002). Other countries, like Romania and Serbia under the Milosevic regime, managed to avoid outright crises thanks to high inflation rates fuelled by central bank and government interventions.[11] Somewhat different, the 1997 financial crisis in Albania was triggered outside the financial sector with a run on pyramid schemes by enterprises and households.[12] In Moldova, the impact of the Russian crisis was strongly felt by domestic banks.[13]

Financial crises in Southeast European countries were associated with a shrinking of financial depth. The monetisation ratio in Bulgaria, the most spectacular example, was halved in one year, decreasing from 71% of GDP in 1996 to 33% in 1997. The impact of the financial crisis in Croatia was smaller, with a pause in financial deepening of one year. Overall, the crisis episodes can be described as a shift from the top right to the top left quadrant, as financial depth adjusted downwards to the poor environment of the financial sector.

These financial crises went along with substantial output losses and a large investment decline (table 2). In Albania and Bulgaria real GDP plummeted in the crisis year(s) (in Albania by 7% in 1997, and in Bulgaria by 9% and 6% in 1996/97). Croatia's output losses in 1999 were more limited, at 1%, although the recession was the only one the country had experienced since the end of the war in the

[10] To some extent, high inflation was caused by the financial sector's weakness, as central banks felt a need to support ailing institutions by providing them credit (see below).

[11] In Romania, for example, the intervention regarding Bancorex, the largest state-owned bank, was related to concerns about systemic risk (IMF, 2001b). In Serbia and Montenegro, the government resorted to repressive regulation (i.e. limited corporate customers' access to cash) and froze foreign currency deposits to avoid a bank run.

[12] In the 1990s, pyramid schemes within and outside the banking sector also caused financial turmoil in Bulgaria, Romania, Serbia, Montenegro and FYR Macedonia (Gomel, 2002). However, the systemic impact was nowhere as large as in Albania (Jarvis, 2000).

[13] In early 1999, 14 out of a total of 22 banks were assigned to the National Bank's "Bank Resolution Unit" (IMF, 2001a).

mid-1990s. Likewise, from 1997 to 1999, while struggling with several bank failures and crises, Romania went through three years of recession. After having experienced its first year of positive growth in the transition period, Moldova posted two additional years of recession, in 1998 and 1999. And even in FYR Macedonia, where there was no outright crisis, major weaknesses in the banking sector have been identified as a cause for slow growth (Drummond, 2000).

The late 1990s: improved environment

Output and budgetary costs of financial crises were instrumental in bringing about a decisive change in financial sector reform policies in the most recent years. Reforms have successfully improved the environment of the financial sector by focusing on three aspects:

- Hardening of budget constraints. Central banks in the region have reduced or ceased to lend to commercial banks, thereby putting harder constraints on their refinancing opportunities (chart 1). As early as the end of 2000, central bank lending to commercial banks in most countries of the region was virtually nil.[14] Conversely, central banks have accumulated foreign assets, which in most countries cover more than 100% of reserve money.
- Tightening of banking supervision and regulation. Authorities in Southeast Europe have endeavoured to adopt international standards regarding banking supervision and regulation and, in some cases, even more stringent requirements (Talley, Giugale and Polastri, 1998). Regulatory and supervisory reforms touched many areas, but the main focus has been to strengthen capital adequacy requirements. The amount of capital needed to obtain a banking licence increased substantially and some countries raised capital adequacy ratios even above the 8%-Cooke reference value (table 3).[15] Moreover, regulations pertaining to classification and provisioning of loans have been strengthened.[16] Last, many countries in the region have introduced international accounting standards to improve transparency, while banking supervision has been strengthened in terms of both on-site and off-site inspection.

[14] In some countries, central banks even became net debtors to the banking sector.
[15] See also the respective country assessments in EBRD (2002).
[16] Without adequate provisioning, minimal capital requirements lose their informational content. They provide adequate incentives only to the extent that they serve as a buffer against unexpected losses (Dziobek, Frecaut and Nieto, 1995).

- Consolidation of the banking sector and opening to foreign investors. Financial crises and higher minimum capital requirements led to a consolidation in Southeast Europe's banking sectors: since the middle of the 1990s, the number of banks in countries which had a relatively large number of licensed banks (e.g. Bosnia and Herzegovina, Croatia and Serbia), has decreased significantly (chart 2).

  In line with developments observed in the new EU member states (Caviglia et al. 2002), authorities opened banking sectors to foreign investors, mainly by privatising the remaining state-owned banks. [17] Banks owned by foreign investors, mainly from the euro area, have become the dominant players in all banking sectors of the region, expressed as a share in the number of banks operating (chart 3) as well as in total banking sector assets. Conversely, the share of state-owned banks in total banking sector assets has significantly declined in recent years, as governments realised that bank failures were associated with substantial fiscal costs (Brixi et al. 1999; Tang et al. 2000).[18]

  The strong presence of euro area banks improves the financial sector's environment in the region for two reasons. First, it allows the import of "reputational capital" (Hellman and Murdock, 1998) or "franchise value" (Demsetz, Saidenberg and Strahan, 1996). This intangible capital serves the same purpose as equity reported in the balance sheet, namely to align the interests of banks and depositors. Euro area banks would lose their money if they have bad lending practices. Second, foreign banks are unlikely to engage in connected lending as reputable foreign shareholders do not borrow from the local banks they have invested in (EBRD, 1998). As a result, foreign bank entry further hardens budget constraints imposed on the real sector.[19]

[17] An exception is Albania where foreign investors entered the market mainly via greenfield investments as, at the start of transition, the banking sector comprised only three state-owned banks (see also Winkler (2000)). Two of them were sold to foreign investors in 2000 and 2004; the third was liquidated in the late 1990s. Also in Serbia, most foreign-owned banks licensed in the first years after the October 2000 revolution started as greenfield operations, while privatisation became a favoured entry mechanism for foreign-owned banks only recently.

[18] In Croatia, for example, the Croatian National Bank intervened to address the difficulties of 17 distressed banks, accounting for 17% of bank assets, in 1998 and the first half of 1999. About 80 percent of deposits in the bankrupted banks (about 5.5% of broad money and 2% of GDP) were covered by deposit insurance, with payouts funded by the budget (IMF, 2000; Gomel, 2002).

[19] Giannetti and Ongena (2005) provide evidence that "foreign banks are more willing to take hard choices than domestic banks and thus mitigate connected lending problems."

Most recent developments: from consolidation efforts to credit boom

With the improvement in the financial sectors' environment, financial depth in the region has significantly increased in recent years (charts 4 and 5). While still being on a much lower level than in industrialised economies, there has been a strong catch-up, at least in some countries of the region, to financial depth ratios seen in the new EU member states.

Monetisation has increased for three reasons. First, progress in achieving macroeconomic stability, as reflected in low or declining inflation rates and rather stable exchange rates. Second, the growing presence of reputable foreign-owned banks in the region.[20] Third, the effect of the euro cash changeover, mostly in former Yugoslavia countries, where legacy currency cash, in particular Deutsche Mark banknotes, was circulating (Padoa-Schioppa, 2003; ECB, 2002). Credit institutions, in particular foreign-owned banks, widely advertised euro-denominated accounts at attractive conditions. Households and firms used this opportunity to deposit their holdings of "under the mattress" legacy currency cash to minimise risks and cost of the cash changeover, giving a large boost to the volume of deposits in the respective countries.[21]

In contrast, financial intermediation at first remained subdued, as banks became more cautious in their lending behaviour. Again, three factors underlie these developments. First, the heavy losses faced in years of financial crisis and takeovers of banks by foreign owners resulted in a reduction of bank exposures to the traditional, not creditworthy, customers, and a focus on loan quality rather than quantity. This is also why banks seemed to be reluctant to expand their lending activities to the new private sector as most micro, small and medium-sized enterprises were fairly young, fragile and offered limited borrowing track-record (Klapper, Sarria-Allende and Sulla 2002).[22] Second, there has been some anecdotal evidence that foreign-owned banks endeavoured to "cherry-pick the best

[20] The key contribution of foreign-owned banks in the region seems indeed the import of stability, based on the track-record and reputation of powerful parent institutions (Keren and Ofer, 2002; Grigorian and Manole, 2002).

[21] For instance, in Croatia, the substantial increase in euro-denominated deposits in the wake of the cash changeover was equivalent to a 10% of GDP capital inflow (Croatian National Bank, 2003). By contrast, in Montenegro, where foreign-owned banks played a limited role at the time of the cash changeover, the increase in deposits was smaller, suggesting that it was indeed the combination of reputable foreign-owned banks and the euro cash changeover that contributed to the strong increase in bank deposits in Southeast Europe (Schobert, 2003).

[22] The most prominent example in this regard is Albania, where almost the entire enterprise sector is based on micro and small businesses (Muent, Pissarides and Sanfey, 2000), many of them being unfamiliar with standard credit approval

borrowers available on the market (especially those from their own countries of origin)" (Grigorian and Manole, 2002).[23] Moreover, at least initially, they seem to have focused their activities on wholesale banking and on activities that generate fees and commissions, such as international payment transactions, short-term trade credits and issuance of securities (Buch, 2002). Third, the cautious attitude also reflected the need to change procedures and risk management tools, which took time to implement, as banks had been short of adequately trained staff with experience in selecting, analysing and monitoring clients, reflecting governance problems in former state-owned and private "pocket" banks.

As a consequence, credit quality rose substantially and/or remained at comparatively high levels, as indicated by the increase in the share of standard loans in total loans since the late 1990s in several countries (chart 6).[24] After the experience of financial crises and given the short-term nature of their deposits, banks have preferred to transform them into highly liquid assets with a zero or low risk weight, e.g. deposits abroad or, when available, domestic treasury bills (Gomel, 2002).[25] Together with high minimum capital requirements, recapitalisation efforts and foreign investments, this has led to a strong increase in capital adequacy ratios in 2000/2001 (table 4).

Since the beginning of the new millennium, however, the increase in credit quality has been followed by a robust expansion of credit, as the region has been characterised by strong credit growth, even though the initial level of financial intermediation, timing, pattern and dynamics of expansion have been different across countries. This growth in credit has been accompanied by an acceleration in GDP growth in the region, mainly via an expansion of domestic consumption and investment.

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procedures, which may at least partly explain the particularly low level of financial intermediation in Albania compared to the rest of the region (Winkler, 2000).

23 However, Fries and Taci (2002) present evidence that foreign-owned banks seem to be associated neither with stronger nor with weaker real growth in customer loans compared to local banks. De Haas and Naaborg (2005) – on the basis of focused interviews with managers of foreign parent banks and their affiliates in Central Europe and the Baltics – also find evidence that the acquisition of local banks by foreign banks has not led to a persistent bias in these banks'credit supply towards large, multinational companies. At the same time, there is evidence that credit supply to local micro and small enterprises in the region has been constrained, triggering efforts by the international community to foster micro and small business lending in the region. On this see various contributions in Matthäus-Maier, I. and J.D. von Pischke (2004, 2005).

24 A substantial part of the improvement in credit quality, e.g. in Albania and Romania, also reflects the recapitalisation of banks and the taking over of bad loan portfolios by governments.

25 This behaviour is typical of most transition countries in a post-crisis period. See OECD (1997), EBRD (1998) and Berglof and Bolton (2002).

The phenomenon was first seen in Croatia (Kraft and Jankov 2005), has been most pronounced in Bulgaria (Charts 5 and 7), and reached the "sleeping beauties" (Cottarelli, Dell'Ariccia and Vladkova-Hollar 2005), Albania, FYR Macedonia and Romania, in 2003/3004. Banks financed the expansion by first reducing reserves and foreign assets, which they had accumulated in the years of consolidation and low lending activity. The increase in deposits referred to earlier has been the second source of financing. In more recent years, banks have increasingly relied on loans from banks abroad, mainly from their parent banks in the euro area (chart 8). Finally, lending to households has been growing in some countries and years with an annual rate of more than 100% (chart 9), reflecting a boom in housing and consumer credit. Thus, credit portfolios have become more diversified in terms of borrower type, supported by strong (expected) growth of household incomes in the region.

As a result of the lending boom, capital adequacy ratios have dropped from the high levels observed at the turn of the century (table 4), but are still at levels considerably above the required ratios (table 3). At the same time, there has been little evidence on a deterioration of credit quality, as the share of loans classified as standard remained high or even increased further. However, the share of non-performing loans in credit portfolios is known as a lagging indicator and hence may not signal banking problems in advance (Rojas-Suarez, 2001). There is also evidence that rapid growth in consumer lending may lead to severe banking sector problems in case of an economic setback (Rhyne, 2001). Finally, in many countries of the region, a large and increasing share of lending has been conducted in foreign currency, thereby creating risks of potential debt service difficulties in case of devaluations, as the household sector and a considerable share of the corporate sector are without the appropriate hedging.

Against this background, authorities in the region have increasingly taken administrative and regulatory measures to curb credit growth.[26] Examples of these measures include a tightening of eligibility criteria for consumer and mortgage loans, increased minimum reserve requirements for banks which exceed a certain credit growth rate, the introduction of a special reserve requirement on the (net) increase of foreign liabilities, the lowering of the remuneration rate of reserves and outright

[26] An overview is provided in Hilbers et.al. 2005.

credit ceilings. Experience of other countries facing similar challenges suggests – and there is already some evidence for this in the region – that these measures tend to be effective only in the short-term, as they are – at least partly – circumvented, e.g. by direct corporate borrowing abroad or by using leasing and other forms of domestic financing.

To wrap up, the improvement in the quality of the financial sector and its environment has been accompanied by a noticeable financial deepening.. The subsequent section tests the impact of these evolutions on growth empirically.

4. Empirical evidence on the finance-growth nexus in Southeast Europe

This section examines the finance-growth nexus in Southeast Europe empirically using the standard empirical framework pioneered by King and Levine (1993a, 1993b). It additionally interprets the results in light of the conceptual considerations presented in Section 2.

Standard empirical framework

Empirical research on the finance-growth nexus is traditionally based on the following econometric framework [27]:

$$\Delta y_{it} = \boldsymbol{\alpha}' \mathbf{X}_{\mathbf{it}} + \beta z_{it} + u_{it} \qquad (1)$$

where Δy_{it}, the real GDP per capita growth in the *i*th country in time period *t*, is regressed on a set of conditioning variables $\mathbf{X}_{\mathbf{it}}$, and a measure of financial depth, z_{it}, while u_{it} is the residual. Indicators of financial depth include (i) the ratio of broad money to GDP (monetisation ratio), (ii) credit to private enterprises to GDP (financial intermediation ratio). As aforementionned, both ratios measure the extent to which resources are intermediated across time periods and agents via the banking system. King and Levine estimates suggest that the gains to be expected from financial deepening are very significant. For instance, a 10 percentage point increase in the ratio of broad money to GDP is

[27] While not as extensive as the body of work on the banking sector, specific studies on the stock market also suggest a positive link with economic growth. Theory indicates, for instance, that well-developed stock markets strengthen corporate control by facilitating take-overs or making it easier to tie managerial compensation to performance. This enhances managerial incentives and improves resource allocation (see Levine, 2001, for an overview). Empirical studies

associated with an acceleration of GDP growth by a quarter of a percentage point per year. Moreover, not only is this association positive, but it is causal as well, as financial deepening today affects growth tomorrow. Converging results have emerged from studies conducted at the firm-level (e.g. Demirgüç-Kunt and Maksimovic, 1998), industry-level (e.g. Rajan and Zingales, 1998) or time-series-based analyses (e.g. Rousseau and Wachtel, 1998), suggesting that financial development has been a significant part of the growth process indeed.[28]

Application to Southeast Europe

There are two major challenges when applying the standard econometric framework described in (1) to Southeast Europe.

(*a*) Challenges relating to the explanatory variables

Following the literature on the finance and growth nexus, we include the "standard" set of conditioning variables $\mathbf{X}_{it}$, namely the log of initial real GDP per capita, to capture a convergence effect, and the initial secondary school enrollment rate, to proxy human capital investment. However, these variables may not directly apply to transition economies undergoing rapid systemic change, given that there is "little specific guidance from economic theory" to model the evolution of output in transition economies (Berg, Borensztein, Sahay and Zettelmeyer, 1999). Interestingly, in his empirical analysis of a panel of 25 transition economies over 1993-2000, Koivu (2002) leaves out initial conditions as control variables, arguing that their effect had already died out by 1993, some years after the start of transition.

Growth in transition economies seems to be related to the timing of macroeconomic stabilisation and the extent of structural reform (Fischer and Sahay, 2000). As a result, beyond the standard variables, we place a particular emphasis on the quality of the financial environment. To this end, the arithmetic average of the EBRD transition indicators for the various dimensions of structural reform is used to

(e.g. Levine and Zervos, 1998) confirm that stock market liquidity is positively and significantly correlated with current and future rates of economic growth, capital accumulation and productivity growth.

[28] Closer analysis seems moreover to indicate that financial development is significantly correlated with total factor productivity but not robustly correlated with either private savings rates or capital accumulation (De Gregorio and Guidotti, 1992; Beck, Levine and Loayza, 2000). Therefore, finance seems to contribute to long-term growth by

proxy the extent of structural reform. The EBRD indicator of banking sector reform per se is additionally used to better capture the governance and incentive environment in which financial institutions operate.

We also try to account for the role of the legal environment, whose impact on finance has been highlighted by La Porta et al. (1997; 1998, hereinafter LLSV) by including the LLSV index of creditor rights[29] as compiled by Pistor, Raiser and Gelfer (2000) for transition economies.[30]

Inflation is used as a proxy for macroeconomic stability. As shown by Khan et al. (2001), inflation has a significant negative effect on financial deepening when it is above a certain threshold.[31] To account for this non-linearity, they include a measure of the distance between actual inflation and the threshold ($1/Infl_{it}$ - $1/InflThreshold_{it}$), and a dummy variable (*HighInfl*) for inflation above the threshold. We use the same specification and, following Khan et al. (2001) and Cottarelli et al. (2005), set the threshold at 4%. The results show that inflation rates above the threshold have a significant and negative effect.

Last, we include government size and openness in the set of conditioning variables as additional controls for possible endogeneity between growth and financial development (see Wachtel, 2001; Rousseau and Wachtel, 2000).

(*b*) Challenges relating to the estimation

A second major challenge arises from the fact that available time series for Southeast European economies are short, like for other transition economies. Moreover, Southeast Europe has experienced in recent years high political instability and wars, which makes the number of observations available

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improving the economy's productivity via the interpersonal reallocation of resources rather than by increasing the quantity of physical capital.

29 We have also run regressions using the LLSV shareholder rights indicator for transition economies, always taken from Pistor et al. (2000).

30 Data for this index are the scores achieved in 1998 (more recent data were not available, unfortunately). They are still relevant, however, as "the impact of legal improvements on the economy may be seen with a lag, as there may be some learning effects that lead old laws to be still relevant for some time" (Pistor, Resiser, Gerfler, 2000).

31 Obviously, in Southeast European economies, part of inflation, especially at the outset of transition, is also linked to the liberalisation and adjustment of administrative prices. However, estimates available for Central and Eastern European countries in the last decade suggest that monetary determinants are also at the core of price dynamics in transition economies (Arratibel et. al., 2002). Interestingly, Rousseau and Wachtel (2002) found that inflation directly affects the finance-growth nexus. In countries with inflation higher than 13%-25% per year, finance ceases to boost economic growth because, as they put it, the flow of information about investment projects and returns that is used by intermediaries becomes more uncertain and less readily available. Furthermore, high inflation can allegedly repress financial intermediation by eroding the usefulness of money assets (McKinnon, 1973) and leading to unproductive investment decisions (Hicks, 1974).

for stable estimation even smaller. We include in the set of conditioning variables time dummies, also to control for the war periods which have marked part of the region's recent history.[32].

Against this background, our panel data set comprises annual data over the years 1993-2003 for seven Southeast European countries, with some missing observations for Bosnia and Herzegovina and Serbia and Montenegro.[33]

Turning to the choice of estimators, Wachtel (2001) expresses skepticism as regards fixed-effects in estimating the finance-growth relation. According to him, as financial systems develop slowly, financial depth ratios are highly autocorrelated and may be similar to a constant term. In this case, financial depth ratios and fixed effects may largely convey the same information. As argued by Koivu (2002), this may not be the case in transition economies where banking sectors tend to develop quickly. The fixed effects estimator seems anyway not suitable in our case. A simple Anova *F*-test indicates that, in our sample, there is no significant within-time variation indeed.[34] Moreover, some of the explanatory variables we consider to proxy for the quality of the financial sector environment, for instance LLSV – the index of creditor right protection – are constant. This is another reason not to use a fixed effects estimator. Otherwise we would not distinguish the impact of the time-invariant explanatory variables from the unobservable country effects (which are also constant). For all these reasons, we use ordinary least squares (OLS) in a pooled regression, with time dummies[35] and qualitative variables[36].

Due to potential reverse causality between growth and financial depth, as well as between growth and inflation, the literature suggests also to use a two-stage least squares (2SLS) estimator. Indeed, financial deepening may be endogenous if richer countries have more developed financial sectors

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32 In some regressions, we also consider an 'accession' dummy equal to one for the countries negotiating accession to the European Union (Bulgaria, Croatia and Romania) to capture the macroeconomic discipline brought about by this institutional process. This variable, however, is not significant.

33 Details can be found in the data appendix.

34 This means differences in growth performance are more due to differences across countries than to differences across time within each country. The within estimator is not appropriate in this case, because it uses the time variation within each cross-section. We therefore implement a pooled OLS estimation; the legal indicators should capture country-specific characteristics.

35 We only include time dummies for the years 1993 to 1999 in order not to lose too many degrees of freedom. We run all the regressions also considering time dummies for the whole period, however they are not significant.

36 The Chow test of the pooled model against the fixed effects does not reject the null hypothesis that all the coefficients of the country fixed effects are equal to zero. The pooled regression is appropriate in our case.

because the income elasticity of the demand for financial services is large (Wachtel, 2001). Moreover, inflation may be endogenous if, for instance, an exogenous growth slowdown generates higher inflation. This could result if monetary authorities react to an economic slowdown with expansionary policies (Barro, 1997).[37] Hence, we also run two-stage least squares estimations, using the lagged values of financial depth and inflation as instruments, respectively.[38]

Conversely, we do not resort to the Arellano-Bond (1991) estimator, which is typically used to correct for endogeneity in dynamic panel estimation. The main reason is that this estimator takes (1) in first differences to remove individual heterogeneity and uses lagged values as instruments. In so doing, we would also remove variables such us the creditor right protection indicator, which is constant. Moreover, we would lose 14 observations (about a quarter of the total number of degrees of freedom), thereby leading to less precise estimates.

In line with the literature, the intermediation and monetisation ratios[39] are used to proxy financial depth, i.e. z_{it} in equation (1). Since they are correlated with each other, they are included in the regressions one at a time. In our analysis, we also try to capture qualitative improvements in the financial sector by the share of foreign-owned banks in the banking system. This mirrors a peculiarity of financial sector development in the region, namely the increasing degree of foreign (in particular euro area) ownership of the banking sector. This variable has been used in the literature as a measure of the strength of bank competition (Demirgüç-Kunt and Levine, 1999); as higher foreign bank penetration improves domestic banking efficiency, with positive effects on economic growth. It also captures country imports of good reputation and sound banking practices.

[37] One may also argue that resorting to contemporaneous scores for the EBRD transition indicators may create another endogeneity problem, as current laws may have been partly affected by financial development. However, the test indicates that OLS is consistent, even when we only use the EBRD or another legal indicator in the conditioning set of variables.

[38] We test whether the estimates obtained by least squares are consistent or whether the use of instrumental variable is necessary with the Durbin-Wu-Hausman test. In most specifications considered, the test does not reject the null that OLS is indeed consistent.

[39] We use natural logarithms of the intermediation and monetization ratio.

Core results

Regressions results from OLS and 2SLS estimations when the financial intermediation ratio is used as a proxy for financial depth are reported in Tables 5 and 6. Tables 7 and 8, Table 9 and 10 report the corresponding results when the monetisation ratio and the foreign bank penetration ratio are used.

Overall, the results suggest that financial deepening did not have a significant impact on the growth performance of Southeast European countries over the last decade. The financial intermediation and monetisation ratios are found to have a negative effect on growth, which is even significant in many specifications. These findings are at odds with the standard literature on the finance-growth nexus but are in line with the experience of Southeast European countries. In particular, they mirror the string of banking crises of the 1990s and their adverse impact on economic activity.[40] Conversely, the foreign bank penetration ratio, which captures financial sector evolutions which are more qualitative, exerts a positive impact on growth, even if it is not always significant.[41]

As could be expected from the conclusions of Fischer and Sahay (2000), initial GDP per capita and human capital are always insignificant in all the specifications that use the intermediation ratio as a proxy for financial depth (see columns 6 to 15 of the tables). The same holds true when the share of foreign owned banks is used as the dependant variable. When the monetisation ratio is used, both initial GDP per capita and human capital are found to be significant (with the correct sign), although in some specifications only.[42] This confirms that traditional determinants of long-run growth are not well suited to explain the transition from planned to market economy.

On the other hand, and in line with results found in previous literature, macroeconomic instability, as proxied by inflation higher than a 4%-threshold (noted *Infl*), has a significant and detrimental impact

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[40] For this reason, we also interacted the intermediation and monetisation ratios with a dummy equal to one from 2000 onwards. In so doing, we try to capture a structural change in the slope of the finance-growth nexus from the late 1990s, e.g. due to an improvement in the financial sector environment. In a number of specifications, the change was found to be positive, albeit insignificant.

[41] Unfortunately, owing to data unavailability, we could not use other measures of banking sector efficiency, such us the net interest margin or overhead cost. We tried to run a few regressions using a measure of commercial bank concentration, another market structure indicator, which proved always insignificant, however.

[42] It is worth mentioning that the initial level of GDP per capita is correlated with the EBRD and banking sector reform indicators (with a coefficient of about 0.5), giving rise to multicollinearity. Estimates are still unbiased, albeit less

on growth in all specifications (note that a positive sign means that it is negatively associated with growth, as we take here the *inverse* of the deviation from the threshold; hence, the higher inflation, the more negative the deviation; see also Cottarelli et al., 2005). Also in line with results found in the literature, the impact of inflation on growth is non-linear. Lower inflation than the threshold (noted Infl1 in the tables) is not significant in most specifications.

Somewhat weaker is the evidence on the impact of structural reforms, in particular those affecting the banking sector, as proxied by the EBRD transition indicators.[43] In several regressions, they have a positive – albeit rarely significant – effect on growth. However, when the monetisation ratio is used as the dependent variable, they display a negative sign, which is statistically significant in some specifications. Interestingly, previous studies had already found evidence of negative correlation between EBRD indicators and financial deepening.[44]

Conversely, creditor right protection (noted LLSV), has always a positive and significant impact on growth. This suggests that improvements in the financial sector environment, in particular with regard to contract enforcement, matters. These results are in line with those of Levine, Loayza and Beck (2000), who had also underscored the crucial role played by the overall institutional and legal framework governing contractual relations. Likewise, several cross-country regressions for Latin America in the 1970s and 1980s (De Gregorio and Guidotti, 1992), as well as countries experiencing financial crisis (Johnston and Pazarbasioglu, 1995) had also found a negative and significant coefficient for the financial variable, suggesting that in a low quality financial sector environment "expansions of financial intermediation do not appear to improve growth and efficiency."(Johnston and Pazarbasioglu, 1995, p. 20)

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efficient as standard errors increase sizeably. As a result, we also ran all the regressions excluding initial GDP per capita, which did not affect the thrust of our conclusions.

43 The EBRD transition indicator and the banking sector reform indicator are highly correlated (0.9), hence they are not entered in the regression simultaneously.

44 As Pistor et al. (2000) argued: "Law on the books, if lagged, has an increasingly negative impact on external finance the longer the lags, and this effect becomes significant for the 1992 year. This results partially reflect the extremely low starting values for shareholder and creditor rights in the former Yugoslav republics, Slovenia and Croatia". At the start of our sample, the country scores for the transition indicators are low indeed.

Overall, the evidence seems to suggest that better quality of the financial sector and its environment, together with higher macroeconomic stability, accelerates growth, rather than financial deepening per se.

Sensitivity analysis

To check the robustness of our results and control for the potential influence of outliers, we removed all the observations with residuals above three-standard deviations away from zero and re-ran the pooled regressions to test for outlier-sensitivity.[45] Results are not reported here to save space, but are available from the authors upon request. The LLSV creditor rights indicator gains in significance, when the intermediation ratio is used as proxy for financial depth (in particular in specifications 8, 9 and 10). Moreover, if one allows for a structural change in the slope after 2000, financial depth, when proxied by the intermediation ratio, has a positive and significant impact on growth (at the 10% level). In regressions using the monetisation ratio as a proxy for financial depth, creditor right protection becomes more significant in specification 8 and 10, while human capital turns slightly less significant in specifications 6 and 7. In regressions using the foreign bank penetration ratio, this variable gains in significance in specifications 1 to 5, while creditor right protection loses significance in specifications 8, 9, and 10. The other results do not change.

We then removed an additional observation with residuals above two-standard deviations away from zero when the foreign bank penetration ratio is used as independent variable (Albania 1997).[46] Creditor right protection then gains in significance (at the 5% level) in specifications 8 to 10.

We also re-ran the pooled regressions after excluding Serbia and Montenegro as there are many missing values for this country. Foreign bank penetration gains in significance (at 5% level) in specifications 1 and 7, while the other results are not altered compared to table 9 and 10. Likewise, the

[45] Two observations in the regressions using the intermediation ratio as a proxy for financial development (Albania and Croatia 1997), one observation in the regressions using the monetisation ratio (Bosnia and Herzegovina 1996) and one observation in the regressions using the share of foreign-owned banks (Croatia 1997).

[46] For the intermediation and monetisation ratios, there were no additional outliers. All the outliers had residuals above three-standard deviation away from zero and had already been removed in the previous series of robustness checks.

EBRD transition indicator and the banking sector reform indicators becomes more significant in specifications 1, 2, 4 and 5 when the monetisation ratio is used as proxy for financial depth.

5. Conclusions

Earlier literature on the finance-growth nexus found evidence that financial deepening is good for growth. The experience of Southeast European countries since the 1990s, however, provides weaker evidence for such a link. In analysing financial development in the region, this paper has tried to offer a conceptual framework to interpret this experience based on the following considerations:

- In the early years of transition, financial sectors in Southeast Europe were characterised by relative depth and poor environment, partly due to the socialist legacy and partly to financial sector reforms that largely failed to address issues related to the quality of financial sectors' environment.
- After the outbreak of financial crises, financial sectors' environment has substantially improved, with harder budget constraints, tighter banking supervision and regulation and the opening to foreign banks.
- Since 2000 there have been signs indicating that financial development in a proper sense, i.e. based on financial deepening and a good environment, may have started in the region, with the strong growth in credit serving as the main indicator.

To wrap-up, in terms of our conceptual framework, financial sectors in Southeast Europe remained throughout most of the 1990s in the top right quadrant of table 9, moved shortly to the top left quadrant in the crises years, then to the lower left quadrant with the improvement in their environment, and seems to be now on its way to the lower right quadrant.

To confront this conceptual framework with the data, we used a standard econometric framework and indeed did not find evidence that financial deepening impacted growth positvely in Southeast Europe. There are several possible explanations for this result. Admittedly, available time series may be still too short to uncover such an impact. Morever, the specific nature of the transition process may make the standard growth regression framework ill-suited to model the evolution of output in the region. This is suggested by the fact that the initial level of development and stock of human capital, are found

to be insignificant or wrong-signed. However, a third interpretation is that it is the quality of the financial sector and its environment that mattered for growth, rather than financial deepening per se. Indeed, together with higher macroeconomic stability, higher creditor right protection and increasing foreign bank penetration are found to have a positive and statistically significant impact on growth. This result is robust to the choice of estimator, as well as to outliers.

Looking ahead, our results suggest that, together with stability-oriented policies, a sound legal environment and the opening up of the financial sector are instrumental in ensuring that the ongoing credit expansion in the region goes hand-in-hand with growth.

Data appendix to the empirical estimates

- Accession dummy: variable equals one for the new candidate countries for joining the European Union.
- EBRD banking sector reform indicator: EBRD indicator of structural reform in the banking sector. Source: EBRD, *Transition Report* (2002, 2003 and 2004 issues). Data available from 1993 to 2003.
- EBRD transition indicators: arithmetic average of the EBRD indicators for the various dimensions of transition towards a market economy (price liberalization, foreign exchange and trade liberalization, small-scale and large-scale liberalization, enterprise reform, competition policy, infrastructure reform, banking sector reform, reform of non-bank financial institutions). Source: EBRD, *Transition Report* (2002, 2003 and 2004 issues). Data available from 1993 to 2003.
- Foreign bank share: number of foreign banks in total number of banks as a measure of foreign bank penetration. Source: EBRD, *Transition Report* (2002, 2003 and 2004 issues). Data available from 1993 to 2003, except for Albania, Macedonia, Serbia and Montenegro (1994-2003), Croatia (1995-2003), Bosnia and Herzegovina (1999-2003).
- GDP per capita growth: log difference of GDP per capita, in constant local currency. Source: IMF, *World Economic Outlook*; data available from 1993 to 2004. However, for Serbia and Montenegro, data from this source were available from 1998.
- Government size: natural logarithm of general government expenditure as share of GDP. Source: EBRD (2001, 2002, 2003, 2004), data available form 1993 to 2003. However, for Bosnia and Herzegovina and Serbia and Montenegro, data from this source were available from 1995 and from 2000, respectively.
- Inflation: log difference of the GDP deflator. Sources: IMF, *World Economic Outlook*; data available from 1993 to 2004. However, for Bosnia and Herzegovina and Serbia and Montenegro, data from this source were available from 1995 and 1999, respectively.
- Initial human capital: 1993 gross secondary school enrollment rate, as a percentage. Source: *World Development Indicators*, World Bank.

- Initial real GDP per capita: GPD per capita in 1993 (1995 for Bosnia and Herzegovina and Serbia and Montenegro, due to data unavailability), in constant 1995 US dollars. Source: *World Development Indicators*, World Bank.
- Intermediation ratio: credit to the private sector as a percentage of GDP. Source: EBRD (2002, 2003, 2004). Data available from 1993 to 2003, except for Albania (1994-2003), Bosnia and Herzegovina (1999-2003), Serbia and Montenegro (1996-2001).
- LLSV creditor rights indices for the year 1998 specifically constructed for transition economies. Source: Pistor et al. (2000).
- Monetisation ratio: broad money as a percentage of GDP. Source: EBRD (2001, 2002, 2003, 2004). Data available from 1993 to 2003, except for Bosnia and Herzegovina (1994-2003) and Serbia and Montenegro (1998-2003).
- Openness: natural logarithm of trade in goods as share of real GDP. Source: *World Development Indicators*, World Bank, data available from 1993 to 2004. However, for Bosnia and Herzegovina data from this source were available from 1994 and for Serbia and Montenegro from 1995.

Tables and charts

Table 1: Financial development: quantity and quality

		Financial depth	
		Shallow	Deep
Quality of the environment	Poor	*Non-developed financial sector*	*Socialist financial system* *Financial sector prone to inflation and crises*
	Good	*Stable financial sector, but not actively growth-supportive*	*Developed and growth-supportive financial sector*

Source: authors' own compilation.

Table 2: Real activity indicators in selected Southeast European countries (% change)

	Bulgaria		Croatia		Moldova		Romania	
	Real GDP	Investment	Real GDP	Investment	Real GDP	Investment	Real GDP	Investment
1994	1.8	1.1	5.9	n.a.	-31.2	n.a.	3.9	20.7
1995	2.9	16.1	6.8	n.a.	-1.4	-16	7.1	6.9
1996	-9.4	-21.2	6	n.a.	-5.9	-8	3.9	5.7
1997	-5.6	-20.9	6.5	n.a.	1.6	-8	-6.1	-3
1998	4	35.2	2.5	2.5	-6.5	10	-5.4	-18.1
1999	2.3	20.8	-0.9	-3.9	-3.4	-22	-3.2	-5.1
2000	5.4	15.4	2.9	-3.8	2.1	-15	1.8	5.5
2001	4	19.9	3.8	9.7	6.1	-2	5.3	6.6

Note: The shaded area indicates years of banking sector crisis or severe banking sector problems.
Source: EBRD (2002), except gross fixed real investment in Moldova (National Bank of Moldova).

Table 3: Bank capital in Southeast Europe: requirement and adequacy ratio, 2003

	Minimum capital requirement *(as specified)*	Minimum capital adequacy ratio *(in %)*
Albania	ALL 700 million	12
Bosnia and Herzegovina	BAM 15 million	10
Bulgaria	BGN 10 million	12
Croatia	HRK 40 million	10
Serbia	EUR 10 million	8
FYR Macedonia	EUR 9 million	8
Moldova	MDL 50 million	12
Romania	ROL 250 billion	12
Pro memoria:		
Euro area	EUR 5 million	8

Sources: World Bank database on bank regulation and supervision, national authorities.

Table 4: Capital adequacy ratio in Southeast Europe, 1998 - 2004

	1998	1999	2000	2001	2002	2003	2004
Albania	-1.8	8.2	42.0 [1]	35.3	31.6	28.5	21.6
Bosnia			28.4	25.1	20.6	19.8	
Bulgaria	37.0 [2]	41.3	35.5	31.1	25.2	22.2	16.6
Croatia	12.7	20.6	21.3	18.5	17.2	16.2	14.1
FYR Macedonia	25.9	28.7	36.7	34.3	28.1	25.8	23.1
Moldova	0.0	0.0	48.5	43.4	36.4	31.6	31.4
Romania	10.3	17.9	23.8	28.8	25.0	21.1	18.7
Serbia			0.7	21.9	30.4	31.3	

[1] The 1999 increase partly reflects the capitalisation of the Savings Bank by the government.
[2] 1996: 5.7%, 1997: 28.9%.

Table 5. Estimated impact of financial depht on economic growth in South East Europe using Financial Intermediation ratio as a proxy for financial depht

Dependent variable: Real GDP per capita growth rate, 1993-2003

Pooled regression with time dumies and qualitative variables

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Financial intermediation ratio	-0.025	-0.026	-0.015	-0.019	-0.020	-0.029	-0.032	-0.021	-0.020	-0.021	-0.019	-0.019	-0.020	-0.020	-0.020
	(0.009)**	(0.011)**	(0.007)**	(0.008)**	(0.010)*	(0.012)*	(0.013)**	(0.012)*	(0.012)*	(0.012)*	(0.016)	(0.016)	(0.016)	(0.017)	(0.016)
EBRD transition indicators	0.041			0.028		0.034			0.020		-0.013			0.009	
	(0.033)			(0.017)		(0.040)			(0.030)		(0.017)			(0.038)	
EBRD banking sector reform		0.027			0.017		0.017			0.012		-0.007			0.010
		(0.023)			(0.019)		(0.027)			(0.025)		(0.015)			(0.026)
LLSVcred98			0.013	0.012	0.012			0.016	0.014	0.015			0.023	0.022	0.022
			(0.005)**	(0.005)**	(0.005)**			(0.009)*	(0.009)	(0.009)*			(0.012)*	(0.013)*	(0.013)*
Infl=highinfl*((1/inflation)-(1/0.04))	0.001890	0.001765	0.002165	0.002214	0.002056	0.002635	0.002601	0.001946	0.002094	0.001844	0.002024	0.002065	0.002315	0.002338	0.002208
	(0.000770)**	(0.000736)**	(0.000669)***	(0.000673)***	(0.000647)***	(0.000911)**	(0.000924)***	(0.000815)**	(0.000863)**	(0.000837)**	(0.000806)**	(0.000899)**	(0.000891)**	(0.000900)**	(0.000928)**
Infl1=(1-highinfl)*((1/inflation)-(1/0.04))	-0.000043	-0.000083	-0.000120	-0.000030	-0.000063	-0.000139	-0.000155	-0.000010	-0.000009	0.000008	-0.000070	-0.000072	-0.000035	-0.000033	-0.000019
	(0.000161)	(0.000136)	(0.000084)	(0.000088)	(0.000101)	(0.000128)	(0.000125)	(0.000111)	(0.000110)	(0.000111)	(0.000120)	(0.000126)	(0.000114)	(0.000116)	(0.000117)
d193	-0.034	-0.045	-0.064	-0.032	-0.045	-0.030	-0.047	-0.071	-0.044	-0.055	-0.090	-0.084	-0.059	-0.049	-0.047
	(0.053)	(0.051)	(0.031)**	(0.042)	(0.047)	(0.064)	(0.055)	(0.032)**	(0.058)	(0.053)	(0.032)***	(0.031)***	(0.033)*	(0.063)	(0.052)
d194	0.029	0.016	0.016	0.037	0.024	0.038	0.023	0.009	0.028	0.016	-0.004	0.001	0.021	0.029	0.026
	(0.037)	(0.028)	(0.023)	(0.029)	(0.026)	(0.046)	(0.034)	(0.025)	(0.039)	(0.029)	(0.026)	(0.026)	(0.028)	(0.044)	(0.031)
d195	0.040	0.026	0.031	0.046	0.035	0.047	0.034	0.028	0.041	0.031	0.016	0.021	0.036	0.041	0.037
	(0.027)	(0.022)	(0.017)*	(0.019)**	(0.018)*	(0.030)	(0.020)*	(0.017)	(0.026)	(0.018)	(0.019)	(0.019)	(0.018)*	(0.028)	(0.019)*
d196	0.005	-0.003	-0.002	0.010	0.003	0.010	0.003	-0.004	0.006	-0.001	-0.015	-0.011	0.000	0.005	0.003
	(0.024)	(0.020)	(0.019)	(0.020)	(0.018)	(0.028)	(0.022)	(0.019)	(0.024)	(0.019)	(0.022)	(0.020)	(0.022)	(0.029)	(0.022)
d197	-0.047	-0.051	-0.044	-0.038	-0.042	-0.040	-0.044	-0.048	-0.041	-0.046	-0.055	-0.053	-0.046	-0.044	-0.045
	(0.039)	(0.039)	(0.038)	(0.038)	(0.037)	(0.038)	(0.037)	(0.036)	(0.036)	(0.036)	(0.037)	(0.037)	(0.036)	(0.038)	(0.036)
d198	-0.004	-0.002	0.005	0.008	0.008	0.002	0.001	-0.001	0.005	0.002	-0.009	-0.008	0.005	0.007	0.008
	(0.018)	(0.017)	(0.022)	(0.022)	(0.020)	(0.024)	(0.022)	(0.022)	(0.026)	(0.023)	(0.024)	(0.024)	(0.022)	(0.024)	(0.022)
d199	-0.031	-0.035	-0.005	0.001	-0.002	-0.034	-0.040	-0.005	-0.001	-0.002	-0.011	-0.011	0.001	0.003	0.003
	(0.026)	(0.028)	(0.011)	(0.013)	(0.012)	(0.026)	(0.029)	(0.013)	(0.015)	(0.014)	(0.014)	(0.015)	(0.014)	(0.014)	(0.015)
Log of initial GDP						-0.010	-0.003	0.018	0.008	0.014	0.003	0.001	0.022	0.018	0.019
						(0.023)	(0.018)	(0.014)	(0.024)	(0.019)	(0.017)	(0.017)	(0.022)	(0.027)	(0.024)
Log initial secondary school enrollement						0.063	0.059	-0.021	-0.011	-0.026	0.066	0.066	-0.045	-0.042	-0.049
						(0.037)	(0.040)	(0.058)	(0.062)	(0.059)	(0.041)	(0.043)	(0.076)	(0.077)	(0.078)
Governement expenditure to GDP											-0.013	-0.009	-0.045	-0.041	-0.042
											(0.041)	(0.038)	(0.040)	(0.049)	(0.042)
Openness											-0.030	-0.028	0.030	0.029	0.029
											(0.030)	(0.030)	(0.042)	(0.043)	(0.043)
Constant	-0.115	-0.076	-0.020	-0.111	-0.075	-0.000	-0.006	-0.187	-0.156	-0.192	0.035	0.035	-0.274	-0.263	-0.278
	(0.109)	(0.082)	(0.021)	(0.065)*	(0.070)	(0.130)	(0.124)	(0.141)	(0.158)	(0.138)	(0.130)	(0.133)	(0.218)	(0.224)	(0.221)
Number of Observations	62	62	59	59	59	62	62	59	59	59	61	61	59	59	59
R2	0.44	0.43	0.52	0.53	0.53	0.47	0.45	0.53	0.53	0.53	0.50	0.50	0.54	0.54	0.54

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6. Estimated impact of financial depht on economic growth in South East Europe using Financial Intermediation ratio as a proxy for financial depht

Dependent variable: Real GDP per capita growth rate, 1993-2003

Two-stage least squares estimation

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Financial intermediation ratio	-0.025	-0.030	-0.011	-0.020	-0.026	-0.038	-0.046	-0.022	-0.023	-0.029	-0.018	-0.018	-0.017	-0.018	-0.030
	(0.013)*	(0.016)*	(0.008)	(0.010)**	(0.011)**	(0.023)	(0.026)*	(0.019)	(0.020)	(0.019)	(0.029)	(0.028)	(0.026)	(0.029)	(0.030)
EBRD transition indicators	0.051			0.043		0.038			0.037		-0.012			0.002	
	(0.036)			(0.020)**		(0.039)			(0.028)		(0.019)			(0.041)	
EBRD banking sector reform		0.039			0.038		0.023			0.032		-0.005			0.033
		(0.027)			(0.016)**		(0.027)			(0.023)		(0.016)			(0.023)
LLSVcred98			0.013	0.012	0.011			0.016	0.012	0.014			0.035	0.035	0.036
			(0.005)**	(0.005)**	(0.005)**			(0.010)	(0.010)	(0.010)			(0.013)**	(0.015)**	(0.012)***
Infl=highinfl*((1/inflation)-(1/0.04))	0.001556	0.001419	0.002058	0.002128	0.001948	0.002498	0.002489	0.001881	0.002138	0.001768	0.002101	0.002057	0.002448	0.002452	0.002183
	(0.000689)**	(0.000673)**	(0.000684)***	(0.000668)***	(0.000653)***	(0.000948)*	(0.001079)**	(0.000932)*	(0.000955)**	(0.000976)*	(0.000917)**	(0.001035)*	(0.000994)**	(0.001011)**	(0.001030)**
Infl1=(1-highinfl)*((1/inflation)-(1/0.04))	0.000017	-0.000022	-0.000121	0.000024	0.000012	-0.000036	-0.000032	0.000021	0.000036	0.000089	-0.000055	-0.000051	0.000013	0.000014	0.000079
	(0.000169)	(0.000136)	(0.000085)	(0.000090)	(0.000090)	(0.000118)	(0.000109)	(0.000114)	(0.000115)	(0.000104)	(0.000123)	(0.000122)	(0.000123)	(0.000129)	(0.000116)
d193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
d194	0.019	0.006	0.004	0.034	0.025	0.019	0.004	-0.006	0.028	0.016	-0.017	-0.013	0.018	0.019	0.036
	(0.038)	(0.032)	(0.023)	(0.030)	(0.027)	(0.046)	(0.038)	(0.024)	(0.039)	(0.030)	(0.024)	(0.023)	(0.026)	(0.045)	(0.035)
d195	0.041	0.025	0.030	0.053	0.040	0.046	0.034	0.027	0.049	0.036	0.017	0.021	0.041	0.042	0.050
	(0.029)	(0.023)	(0.018)*	(0.020)**	(0.017)**	(0.028)	(0.019)*	(0.017)	(0.025)*	(0.017)**	(0.019)	(0.019)	(0.019)**	(0.031)	(0.019)**
d196	0.006	-0.002	-0.004	0.015	0.010	0.012	0.006	-0.004	0.013	0.006	-0.015	-0.012	0.002	0.003	0.016
	(0.026)	(0.021)	(0.021)	(0.021)	(0.017)	(0.028)	(0.024)	(0.020)	(0.024)	(0.018)	(0.025)	(0.023)	(0.025)	(0.033)	(0.024)
d197	-0.049	-0.053	-0.045	-0.035	-0.039	-0.041	-0.045	-0.049	-0.037	-0.042	-0.057	-0.055	-0.048	-0.048	-0.041
	(0.040)	(0.040)	(0.037)	(0.039)	(0.038)	(0.038)	(0.038)	(0.036)	(0.037)	(0.036)	(0.039)	(0.039)	(0.036)	(0.042)	(0.036)
d198	-0.006	-0.004	0.006	0.009	0.011	-0.003	-0.005	-0.003	0.006	0.004	-0.008	-0.008	0.010	0.010	0.016
	(0.018)	(0.016)	(0.024)	(0.023)	(0.018)	(0.024)	(0.020)	(0.023)	(0.027)	(0.022)	(0.026)	(0.026)	(0.023)	(0.025)	(0.020)
d199	-0.041	-0.042	-0.006	-0.004	-0.003	-0.046	-0.050	-0.011	-0.006	-0.006	-0.016	-0.016	0.001	0.001	0.005
	(0.027)	(0.029)	(0.013)	(0.014)	(0.013)	(0.029)	(0.031)	(0.015)	(0.017)	(0.017)	(0.016)	(0.017)	(0.014)	(0.014)	(0.015)
Log of initial GDP						0.002	0.011	0.023	0.005	0.015	0.005	0.002	0.039	0.038	0.037
						(0.025)	(0.022)	(0.017)	(0.025)	(0.022)	(0.024)	(0.024)	(0.026)	(0.028)	(0.028)
Log initial secondary school enrollement						0.071	0.072	-0.015	0.004	-0.019	0.078	0.076	-0.093	-0.092	-0.117
						(0.043)	(0.050)	(0.071)	(0.072)	(0.070)	(0.048)	(0.052)	(0.084)	(0.088)	(0.073)
Governement expenditure to GDP											-0.032	-0.027	-0.099	-0.098	-0.079
											(0.051)	(0.045)	(0.046)**	(0.065)	(0.045)*
Openness											-0.026	-0.025	0.066	0.066	0.079
											(0.033)	(0.033)	(0.045)	(0.046)	(0.045)*
Constant	-0.148	-0.118	-0.013	-0.155	-0.148	-0.119	-0.153	-0.221	-0.182	-0.269	0.012	0.012	-0.486	-0.483	-0.586
	(0.127)	(0.104)	(0.023)	(0.077)*	(0.062)**	(0.175)	(0.182)	(0.164)	(0.178)	(0.154)*	(0.198)	(0.189)	(0.253)*	(0.252)*	(0.256)**
Observations	56	56	53	53	53	56	56	53	53	53	55	55	53	53	53
R-squared	0.40	0.39	0.40	0.45	0.47	0.45	0.44	0.44	0.46	0.48	0.39	0.38	0.49	0.49	0.53

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7. Estimated impact of financial depht on economic growth in South East Europe using Monetisation ratio as a proxy for financial depht

Dependent variable: Real GDP per capita growth rate, 1993-2003

Pooled regression with time dumies and qualitative variables

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Monetisation ratio	-0.017	-0.026	-0.066	-0.046	-0.062	-0.047	-0.039	-0.067	-0.057	-0.061	-0.037	-0.037	-0.086	-0.074	-0.078
	(0.023)	(0.022)	(0.029)**	(0.021)**	(0.023)***	(0.024)*	(0.021)*	(0.020)***	(0.021)***	(0.019)***	(0.025)	(0.021)*	(0.026)***	(0.027)***	(0.025)***
EBRD transition indicators	-0.081			-0.110		-0.004			-0.081		-0.043			-0.056	
	(0.047)*			(0.049)**		(0.045)			(0.064)		(0.039)			(0.065)	
EBRD banking sector reform		-0.063			-0.085		-0.032			-0.071		-0.053			-0.065
		(0.033)*			(0.031)***		(0.032)			(0.039)*		(0.029)*			(0.038)*
LLSVcred98			0.041	0.032	0.036			0.028	0.036	0.032			0.067	0.068	0.067
			(0.014)***	(0.010)***	(0.010)***			(0.013)**	(0.013)***	(0.013)**			(0.024)***	(0.026)**	(0.023)***
Infl=highinfl*((1/inflation)-(1/0.04))	0.005138	0.005750	0.005470	0.004473	0.005532	0.006335	0.006796	0.005862	0.004718	0.005678	0.005399	0.005987	0.004981	0.004592	0.004972
	(0.002223)**	(0.002355)**	(0.002388)**	(0.001675)**	(0.001879)***	(0.002179)***	(0.002283)***	(0.002427)**	(0.002059)**	(0.002145)**	(0.002031)**	(0.002140)***	(0.002175)**	(0.002040)**	(0.002063)**
Infl1=(1-highinfl)*((1/inflation)-(1/0.04))	-0.001196	-0.001100	-0.001000	-0.001157	-0.001027	-0.001512	-0.001466	-0.001277	-0.001161	-0.001112	-0.001385	-0.001327	-0.001280	-0.001205	-0.001128
	(0.000897)	(0.000851)	(0.000860)	(0.000725)	(0.000637)	(0.000854)*	(0.000784)*	(0.000913)	(0.000823)	(0.000746)	(0.000885)	(0.000803)	(0.000890)	(0.000842)	(0.000743)
d193	-0.076	-0.061	0.017	-0.118	-0.090	0.030	0.004	0.030	-0.081	-0.067	-0.025	-0.035	0.017	-0.051	-0.070
	(0.056)	(0.046)	(0.055)	(0.064)*	(0.046)*	(0.061)	(0.052)	(0.049)	(0.086)	(0.054)	(0.053)	(0.045)	(0.051)	(0.080)	(0.055)
d194	-0.003	0.023	0.054	-0.039	0.001	0.072	0.065	0.067	-0.014	0.015	0.031	0.040	0.062	0.014	0.016
	(0.036)	(0.034)	(0.038)	(0.041)	(0.029)	(0.041)*	(0.035)*	(0.040)	(0.059)	(0.033)	(0.029)	(0.032)	(0.040)	(0.054)	(0.032)
d195	0.002	0.030	0.044	-0.037	0.003	0.045	0.042	0.043	-0.018	0.011	0.018	0.030	0.045	0.006	0.016
	(0.033)	(0.025)	(0.022)**	(0.042)	(0.029)	(0.030)	(0.023)*	(0.024)*	(0.046)	(0.027)	(0.023)	(0.024)	(0.028)	(0.042)	(0.033)
d196	0.048	0.063	0.085	0.022	0.043	0.076	0.070	0.081	0.036	0.050	0.059	0.063	0.084	0.055	0.055
	(0.065)	(0.069)	(0.082)	(0.056)	(0.056)	(0.060)	(0.057)	(0.069)	(0.063)	(0.054)	(0.060)	(0.057)	(0.068)	(0.064)	(0.055)
d197	-0.019	-0.013	-0.000	-0.047	-0.035	0.001	-0.002	-0.001	-0.037	-0.029	-0.012	-0.010	-0.008	-0.031	-0.033
	(0.045)	(0.042)	(0.040)	(0.041)	(0.033)	(0.042)	(0.037)	(0.043)	(0.044)	(0.033)	(0.040)	(0.035)	(0.038)	(0.042)	(0.030)
d198	0.030	0.030	0.034	0.007	0.008	0.042	0.040	0.037	0.012	0.014	0.032	0.031	0.041	0.028	0.021
	(0.028)	(0.032)	(0.037)	(0.029)	(0.031)	(0.029)	(0.029)	(0.031)	(0.032)	(0.030)	(0.027)	(0.029)	(0.031)	(0.030)	(0.029)
d199	-0.075	-0.073	-0.031	-0.048	-0.048	-0.065	-0.071	-0.035	-0.046	-0.046	-0.038	-0.039	-0.027	-0.033	-0.037
	(0.047)	(0.045)	(0.027)	(0.032)	(0.026)*	(0.038)*	(0.041)*	(0.029)	(0.032)	(0.028)	(0.030)	(0.028)	(0.033)	(0.034)	(0.031)
Log of initial GDP						-0.100	-0.084	-0.068	-0.014	-0.021	-0.076	-0.068	-0.023	0.007	0.015
						(0.032)***	(0.029)***	(0.046)	(0.036)	(0.033)	(0.032)**	(0.028)**	(0.039)	(0.045)	(0.036)
Log initial secondary school enrollement						0.161	0.169	0.039	-0.026	0.024	0.141	0.157	-0.202	-0.208	-0.190
						(0.071)**	(0.074)**	(0.112)	(0.093)	(0.102)	(0.064)**	(0.069)**	(0.120)*	(0.128)	(0.124)
Governement expenditure to GDP											0.018	0.023	0.002	-0.023	-0.005
											(0.060)	(0.049)	(0.072)	(0.086)	(0.070)
Openness											-0.015	-0.011	0.123	0.113	0.112
											(0.035)	(0.037)	(0.064)*	(0.064)*	(0.062)*
Constant	0.299	0.233	-0.111	0.253	0.142	0.857	0.827	0.439	0.237	0.280	0.795	0.771	-0.090	-0.168	-0.186
	(0.151)*	(0.101)**	(0.052)**	(0.140)*	(0.078)*	(0.281)***	(0.262)***	(0.425)	(0.346)	(0.347)	(0.297)**	(0.271)***	(0.405)	(0.422)	(0.384)
Number of Observations	69	69	64	64	64	69	69	64	64	64	68	68	64	64	64
R2	0.38	0.40	0.41	0.55	0.58	0.52	0.53	0.54	0.56	0.59	0.52	0.55	0.57	0.58	0.61

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8. Estimated impact of financial depht on economic growth in South East Europe using Monetisation ratio as a proxy for financial depht

Dependent variable: Real GDP per capita growth rate, 1993-2003

Two-stage least squares estimation

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Monetisation ratio	-0.013	-0.027	-0.070	-0.047	-0.069	-0.034	-0.031	-0.063	-0.050	-0.060	-0.024	-0.033	-0.092	-0.070	-0.083
	(0.023)	(0.024)	(0.031)**	(0.022)**	(0.025)***	(0.022)	(0.020)	(0.019)***	(0.021)**	(0.020)***	(0.024)	(0.020)*	(0.026)***	(0.029)**	(0.023)***
EBRD transition indicators	-0.081			-0.107		-0.018			-0.099		-0.070			-0.096	
	(0.047)*			(0.049)**		(0.045)			(0.065)		(0.042)			(0.079)	
EBRD banking sector reform		-0.061			-0.083		-0.038			-0.081		-0.061			-0.071
		(0.034)*			(0.032)**		(0.033)			(0.043)*		(0.031)*			(0.044)
LLSVcred98			0.044	0.034	0.039			0.025	0.035	0.031			0.087	0.087	0.079
			(0.016)***	(0.011)***	(0.011)***			(0.015)*	(0.014)**	(0.015)**			(0.027)***	(0.025)***	(0.025)***
Infl=highinfl*((1/inflation)-(1/0.04))	0.005103	0.005701	0.005546	0.004541	0.005579	0.006391	0.006933	0.006030	0.004602	0.005787	0.005808	0.006410	0.005303	0.004881	0.005416
	(0.002220)**	(0.002381)**	(0.002398)**	(0.001697)**	(0.001878)***	(0.002207)***	(0.002325)***	(0.002481)**	(0.002116)**	(0.002142)***	(0.002138)***	(0.002275)***	(0.002355)**	(0.002237)**	(0.002307)**
Infl1=(1-highinfl)*((1/inflation)-(1/0.04))	-0.001195	-0.001097	-0.000999	-0.001151	-0.001025	-0.001509	-0.001460	-0.001300	-0.001150	-0.001102	-0.001367	-0.001310	-0.001249	-0.001125	-0.001088
	(0.000897)	(0.000857)	(0.000846)	(0.000725)	(0.000631)	(0.000849)*	(0.000778)*	(0.000927)	(0.000827)	(0.000734)	(0.000878)	(0.000790)	(0.000905)	(0.000837)	(0.000746)
d193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
d194	-0.003	0.023	0.055	-0.035	0.002	0.065	0.065	0.071	-0.029	0.010	0.023	0.042	0.074	-0.003	0.023
	(0.036)	(0.034)	(0.039)	(0.041)	(0.030)	(0.042)	(0.037)*	(0.043)	(0.061)	(0.036)	(0.032)	(0.035)	(0.044)	(0.059)	(0.035)
d195	0.003	0.030	0.043	-0.034	0.002	0.040	0.043	0.046	-0.029	0.008	0.008	0.031	0.053	-0.011	0.020
	(0.032)	(0.025)	(0.023)*	(0.042)	(0.030)	(0.030)	(0.024)*	(0.025)*	(0.046)	(0.029)	(0.022)	(0.025)	(0.031)*	(0.042)	(0.036)
d196	0.048	0.064	0.084	0.024	0.043	0.071	0.069	0.082	0.027	0.046	0.050	0.061	0.090	0.042	0.057
	(0.064)	(0.069)	(0.082)	(0.056)	(0.055)	(0.059)	(0.056)	(0.070)	(0.063)	(0.054)	(0.059)	(0.057)	(0.070)	(0.064)	(0.055)
d197	-0.019	-0.013	-0.001	-0.045	-0.036	-0.000	-0.001	0.002	-0.043	-0.031	-0.017	-0.010	-0.008	-0.046	-0.035
	(0.045)	(0.042)	(0.039)	(0.041)	(0.032)	(0.040)	(0.034)	(0.041)	(0.042)	(0.030)	(0.038)	(0.033)	(0.036)	(0.041)	(0.027)
d198	0.030	0.030	0.033	0.007	0.006	0.043	0.041	0.040	0.009	0.012	0.033	0.032	0.050	0.029	0.025
	(0.028)	(0.032)	(0.038)	(0.030)	(0.032)	(0.030)	(0.031)	(0.033)	(0.033)	(0.032)	(0.029)	(0.032)	(0.033)	(0.032)	(0.031)
d199	-0.075	-0.073	-0.032	-0.048	-0.049	-0.067	-0.072	-0.034	-0.047	-0.048	-0.037	-0.039	-0.019	-0.028	-0.033
	(0.047)	(0.045)	(0.028)	(0.032)	(0.027)*	(0.039)*	(0.041)*	(0.029)	(0.032)	(0.028)*	(0.029)	(0.028)	(0.032)	(0.031)	(0.031)
Log of initial GDP						-0.092	-0.079	-0.071	-0.003	-0.015	-0.064	-0.064	-0.001	0.048	0.032
						(0.033)***	(0.030)***	(0.049)	(0.038)	(0.035)	(0.031)**	(0.027)**	(0.045)	(0.044)	(0.039)
Log initial secondary school enrollement						0.179	0.192	0.071	-0.008	0.052	0.180	0.194	-0.277	-0.268	-0.215
						(0.075)**	(0.078)**	(0.119)	(0.099)	(0.108)	(0.076)**	(0.082)**	(0.145)*	(0.141)*	(0.155)
Governement expenditure to GDP											-0.025	-0.000	-0.051	-0.108	-0.054
											(0.068)	(0.054)	(0.076)	(0.098)	(0.073)
Openness											-0.013	-0.013	0.177	0.160	0.142
											(0.038)	(0.039)	(0.066)**	(0.062)**	(0.062)**
Constant	0.303	0.226	-0.125	0.236	0.123	0.856	0.830	0.486	0.228	0.284	0.776	0.765	-0.377	-0.495	-0.375
	(0.149)**	(0.101)**	(0.058)**	(0.139)*	(0.079)	(0.293)***	(0.272)***	(0.458)	(0.371)	(0.373)	(0.297)**	(0.270)***	(0.463)	(0.424)	(0.442)
Number of Observations	64	64	59	59	59	64	64	59	59	59	63	63	59	59	59
R2	0.37	0.38	0.41	0.55	0.58	0.50	0.52	0.52	0.55	0.58	0.52	0.55	0.56	0.58	0.60

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 9. Estimated impact of financial depht on economic growth in South East Europe using Foreign banks' penetration as a proxy for financial depht

Dependent variable: Real GDP per capita growth rate, 1993-2003
Pooled regression with time dumies and qualitative variables

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Foreign bank penetration	0.056	0.059	0.067	0.067	0.066	0.035	0.066	0.059	0.079	0.062	0.052	0.028	0.040	0.092	0.038
	(0.033)*	(0.034)*	(0.029)**	(0.029)**	(0.030)**	(0.065)	(0.040)	(0.039)	(0.057)	(0.046)	(0.060)	(0.046)	(0.043)	(0.062)	(0.052)
EBRD transition indicators	0.004			-0.005		0.020			-0.032		-0.046			-0.096	
	(0.028)			(0.017)		(0.065)			(0.050)		(0.036)			(0.066)	
EBRD banking sector reform		0.000			-0.003		-0.006			-0.003		-0.019			0.002
		(0.018)			(0.014)		(0.032)			(0.029)		(0.022)			(0.030)
LLSVcred98			0.015	0.015	0.015			0.017	0.020	0.017			0.034	0.050	0.034
			(0.006)**	(0.006)**	(0.006)**			(0.010)*	(0.010)**	(0.010)*			(0.015)**	(0.021)**	(0.015)**
Infl=highinfl*((1/inflation)-(1/0.04))	0.001606	0.001662	0.002194	0.002202	0.002223	0.002159	0.002498	0.002005	0.001901	0.002053	0.002106	0.002076	0.002612	0.002603	0.002591
	(0.000726)**	(0.000750)**	(0.000749)***	(0.000754)***	(0.000752)***	(0.000824)**	(0.001020)**	(0.000955)**	(0.000943)*	(0.001094)*	(0.000846)**	(0.000889)**	(0.001016)**	(0.001016)**	(0.001107)**
Infl1=(1-highinfl)*((1/inflation)-(1/0.04))	-0.000139	-0.000149	-0.000073	-0.000089	-0.000083	-0.000283	-0.000296	-0.000042	-0.000032	-0.000046	-0.000123	-0.000131	-0.000057	-0.000035	-0.000054
	(0.000145)	(0.000144)	(0.000099)	(0.000110)	(0.000112)	(0.000144)*	(0.000151)*	(0.000125)	(0.000135)	(0.000134)	(0.000118)	(0.000123)	(0.000135)	(0.000148)	(0.000141)
d193	-0.033	-0.035	-0.017	-0.023	-0.021	-0.026	-0.034	-0.022	-0.048	-0.024	-0.093	-0.080	-0.009	-0.077	-0.008
	(0.064)	(0.063)	(0.052)	(0.055)	(0.056)	(0.070)	(0.061)	(0.057)	(0.064)	(0.060)	(0.035)**	(0.035)**	(0.058)	(0.060)	(0.062)
d194	0.015	0.014	0.040	0.036	0.038	0.031	0.028	0.035	0.015	0.034	-0.011	0.002	0.053	0.004	0.053
	(0.037)	(0.033)	(0.028)	(0.031)	(0.031)	(0.044)	(0.034)	(0.033)	(0.042)	(0.035)	(0.023)	(0.024)	(0.035)	(0.041)	(0.036)
d195	0.034	0.034	0.053	0.051	0.052	0.043	0.045	0.049	0.037	0.049	0.015	0.025	0.055	0.024	0.055
	(0.030)	(0.028)	(0.023)**	(0.025)*	(0.024)**	(0.030)	(0.028)	(0.030)	(0.031)	(0.030)	(0.022)	(0.024)	(0.027)*	(0.028)	(0.028)*
d196	0.003	0.003	0.021	0.019	0.020	0.007	0.012	0.017	0.011	0.017	-0.013	-0.009	0.016	-0.002	0.015
	(0.028)	(0.028)	(0.025)	(0.024)	(0.025)	(0.027)	(0.029)	(0.027)	(0.028)	(0.028)	(0.025)	(0.029)	(0.031)	(0.032)	(0.032)
d197	-0.041	-0.040	-0.021	-0.022	-0.021	-0.037	-0.029	-0.025	-0.027	-0.025	-0.046	-0.047	-0.032	-0.040	-0.032
	(0.036)	(0.037)	(0.038)	(0.039)	(0.038)	(0.036)	(0.040)	(0.036)	(0.036)	(0.038)	(0.038)	(0.042)	(0.036)	(0.034)	(0.039)
d198	0.006	0.006	0.023	0.022	0.022	0.013	0.016	0.019	0.015	0.019	0.001	-0.001	0.025	0.017	0.025
	(0.024)	(0.024)	(0.027)	(0.027)	(0.027)	(0.028)	(0.029)	(0.030)	(0.030)	(0.030)	(0.028)	(0.030)	(0.030)	(0.027)	(0.030)
d199	-0.028	-0.029	0.011	0.009	0.010	-0.029	-0.032	0.010	0.007	0.010	-0.005	-0.005	0.018	0.015	0.019
	(0.029)	(0.030)	(0.016)	(0.015)	(0.016)	(0.029)	(0.031)	(0.016)	(0.016)	(0.017)	(0.014)	(0.015)	(0.018)	(0.015)	(0.018)
Log of initial GDP						-0.030	-0.020	0.005	0.022	0.006	-0.000	-0.010	0.019	0.076	0.018
						(0.031)	(0.020)	(0.017)	(0.030)	(0.020)	(0.020)	(0.015)	(0.023)	(0.049)	(0.027)
Log initial secondary school enrollement						0.048	0.065	-0.022	-0.027	-0.019	0.084	0.075	-0.077	-0.131	-0.079
						(0.044)	(0.051)	(0.068)	(0.067)	(0.078)	(0.049)*	(0.049)	(0.094)	(0.102)	(0.098)
Governement expenditure to GDP											-0.028	-0.015	-0.090	-0.138	-0.090
											(0.039)	(0.041)	(0.045)*	(0.058)**	(0.045)*
Openness											-0.042	-0.039	0.051	0.084	0.051
											(0.025)	(0.027)	(0.047)	(0.059)	(0.048)
Constant	0.011	0.021	-0.035	-0.019	-0.026	0.218	0.213	-0.090	-0.136	-0.086	0.154	0.170	-0.309	-0.588	-0.311
	(0.079)	(0.057)	(0.030)	(0.058)	(0.053)	(0.114)*	(0.116)*	(0.162)	(0.173)	(0.166)	(0.090)*	(0.085)*	(0.251)	(0.336)*	(0.251)
Number of Observations	61	61	56	56	56	61	61	56	56	56	60	60	56	56	56
R2	0.30	0.30	0.44	0.44	0.44	0.34	0.33	0.44	0.44	0.44	0.40	0.39	0.47	0.51	0.47

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 10. Estimated impact of financial depht on economic growth in South East Europe using Foreign banks' penetration as a proxy for financial depht

Dependent variable: Real GDP per capita growth rate, 1993-2003

Two-stage least squares estimation

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Foreign bank penetration	0.040	0.059	0.055	0.054	0.057	-0.033	0.017	0.046	0.033	0.009	-0.002	-0.029	-0.004	0.016	-0.079
	(0.036)	(0.034)*	(0.032)*	(0.032)	(0.032)*	(0.090)	(0.052)	(0.042)	(0.064)	(0.065)	(0.069)	(0.075)	(0.044)	(0.070)	(0.084)
EBRD transition indicators	0.018			0.003		0.064			0.015		-0.012			-0.026	
	(0.031)			(0.018)		(0.079)			(0.047)		(0.039)			(0.067)	
EBRD banking sector reform		0.000			0.005		0.024			0.036		0.006			0.056
		(0.018)			(0.014)		(0.044)			(0.044)		(0.035)			(0.049)
LLSVcred98			0.010	0.010	0.010			0.014	0.013	0.017			0.037	0.041	0.045
			(0.006)*	(0.006)*	(0.006)			(0.010)	(0.010)	(0.011)			(0.017)**	(0.023)*	(0.016)***
Infl=highinfl*((1/inflation)-(1/0.04))	0.001067	0.001662	0.001657	0.001650	0.001593	0.001296	0.001199	0.001383	0.001424	0.000814	0.001591	0.001470	0.002254	0.002241	0.001600
	(0.000626)*	(0.000750)**	(0.000738)**	(0.000731)**	(0.000728)**	(0.000716)*	(0.000970)	(0.000903)	(0.000895)	(0.001228)	(0.000922)*	(0.001008)	(0.001165)*	(0.001165)*	(0.001364)
Infl1=(1-highinfl)*((1/inflation)-(1/0.04))	-0.000063	-0.000149	-0.000052	-0.000045	-0.000034	-0.000205	-0.000190	-0.000002	-0.000009	0.000029	-0.000094	-0.000095	-0.000025	-0.000015	0.000017
	(0.000140)	(0.000144)	(0.000092)	(0.000101)	(0.000107)	(0.000140)	(0.000129)	(0.000117)	(0.000118)	(0.000118)	(0.000122)	(0.000127)	(0.000135)	(0.000132)	(0.000136)
d193	0.000	-0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.063)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
d194	0.008	0.014	0.016	0.018	0.020	0.012	0.004	0.011	0.018	0.017	-0.032	-0.032	0.011	0.001	0.018
	(0.039)	(0.033)	(0.030)	(0.034)	(0.033)	(0.046)	(0.037)	(0.036)	(0.040)	(0.038)	(0.018)*	(0.021)	(0.037)	(0.038)	(0.040)
d195	0.015	0.034	0.030	0.031	0.031	0.021	0.007	0.024	0.029	0.015	-0.003	-0.005	0.031	0.024	0.016
	(0.030)	(0.028)	(0.025)	(0.028)	(0.026)	(0.030)	(0.028)	(0.031)	(0.030)	(0.032)	(0.019)	(0.028)	(0.027)	(0.026)	(0.032)
d196	-0.001	0.003	0.012	0.013	0.014	-0.008	-0.007	0.006	0.008	-0.002	-0.024	-0.029	-0.005	-0.008	-0.023
	(0.029)	(0.028)	(0.025)	(0.025)	(0.025)	(0.027)	(0.028)	(0.026)	(0.026)	(0.028)	(0.029)	(0.035)	(0.032)	(0.032)	(0.035)
d197	-0.048	-0.040	-0.031	-0.030	-0.030	-0.058	-0.051	-0.037	-0.037	-0.047	-0.062	-0.070	-0.053	-0.054	-0.075
	(0.036)	(0.037)	(0.039)	(0.040)	(0.039)	(0.041)	(0.047)	(0.039)	(0.040)	(0.047)	(0.043)	(0.054)	(0.039)	(0.039)	(0.054)
d198	0.000	0.006	0.015	0.016	0.017	0.001	0.006	0.010	0.012	0.012	-0.006	-0.008	0.013	0.012	0.014
	(0.026)	(0.024)	(0.027)	(0.027)	(0.027)	(0.029)	(0.026)	(0.029)	(0.030)	(0.027)	(0.029)	(0.031)	(0.028)	(0.028)	(0.027)
d199	-0.039	-0.029	0.004	0.004	0.005	-0.036	-0.037	0.002	0.003	0.007	-0.010	-0.010	0.006	0.005	0.013
	(0.034)	(0.030)	(0.016)	(0.016)	(0.017)	(0.031)	(0.034)	(0.016)	(0.016)	(0.017)	(0.018)	(0.018)	(0.017)	(0.015)	(0.019)
Log of initial GDP						-0.039	-0.023	0.009	0.001	-0.003	-0.011	-0.019	0.025	0.041	0.008
						(0.036)	(0.023)	(0.017)	(0.028)	(0.025)	(0.021)	(0.023)	(0.025)	(0.053)	(0.033)
Log initial secondary school enrollement						0.005	0.007	-0.032	-0.032	-0.077	0.059	0.052	-0.103	-0.115	-0.178
						(0.050)	(0.060)	(0.071)	(0.072)	(0.097)	(0.058)	(0.062)	(0.107)	(0.114)	(0.118)
Governement expenditure to GDP											-0.038	-0.043	-0.120	-0.130	-0.149
											(0.046)	(0.053)	(0.055)**	(0.068)*	(0.059)**
Openness											-0.036	-0.039	0.056	0.065	0.062
											(0.027)	(0.027)	(0.050)	(0.063)	(0.047)
Constant	-0.023	0.021	-0.017	-0.025	-0.033	0.177	0.144	-0.103	-0.081	-0.126	0.142	0.160	-0.382	-0.456	-0.456
	(0.086)	(0.057)	(0.030)	(0.063)	(0.053)	(0.098)*	(0.097)	(0.167)	(0.176)	(0.174)	(0.086)	(0.087)*	(0.273)	(0.374)	(0.253)*
Observations	55	61	50	50	50	55	55	50	50	50	54	54	50	50	50
R-squared	0.30	0.30	0.37	0.37	0.38	0.29	0.30	0.37	0.37	0.37	0.29	0.27	0.38	0.40	0.36

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

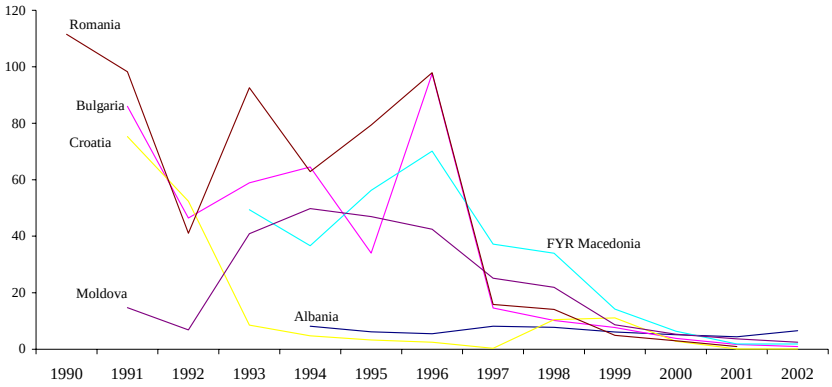
Table 9: The evolution of financial sectors in Southeast Europe since the start of transition:

		Financial depth	
		Shallow	Deep
Quality of the environment	Poor	*Non-developed financial sector*	*Socialist financial system*
			Financial sector prone to inflation and crises
	Good	*Stable financial sector, but not actively growth-supportive*	*Developed and growth-supportive financial sector*

Source: authors' own compilation.

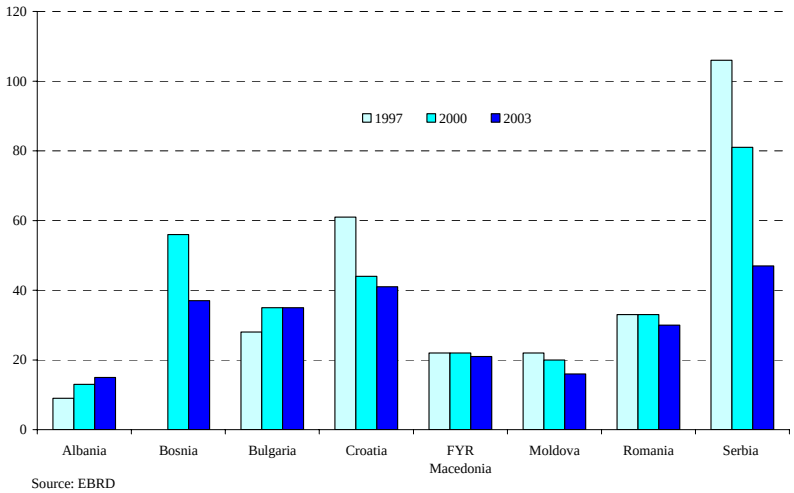
Chart 1: Monetary authorities' claims on deposit money banks as a share of reserve money

(in %)



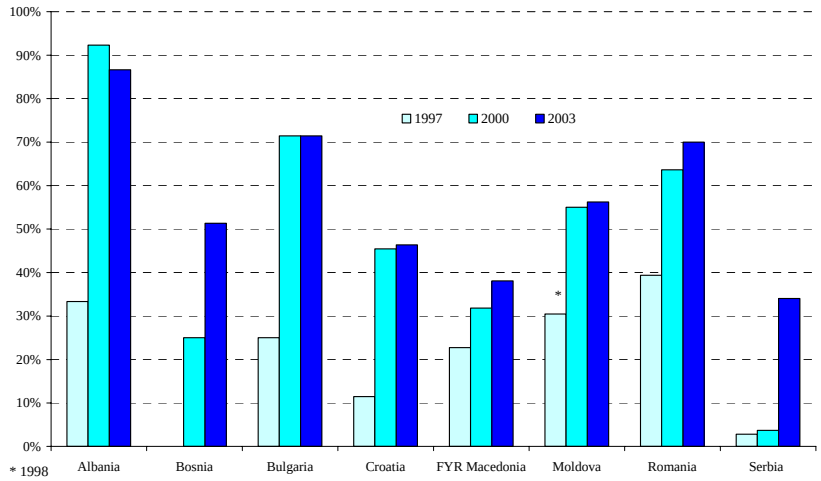
Source: IMF and authors' calculations.

Chart 2: Number of banks



Source: EBRD

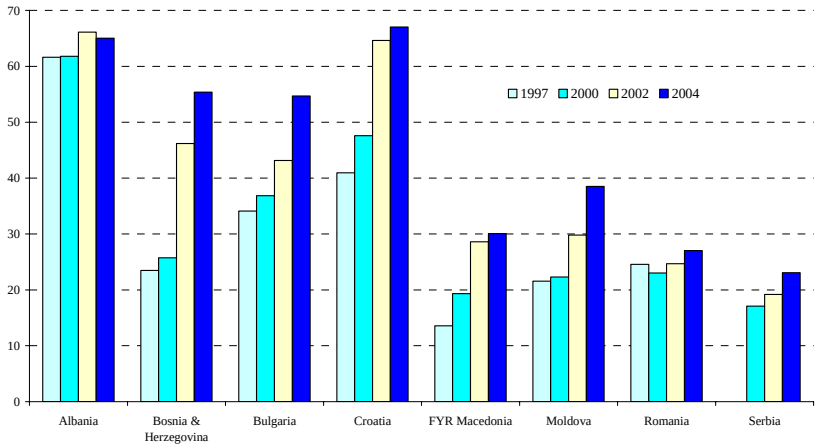
Chart 3: Share of foreign banks
(in total number of banks operating)



* 1998

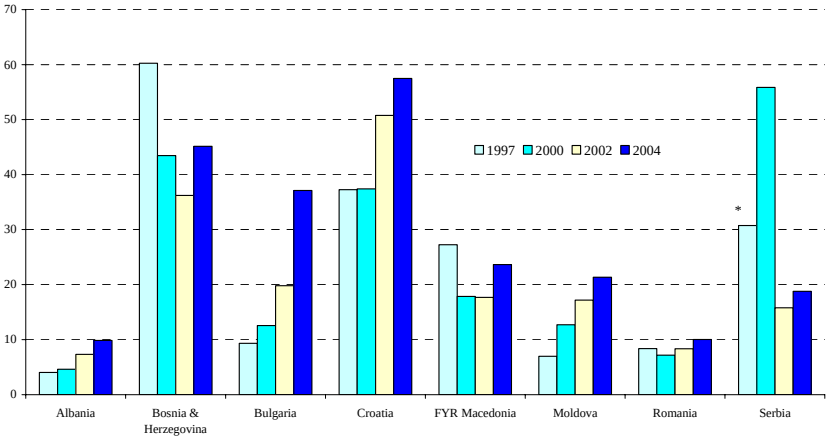
Source: EBRD, own compilation

Chart 4: Monetisation in Southeast Europe
(Broad money as a percentage of GDP)



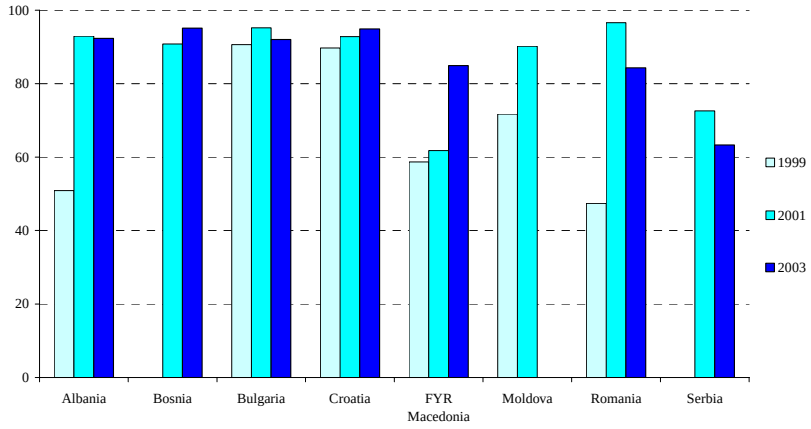
Source: IMF, national authorities, own compilation

Chart 5: Financial intermediation in Southeast Europe
(Claims on private sector as a percentage of GDP)



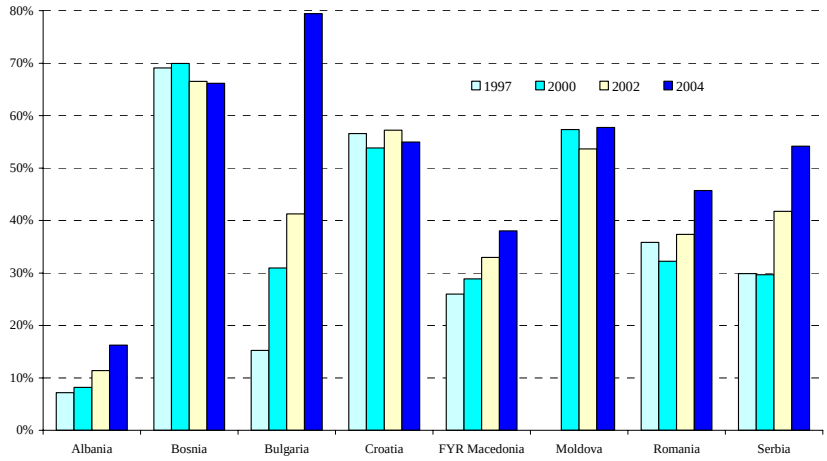
* 1998
Source: IMF, national authorities, own compilation

Chart 6: Loan portfolio quality
(Share of loans, as a percentage of total loan portfolio, that are classified in category A/Standard)



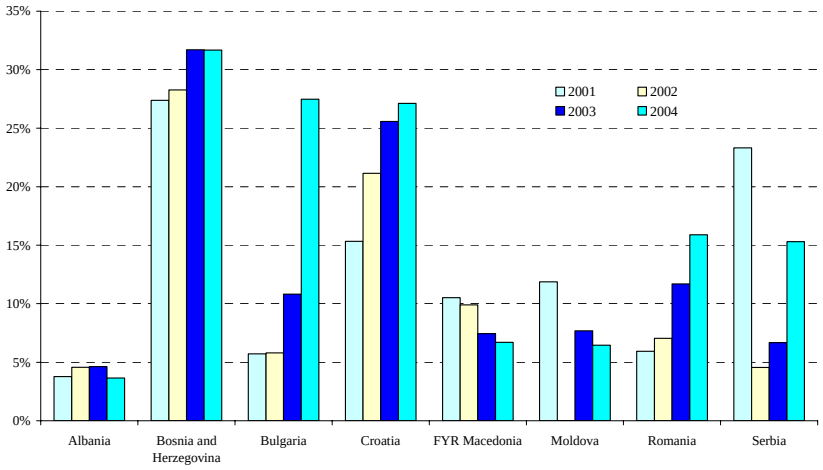
The 2003-decline of the ratio in Romania reflects a more stringent classification and provisioning system introduced in January 2003.
Source: national authorities, own compilation

Chart 7: Private sector claims
(as a percentage of total banking sector assets)



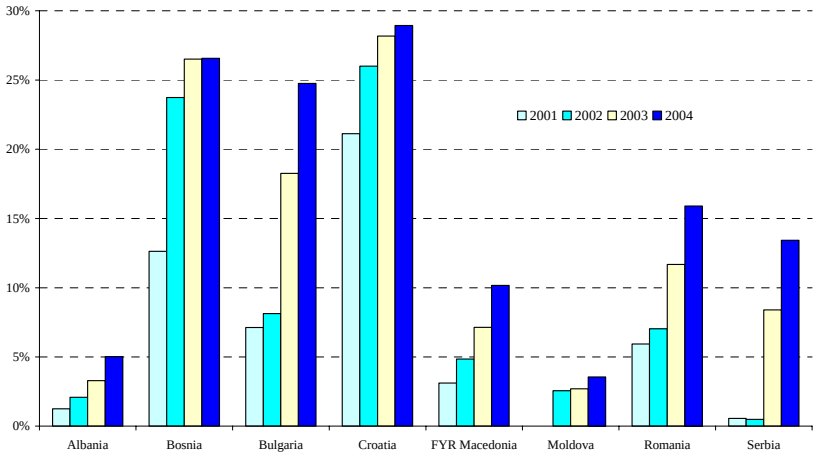
Source: National authorities, own compilation

Chart 8: Foreign liabilities of the banking sector
(as a percentage of total liabilities and equity)



Source: IMF, national authorities, own compilation

Chart 9: Claims on the household sector
(as a percentage of total banking sector assets)



Source: National authorities, own compilation

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