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## Signals of foreign bank entry on real sector FDI and foreign trade and their impact on economic development in the New EU Member States

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**Signals of foreign bank entry on real sector FDI and foreign  
trade and their impact on economic development in the New EU  
Member States**

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**Abstract**

Does financial sector foreign direct investment (FSFDI) trigger general capital inflows and foreign trade? Do these inflows to New EU Member States (NMS) provide positive signals (Spence, 1973) towards economic development or “crowd out” investment and trade? While the direct impact of financial deepening has received much attention (Hasan, Wachtel, Zhou, 2006; Detragiache, Tressel, Gupta, 2006), indirect effects have received less consideration. To fill this gap, we review the literature on possible links and provide descriptive data for NMS. We apply regression analysis and find coherence between FSFDI and non-financial FDI and trade in Bulgaria and Croatia, but there are various directions in which developmental repercussions can go and the impact on trade is not as significant as the effect on non-financial FDI. We argue that the relative impact of FSFDI, real sector FDI and trade needs to be taken into consideration in shaping economic policies conducive to economic development.

Key Words: foreign banks, economic development, foreign trade, FDI, signal theory  
JEL-codes: E44, F15, F36, G21, O11, P34

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## 1. Introduction

During the past 15 years a great expansion of foreign banks into Central and Eastern Europe (CEE), the Baltic States and South-Eastern Europe has occurred. The main motivation behind these financial sector foreign direct investments (FSFDI) is built on promising growth prospects and higher interest margins in the host country compared to those in their home country (EBRD 2006a, 28). As a consequence, foreign banks (mostly from the “old” EU-15) now account for 80-90% of total banking assets in most of the New Member States (NMS) and the Accession Countries (AC). Only Slovenia and Turkey show a rather low level of foreign bank involvement comparable to the Euro area of 16% (ECB, 2006). With the financial sector alone accounting for about 20% of total FDI stock in the region (WIIW 2006), equivalent to about 8% of GDP (Eller, Haiss and Steiner, 2006), what are the implications of this massive inflow?

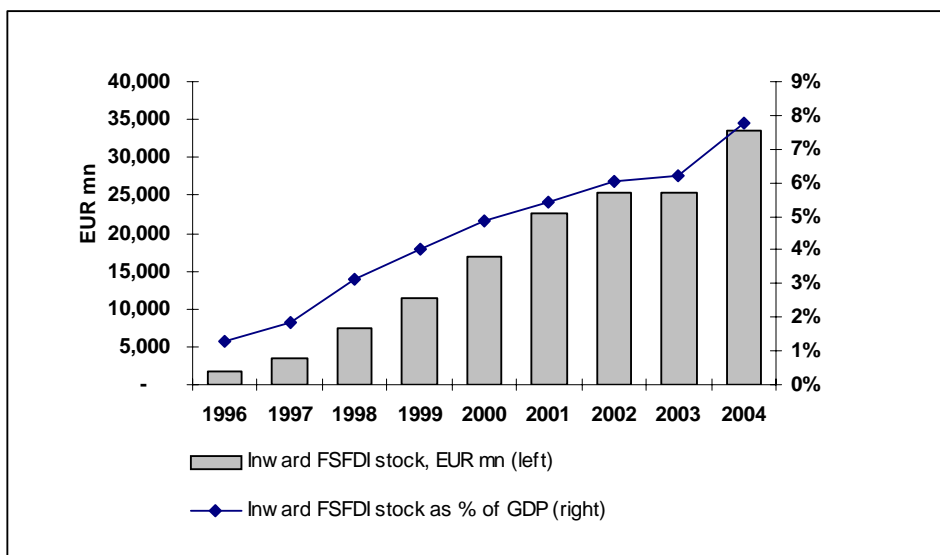


Figure 1: Inflow of FSFDI to CEE-10 (Source: Eller, Haiss and Steiner 2007)

There is indeed a growing body of literature on whether and how this massive financial sector foreign direct investment (FSFDI) has directly supported economic development and provides a competitive advantage to the host country. Firstly, with regard to the “volume channel”, Detragiache, Tressel and Gupta (2006), Mihaljek (2006) and Arena, Reinhart and Vázquez (2006) analyze whether foreign banks promote capital accumulation, i.e. whether they promote growth by lending more, with rather mixed results. There is related research whether foreign banks lend more to certain sectors of the host economies, e.g. to large versus small companies (Gianneti and Ongena 2005). Secondly, with regard to the “efficiency channel”, whether foreign banks improve the productivity of the host country financial sector and of the economy at large (e.g. Eller, Haiss and Steiner 2006; Hermes and Lensink 2003; Lehner, 2007), with rather positive results. Thirdly, with regard to the financial market stability (“governance channel”), i.e. whether foreign banks improve the regulatory environment and add to financial market stability (Faria and Mauro, 2004; de Haas and van Lelyveld 2006). Indirect effects of FSFDI onto the host economies development, e.g. via influencing trade flows, by attracting general FDI and by drawing foreign investment into the local stock markets (foreign portfolio investment,

FPI), however, have received much less attention, perhaps with the exception of whether foreign banks follow their major corporate clients in entering host countries or not (e.g. Focarelli and Pozzolo 2005; Haselmann 2006).

Given the enormous and highly visible volumes of capital inflows and the massive public and media attention that the foreign bank takeovers of most of the Central, Eastern and South-Eastern European markets receive, we argue that these indirect, collateral-type implications of FSFDI could also be massive. If investors who are regarded as rather cautious and risk averse (a usual perception of banks) enter and invest into a certain market, this initial move may pull in followers (Eller et al. 2007). After all, banks' core business is to acquire information about firms, business conditions and policy changes to overcome asymmetric information problems (Levine 1996; Mehl, Crespo and Winkler 2006). They provide price information that helps coordinate decentralized decision-making in various sectors of the economy (Merton and Bodie 1995). So any such large-scale move by banks (e.g. of the acquisition of Bulbank in Bulgaria 1994 or more recently of BCR in Romania) should provide strong signals in the sense of the Spence (1993) "signal model" to other market participants (export/import traders; industrial investors from other sectors; financial investors) to follow that bold banks' move and thus support economic development. Additional non-financial portfolio investment as well as non-financial FDI might be drawn in, which in turn can influence economic development (Durham 2003).

We build on the Spence (1973) signal theory and contribute to the literature by (1) combining research on the impact of the financial sector on growth with research on the impact of FDI; (2) extending previous research about foreign bank investment from direct effects (credit volume, efficiency, governance) to indirect effects; (3) establishing possible links between FSFDI and trade and between FSFDI and general FDI and (4) providing descriptive data and applying regression analysis for selected countries to empirically investigate these possible links. We focus on the following research questions: What are the repercussions of foreign bank entry on the level of trade in the country receiving the direct investment? What are the effects on non-financial FDI succeeding foreign bank entry? What are the effects of FDI-inflows of banks on the non-financial FDI-inflows to Croatia and Bulgaria and the rate of change of imports and exports of these countries?

In the empirical part, we concentrate on Bulgaria and Croatia over the 1999-2005 period in order to assess possible effects of foreign bank entry in transition countries, which differ considerably from those in industrialized countries. Among European transition countries, Croatia and Bulgaria are of special interest: Firstly, both took longer for integrating into the EU than many other former transition economies. Bulgaria joined the European Union in 2007 and Croatia has been conducting accession negotiations since October 2005, thus, there is a long time period for sending "signals". Secondly, both countries' banking markets essentially became foreign-owned after major banking crises, so there is a basis for "strong" signals of foreign banks (Kreditschutzverband 2002, 16).

For these two countries, we find coherence between FSFDI and the level of non-financial FDI and a weaker link between FSFDI and foreign trade. While so far massive foreign bank entry was mainly evaluated with a narrow focus on financial market implications (loan growth, bank efficiency, financial sector stability), we

conclude that these indirect effects also need to be taken into consideration. Although more robust empirical evidence for a larger sample of countries is necessary, our preliminary empirical results suggest that foreign bank investment into emerging markets can trigger growth in foreign trade, in FDI into other sectors and in investment into host country stock markets (i.e. foreign portfolio investment) that is conducive to economic development and competitiveness of the host country.

The remainder of the paper progresses as follows: Section 2 presents four transmission channels which explain various ways in which FSFDI stimulates economic growth and further examines the signal channel in greater detail, in particular the effects of foreign bank entry on non-financial FDI and on trade. Following this theoretical background, Section 3 presents the paper's survey of Bulgaria and Croatia: For each country the effects of FSFDI on non-financial FDI and trade are examined with the help of descriptive data and regression analyses. Finally, Section 4 draws main conclusions while Section 5 proposes directions for future research.

## **2. Literature Review**

### **2.1 Transmission channels between FSFDI and economic growth**

Finance-growth theory suggests that financial services affect economic growth. More precisely, literature concentrates on four channels providing the linkages between FSFDI and economic growth. In 1996, Levine defined two channels, namely the "volume channel" and the "efficiency channel", followed by Haiss et al. (2005) defining the "corporate governance channel" and the "signal channel". The following sections provide a review of adequate research findings concerning these four transmission channels.

#### **2.1.1 Volume Channel**

Bol et al. argue that foreign banks replaced domestic banks as creditors for the public and the private sector in CEE (Bol et al. 2003, 15). Partly owing to the backup by their holding companies, foreign-owned banks may grant a higher volume of credit in the host country, thus increasing the level of investment and growth (Eller et al. 2007, 6). However, Detragiache, Tressel and Gupta (2006) empirically investigated the relation between foreign bank penetration and credit growth in poor countries, showing that poor countries with a higher bank presence exhibit slower credit growth (Detragiache et al. 2006, 21). Giannetti and Ongena (2005) used data of listed and unlisted companies in 14 Eastern European transition economies and assumed that foreign banks may not be able to serve as a credit source for small firms because they might lack local or soft information, the latter being especially crucial since it is often the only information available on small and young firms. Indeed, their findings suggest that while foreign lending improves credit allocation and stimulates growth in firm sales, assets and leverage, effects for small firms are dampened: Small firms have a lower market share and a lower proportion of total assets in countries with stronger foreign bank presence (Giannetti and Ongena 2005, 33). Finally, Mihaljek (2006) highlights the significant increase of the share of household loans in total loans

granted by foreign banks in the last five years, especially in Hungary, Korea and Turkey (Mihaljek 2006, 53).

The preceding review shows that the effects of foreign bank entry on the credit volume depend on some main factors: While on the macroeconomic level the repercussions depend on the stage of development of the host country, on the microeconomic level, the size and age of the firm are crucial to assess the possible benefits or losses due to foreign bank presence.

### 2.1.2 Efficiency Channel

Foreign banks can improve the efficiency with which economies combine capital and labour in production (Levine 1996). FSFDI may increase financial sector efficiency on the microeconomic level by transferring superior managerial skills, bank management systems and technology to the target bank (Amel et al. 2002). Better diversification of risks, lower transaction costs and improved pooling and allocation of financial resources to projects of higher productivity may result in macroeconomic efficiency gains (Eller et al. 2007). In an efficient financial sector, narrower net interest rate margins can enhance investment activity and stimulate economic growth (Holló and Nagy 2006). Technology changes and an introduction of new products by foreign investors may stimulate financial market development (Eller et al. 2007, 5). Drawing on the experience of U.S. banks abroad, Goldberg (2004) argues that FSFDI from well-regulated countries improves the risk management tools of the host emerging market (Goldberg 2004, 18) and leads to a more efficient credit allocation (Goldberg 2004, 8).

The preceding arguments implicate that foreign owned banks are more efficient. Eller, Haiss and Steiner (2006) find a hump-shaped impact of FSFDI on economic growth via the efficiency channel for 11 CEE countries. Green et al. (2004) show that foreign banks cannot exploit higher efficiency in terms of economies of scale and scope than an average domestic bank (Green et al. 2004; 2, 17). The underlying cause of this contradictory result might be the initial costs foreign owners have to bear when modernizing the acquired bank, which signifies a time lag for cost efficiency to occur (Haiss et al. 2007, 6). Finally, Papi and Revoltella (2003) stress the importance of a certain threshold of foreign ownership in order to influence the acquired bank's efficiency.

### 2.1.3 The Corporate Governance Channel

Some policy makers in CEE aim at attracting foreign banks based on the assumption that foreign bank presence improves the quality of their banking system (De Haas and Van Lelyved 2002, 5). Indeed, foreign-owned banks are less involved in connected lending as they need to comply with internal group-wide risk management rules which contribute to a reduction in bad loans (Fink et al. 1998, 433).

As to impacts on supervision, the entry of sound foreign banks leads to an import of efficient supervision, which may have a positive impact on the stability of the domestic banking system (Roldos 2001, 8). Moreover, there is a need to improve the ability of emerging markets' supervisors to analyse the rising use of new financial products (particularly OTC derivative products) by international banks, since these products can be used to evade regulations (Roldos 2001, 13). This reorientation of the

legal environment contributes to institutional quality, i.e. the absence of corruption, red tape, or political violence (Faria and Mauro 2004, 3).

#### 2.1.4 Signal Channel

In 1973, Michael Spence furthered the literature on signaling theory by constructing a job market signaling model. In this framework he aims at determining the signaling power of personal characteristics in the job market: Since hiring is an investment under uncertainty, the employer tries to reduce the risks involved by drawing on indices (i.e. observable, unalterable attributes) and on signals, being observable characteristics of the individual that are subject to manipulation by him (Spence 1973; 356, 357). In the following years he continued to examine signals, referring to things “*that would carry information persistently in equilibrium from sellers to buyers, or more generally from those with more to those with less information*” (Spence 2002, 434). We extend this signaling theory to signals which FSFDI may provide towards economic integration and development via the stimulation of non-financial FDI and trade. As to the contribution to non-financial FDI, banks may have more information about the foreign markets they entered and consequently send signals to investors from their home country who benefit from the information exchange with these banks. Besides adding physical capital and efficient banking technology, FDFDI inflows may catalyse “collateral benefits” (Kose et al. 2006), such as contributing to improve the host country economic environment by importing “reputational capital” (Hellmann and Murdock 1998). FSFDI and the presence of reputable foreign-owned banks may send signals towards merchandise trade and non-financial FDI, thus indirectly contributing to economic growth. Since this paper focuses on this particular channel, the next section provides a literature review concerning the potential signals of foreign bank entry. For each of the links discussed – FSFDI/trade; FSFDI/non-financial FDI – we will start by discussing general FDI vis-à-vis these links, and then add FSFDI vs. the links.

## **2.2 Signals of foreign bank entry**

### 2.2.1 Foreign bank entry and non-financial FDI

When examining the impacts of foreign bank entry, the effects of the foreign investor on the home economy have to be considered as well. Studies in the United States undertaken by Goldberg and Johnson (1990) and Miller and Parkhe (1998) both show a positive correlation between non-bank and bank FDI inflows. Furthermore, Brealey and Kaplanis (1996) introduced an analysis of nearly 2000 overseas offices across 37 parent and 82 host countries. They draw the conclusion that countries with the highest foreign bank presence registered the greatest level of non-bank FDI links, although the relationship between the location of bank offices and trade or FDI is not very strong (Brealey and Kaplanis 1996, 594). Besides, Focarelli and Pozzolo (2005), by conducting a survey of 260 large banks from OECD countries, show a positive relationship between banks’ choice of location and non-bank FDI. However, this relationship is less significant than other factors in determining banks’ FDI decisions (Soussa 2004, 5). Besides, this finding does not support the argument that foreign bank entry influences non-financial FDI because it refers to decision criteria chosen by banks when entering foreign markets, which is in this case the level of non-bank

FDI. Still, this finding is crucial to our analysis, because for a sound interpretation of the results both possible directions of causalities have to be kept in mind.

In this context, Clarke et al. (2002) underline, by drawing on various studies (Ball and Tschoegl 1982, Grosse and Goldberg 1991, Goldberg and Saunders 1980, Yamori 1998), that the causality between non-financial sector FDI and banking sector FDI is blurred. Firstly, the causality might run in the opposite direction. Secondly, some factors, which have been neglected in the studies, stimulate FDI in both sectors: Most studies use market size measured by GDP or population and foreign trade links between home and host countries, their results showing that market size and trade are positively related to banking sector FDI. But this positive connection between banking- and non-financial FDI does not imperatively mean that foreign banks finance only the affiliates of clients from their home countries (Clarke et al. 2002, 5).

Concerning the eventual effects of this intra-relations, these likely repercussions of financial-sector foreign direct investment on non-financial FDI may indirectly lead to an overall better performing banking system, since efficiency rises due to the increased number of new and potential entrants (Cárdenas et al. 2003, 3). In this context Sohinger (2005) touches upon the so-called “economic conditionality”, which refers to the long-term quality of FDI and the changes of the economic system as a whole. These economic changes result – in the long run – in growth. But for this economic conditionality to happen, transparency and institutional quality of the host country are crucial (Sohinger 2005, 90): *“If an investor-friendly environment is in place, both for domestic and foreign investors, FDI will flow to that economy regardless of any extra measures designed to promote FDI entry, as their potential alone can never be powerful enough. In fact, it will flow only to those places that can provide such environments.”* (Sohinger 2005, 91) Consequently, one could argue that foreign banks enhance transparency and the institutional quality of the host country by providing an improved mix of services, thus attracting non-financial FDI and eventually leading to growth.

### 2.2.2 Foreign bank entry and trade

Empirical evidence supports a positive impact of overall FDI on trade. Developing host countries benefit from FDI in terms of trade because they are integrated more closely into the world economy in a process expected to include higher imports and exports (OECD 2002, 91). Besides, Walkenhorst (2004), examining the determinants of inward manufacturing FDI in Poland, emphasises the complementarity of trade and FDI in the transition process and suggests a positive impact of FDI on trade between CEE-countries and Western European countries (Walkenhorst 2004, 13): *“FDI and trade are complements, rather than substitutes, in the transition process”* (Walkenhorst 2004, 21). Concerning empirical evidence on FDI’s impact on goods exports, UNCTAD (1999) highlights the critical role of multinational enterprises (MNEs) from developed countries in the initial stages in stimulating labour-intensive exports from developing countries (UNCTAD 1999, 234). Moreover, Chen (1997) proves a positive and statistically significant impact of FDI on China’s goods exports and on provincial trade flows among Chinese provinces (Chen 1997, 36). Finally, long-term impacts of FDI improve the host country’s export competitiveness due to the effects of FDI on competition, enterprise restructuring, human capital formation and technology transfer (OECD 2002, 83). As to the impact of FDI on goods imports there are two forms of effects, namely a direct impact due to the actual investment and the repercussions on the import pattern of the targeted enterprises (OECD 2002, 85).



Focusing on the former impact, empirical evidence suggests that FDI leads to an increase in goods imports, although this effect is likely to weaken over time (OECD 2002, 86). To sum up, these FDI-trade linkages explain why policy makers in developing countries consider FDI as a potential vehicle for boosting export performance and stimulating import-competing production in the host economy (OECD 2002, 77).

Levine (1996) argues that financial systems facilitate trade. Concentrating on financial-sector foreign direct investment, there are two directions in which the repercussions can go: While foreign bank entry can lead to increased trade, a higher level of trade may stimulate bank expansion. The evidence of the latter is more evident, which should be explained with the help of a study conducted by Goldberg and Saunders (1980). They used the level of U.S. exports as a measure of business activity of U.S. firms abroad and suggested that a higher level of exports may result in an increased overseas presence of American banks (Goldberg and Saunders 1980, 633). Indeed, their results show that exports to the U.K. were positively correlated with the amount of US bank FDI in the U.K. (Soussa 2004, 4).

Consequently, recent studies seem to focus on the argument that trade stimulated bank expansion. However – or rather, that is why – this paper’s survey focuses on the first direction, i.e. the impact of financial-sector foreign direct investment on trade. Some studies already exist which support the positive correlation between foreign bank presence and an increased level of trade. For example, the international study of bank FDI (see Section 2.2.1) leads Brealey and Kaplanis (1996) to the conclusion that there may be a relationship between the location of overseas offices of large banks and trade, again highlighting the uncertainty behind such a conclusion owing to the correlation between different economic variables (Brealey and Kaplanis 1996, 594). Furthermore, by drawing on Easterly (2001), Rhee and Belot (1990), Alfaro et al. (2004) show that the lack of financial markets can constrain potential entrepreneurs with reference to export industries: After the establishment of a textile plant by Daewoo in Bangladesh in 1979, a textile export industry emerged. Although in this case the trigger technically was not a foreign bank, the Bangladeshi workers would not have been able to set up the factories without the help of external finance: “*Had loans not been forthcoming to finance their enterprises and many export industries that followed, it is unlikely that garment exports from Bangladesh would have increased from \$55 000 in 1980 to \$2 billion in two decades*” (Alfaro et al. 2004; 91, 92).

Still, Sohinger (2005), who examined growth in transition economies, questions the influence of overall services sectors FDI on the host country’s export competitiveness – countries with larger stocks of manufacturing FDI (such as Hungary) seem to have greater growth in their export competitiveness than countries that received more FDI in their services sectors, like Croatia (Sohinger 2005, 84): “*Restructuring in production has resulted in the increase and restructuring of exports, in raised technological content, and in their reorientation toward developed countries’ markets, mostly toward the European Union.*” (Sohinger 2005, 91, 92) In most transition economies, telecommunications and financial intermediation (banking in particular) were the service sector industries to receive the majority of the capital inflow. Regarding the final impact of this relationship between foreign bank entry and trade, foreign-bank entry in particular leads to increasing efficiency and reduced transaction costs in the business environment. However, those efficiency gains are not as readily measurable as manufacturing FDI (Sohinger 2005, 92).

### **3. Analysis of Bulgaria and Croatia**

After this literature review, coherence between FSFDI and trade, and FSFDI and non-financial FDI is tested in an empirical framework by drawing on descriptive data and regression analyses. Most of the data was provided by the *Vienna Institute for International Economic Studies* (Wiiw) and various *Transition Reports* of the *European Bank for Reconstruction and Development* (EBRD).

#### **3.1 Facts about the financial sector and FDI**

##### **3.1.1 Bulgaria**

The prospect of EU entry was a continuous trigger for FDI into Bulgaria: In 2006, FDI accounted for 13.2% of projected GDP between January and October (UniCredit Group 2006, 3). Net non-FDI inward inflows, which consist of portfolio plus loans plus deposits, represented 6.5% of GDP<sup>3</sup> (UniCredit Group 2006, 7, Chart 4). During the full year of 2006, 286 FDI-projects were realised, accounting for a total capital investment of US\$11.67 bn (Locomonitor 2007a). Besides, Euro zone companies recently continued to shift their production to Bulgaria, thus increasing export growth, which reflects the sustainability of Bulgaria's external competitiveness (IIF 2006, 1). As to earlier years, Bulgaria did not receive as much FDI in 2005 as in 2004, when telecommunications became the most important economic activity in FDI stocks. Thus, the share of manufacturing FDI decreased to 20% of total FDI in 2005 (wiiw 2006, 10, 79). In 2007, up to the end of April, 36 FDI-projects were realised, amounting to a total capital investment of US\$876.01 mn (Locomonitor 2007a).

A measure of the extent to which a country receives inward FDI relative to its economic size is the *UNCTAD Inward FDI Performance Index*, which is the ratio of a country's share in global FDI inflows to its share in global GDP (UNCTAD 2006, 38). Considering the period of 2003-2005<sup>4</sup>, Bulgaria ranked ninth (UNCTAD 2006, 22, Table I.8). Furthermore, Bulgaria was among the countries with high FDI potential and performance in 2004<sup>5</sup>, when comparing their inward FDI performance and potential by using the UNCTAD indices (UNCTAD 2006, 22, 24, Table I.10.).

Hereafter, important figures of the financial sector and FDI inflows are presented. Table 1 is of particular importance, because it illustrates the bank crisis of 1995/96 reflecting the following increase in foreign bank presence. In this context Roldos (2001) shows that "[...] *a previous banking crisis and improved macroeconomic conditions are likely to lead to greater foreign participation and control.*" (Roldos 2001, 8) This coherence of foreign bank entry and bank crisis may be explained by the suggestion that countries often turn to foreign banks for restructuring the domestic banking system (Roldos 2001, 8).

	1991	1992	1993	1994	1995	1996	1997	1998
Number of banks	75	79	41	40	41	42	28	34
(of which foreign-	(0)	(0)	(0)	(1)	(3)	(3)	(7)	(17)

<sup>3</sup> 4 Quarter moving average

<sup>4</sup> "three-year moving averages of FDI inflows and GDP, using data for the immediate past three years including the year in question." (UNCTAD 2006, 22)

<sup>5</sup> "three-year average for 2002-2004. Because of unavailability of data on FDI potential for 2005, the data for 2004 have been used." (UNCTAD 2006, 24)

owned)								
FDI inflows (US\$mn)	56	42	40	105	98	138	507	537

Table 1: Bulgaria – FDI inflows and foreign banks, 1991-1998 (Sources: EBRD Transition Reports)

	1999	2000	2001	2002	2003	2004	2005	2006
Number of banks (foreign-owned)	34 (22)	35 (25)	35 (26)	34 (26)	35 (25)	35 (24)	34 (23)	32 (23)
Asset share of foreign-owned banks (in %)	42.8	75.3	72.7	75.2	82.7	81.6	74.5	80.1

Table 2: Bulgaria – foreign banks, 1999-2006 (Sources: EBRD Transition Reports)

	1999	2000	2001	2002	2003	2004	2005
Inward FDI stock as a percentage of GDP	19.7	17.7	20.6	21.3	28.0	34.6	39.8
FDI inflows (US\$mn)	802	998	803	867	2,070	2,777	2,223

Table 3: Bulgaria – FDI inflows, 1999-2005 (Sources: EBRD Transition Reports, UNCTAD 2006, WIIW 2006)

Figure 2 gives a snapshot of recent annual changes in significant key figures. The red line represents the progression of financial intermediation FDI inward stock, used to model the development of FSFDI in Bulgaria. Real GDP growth, almost stagnating, is shown in order to provide a benchmark and the sum of merchandise exports and imports is the measure used for trade. Net equity investment represents the level of Bulgaria's direct investment and portfolio investment. The chart shows that in 2002, when FSFDI change was negative, there was a decrease both in trade and total FDI. In 2003, a high increase of FSFDI was recorded, simultaneously with a significant rise in total FDI and trade. The relation between FSFDI and net equity investment does not seem to be that evident - in fact, the snapshot does not provide a significant coherence at all.

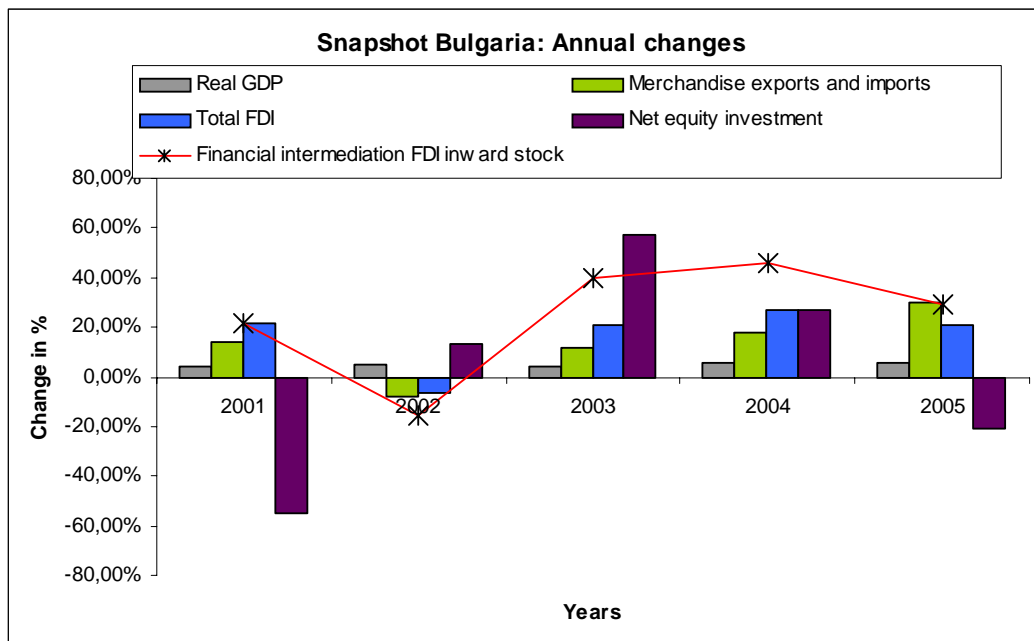


Figure 2: Bulgaria – a snapshot of annual changes between 2001 and 2005

### 3.1.2 Croatia

FDI has been relatively low in comparison to other countries in the region, although increases have been recorded. 37 FDI-projects were recorded in 2006, amounting to a total capital investment of US\$147.08 mn, which shows a clear setback in comparison to Bulgaria. In 2007, up to the end of April, 4 FDI-projects were realised with a total capital investment of US\$327.40 mn (Locamonitor 2007b). Most of FDI arose because of investments in privatisations, half of which were focused on supermarket construction and the banking and insurance sectors between 1993 and 2004. However, in order to promote further foreign investment, the Croatian government aims at attracting more foreign investors for large privatisations of state-held assets in the metals and financial sectors (Australian Government, Department of Foreign Affairs and Trade 2006). These FDI-related policies were improved by setting up “one-stop shops for FDI admission” (UNCTAD 2006, 25) and accession talks with the *European Union* may restructure their implementation even further (UNCTAD 2006, 81). Referring to the indices measured by *UNCTAD*, Croatia was one of the front-runners in 2004 as measured by the *FDI Potential Index*, characterized by high inward FDI performance and potential. But, unlike Bulgaria, it did not figure among the top 30 in the *Inward FDI Performance Index* (UNCTAD 2006, 23, 24). The following tables present important figures of Croatia’s financial sector and level of FDI.

	1992	1993	1994	1995	1996	1997	1998
Number of banks (of which foreign-owned)	na	43 (na)	50 (na)	54 (1)	58 (4)	61 (7)	60 (10)
FDI inflows (US\$m)	13	78	106	96	509	302	781

Table 4: Croatia – FDI inflows and foreign banks, 1992-1998 (Sources: EBRD Transition Reports)

	1999	2000	2001	2002	2003	2004	2005	2006
Number of banks (foreign-owned)	53 (13)	43 (21)	43 (24)	46 (23)	41 (19)	37 (15)	34 (13)	33 (15)
Asset share of foreign-owned banks (in %)	40.3	84.1	89.3	90.2	91.0	91.2	91.2	90.8

Table 5: Croatia – foreign banks, 1999-2006 (Sources: EBRD Transition Reports)

	1999	2000	2001	2002	2003	2004	2005
Inward FDI stock as a percentage of GDP	13.7	16.2	21.3	25.2	27.7	33.3	42.6
FDI inflows (US\$m)	1,420	1,085	1,407	1,213	1,700	1,262	1,695

Table 6: Croatia – FDI inflows, 1999-2006 (Sources: EBRD Transition Reports, UNCTAD 2006, WIIW 2006)

The snapshot in Figure 3 presents a positive picture of the progression of FSFDI. Furthermore, merchandise exports and imports and total FDI seem to increase simultaneously with FSFDI in almost every year. Unfortunately, the relation between FSFDI and net equity investment is not provided, since the figure would have been blurred due to the high increases in equity investment. However, for the sake of completeness, Table A2 provides the annual changes of net equity investment. Similar to Bulgaria, coherence between FSFDI and trade and the relation between FSFDI and non-financial FDI is analysed in the following section.

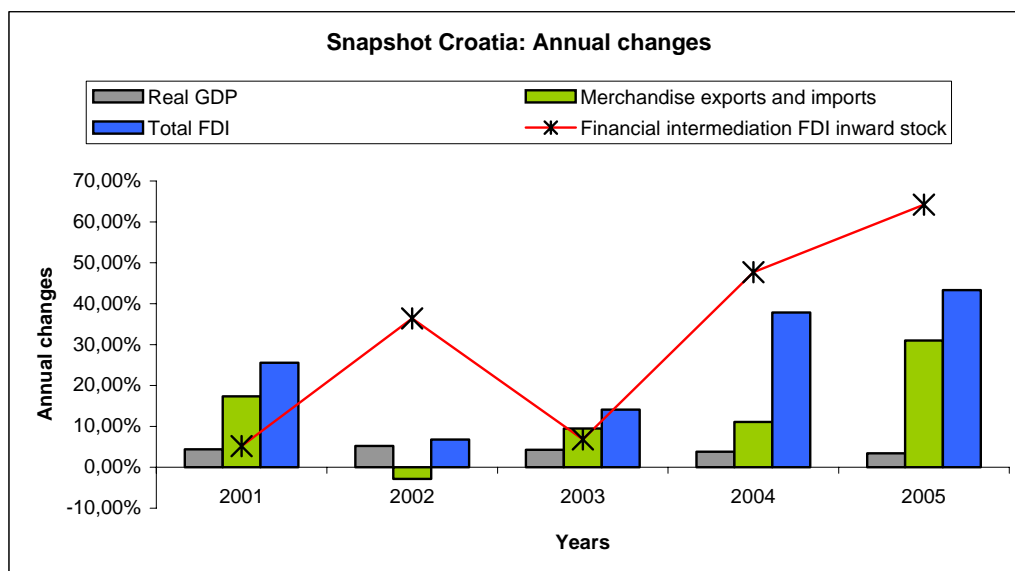


Figure 3: Croatia – a snapshot of annual changes between 2001 and 2005

In the following section the relation between FSFDI and trade and between FSFDI and non-financial FDI in Bulgaria and Croatia is discussed.

## 3.2 Statistical analyses

### 3.2.1 FSFDI and non-financial FDI-inflows

#### 3.2.1.1 Descriptive data

Although the paper's analysis does not show causality between the level of FSFDI and non-financial FDI, coherence between those two can be made evident in various ways. Descriptive data includes absolute numbers from 1999-2005, but focuses on annual changes from 2001-2005, since the considerable surge of FSFDI in 2000 (Bulgaria: 311.62%, Croatia: 143.61%) would have made it impossible to provide a sound trend line. Financial intermediation inward stock (in EUR) functions as a measure for FSFDI and the sum of total FDI inward stock minus the level of financial intermediation inward stock is calculated to present non-financial FDI. Figure 4 and 5 provide the corresponding charts for Bulgaria and Croatia.

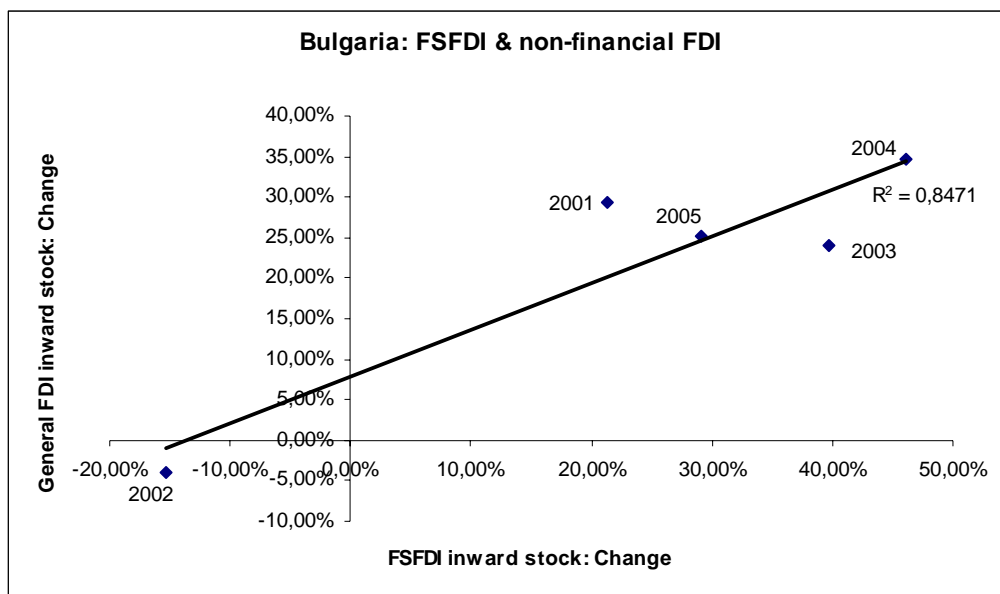


Figure 4: Bulgaria – annual changes of FSFDI and non-financial FDI between 2001 and 2005

Figure 4 shows an evident surge of FSFDI in Bulgaria in recent year. In 2002 annual changes in both variables were negative in Bulgaria. Besides, there seem to be similarities in the strength of the changes in both numbers.

Croatia presents a similar picture in Figure 5: In years with an increased level of FSFDI, non-financial FDI raised as well. During the presented period, FSFDI fell only from 2001 to 2002, when a decrease in non-financial FDI was recorded as well. Although the trend line is not as great as in the case of Bulgaria, there is still a clear upward movement. The year 2002 is of particular interest: While in 2002 FSFDI rose by 36.38%, non-financial FDI even decreased slightly, namely by 0.10%. However, the other years show an increase in both numbers, although recent annual changes in FSFDI are more significant than changes in non-financial FDI.

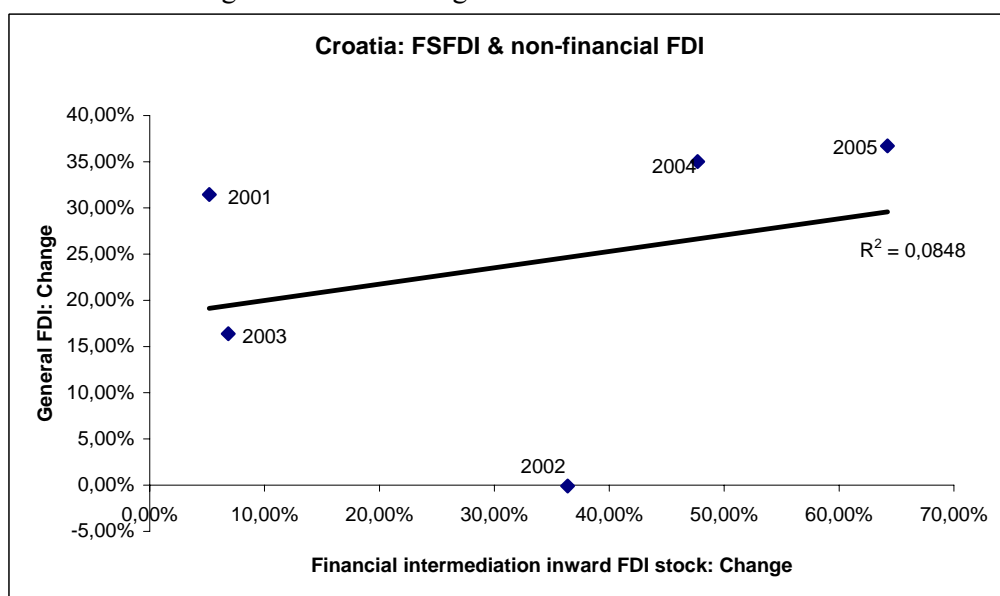


Figure 5: Croatia – annual changes of FSFDI and non-financial FDI between 2001 and 2005

### 3.2.1.2 Regression analysis

Though the preceding charts present the given figures in an adequate way, a regression analysis should produce the soundest results in order to model the relationship between FSFDI and non-financial FDI. The dependent variable is the level of non-financial FDI and the independent variable is the level of financial intermediation FDI inward stock. The examined period of time comprises the years from 1999 to 2005. The chosen confidence level is 95%. After the completion of a regression analysis it can be decided whether or not to reject the null hypothesis and accepting the alternative hypothesis, the latter suggesting that there is a relationship between FSFDI and non-financial FDI.

In order to interpret the regression analysis for Bulgaria presented by Table A7, certain steps have to be followed. Firstly, the coefficient of determination *R Square* is 0.97, which indicates that 97% of the variation in the dependent variable can be explained by the independent variable. Secondly, *Significance F* and *P-value* show the probability that the results came about by chance. They are smaller than the chosen significance  $\alpha = 0.05$ , which suggests a statistically significant association between the two variables. Thirdly, since the calculated *t-value* exceeds the *critical t-value* of 1.943, the means differ significantly with 95% confidence, thus FSFDI is a proper variable to identify the extent of non-financial FDI. Consequently, the regression analysis supports the alternative hypothesis: There is a statistically significant relationship between FSFDI and non-financial FDI.

Using the same approach, a simple linear regression for Croatia is presented in Table A8. *R Square*, is 0.9736, *Significance F* and *P-value* are smaller than the chosen significance  $\alpha$ . Again, the *critical t-value* of 1.943 is lower than the calculated *t-value*. That is why the null hypothesis can be rejected and the alternative hypothesis may be accepted, implying a statistically significant association between the two variables.

To sum up, regression analyses for Bulgaria and Croatia suggest coherence between FSFDI and non-financial FDI. However, the high level of *R Square* must be pointed out which may be explained by the mode of calculation of non-financial FDI. Furthermore, regression analyses do not show the direction of the effects and since foreign banks tend to enter countries with an already higher FDI-inward stock causalities might be blurred.

## 3.2.2 FSFDI and trade of Bulgaria and Croatia

### 3.2.2.1 Descriptive data

This section discusses the relation between foreign bank entry and the level of trade in Bulgaria and Croatia. The measure of FSFDI is again financial intermediation FDI inward stock. In order to present the extent of trade, the sum of merchandise exports and imports is the most adequate measure. The introduced analysis draws on absolute numbers from 1999-2005, but focuses on annual changes from 2001-2005 (as before, owing to the surges in FSFDI in 2000). Since the available data on the level of exports and imports in Bulgaria and Croatia is nominated in USD and the extent of FSFDI in EUR, exports and imports have to be converted into EUR. Similar to the approach of the *wiiw database*, which provides the necessary data of FSFDI, the end-of-year exchange rate is used. The approach in the case of Bulgaria is shown in Tables A9 and A10, while Tables A11 and A12 provide the coherent procedure for Croatia. Figure 6 and 7 present the coherence between FSFDI and trade in Bulgaria and Croatia.

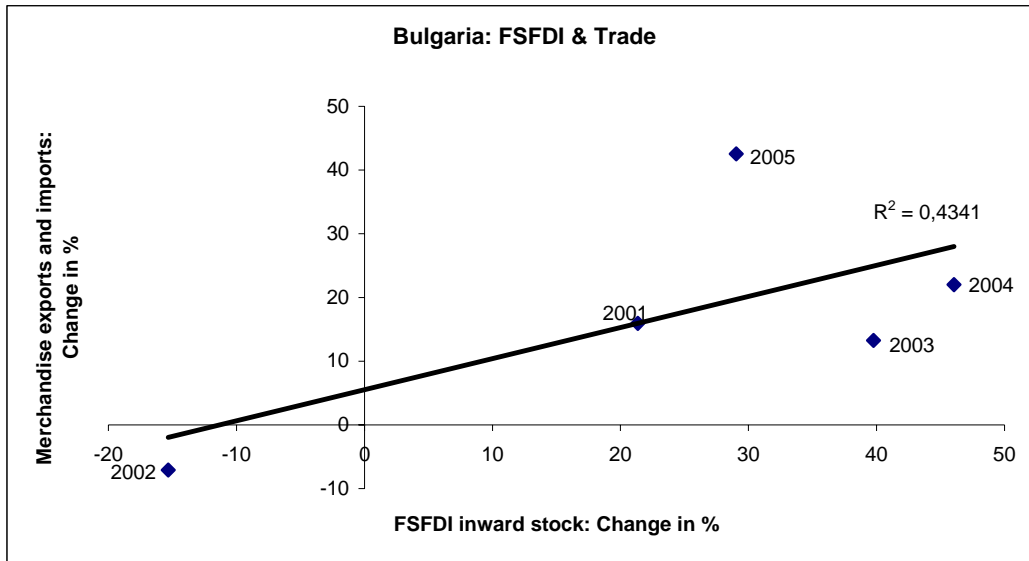


Figure 6: Bulgaria – annual changes of FSFDI and trade between 2001 and 2005

Figure 6 shows that there is a clear relationship between foreign bank entry and the extent of merchandise exports and imports in Bulgaria. In 2002, both FSFDI inward stock and merchandise exports and imports decreased. In 2005, both increased. Finally, a similar intensity of annual changes in FSFDI and merchandise exports and imports in the case of Bulgaria can be observed and the trend line shows an upward movement.

Figure 7 suggests that the sum of merchandise exports and imports usually increases simultaneously with FSFDI in Croatia. Consequently, one could argue that there seems to be a relationship between the movements of FSFDI and trade. However, the progression of the trend line is not as steep compared to that for Bulgaria. The year 2002 presents an ambiguous finding: While FSFDI surges by 36.38%, merchandise exports and imports decreased by 2.85%. Still, annual changes of the other years show clear similarities in their scope.

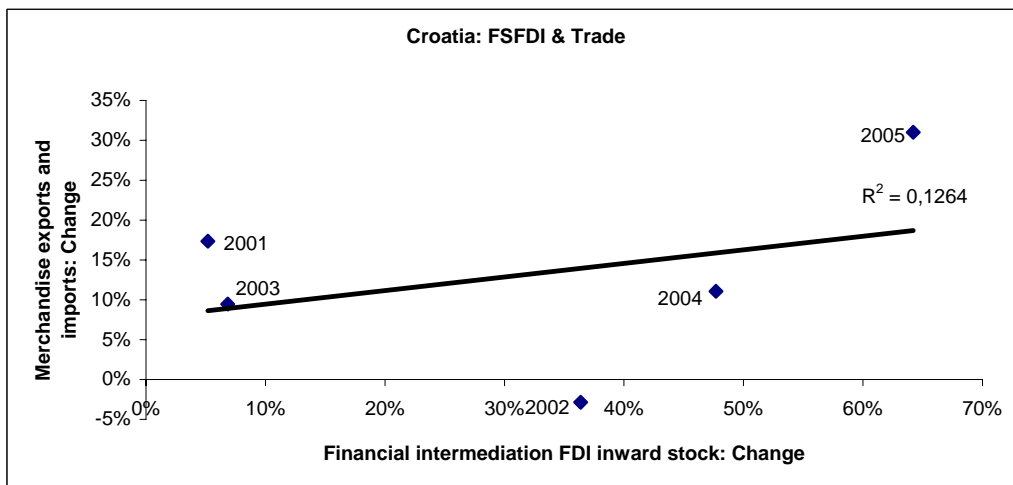


Figure 7: Croatia – annual changes of FSFDI and trade between 2001 and 2005



In this context, a survey of Sohinger (2005) is noteworthy: By examining the relation between total FDI inflows and the level of exports in Hungary, the Czech Republic and Croatia between 1993 and 2002, it is shown that Croatia recorded the smallest effect on export competitiveness: Exports have been stagnating and “*even though FDI flowed into Croatia in large amounts, it largely bypassed export-oriented sectors*” (Sohinger 2005, 86). Furthermore, the argument goes that FDI inflows into services sectors such as financial intermediation, which recently showed an increase, are not expected to lead to a change in export structure soon, and that specifically banking FDI are in general not export oriented (Sohinger 2005, 84, 86). Finally, it has to be added that in Croatia tourism (thus services) amounts for a higher fraction of GDP in comparison with other countries in CEE. This fact may have effects on FSFDI-repercussions. Furthermore, exports and imports refer to merchandise trade and do not include the (greater) service sector. This explains the smaller impact on trade compared to Bulgaria.

#### 3.2.2.2 Regression analysis

The dependent variable is the sum of merchandise exports and imports (trade) and the independent variable is the level of financial intermediation (FSFDI). Again, with the help of the regression analysis it can be decided which hypothesis is true. In this case the alternative hypothesis assumes coherence between FSFDI and trade.

The regression analysis of Bulgaria is presented in Table A15. The coefficient of determination *R Square* is 0.935 implying coherence between the predictor and the response variable. *Significance F* and *P-value* are smaller than  $\alpha$ . That is why the null hypothesis is rejected and the alternative hypothesis is accepted. The calculated *t-value* is greater than the *critical t-value*, while the means differ significantly with 95% confidence, thus FSFDI is a proper variable to identify the extent of merchandise exports and imports.

The results of the regression analysis for Croatia are shown in Table A16. The *R Square* of 0.9676 suggests coherence between the independent and the dependent variable. *Significance F* and *P-value* are smaller than the significance of 0.05. The calculated *t-value* is greater than the *critical t-value*, implying that FSFDI is a proper variable to define the extent of merchandise exports and imports.

To sum up, both regression analyses for Bulgaria and Croatia assume coherence between FSFDI and merchandise exports and imports. But again, there is no indication as to the direction of the coherence. Since banks are likely to enter economies with an already high level of exports and imports caution is recommended when analyzing these results.

## **4. Conclusion**

This paper discusses the repercussions of foreign bank entry on economic development via non-financial FDI and trade in the host country. We provide descriptive data and conduct a regression analysis in order to assess the effects of foreign bank presence on non-financial FDI and trade in Bulgaria and Croatia.

From our literature review we suggest that there are four channels through which financial sector foreign direct investment (FSFDI) affects economic growth: The efficiency channel, the volume channel, the corporate governance channel and the signal channel. While direct effects from foreign bank entry to host country economic

development and competitiveness via credit volume, bank efficiency and stability receive ample attention in the literature, the indirect, collateral-type impact of FSFDI has not yet been explored. We follow the Spence (1973) signal theory and argue that the massive inflow of foreign banks may stimulate non-financial FDI and trade.

From reviewing the literature, we draw the conclusion that these repercussions on non-financial FDI may result in an overall better performing banking system, since efficiency rises due to the increased number of new and potential entrants (Cárdenas et al. 2003, 3). Repercussions on trade are not that evident, since the majority of studies suggest that a high level of trade leads to an increased number of foreign banks, thus neglecting the opposite direction of repercussions. However, surveys underline the importance of a well-functioning banking system for the emergence and improvement of export industry (e.g. Roldos 2001) and Brealey and Kaplanis (1996) suggest a likely relationship between the location of overseas offices of large banks and trade.

In the empirical part, we survey the development in Bulgaria and Croatia. We provide descriptive evidence for FSFDI, non-financial FDI and trade between 1999 and 2005 and for respective annual changes between 2001 and 2005, focusing on the period, where the level of FSFDI surged considerably. In order to examine effects of foreign bank entry on non-financial FDI and trade in the countries, simple linear regression analyses are applied and although the data used has certain setbacks, this analysis is useful for examining likely coherences between financial intermediation FDI inward stock (used as a measure for FSFDI) and non-financial FDI, and FSFDI and merchandise exports and imports (used as a measure for trade).

Descriptive data of Bulgaria suggests coherence between FSFDI and non-financial FDI and regression analysis proves a statistically significant association between these measures. In the case of Croatia, the gradient of the trend line showing the relation between annual changes in both variables is not as great as for Bulgaria, but there is a clear upward movement. The related regression analysis supports the alternative hypothesis: There is a clear relationship between FSFDI and non-financial FDI in Croatia. However, both findings for Bulgaria and Croatia have to be analyzed with caution, since the high level of *R Square* is partly due to the fact that financial intermediation is closely related to non-financial FDI solely because of its mode of calculation.

The relation between FSFDI and trade is examined by using merchandise exports and imports as a measure for the latter. Figures of Bulgaria affirm similarities in the annual changes of both variables. However, the lower *R Square* implies that the intensity of the similarities is less than for the relationship between FSFDI and non-financial FDI. The progression of the trend line in the same scenario in the case of Croatia is not as steep as for Bulgaria. Still, it records an increase over the years and there seem to be similarities in the strength of both variables' movements.

To sum up, FSFDI in Bulgaria seems to have a positive impact on trade and the attraction of non-financial FDI. This may support the notion that FDI in general affects economic growth, sustained by the fact that Bulgaria was ranked ninth in the *UNCTAD Inward FDI Performance Index*, which is the ratio of a country's share in global FDI inflows to its share in global GDP. The findings of Croatia provide a rather ambiguous picture, although there is some coherence between FSFDI and non-financial FDI and trade. The smaller impact on non-financial FDI may be explained by the overall less developed institutional level of the country, since foreign banks

improve transparency and institutional quality of the country receiving the foreign direct investment, which in turn attracts non-financial FDI. The ambiguous findings with regard to trade are supported by findings of Sohinger (2005) showing that Croatia recorded the smallest effect of total FDI on export competitiveness between 1993 and 2002 in comparison to Hungary and the Czech Republic, and that the large amounts of FDI having been recorded bypassed export-oriented sectors and that especially banking FDI are not export oriented. However, the smaller impact on trade in comparison to Bulgaria may be explained by the fact that tourism (thus services) amounts for a higher fraction of GDP in Croatia, which may have effects on FSFDI-repercussions. Furthermore, exports and imports refer to merchandise trade and do not include the (greater) service sector.

Our preliminary empirical results suggest that financial sector FDI can trigger growth in foreign trade and in FDI into other sectors that is conducive to economic development and competitiveness of the host country. These indirect effects also need to be taken into consideration by public policy and investors.

## **5. Agenda for further research**

The paper provides a rather positive picture of the effects of foreign bank entry. Consequently, one could argue that incentives offered by government policies to attract FDI are maintainable, but there are some weaknesses in the data, which have to be considered in order to interpret the presented findings critically.

Firstly, the examined time period should be extended in order to present a more complete picture. By focusing on the years between 1999 and 2005 the most critical years of bank crises are omitted. Including the period of bank crises could on one hand lead to a distortion of the data's presentation. On the other hand, interesting conclusions could be drawn referring to foreign bank influence during a period of bank crises. Secondly, although regression analysis is a sound instrument to show coherence between two variables, it does not show causality. This insufficiency should be reduced by a supplemental analysis of so-called "news-based indicators", which shows the length and strength of the signals by foreign banks.

Since a decision criterion of banks may be the high level of non-financial FDI in a certain market when entering it, it would be necessary to provide more accurate time series analysis in order to discuss which phenomena appeared first and which repercussions followed.

In order to overcome the weaknesses of this analysis, a more complete data set would provide a sounder picture. Moreover, the actual effects of foreign bank entry on portfolio investment still need to be investigated. Finally, it would be interesting to link the findings concerning effects of FSFDI on non-financial FDI and trade with their further impacts on economic growth, in other words, tracking time series from the starting point of FSFDI until their implementation in the host economies and their final contribution to growth.

## APPENDIX

**Table A1: Bulgaria – annual changes of various factors between 2001 and 2005**

	Real GDP	Total FDI	FSFDI	Trade	Net equity investment
01	4,10%	21,73%	21,35%	13,75%	-55%
02	4,90%	-6,53%	-15,34%	-7,63%	13%
03	4,50%	21,11%	39,76%	11,68%	57%
04	5,70%	26,93%	46,04%	18,05%	27%
05	5,50%	20,65%	29,03%	29,83%	-21%

(Sources: own calculation, based on data from wiiw, IIF)

**Table A2: Croatia – annual changes of various factors between 2001 and 2005**

	Real GDP	Total FDI	Trade	FSFDI	Net eq. invest.
01	4,40%	25,56%	17,34%	5,18%	19,43%
02	5,20%	6,74%	-2,85%	36,38%	-75,45%
03	4,30%	14,09%	9,46%	6,84%	364,74%
04	3,80%	37,87%	11,06%	47,69%	-64,10%
05	3,40%	43,32%	31,01%	64,21%	229,68%

Sources: own calculation based on data from wiiw, IIF

**Table A3: Bulgaria – FSFDI and non-financial FDI between 1999 and 2005**

	Financial intermediation FDI inward stock: Value in EUR	non-financial FDI: Value in EUR
1999	156.600.000	1.993.900.000
2000	644.600.000	2.609.200.000
2001	782.200.000	3.375.000.000
2002	662.200.000	3.240.100.000
2003	925.500.000	4.020.700.000
2004	1.351.600.000	5.417.100.000
2005	1.744.000.000	6.786.700.000

Source: own calculation based on data from wiiw

**Table A4: Croatia – FSFDI and non-financial FDI between 1999 and 2005**

	Financial intermediation inward FDI stock: Value in EUR	non-financial FDI: Value in EUR
1999	327.200.000	2.461.300.000
2000	797.100.000	2.762.500.000
2001	838.400.000	3.631.100.000
2002	1.143.400.000	3.627.400.000
2003	1.221.600.000	4.221.500.000
2004	1.804.200.000	5.700.000.000
2005	2.962.600.000	7.792.700.000

Source: own calculation based on data from wiiw

**Table A5: Bulgaria – annual changes of FSFDI and non-financial FDI between 2001 and 2005**

	Financial intermediation FDI inward stock: Change	General FDI: Change
2001	21,35%	29,35%
2002	-15,34%	-4,00%
2003	39,76%	24,09%
2004	46,04%	34,73%
2005	29,03%	25,28%

Source: own calculation based on data from wiiw

**Table A6: Croatia – annual changes of FSFDI and non-financial FDI between 2001 and 2005**

	Financial intermediation inward FDI stock: Change	non-financial FDI: Change
2001	5,18%	31,44%
2002	36,38%	-0,10%
2003	6,84%	16,38%
2004	47,69%	35,02%
2005	64,21%	36,71%

Source: own calculation based on data from wiiw

**Table A7: Bulgaria – regression analysis, independent variable: FSFDI, dependent variable: non-financial FDI**

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0,984542
<b>R Square</b>	<b>0,969323</b>
Adjusted R Square	0,963188
Standard Error	3,2E+08
Observations	7

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<b><i>Significance F</i></b>
Regression	1	1,61E+19	1,61E+19	157,990836	<b>5,65867E-05</b>
Residual	5	5,11E+17	1,02E+17		
Total	<b>6</b>	1,67E+19			

	<i>Coefficients</i>	<i>Standard Error</i>	<b><i>t Stat</i></b>	<b><i>P-value</i></b>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	1,08E+09	2,56E+08	4,2197120,00833011	422474737,8	3,8202	1,74E+09
X Variable 1	3,171632	0,252329	<b>12,56944</b>	<b>5,6587E-05</b>	2,523001485	63

**Table A8: Croatia – regression analysis, independent variable: FSFDI, dependent variable: non-financial FDI**

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0,986753926
<b>R Square</b>	<b>0,97368331</b>
Adjusted R Square	0,968419972
Standard Error	332276871,1
Observations	7

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	2,04247E+19	2,04E+19	184,9935	<b>3,85108E-05</b>	
Residual	5	5,5204E+17	1,1E+17			
Total	<b>6</b>	2,09768E+19				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	1486513605	242457704,1	6,131022	0,001676	863257253,2	2,11E+09
X Variable 1	2,160501643	0,158846032	<b>13,60123</b>	<b>3,85E-05</b>	1,752175585	828

**Table A9: Bulgaria – conversion of merchandise exports and imports into EUR, 1999-2005**

	Merchandise exports & imports: Value in USD	Merchandise exports and imports: Value in EUR	USD/EUR (31st of December)
1999	9.093.800.000	9.056.879.172	0,99594
2000	10.824.800.000	11.496.154.096	1,06202
2001	11.806.300.000	13.328.368.196	1,12892
2002	12.978.700.000	12.383.107.457	0,95411
2003	17.599.700.000	14.021.504.993	0,79669
2004	23.338.500.000	17.110.387.890	0,73314
2005	28.878.200.000	24.385.040.862	0,84441

Sources: own calculation based on data from IIF, Fxconverter

**Table A10: Bulgaria –FSFDI and merchandise exports and imports between 1999 and 2005**

	Financial intermediation FDI inward stock: Value in EUR	Merchandise exports and imports: Value in EUR
1999	156.600.000	9.056.879.172
2000	644.600.000	11.496.154.096
2001	782.200.000	13.328.368.196
2002	662.200.000	12.383.107.457
2003	925.500.000	14.021.504.993
2004	1.351.600.000	17.110.387.890
2005	1.744.000.000	24.385.040.862

Sources: own calculation based on data from wiiw, IIF

**Table A11: Croatia – conversion of merchandise exports and imports into EUR, 1999-2005**

	Merchandise exports and imports: Value in USD	Merchandise exports and imports: Value in EUR	EUR/USD (31 <sup>st</sup> of December)
1999	12.088.100.000	12.039.022.314	0,99594
2000	12.337.400.000	13.102.565.548	1,06202
2001	13.619.300.000	15.375.100.156	1,12892
2002	15.656.100.000	14.937.641.571	0,95411
2003	20.524.000.000	16.351.265.560	0,79669
2004	24.770.200.000	18.160.024.428	0,73314
2005	28.175.400.000	23.791.589.514	0,84441

Sources: own calculation based on data from IIF, Fxconverter

**Table A12: Croatia – FSFDI and merchandise exports and imports between 1999 and 2005**

	Financial intermediation FDI inward stock: Value in EUR	Merchandise exports and imports: Value in EUR
1999	327.200.000	12.039.022.314
2000	797.100.000	13.102.565.548
2001	838.400.000	15.375.100.156
2002	1.143.400.000	14.937.641.571
2003	1.221.600.000	16.351.265.560
2004	1.804.200.000	18.160.024.428
2005	2.962.600.000	23.791.589.514

Sources: own calculation based on data from wiiw, IIF

**Table A13: Croatia – annual changes of FSFDI and trade between 2001 and 2005**

	Financial intermediation FDI inward stock: Change	Merchandise exports and imports: Change
2001	5,18%	17,34%
2002	36,38%	-2,85%
2003	6,84%	9,46%
2004	47,69%	11,06%
2005	64,21%	31,01%

Sources: own calculation based on data from wiiw, IIF

**Table A14: Bulgaria – annual changes of FSFDI and trade between 2001 and 2005**

	Financial intermediation FDI inward stock: Change in %	Merchandise exports and imports: Change in %
2001	21,34657152	15,93762649
2002	-15,34134492	-7,092096535
2003	39,76140139	13,23090785
2004	46,03997839	22,02961022
2005	29,03225806	42,51600267

Sources: own calculation based on data from wiiw, IIF

**Table A15: Bulgaria – regression analysis, independent variable: FSFDI, dependent variable: trade**

SUMMARY OUTPUT

<i>Regression Statistics</i>						
Multiple R		0,966942092				
<b>R Square</b>		<b>0,934977009</b>				
Adjusted R Square		0,921972411				
Standard Error		1393176802				
Observations		7				

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	1,39546E+20	1,4E+20	71,89588	<b>0,000374893</b>	
Residual	5	9,70471E+18	1,94E+18			
<b>Total</b>	<b>6</b>	<b>1,4925E+20</b>				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	6192786015	1116444658	5,546881	0,002616	3322878346	90626936
X Variable 1	9,324196238	1,099662483	<b>8,479144</b>	<b>0,000375</b>	6,497428453	12,150964

**Table A16: Croatia – regression analyses, independent variable: FSFDI, dependent variable: trade**

SUMMARY OUTPUT

<i>Regression Statistics</i>						
Multiple R		0,98370578				
<b>R Square</b>		<b>0,96767706</b>				
Adjusted R Square		0,96121247				
Standard Error		765560088				
Observations		7				

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	8,773E+19	8,77E+19	149,6889	<b>6,45262E-05</b>	
Residual	5	2,93041E+18	5,86E+17			
<b>Total</b>	<b>6</b>	<b>9,06604E+19</b>				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	1,0405E+10	558618301,4	18,62598	8,21E-06	8968843572	1,18E+10
X Variable 1	4,47765218	0,365978474	<b>12,23474</b>	<b>6,45E-05</b>	3,536876099	5,418428



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