

Bank internationalization and trade: What comes first?*

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Abstract

Using bilateral data between 1995 and 2002, we study the dynamic nexus that changes in foreign bank penetration have with changes in trade and FDI between some selected OECD countries and Central and Eastern Europe countries (CEECs). Following the literature, we contemplate the possibility that such a nexus might differ depending on whether foreign bank entry materializes through the opening of branches or by acquiring local subsidiaries. The evidence presented in this paper – based on the changes in the bilateral linkages between OECD origin country and CEE target country – shows only one strong link, going from the share of bilateral trade over total trade from the country of origin, which we define a “push factor”, to the change in the presence of foreign branches. The link from trade to bank FDI is instead much weaker. In addition, we find some evidence that the share of bilateral trade over total trade with the target country – which we define a “pull factor” – affects bank internationalization through the acquisition of subsidiaries, but not through the opening of branches.

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1. Introduction

The pattern of bank internationalization is correlated with the degree of integration between the home country of the parent company and the country where the branch or the subsidiary is located. This is a well established fact in the economic literature. Integration relates both to strictly economic variables, such as the levels of trade or foreign direct investment (FDI), and to non-economic aspects, such as linguistic and cultural similarities. However, to our knowledge, no previous work has analyzed the dynamic aspects of the relationship between bilateral trade and bank internationalization. In this paper we try to fill this gap in the literature, by studying bank internationalization from some OECD countries to Central and Eastern Europe.

The case of flows to Central and Eastern Europe is very well suited for our research purposes. Foreign bank presence in the Central and Eastern Europe countries (henceforth CEECs) has become sizeable in recent years, due to the widespread bank distress and closure that these countries suffered in the post-1989 years, favouring the penetration of foreign intermediaries. Already by the mid 1990s, half of bank assets in the region were in the hands of foreign – mostly EU – owned banks, twice as much as in Asia and Latin America (Claessens et al., 2001). Moreover, not all countries entered Central and Eastern Europe at the same time. For some countries – e.g. Germany – this happened since the early 1990s, while others – e.g. Austria and Italy – sped up only later (Papi and Revoltella, 1999).

At the same time, FDI in manufacturing and foreign trade also increased significantly. Trade flows with Central and Eastern Europe have been guided by a number of factors, including increased openness, higher GDP and the rising share of intermediate goods trade, related to the fragmentation in production processes and the outsourcing of high-labour intensive phases of production to low-wage transition countries (Arndt and Kierzkowski, 2001; Baldone et al., 2001). For several years, Central and Eastern Europe has been the favoured destination of such outsourcing, especially from EU countries, for two main reasons: (i) vicinity, and thus ease to reach these locations; (ii) general flexibility of markets in transition economies.

As it is clear from the title, the question that we try to answer is whether bank internationalization led or followed the increase in trade and manufacturing FDI. In practice, we contemplate two alternative hypotheses. On the one hand, OECD banks' expansion to Central and Eastern Europe could have led the increase in bilateral trade. This could be the case if two features held true: (i)

opportunities for bank FDI in Central and Eastern Europe materialized early on, and (ii) the opening of financial markets preceded the increase in bilateral trade. Furthermore, foreign bank entry could help lure manufacturing FDI and therefore bilateral trade in intermediate products to any emerging/transition country by making its financial system more stable (Dages, et al., 2000; Reynoso, 2002) and by reducing credit constraints (Clarke, et al., 2001), even though foreign banks might be less lenient to lend to small business (Berger, et al., 2002; Clarke, et al., 2003). On the other hand, the opposite hypothesis holds that OECD banks followed their customers abroad. According to this hypothesis, OECD manufacturing companies first increased their trade with Central and Eastern Europe. In the second stage also their lending banks made FDI in the area, to improve their supply as well as to keep track of the overall risk of their customers, that had become more opaque because of their activity in Central and Eastern Europe.

To shed light on whether any causal link of the type discussed above emerges, we use bilateral data on foreign bank penetration and on the intensity of trade/FDI. Specifically, controlling for other factors, we study the dynamic nexus that changes in foreign bank penetration have with changes in trade and FDI between some selected OECD countries and the CEECs between 1995 – a few years since both types of integration between the former and the latter countries could be re-established after the fall of the iron curtain – and 2002. Furthermore, following the literature, we contemplate the possibility that such a nexus might differ depending on whether foreign bank entry materializes through the opening of branches – supposedly identifying a wholesale and arm’s length approach – or it takes the shape of acquisitions of local subsidiaries – suggesting a retail and relationship banking oriented modality of entry.

In the rest of the paper, section 2 sketches the pertinent literature outlining the reasons why the entry in a target transition economy by foreign banks originating from a rich country might be related – in both a contemporaneous and a dynamic way – to the intensity of economic integration between the two countries as measured, alternatively, by trade flows or by FDI stocks. This survey of the literature allows us to formulate a few testable hypotheses. Next, section 3 describes the data and the methodology used in the empirical analysis, introducing, in particular, the indicators developed in order to analyze the phenomena under scrutiny, presenting some descriptive statistics of the relevant variables and describing the econometric set up. Section 4 reports and discusses our econometric results. Section 5 concludes.

2. Background Literature and Testable Hypotheses

The literature on banks' and nonfinancial firms' internationalization has made considerable progress over the recent years. For the sake of exposition, in this section we will discuss both channels of causation. First, we will describe the ways through which relationships with banks can affect the firm's choice to go international, either through trade or FDI. Second, we will spell out the factors affecting banks' decision to go international, watching in particular at the potential benefits for firms when also banks go international.

Regarding their internationalization, nonfinancial enterprises can be classified in three different categories. Firstly, and this is the case for most firms, firms may have no foreign relationships: in this case the enterprise only produces domestically and sells entirely on the domestic market. The second case is that of the firms whose production is entirely domestic but which sell a portion of their output abroad. Finally, the third case concerns those companies which, besides exporting, choose to move some of their plants abroad.

Firms deciding to go international typically must sustain relevant sunk costs at the beginning of the process, that must be financed upfront. Here is where the role of banks in assisting firms' internationalization can become very relevant, both for exporters and for those making FDI.

In the case of exporters, it is clear that a company wishing to sell its product abroad must bear some fixed sunk costs related to identifying its specific export market and undertaking the adjustment needed to make its products adequate to that market (e.g., specific R&D or marketing expenses) and conforming to the target country's regulations. These costs are sunk in the sense that they will be wholly lost in case the company discontinues exporting that product to that market. The literature points to those sunk costs as a key factor helping explain a series of puzzles, such as why the intensity of international trade – even though increasing – is still relatively low or why the increase in exports of countries whose exchange rate depreciates lags until depreciations become large (Melitz, 2003). In this respect, using a sample of companies from Columbia, Roberts and Tybout (1997) find that the probability of exporting is 60% larger for companies which had past exporting experience.

In the case of firms investing abroad, the role of sunk costs and the related financial needs are even clearer. There is a wide number of motivations why a firm can choose to invest abroad and

become a multinational, typically pertaining to firms' features and their production process: economies of scale at the firm or plant level; trade costs specific to the product; costs stemming from the disintegration of production phases; differences in factor intensity across production phases (e.g. capital vs. labor; skilled vs. unskilled labor). A second set of determinants instead, relates to the variables affecting the choice of target regarding where to locate FDIs: trade costs specific to the target country (e.g. distance, trade barriers etc.); market size; differences in factor cost. A key distinction is between horizontal FDI (HFDI), aiming to improve export penetration in final markets, and vertical FDI (VFDI) or international outsourcing of production, that have the objective of lowering production costs by moving production where factor costs are lower. The ideal candidates for HFDIs are rich countries which are distant and have high trade barriers, while VFDIs/international outsourcing of production is attracted by countries with low labor costs, which are close and/or may be reached with low transportation costs.

In the case we will examine in our empirical analysis – focused on some OECD countries' banks opening in one or more CEE country and on the related bilateral trade/FDI – we may presume that VFDIs will be the norm among FDIs, since the target countries are not (yet) rich markets.

It is then worth stressing that internationalization of production is more likely for larger-sized enterprises, since it entails sunk costs which are generally higher than those implied by a lighter form of internationalization, such as simple exports (Helpman, Melitz and Yeaple, 2003). The costs entailed in the internationalization of production take various shapes. For example, investors undertake the risk that initially favorable conditions – e.g. tax exemptions and other incentives to incoming FDIs, dynamic target country – might change subsequently, to the point of causing divesting at an unfavorable time, thus inducing large losses with respect to the initial investment cost, since capital goods are not easily replaceable in the sense described by Williamson (1979).

In turn, the various modalities of company internationalization have implications on the need of and ability to obtain external financing on the part of the internationalizing company. As outlined in De Bonis et al. (2008), it seems that all the three forms of internationalization have a double impact on external financing. On the one hand, at least temporarily, the need for external financing increases. On the other hand, obtaining external financing becomes more difficult. This situation stems from the fact that the company experiences increasing financial needs while its assets become more opaque vis-à-vis external financiers, typically a bank. This unfolds because of sunk investments. Even in the case of

exports, though less markedly, an effect like that ensues. Sunk investments must, in fact, be financed and they imply shifting some of the company's assets abroad, to the country where it starts exporting. From an accounting perspective, the goodwill capital of the firm increases and a part of it is now abroad. From the perspective of economic theory, this intensifies the company's asymmetries of information vis-à-vis its domestic banks both because the firm experiences a rising ratio of intangible capital – in its goodwill component – to tangible capital (where only the latter may be used as collateral) and, most importantly, because the increase in intangible capital takes place abroad in a distant context for the domestic bank. Accordingly, the bank's ability to classify the company's credit worthiness worsens with respect to its previous status.

The effects just described for a newly exporting company are more intense when the firm shifts its production abroad. In this case, the size of the investment is larger and, thus, also the sunk costs are larger. This implies more intense information asymmetries between the firm and its bank. In practice, then, we can state a priori that sunk costs should be larger for FDI than for exports since the former implies moving production abroad while the latter requires only smaller specific investment.

The financial implications of company internationalization have attracted some attention in the literature. Various papers try to test whether internationalization is more likely for those firms active in countries enjoying more intense financial development. Most of these studies address the link between financial development and export. The underlying idea is that, against the firm's rising financial needs and in the face of the intensified asymmetry of information for the newly exporting company, better developed financial setups may help mitigate the problem. For instance, in a cross-country comparison over 30 years, Beck (2002) finds that the countries with more developed financial systems show a larger share of manufacturing exports over GDP. Extending the analysis to the industrial sector level, Becker and Greenberg (2005) find that the degree of financial development increases exports and that such an impact is stronger for those industries with larger fixed costs. Furthermore, some recent studies ask the question on firm level data. On the basis of a large sample of companies from Argentina, Espanol (2007) reports that the probability for a firm to become an exporter rises when it has better access to finance (measured through the answers the firm gives to a questionnaire). Analogously, using a large sample of Italian enterprises, Grisorio (2007) finds that the probability for a firm to start exporting increases along with the degree of financial development (measured by the number of per capita bank branches) of the province where the firm is located.

On a related ground, the well known role of information asymmetries in banking suggest that banks are more likely to finance a firm's internationalization if it knows the market where it is going to expand. Banks are therefore more likely to finance the sunk investment needed by manufacturing firms to expand abroad if they already have set operations in that same country. As such, foreign banks can pull trade and FDI from their home countries.

Let's now come to the factors affecting banks' decision to go international. Banks go abroad for different reasons (Farabullini and Ferri, 2005). One is risk diversification: to be active in different countries helps dealing with idiosyncratic shocks in any specific country. Second, banks internationalize to enter profitable markets, for example economies with a high rate of growth; in emerging countries the presence of foreign banks may improve the efficiency of financial systems. According to Focarelli and Pozzolo (2001), banks buying foreign subsidiaries are usually large and come from developed credit systems: these large intermediaries enter markets where banks are less efficient, with the aim of restructuring to save costs. Third, banks' expansion abroad may be explained by the search for scale and scope economies. Fourth, banks active in high concentrated markets may be forced to go abroad because antitrust authorities may limit further national expansion. Fifth, when firms go abroad, banks follow suit in order to maintain the links built within the national borders. In terms of the form of the foreign presence, branches are mainly active in wholesale markets, especially in the interbanking segment, while the subsidiaries are more focused on retail markets. Branches tend to be more localized in large financial centres, with London in first place, while the subsidiaries are more present in emerging markets (Focarelli and Pozzolo, 2005).

A traditional question asked in the literature is whether bank internationalization follows firm internationalization or not. Seth, Nolle and Mohanty (1998) are probably among the first to observe that the hypothesis "follow the customer" was becoming too restrictive. These authors note that the largest part of loans granted abroad by banks did not finance national firms on foreign markets. Similarly Focarelli and Pozzolo (2005) underline that banks' motivation to go abroad is to achieve higher profits rather than to follow their national customers. Yamori (1998) finds that Japanese banks' FDIs were influenced originally by the FDIs of the country's multinational but are also sensible to the conditions of the destination markets. In examining the Japanese firms' FDIs in Europe, von der Ruhr and Ryan (2005) shows how initially industrial FDIs attract the banking ones; subsequently the banking FDIs attract new industrial FDIs. In analysing the Chinese case, He and Gray (2001) find that

non financial FDIs increase strongly in those regions where banks previously invested. Even if this paper does not contain information on the country origin of banking and industrial FDIs, it is plausible to think that there is a casual link going from the first to the latter also on a national base.¹

However, despite the fact that a bank's choice to expand abroad can be motivated by a reasonably large number of possibly interlinked reasons, it is however fully recognized that bilateral integration – measured in a number of different ways, ranging from geographical distance, to the volume of bilateral trade flows and bilateral foreign direct investment – is a key determinant of bank foreign growth.² This points to the main object of this paper, i.e. the links between bank and firm internationalization and their timing. Indeed, it is reasonable to imagine that banks “follow the customer and then gain new ones”, as suggested by von der Ruhr and Ryan (2005). According to Roberto Nicastro (2007) the process has been guided by the goals of growth and profit opportunities; this strategy would be coherent with the idea of “anticipating the customer”. As recognized by Nicastro – a top manager at Unicredit Group, one of the leading European multinational banks, which has its home base in Italy and relevant interests in the CEECs – even though the original goals were different, bank internationalization is today an important competitive aspect for the entire Italian economic system. Accordingly, the foreign retail network of the most important banks could be a launching pad towards the foreign markets for those small and medium firms which, otherwise, would not be able to launch their internationalization.

In analyzing the links between bank and firm internationalization, one important additional factor to consider is the difference between “push” and “pull” factors. Push factors can be defined as those at work when it is the domestic firms operating abroad that put pressure on their banks in order to obtain financial services in a foreign country. These are more likely to be sizeable when trade relationships and FDIs to a foreign country reach a relevant share of the total value of trade and FDIs of the origin country. Pull factors are instead those at work when foreign firms with strong trade relationship with the country of origin of the internationalizing banks signal the opportunity to offer services abroad. Contrary to the previous case, they are more likely to be sizeable when trade relationships and FDIs to

¹ See also the discussion in Pozzolo (2008).

² A non exhaustive list includes Goldberg and Saunders (1980 and 1981), Ball and Tschoegl (1982), Nigh, et al. (1986), Goldberg and Johnson (1990), Grosse and Goldberg (1991), Sagari (1992), ter Wengel (1995), Brealey and Kaplanis (1996), Miller and Parkhe (1998), Yamori (1998), Williams (1998), Berger et al. (2003), Buch (2000 and 2003), Buch and Delong (2004), Buch and Lapp (1998), Berger et al. (2003 and 2004), Magri et al. (2005), Focarelli and Pozzolo (2005 and 2008), Paladino (2007).

a foreign country reach a relevant share of the total value of trade and FDIs of the country which is the destination of bank internationalization. The empirical analysis will distinguish between these two factors.

3. Data and methodology

Commercial bank FDI data and data on the number of branches were painstakingly constructed aggregating individual shareholdings and branches by OECD banks in the CEECs, respectively from the Bankscope database by Fitch-IBCA/Bureau Van Dijk and from The Bankers. Data on bilateral trade are from the IMF's Direction of trade statistics, those on total bilateral FDI are from the OECD database.

Table 1 reports some descriptive statistics on the foreign presence of selected OECD countries in the CEECs, in 1995 and in 2002. The most striking fact is the significant increase in almost all indicators considered. While this is not surprising, in light of the radical change that the CEECs experienced with their transition to market economies, it confirms that these countries provide an adequate framework to test our hypotheses. The second aspect to notice is that the increase in foreign bank presence and in total FDI is larger than that in bilateral trade. These trends are substantially confirmed by those of the total foreign presence of our set of selected OECD countries in each one of the CEECs in the same years, as reported in table 2.

To test the alternative hypotheses discussed in the previous section, we decided to avoid using absolute values, and constructed instead two sets of indicators, accounting for the relative weight of each bilateral relationship with respect to total trade and foreign bank presence, respectively in the origin and destination countries. In particular, the role of pull factors is analyzed considering the ratio of the index of foreign presence of country W in country E to that of total foreign presence from country W to Central and Eastern European countries:

$$I_{wePULL}^i = \frac{FDI_w^e}{\sum_{e=1}^E FDI_w^e} \quad i = B, Br, T, F \quad (1)$$

where $i = B, Br, T, F$ stands respectively for bank FDI, bank branches, trade and total FDI. In other words, we are measuring what is the weight of the destination country e over all bank FDI of country w towards Central and Eastern Europe.

Symmetrically, the role of push factors is analyzed considering the ratio of bank FDI of country W (for selected Western countries) to country E (for Central and Eastern Europe) to that of all FDI from the selected OECD countries to Central and Eastern Europe:

$$I_{wePUSH}^i = \frac{FDI_W^E}{\sum_{w=1}^W FDI_w^E} \quad i = B, Br, T, F \quad (2)$$

In this case we are therefore measuring what is the weight of the origin country w over all bank FDI of our selected OECD countries towards Central and Eastern Europe.

Analogous indices were constructed with respect to the number of foreign branches, the share of bilateral trade and that of total FDI (largely represented by manufacturing FDI)³.

Table 3 reports some descriptive statistics for the shares described above, and for their changes between 1995 and 2002. Starting from bank FDI, I_{wePUSH}^B , the average value of the share with respect to the country of origin, therefore measuring the push factor, was in 1995 3.57, with a standard deviation of 16.11. The average change between 1995 and 2002 is zero, but the sample includes both positive and negative values and the standard deviation is 12.20. Similarly, the average value of the share with respect to the country of destination, I_{wePULL}^B , which measures the pull factor, was 3.93 in 1995. The average change is in this case 0.61, and as before the sample includes both positive and negative values, with a standard deviation of changes of 9.31. In the case of foreign bank branches, I_{wePUSH}^{Br} is 3.53, with an average change of 1.15. Similarly, the average value of I_{wePULL}^{Br} is 2.27, with an average change of 0.41. As before, the sample includes both positive and negative values, and the standard deviation of the changes is 9.34. For trade and total FDI, the average changes are respectively 0.01 and 0.41 for the push factors and 0.01 and -0.35 for the pull factor.

From the descriptive statistics described above it is not possible to understand whether the clear increase in the presence of banks from the OECD countries included in our sample in the CEECs is a cause or a consequence of the increase in trade and total FDI. In order to answer to this question we then conducted an econometric analysis based on the above indicators. In particular, we have estimated the following equations:

$$\Delta I_{wePULL}^i = \alpha_{iPULL} + \sum_{j=1}^4 \beta_{PULLij} I_{wePULL,t-7}^j + \Gamma_{iPULL} X + \varepsilon_{iPULL}, \quad i, j = B, Br, F, T \quad (3)$$

$$\Delta I_{wePUSH}^i = \alpha_{iPUSH} + \sum_{j=1}^4 \beta_{PUSHij} I_{wePUSH,t-7}^j + \Gamma_{iPUSH} X + \varepsilon_{iPUSH} \quad i,j = B, Br, F, T \quad (4)$$

where X is a set of exogenous variables, α_{PULLij} and α_{PUSHij} , β_{PULLij} and β_{PUSHij} , Γ_{iPULL} and Γ_{iPUSH} are the parameters to be estimated, and ε_{iPULL} and ε_{iPUSH} are i.i.d errors. Considering all possible combinations of indicators, we obtain four regressions for each of the two models.

The number of observations in these sets of regressions is given by the product of the set of OECD countries and the CEECs. The exogenous explanatory variables introduced in the regression are a measure of bilateral geographical distance and a dummy for a common border. All regressions include dummy variables for the country of origin and of destination. While this specification choice prevents the possibility of including among the explanatory variables country specific characteristics, whose effects could be interesting per se, it permits a more careful control of the possibly exogenous determinants of bilateral relationships, allowing a more precise estimation of the coefficients of interest for our analysis.

Within this framework, Granger type causality tests of foreign bank presence to trade and total FDI – and vice-versa – are conducted. In particular, the generic coefficient β_{PULLij} measures the effect of the pull factor j (for example, for $j = T$, the level of bilateral trade) on the change in the share of the foreign presence measured by the indicator i (for example, for $i = B$, the level of bank FDI). Similarly, β_{PUSHij} measures the same effect for the push factors.

4. Econometric results

As we mentioned above, the econometric analysis distinguishes between push and pull factors, and between effects going from bank internationalization to trade or total FDI and effects going the other way round. All specifications are identical, and all estimates are conducted on the same sample of 504 country pairs, with the only exception of those involving total FDI, that are conducted on a narrower sample of 154 country pairs due to data availability. All regressions have remarkably high Rs-squared, ranging from 0.34 to 0.79, suggesting that the models are capable of explaining a relevant share of the total variance, thanks also to the inclusion of the country specific dummy variables.

³ Unfortunately, bilateral OECD data on FDI do not permit to distinguish between those in the manufacturing sector and those in the financial sector.

4.1. Push factors

Table 4 reports the results of the estimations analyzing the effects of push factors on the presence of foreign banks. Panel 1 reports the coefficient of a first specification in which the dependent variable is the change in the share of the stock of foreign bank FDI from a given OECD country to a given CEEC over the total value of foreign bank FDI from that same OECD country to all CEECs, as defined in equation (2). Panel 1 report the estimates of the model using a sample of 504 observations and therefore excludes from the explanatory variables the share of total FDI.

The negative coefficient (-0.62, significantly different from zero at the 1 per cent level) of the 7-years lagged share of bank FDI suggests that banks from a given country are less likely to make FDI towards countries that represent already a relatively high share of their total FDI in the financial sector. We can call this a convergence effect. Abstracting from this effect, only the presence of foreign branches seems to have a weak push effect on the change in the share of bank FDI, with a coefficient of 0.10, significantly different from zero at the 10 per cent level. Panel 2 reports the results including the lagged share of total FDI, and therefore reducing the estimation sample to 154 country pairs. The coefficient on the additional explanatory variable is positive (0.38) and significantly different from zero at the 10 per cent level, implying a significant positive push effect of lagged total FDI on bank FDI. Within this smaller sample, also the effect of lagged bilateral trade becomes significantly different from zero. An unreported regression excluding total FDI from the set of explanatory variables but estimated on the same sample gave once again an insignificant coefficient on trade, showing that it is indeed the inclusion of FDI, and not the change in the sample, that determines this result. While the specification reported in panel 1 might be more robust due to the larger sample used, it seems indeed the case that it is omitting a relevant explanatory variable.

Panels 3 and 4 present the results of the estimates on the share of foreign branches, showing a strong and positive effect of lagged bilateral trade, with a coefficient of 1.33, significantly different from zero at the 1 per cent level. In this case, total FDI have instead no significant effect.

The analysis of the push factors on foreign bank growth provides a first set of answers to our research question, providing weak evidence that trade and FDI might be pushing bank FDI. What instead turns out to be very strong is the effect of lagged trade on the growth of foreign bank branches.

Table 6 reports the results of the estimation of a set of regressions analyzing the effects of push factors on bilateral trade and FDI. Panel 1 shows that the lagged share of bank FDI has a small

positive effect on trade, with a coefficient of 0.02, significantly different from zero at the 5 per cent level. While the share of total FDI has no effects on bilateral trade, considering the smaller sample the effect of bank FDI on the change in the share of trade is confirmed, with a coefficient of 0.04 (with a p-value of 0.01), and also that of foreign bank branches becomes significant, with a coefficient of 0.03 significantly different from zero at the 5 per cent level. However, the identical results obtained from unreported estimates on the same sample, but excluding total FDI, suggest that these small differences depend only on the sample considered. The effect of bank FDI on bilateral integration of the real economy is confirmed also by the results considering the change in the share of total FDI, reported in Panel 3, which show a positive coefficient, significantly different from zero at the 5 per cent level. Foreign branches have in this case no effect.

In synthesis, bank FDI and, to a smaller extent, foreign branches seem to have only a weak, albeit significant, effect on trade and total FDI.

4.2. Pull factors

Table 4 reports the results of the estimation of a set of regressions concentrating on the effects of pull factors on the presence of foreign banks. Panel 1 reports the coefficient of a first specification in which the dependent variable is the change in the share of the stock of foreign bank FDI from a given OECD country in a given CEEC over the total value of foreign bank FDI in that same CEEC from the whole set of OECD countries in our sample, as defined in equation (1). As before, these estimates are conducted on the larger sample of 504 observations, therefore excluding from the explanatory variables total FDI.

A second variable with a significant effect is the lagged share of bilateral trade, with a coefficient of 0.09 significantly different from zero at the 10 per cent level. This suggests that CEECs with a relevant share of bilateral trade with a given OECD partner are more likely to pull bank FDI. Also the coefficient of the share of foreign branches is positive (0.37) and significantly different from zero at the 1 per cent level, suggesting that foreign branches may pull a stronger presence of foreign banks from the same country of origin.

As we mentioned above, including among the explanatory variables the share of total FDI the number of observations drops to 154. Panel 2 shows that in this case a number of coefficients become insignificant or change substantially. In the end, only the coefficients of the lagged share of foreign

banks and that of lagged bilateral trade turn out to be statistically significant, although the second increases by a factor of 10, to 0.94. The differences between the two specifications are entirely attributable to the sample composition, as confirmed by the results of an unreported regression on the same sample but excluding total FDI from the set of explanatory variables, which gave coefficients substantially identical to those reported in panel 2. Remarkably, the effect of total FDI is very small and not significantly different from zero, suggesting that the omission of this variable from the previous specification is not likely to affect the estimates of the other coefficients. While it is our interpretation that the specification reported in panel 1 is likely to be more robust, due to the larger sample used, it is indeed the case that some information can also be drawn from the differences between the two estimates, considering that the sample including FDI excludes mostly small and less developed countries. Following this interpretation, it can be sensibly argued that only trade relationship with large countries matter in explaining foreign bank expansion, and that the presence of branches has a pulling effect only for bank FDI in smaller countries.

Panels 3 and 4 report the results of the analysis of the effect of internationalization in 1995 on the share of foreign bank branches. The most noticeable difference with respect to the case of bank FDI is that trade and total FDI have no significant effects. Indeed, both including and excluding FDI, the only significant explanatory variables are the share of bank FDI, with a positive effect, and the share of foreign bank branches, with a negative coefficient, consistent with the convergence effect found for bank FDI.

With respect to the first channel of transmission, going from the real economy to bank internationalization, the first set of answers to our question on what comes first between the internationalization of banks and that of the real economy is therefore that bilateral trade seems capable of pulling bank FDI, but unable to pull foreign bank branches, while total FDI has no effect on the relative growth of foreign bank presence.

The second set of regressions that we consider concentrates on the effects of pull factors on bilateral trade and FDI. Panel 1 of Table 5 shows the results of a specification that excludes total FDI, showing once again evidence of a convergence effect, in that the coefficient of lagged bilateral trade is negative and significantly different from zero at the 1 per cent level. With respect to our research question, the results show quite clearly that foreign bank presence has no significant pull effects on bilateral trade, neither through branches nor through bank FDI.

This evidence is not entirely confirmed once we include the lagged share of total FDI, reported in panel 2. While the coefficient on total FDI is also in this case not significantly different from zero, the coefficients on the lagged shares of bank FDI and foreign bank branches become both positive and significantly different from zero at the 5 and at the 1 per cent level, respectively. As before, results from an unreported regression confirm that all the changes are to be attributed to the different sample considered. Following the previous line of reasoning, it can be argued that foreign bank presence only pulls trade with large countries. The determinants of the change in the share of total FDI provide further support to this interpretation, showing a positive and significant effect of lagged bank FDI. On the contrary, the presence of bank branches has no significant effect on the growth in the share of FDI in the following years. Interestingly, also in this case the positive coefficient on lagged total FDI shows the existence of momentum.

When considering the smaller sample, both effects of the lagged share of trade on its change in the following years and that of total FDI on its change are positive and significant, implying a momentum in these processes.

In synthesis, this evidence shows that the channel going from foreign bank presence to bilateral trade and total FDI is at work, although whether the effects come from branches or subsidiaries seems to depend on the sample of countries considered.

5. Conclusions

What comes first: bank or firm internationalization? Or do they come at the same time? Or are the two processes quite independent?

The evidence presented in this paper, based on an analysis of the relative changes in the bilateral linkages between a set of OECD countries and the Central and Eastern Europe countries (CEECs) showed only one strong link, going from bilateral trade over total trade from the country of origin, that we have defined a push factor, to the change in the presence of foreign branches. Although we also found a link from trade to bank FDI, it is much weaker. In addition, we provided some evidence that the share of bilateral trade over total trade with the country of destination, that we defined a pull factor, affects bank internationalization through FDI, but not through branches.

These results are indeed consistent with the hypothesis that banks open foreign branches in order to help their clients operating abroad, suggesting at the same time that foreign firms only have a weak

ability to attract banks from their country of origin. The opposite channel of causation seems to be less important, as shown by the weak effect of bank FDI and foreign branches on trade and total FDI. While we can by no means consider ours as definitive evidence, a first tentative answer to our research question could then be that the two processes are quite independent but, if anything, it is more the firms that push banks abroad, rather than the opposite.

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Table 1

Foreign presence of selected OECD countries in CEECs

Bank assets are from Bankscope and are expressed in millions of 1995 US dollars. Bank branches are from The Bankers and are expressed in units. Trade is the sum of import from and export to CEECs and is expressed in millions of 1995 US dollars; the source is IMF. FDI's are only towards Bulgaria, Czech Republic, Hungary, Romania, Russia, Slovenia and Ukraine and they are expressed in million of 2005 US dollars; the source is OECD.

	Bank assets in CEECs		Bank branches in CEECs		Trade with CEECs		FDIs with CEECs	
	1995	2002	1995	2002	1995	2002	1995	2002
	Belgium	683,033	1,829,164	0	0	333,396	373,654	-
Germany	62,885	428,906	92	390	3,107,319	4,913,684	288,195	666,588
Spain	0	0	0	78	144,935	397,425	-	-
France	147,627	223,948	46	195	544,447	1,052,328	59,138	169,107
Italy	899,262	1,377,057	92	156	1,157,933	1,822,404	-	56,290
Korea	8	1,844	0	0	127,056	191,467	11,792	21,470
Netherlands	130,020	323,584	46	312	571,324	812,014	44,666	247,511
Sweden	77,049	436,617	46	39	240,804	380,234	-	81,588
Switzerland	0	0	0	39	384,170	364,834	43,902	110,962
UK	18,474	125,206	46	273	542,216	815,781	26,818	131,070
USA	185,118	538,889	0	117	695,122	875,682	147,246	146,365

Table 2

Foreign presence in CEECs countries from selected OECD countries

Bank assets are from Bankscope and are expressed in millions of 1995 US dollars. Bank branches are from The Bankers and are expressed in units. Trade is the sum of import from and export to CEECs and is expressed in millions of 1995 US dollars; the source is IMF. FDIs are in million of 2005 US dollars; the source is OECD.

	Foreign bank assets		Foreign bank branches		Trade with selected OECD countries		FDIs with selected OECD countries			
	1995	2002	1995	2002	1995	2002	1993	1995	2002	
	Albania	0	0	0	0	6,446	8,537	-	-	-
Armenia	0	0	0	19	2,151	5,453	-	-	-	
Azerbaijan	0	0	0	37	2,362	3,786	-	-	-	
Bulgaria	106,543	80,131	0	0	58,160	67,352	648	1,621	31,232	
Czech Republic	1,046,150	1,516,262	44	130	268,793	384,525	51,483	134,607	305,146	
Estonia	16,565	113,894	22	19	11,202	26,682	-	-	-	
Georgia	524	2,778	0	37	643	1,220	-	-	-	
Hungary	1,138	8,410	22	112	230,256	289,557	101,967	157,645	324,821	
Kyrgyzstan	0	568	0	19	2,334	1,291	-	-	-	
Croatia	0	0	0	0	102,493	129,709	-	-	-	
Kazakhstan	0	4,304	22	93	29,295	35,465	-	-	-	
Lithuania	2,106	40,374	0	0	31,209	39,255	-	-	-	
Latvia	9,945	85,692	0	0	12,006	22,248	-	-	-	
Moldova	1,329	1,127	0	37	2,435	3,729	-	-	-	
Macedonia	0	9,834	0	0	15,242	19,654	-	-	-	
Poland	520,504	1,368,168	22	168	471,582	628,552	-	-	-	
Romania	0	3,428	66	130	114,580	185,814	1,965	7,557	46,909	
Russia	0	0	66	503	714,318	874,919	13,054	46,598	151,378	
Slovenia	31,717	45,773	22	56	170,185	215,476	5,915	11,293	28,853	
Slovakia	129,331	198,637	0	19	67,557	111,595	-	-	-	
Turkmenistan	0	0	0	19	7,557	8,094	-	-	-	
Ukraine	0	7,706	0	19	75,289	94,969	1,179	2,592	13,625	
Uzbekistan	0	0	0	0	17,559	22,421	-	-	-	

Table 3

Summary statistics on foreign presence shares

All values are expressed in percentage points.

	Mean	Median	St. dev.	Maximum
Shares with respect to totals of the country of origin in 1995:				
Bank FDI	3.57	0.00	16.11	100.00
Foreign bank branches	2.38	0.00	13.90	100.00
Trade	4.36	1.17	8.02	53.12
Total FDI	5.61	0.00	11.90	49.41
Shares with respect to totals of the country of origin in 2002:				
Bank FDI	3.57	0.00	15.48	99.59
Foreign bank branches	3.53	0.00	14.09	100.00
Trade	4.36	1.30	7.28	44.37
Total FDI	7.27	3.44	8.04	28.39
Changes in the shares with respect to totals of the country of origin between 1995 and 2002:				
Bank FDI	0.00	0.00	12.20	99.59
Foreign bank branches	1.15	0.00	14.01	100.00
Trade	0.01	0.05	2.70	10.66
Total FDI	0.41	0.37	8.92	27.41
Shares with respect to totals of the country of origin in 1995:				
Bank FDI	3.32	0.00	16.11	100.00
Foreign bank branches	1.85	0.00	11.74	100.00
Trade	9.11	4.65	12.00	76.51
Total FDI	7.42	0.00	16.46	86.83
Shares with respect to totals of the country of destination in 2002:				
Bank FDI	3.93	0.00	15.83	100.00
Foreign bank branches	2.27	0.00	9.44	100.00
Trade	9.12	4.43	11.73	76.47
Total FDI	7.07	4.39	8.89	40.54
Changes in the shares with respect to totals of the country of destination between 1995 and 2002:				
Bank FDI	0.61	0.00	9.31	93.76
Foreign bank branches	0.41	0.00	9.34	50.00
Trade	0.01	-0.02	7.50	44.68
Total FDI	-0.35	0.00	12.68	26.73

Table 4

Changes in foreign bank assets and branches (Origin country)

The dependent variable measures the absolute change of the share of the value of the variable measuring foreign presence in destination country j (Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Macedonia, Moldova Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine) from origin country i (France, Germany, Italy, Korea, Netherlands, Sweden, United Kingdom and United States) as a ratio of total foreign presence in destination country j . Foreign bank assets are from Bankscope. Foreign bank branches are from The Bankers. Bilateral trade is from the IMF and is the share of the sum of import and exports. Estimation is conducted using an OLS specification. Standard errors in parenthesis. * indicates significance at 10 per cent level, ** at 5 per cent and *** at 1 per cent.

	(1)	(2)	(3)	(4)
	Dependent variable is the absolute change between 1995 and 2002 in the share of:			
	Foreign bank assets in 2002	Foreign bank assets in 2002	Foreign bank branches in 2002	Foreign bank branches in 2002
Foreign bank assets in 1995 (share)	-0.62*** (0.13)	-0.41*** (0.10)	-0.06 (0.06)	0.02 (0.05)
Bilateral FDIs in 1995 (share)	0.38* (0.22)		0.03 (0.10)	
Bilateral trade in 1995 (share)	0.36* (0.20)	0.38 (0.27)	2.28*** (0.29)	1.33*** (0.44)
Foreign bank branches in 1995 (share)	0.00 (0.03)	0.10* (0.05)	-0.62*** (0.10)	-0.54*** (0.10)
Geographical distance (log.)	0.04 (0.04)	0.00 (0.02)	0.28*** (0.04)	0.05** (0.02)
Common border	-0.17* (0.09)	0.01 (0.13)	0.02 (0.04)	-0.10** (0.05)
Constant	-0.43 (0.38)	-0.06 (0.13)	-2.57*** (0.30)	-0.34** (0.15)
Observations	154	504	154	504
R-squared	0.64	0.38	0.66	0.47

Table 5

Changes in bilateral trade and FDI (Origin country)

The dependent variable measures the absolute change of the share of the value of the variable measuring foreign presence in destination country j (Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Macedonia, Moldova Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine) from origin country i (France, Germany, Italy, Korea, Netherlands, Sweden, United Kingdom and United States) as a ratio of total foreign presence in destination country j . Foreign bank assets are from Bankscope. Foreign bank branches are from The Bankers. Bilateral trade is from the IMF and is the share of the sum of import and exports. Estimation is conducted using an OLS specification. Standard errors in parenthesis. * indicates significance at 10 per cent level, ** at 5 per cent and *** at 1 per cent.

	(1)	(2)	(3)
	Dependent variable is the absolute change between 1995 and 2002 in the share of:		
	Bilateral trade in 2002 (change)	Bilateral trade in 2002 (change)	Bilateral FDI in 2002 (share)
Foreign bank assets in 1995 (share)	0.04*** (0.01)	0.02** (0.01)	0.08** (0.04)
Bilateral FDI in 1995 (share)	-0.02 (0.02)		0.54*** (0.06)
Bilateral trade in 1995 (share)	-0.22*** (0.07)	-0.26*** (0.05)	0.74*** (0.12)
Foreign bank branches in 1995 (share)	0.03** (0.02)	0.01 (0.01)	0.00 (0.02)
Geographical distance (log.)	-0.02*** (0.01)	-0.01*** (0.00)	0.08*** (0.02)
Common border	0.01 (0.02)	0.01 (0.01)	-0.04 (0.03)
Constant	0.12*** (0.02)	-0.39** (0.15)	0.12*** (0.02)
Observations	504	126	504
R-squared	0.56	0.79	0.56

Table 6

Changes in foreign bank assets and branches (*Destination country*)

The dependent variable measures the absolute change of the share of the value of the variable measuring foreign presence in destination country j (Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Macedonia, Moldova Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine) from origin country i (France, Germany, Italy, Korea, Netherlands, Sweden, United Kingdom and United States) as a ratio of total foreign presence in destination country j . Foreign bank assets are from Bankscope. Foreign bank branches are from The Bankers. Bilateral trade is from the IMF and is the share of the sum of import and exports. All regressions include dummies for the countries of origin and of destination. Estimation is conducted using an OLS specification. Standard errors in parenthesis. * indicates significance at 10 per cent level, ** at 5 per cent and *** at 1 per cent.

	(1)	(2)	(3)	(4)
	The dependent variable is the absolute change between 1995 and 2002 in the share of:			
	Foreign bank assets in 2002	Foreign bank assets in 2002	Foreign bank branches in 2002	Foreign bank branches in 2002
Foreign bank assets in 1995 (share)	-0.28*** (0.08)	-0.23*** (0.05)	0.19*** (0.06)	0.11** (0.05)
Bilateral FDIs in 1995 (share)	-0.00 (0.17)		0.04 (0.06)	
Bilateral trade in 1995 (share)	0.94* (0.57)	0.09* (0.06)	0.36 (0.26)	0.05 (0.04)
Foreign bank branches in 1995 (share)	0.03 (0.07)	0.37*** (0.12)	-0.62*** (0.10)	-0.52*** (0.09)
Geographical distance (log.)	0.01 (0.02)	0.01 (0.01)	0.02** (0.01)	-0.01 (0.01)
Common border	-0.17 (0.12)	-0.13* (0.07)	0.03 (0.05)	-0.08 (0.06)
Constant	-0.28* (0.16)	-0.05 (0.05)	-0.25*** (0.09)	0.09* (0.05)
Observations	154	504	154	504
R-squared	0.34	0.39	0.55	0.51

Table 7

Changes in bilateral trade and FDI (*Destination country*)

The dependent variable measures the absolute change of the share of the value of the variable measuring foreign presence in destination country j (Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Macedonia, Moldova Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine) from origin country i (France, Germany, Italy, Korea, Netherlands, Sweden, United Kingdom and United States) as a ratio of total foreign presence in destination country j . Foreign bank assets are from Bankscope. Foreign bank branches are from The Bankers. Bilateral trade is from the IMF and is the share of the sum of import and exports. All regressions include dummies for the countries of origin and of destination. Estimation is conducted using an OLS specification. Standard errors in parenthesis. * indicates significance at 10 per cent level, ** at 5 per cent and *** at 1 per cent.

	(1)	(2)	(3)
	Dependent variable is the absolute change between 1995 and 2002 in the share of:		
	Bilateral trade in 2002 (change)	Bilateral trade in 2002 (change)	Bilateral FDI in 2002 (share)
Foreign bank assets in 1995 (share)	0.05** (0.02)	0.03 (0.02)	0.23*** (0.05)
Bilateral FDI in 1995 (share)	-0.02 (0.02)		0.35*** (0.11)
Bilateral trade in 1995 (share)	0.20*** (0.07)	-0.51*** (0.10)	0.97*** (0.30)
Foreign bank branches in 1995 (share)	0.14*** (0.03)	-0.02 (0.03)	-0.04 (0.10)
Geographical distance (log.)	-0.00 (0.00)	-0.05*** (0.01)	0.08*** (0.03)
Common border	0.02 (0.02)	0.09** (0.04)	-0.01 (0.06)
Constant	-0.03 (0.03)	0.42*** (0.08)	-0.68*** (0.23)
Observations	154	504	154
R-squared	0.59	0.35	0.56