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## Financial integration and entrepreneurial activity: evidence from foreign bank entry in emerging markets

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**NO. 498 / JUNE 2005**

**ECB-CFS RESEARCH NETWORK ON  
CAPITAL MARKETS AND FINANCIAL  
INTEGRATION IN EUROPE**

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AND ENTREPRENEURIAL  
ACTIVITY**

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# FINANCIAL INTEGRATION AND ENTREPRENEURIAL ACTIVITY

## EVIDENCE FROM FOREIGN BANK ENTRY IN EMERGING MARKETS<sup>1</sup>

by Mariassunta Giannetti<sup>2</sup>  
and Steven Ongena<sup>3</sup>

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This paper is part of the research conducted under the ECB-CFS Research Network on “Capital Markets and Financial Integration in Europe”. The Network aims at stimulating top-level and policy-relevant research, significantly contributing to the understanding of the current and future structure and integration of the financial system in Europe and its international linkages with the United States and Japan. After two years of work, the ECB Working Paper Series is issuing a selection of papers from the Network. This selection is covering the priority areas “European bond markets”, “European securities settlement systems”, “Bank competition and the geographical scope of banking activities”, “international portfolio choices and asset market linkages” and “start-up financing”. It also covers papers addressing the impact of the euro on financing structures and the cost of capital.

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## Abstract

An extensive empirical literature has documented the positive growth effects of equity market liberalization. However, this line of research ignores the impact of financial integration on a category of firms crucial for economic development, i.e. the small entrepreneurial firms. This paper aims to fill this void. We employ a large panel containing almost 60,000 firm-year observations on listed and unlisted companies in Eastern European economies to assess the differential impact of foreign bank lending on firm growth and financing. Foreign lending stimulates growth in firm sales, assets, and leverage, but the effect is dampened for small firms. We also find that firms started during the transition period of 1989-1993 – arguably the most connected businesses – benefit least from foreign bank entry. This finding suggests that foreign banks can help mitigate connected lending problems and improve capital allocation.

**Keywords:** foreign bank lending, emerging markets, competition, lending relationships.

**JEL:** G21, L11, L14.

## I. Introduction

Neoclassical theory predicts that financial integration can foster growth in emerging markets because it permits capital from rich countries to be invested in economies with low savings but high growth opportunities. Empirical work has focused so far on the impact of equity market liberalization on growth. Henry (2000a, b, 2003) and Bekaert, Harvey and Lundblad (2003) among others show that equity market liberalization decreases the cost of capital, causes investment booms, and increases aggregate growth. Recent empirical firm-level evidence corroborates and extends these aggregate findings. Chari and Henry (2004) for example show that stock prices rally following equity market liberalization. They also document that companies with a larger free float and more liquid stocks tend to attract more investor interest and experience a larger decrease in their cost of equity than the other listed companies.

While listed companies seemingly benefit from financial integration through a lower cost of equity capital, the impact of integration on non-listed firms has not been investigated thoroughly yet and hence remains unclear. In developing countries stock markets are often not well developed and as a consequence few firms are listed (La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998)). Growth prospects in those countries depend to a large extent on the creation of new businesses and investment of non-listed companies.

This paper aims to analyze how and to what extent the process of financial integration can benefit this category of small entrepreneurial firms, an issue that has so far been largely neglected in the literature. In order to do so, we focus on a different aspect of financial integration, which has captured a lot of attention in the policy debate, but less so in the academic community: foreign bank entry.

Unlisted companies in countries with underdeveloped equity markets and weak shareholder protection rely to a large extent on debt and specifically on bank credit to fund investment (Booth, Aivazian, Demircuc-Kunt and Maksimovic (2001) and Giannetti (2003)). Foreign banks may thus represent an invaluable source of capital for small firms and foster the creation of new companies.

Foreign banks may not only have easier access to foreign capital than domestic banks, and thus present a stable source of external funds for firms, but they may also contribute to mitigating problems that afflict bank lending. In many developing countries, banks often lend to cronies (Laeven (2001) and La Porta, Lopez-de-Silanes and Zamarripa (2003)). As a consequence established companies owned by related individuals receive funding even if inefficient, while young and potentially highly profitable firms face credit rationing. Foreign banks have fewer connections to local families and politicians. Therefore, foreign banks may be more inclined to fund promising projects, rather than related or state-owned firms. In addition, foreign banks may import lending expertise and sound practices.

There are reasons however why small firms may not be able to benefit to the full extent from financial integration, even in the case of foreign bank entry. Foreign banks may lack local information; a major problem in countries where asymmetric information problems are severe and legal enforcement is weak (Acharya, Sundaram and John (2004)). In addition foreign banks are often large organizations and reluctant to decentralize decision power. However decentralization is necessary if lending decisions need to be based on soft information, as is often the case when dealing with small and young firms. As a result the local branches of foreign banks may specialize in funding large firms and overlook small firms. Such neglect may create concerns that foreign bank presence may be detrimental to the financing and growth of small and young businesses, if foreign banks would compete away domestic banks. To conclude, small and young firms may be able to benefit from financial integration but even if financial integration involves foreign bank entry, possibly only to a lesser extent than large and established companies. To the best of our knowledge, so far no other study has investigated this differential impact of integration.

We explore a comprehensive dataset containing both listed and unlisted companies operating in the Eastern European economies. The dataset we employ is the most comprehensive source of information on entrepreneurial companies in emerging markets. The large panel, containing almost 60,000 firm–year observations, allows us to assess the differential impact of foreign bank lending on firm growth and financing. We face a potentially insidious endogeneity problem, i.e. foreign banks may in particular enter countries that are expected to grow more. We instrument our



proxies for foreign bank presence with characteristics of the institutional environment that are known to affect foreign banks' willingness to grant loans but are predetermined with respect to foreign bank entry. Additionally, we are not only studying the effect of foreign lending on average firm growth, but also investigate which type of firms grows more. This investigation significantly assuages any lingering doubts about the direction of causality.

In short, we find that foreign lending stimulates growth in firm sales, assets, and leverage, but that the effect is significantly dampened for small firms. Our findings suggest that although large firms benefit more from foreign bank presence, small entrepreneurial companies also profit from financial integration.

Since we focus on Eastern European economies, we can use the regime shift that took place between 1989-1993 as a natural experiment to evaluate whether foreign banks mitigate problems of related lending. We conjecture that firms created during the transition period are more likely to belong to cronies who established businesses in a moment of confusion to strip assets from the government. We find that when foreign bank presence becomes more pervasive these firms receive fewer loans and grow less. In contrast, foreign banks facilitate access to credit and foster growth of young companies born after the transition period. Perhaps more surprisingly, companies already existing before the transition period also receive more loans. This is most likely due to the fact that only the most viable businesses survived. Overall, these findings suggest that foreign bank entry helps mitigating problems of related lending.

Not only has foreign bank presence an impact on individual firm performance, but it also affects industrial structure. Foreign bank lending fosters entry and exit especially in bank dependent industries. This suggests that foreign banks are more willing to take hard choices than domestic banks, and confirms that foreign bank presence helps to mitigate connected lending problems. Even though foreign banks favor entry, lack of local knowledge remains a handicap. Indeed we find that small firms have a lower market share and a lower proportion of total assets in countries with stronger foreign bank presence.

A few studies have already analyzed the lending practices of foreign banks. Mian (2004) for example shows that foreign banks in Pakistan avoid lending to

opaque firms, especially if the cultural and geographical distance between the CEO and the loan officer is large. Analogously, Berger, Klapper and Udell (2001) document that foreign banks in Argentina have difficulties lending to informationally opaque firms. Clarke, Cull and Soledad Martinez Peria (2001) and Clarke, Cull, Soledad Martinez Peria and Sanchez (2002), on the other hand, find that foreign banks lend to small firms at least as much as domestic banks do. Using survey data they further document that both small and large firms assess access to credit to ease following foreign bank entry. However, none of these papers has analyzed the actual impact of foreign bank integration on firm growth, capital structure, and investment policies. To the best of our knowledge our paper is the first to do so.

Our paper is related to a vast literature on finance and growth which following the lead of King and Levine (1993a, b) has analyzed how financial development in general and banking system development in particular affect growth in a large cross-section of countries.<sup>1</sup> We evaluate different aspects of financial development, namely financial development induced by the integration of banking systems. Additionally, in contrast to most of the literature, we use firm level data (not macro data). In this respect, our paper is mostly related to recent studies that employ firm level data and analyze how different aspects of financial development affect firm growth and investment. In particular, Guiso, Sapienza and Zingales (2004) analyze the effect of financial development on firm growth, entry, and capital structure across Italian provinces. Similarly, Bertrand, Schoar and Thesmar (2004) analyze the effect of banking system deregulation on French firms and industrial structure. We complement their work by looking at the firm and industry level effects of a different aspect of a banking system, i.e., foreign bank presence.

We organize the rest of the paper as follows. Section II reviews the predictions regarding lending in emerging markets and foreign bank orientation, and presents recent empirical findings. Section III introduces the data and sample characteristics. Section IV discusses the variables used in the specifications and displays and discusses the empirical results on firm growth and financing. Section V analyzes sectoral performance. Section VI concludes.

## II. Theoretical Predictions on the Effects of Foreign Bank Entry in Eastern European Economies

In this Section we aim to highlight the possible benefits and drawbacks of foreign bank entry, in particular for Eastern European economies. In this way we strive to identify the channels through which foreign bank entry may affect firm growth and industrial structure, the main issue that we explore in the rest of the paper.

### A. *Credit Availability*

Financial integration allows capital to flow from capital-abundant countries, where expected returns are low, to capital-scarce countries, where expected returns are high (Obstfeld and Rogoff (1995)). Capital inflows may foster growth by increasing the amount of funding available to domestic projects.

More in general, in countries with underdeveloped financial systems like the Eastern European economies, financial integration should increase the supply of finance and thus expand the national financial system of these countries. In this respect, financial integration is expected to spur faster growth across the board (Rajan and Zingales (1998), Guiso, et al. (2004)).

The beneficiaries of financial market integration may well depend on the nature of the capital flows. Wider availability of funds decreases the interest rate and the ensuing decrease in the cost of capital should abet all firms. Equity market liberalization on the other hand clearly benefit mainly listed companies or unlisted companies that are large enough to consider an IPO.

Since all firms borrow from banks, the benefits of foreign bank entry may well be more evenly distributed. Foreign bank presence fostering the development of the banking system widens the availability of credit and relaxes firm capital constraints also for small and young firms. Foreign bank presence may thus have pervasive positive effects on a country's level of entrepreneurial activity.

We expect that foreign bank entry might have been particularly beneficial for Eastern European economies. After the fall of the communist regimes, Eastern Europe badly needed capital to restructure its real economy. In particular, state-owned

enterprises had to modernize to compete in competitive markets. Additionally, Eastern European economies badly needed new small firms to provide basic consumer goods and services, and entrepreneurs initially lacked access to start-up capital. But the Eastern European banking sector initially seemed inadequately small to satisfy this hefty demand for funds. For example, in 1993 domestic credit over GDP equaled around 55 percent in the transition countries in our sample and average bank assets per capita were below 1,300 US Dollars (Source: *IMF International Financial Statistics Yearbook*). In contrast, in the other 46 developing countries domestic credit over GDP actually exceeded 85 percent and average bank assets were above 1,500 US Dollars per capita. Bank assets in many developed European countries surpassed 40,000 US Dollars per capita. Foreign capital channeled by foreign banks contributed significantly to relax these constraints. By 1997 for example average bank assets in the transition countries had already increased to almost 2,000 US Dollars per capita.

#### *B. Sounder Lending Practices*

The ownership structure of domestic banks often leads to lending practices that are far from sound. Local governments and shareholders of non-financial companies often control domestic banks in developing countries. State or corporate control may give rise to conflicts of interests with pernicious effects on financial stability.

La Porta, et al. (2003) for example find that Mexican banks make larger loans at a lower interest rate to related companies that are then more likely to default. Similarly, state-owned banks are often driven by political considerations. Sapienza (2004) convincingly shows that in Italy loans from state-owned banks are a vehicle for supplying political patronage. Consistently, Mian (2003) finds that state-owned banks in emerging economies perform uniformly poorly and only survive due to strong government support.

Government ownership of banks is pervasive around the world, but particularly acute in Eastern European economies. La Porta, Lopez-de-Silanes and Shleifer (2002) for example estimate that governments control on average 40 percent of total bank assets, but in Eastern Europe governments still controlled almost 70 percent of all bank assets in the year 2000.

Problems of related lending seem also omnipresent in Eastern Europe. Laeven (2001) for example finds that banks in Russia often grant larger loans to companies that own equity in the bank. In addition, politicians in Eastern Europe continue to mobilize state-owned banks to support employment in state-owned or even recently privatized enterprises.<sup>2</sup>

Opening the domestic financial sector to foreign competition helps to mitigate these conflicts of interests. Domestic firms typically do not control foreign banks. While foreign governments own some foreign banks and these banks may be driven by political motives when lending to their respective home constituencies, these foreign state-owned banks are also naturally unencumbered by any domestic ownership ties and political motivations in making lending decisions.

For all these reasons, we expect foreign bank lending to stimulate firm growth and leveraging, not only because foreign banks may direct more capital into the country, but also because foreign bank presence may enhance allocational efficiency. Foreign banks are likely to shun businesses created during the transition years, because often these firms were mere conduits to strip assets from the government. There is actually evidence that domestic, in particular state-owned, banks favored transition businesses and in the process of privatization made large loans to potential entrepreneurs to enable them to tender and acquire firms (Simonson (2001)).

Small and young firms, a category particularly affected by the ineptitude and corruption of domestic bank officers (Beck, Demirguc-Kunt and Levine (2004b)), are expected to benefit most from foreign bank lending. Firms untainted by any past bank or state ownership ties are likely to be able to access to more bank loans and thus grow more if foreign bank presence increases. In addition, foreign bank lending should increase new firm creation and entry.

### *C. Hard versus Soft Information*

Foreign banks may seek promising local projects and lend at fair rates rather than lending to related firms at below market loan rates. Foreign banks may also import lending expertise and sound lending practices. But foreign banks may suffer considerable organizational handicaps in engaging small and young local firms, a category of firms important for growth in developing countries.



Banks are often already sizeable before venturing abroad, following customers or seeking diversification (see the review by Clarke, Cull, Soledad Martinez Peria and Sanchez (2003)). Once abroad, they may cater to international companies from their home country, which seek their services (Berger, Dai, Ongena and Smith (2003)) and are often considered safer and more profitable borrowers. However, large banks may suffer from managerial diseconomies when engaging both relationship (small) and transactional (large) clients (Berger, Demsetz and Strahan (1999)).

Even more importantly, foreign banks may fail to collect “soft” information (for example, a character assessment of an entrepreneur, the degree of trust), which is crucial in lending to small firms. In fact, small and young firms typically report little or no “hard” information, for example detailed financial statements, credit history etc. (Berger and Udell (2002), Petersen (2002)). The use of soft information in lending decisions requires however a decentralized organization that grants local branch managers substantial decision powers (Liberti (2002)), because soft information cannot be passed as easily as hard information within the bank (Stein (2002)). Foreign banks may hesitate to decentralize because the local bank personnel may be considered lacking expertise or even untrustworthy.<sup>3</sup>

Some of these concerns may be mitigated by the fact that improvements in communication and information processing technology may have altered the possibilities to tap into, collect, and relay information on small businesses. Hence the range of firm opaqueness over which foreign banks are willing to fund may have expanded (Petersen and Rajan (2002)). Nevertheless, foreign bank presence may still hamper small and young firm financing and growth, in particular if foreign banks substitute for domestic banks, as we discuss in the next Section.

#### *D. Competition, Stability, and Dynamic Effects in the Banking System*

Even though access to credit for small and young firms may tighten when foreign bank presence is large, the net impact on these firms still need not be negative. Foreign bank presence may influence the banking system of a country in a number of different ways, such that small firms still end up benefiting. This is true even if no foreign banks would directly lend to small firms.

In developing countries, including Eastern European economies, foreign banks are often more efficient and profitable than domestic banks (Demirguc-Kunt and Huizinga (2000), Green (2003), Naaborg, Scholtens, de Haan, Bol and de Haas (2003)). Fostering competition, foreign banks may reduce profits and interest margins of all banks operating in the market (Claessens, Demirguc-Kunt and Huizinga (2001) and Unite and Sullivan (2003)).

In developing countries, foreign bank entry may also stabilize the financial system (Crystal, Dages and Goldberg (2002)). First, foreign banks have sounder lending practices and accumulate fewer bad loans. In addition foreign banks may be more resilient to negative shocks because of their direct access to foreign savings. On the other hand, foreign banks may introduce more volatility in lending because they can more easily find alternative investment opportunities (Morgan and Strahan (2003)) or transfer shocks from their home countries (Soledad Martinez Peria, Powell and Vladkova Hollar (2003)). However, the latter effect is likely to be second order in emerging markets that are generally exposed to significantly larger shocks than the foreign banks' home countries. Consistently, de Haas and Lelyveld (2003) find no evidence of increased instability following foreign bank entry for a set of transition countries. To the extent that foreign bank entry actually reduces concentration, fewer, not more, banking crises should ensue (Beck, Demirguc-Kunt and Levine (2004a)).

Finally, the mode of foreign bank entry may determine its effects on local financing. It is well known that if foreign banks enter through mergers and acquisitions, they have the potential to harm small local firms borrowing from the domestic target bank. Berger and Udell (1996) and Peek and Rosengren (1996) for example find that as domestic banks grow through consolidation, they tend to reduce the supply of loans to small businesses, in particular when the acquirer previously focused on large-firm lending (Peek and Rosengren (1998)).

On the other hand if foreign banks enter a new market by opening new branches they do not substitute domestic banks but simply increase the number of active financial intermediaries. Enhancing the development of the domestic banking system (as in II.A) without decreasing the number of financial intermediaries with local information can only be positive. This is also true if foreign banks enter by acquiring local distressed banks or state-owned banks, as has often been the case in

Eastern Europe. Distressed or state-owned banks were often plagued by ill-conceived and corrupted lending policies, and were unlikely to have played a major role in fostering local entrepreneurial activity in the first place.

Given the actual mode of entry of foreign banks in Eastern European economies it is not clear whether small firms were harmed considerably. In the first part of the nineties, foreign banks established primarily greenfield subsidiaries in Eastern Europe (de Haas and Lelyveld (2003)), increasing the level of financial intermediation without substituting domestic banks. When foreign banks acquired existing domestic banks they more often than not acquired banks in need of fresh capital, sometimes encouraged to do so by domestic regulation (to obtain a license in Poland for example, Naaborg, et al. (2003)). Foreign banks started only recently merging subsidiaries with domestic banks they already control, spurred by and contributing to an industry-wide global consolidation trend.

Whatever the mode of entry, even though the entrant or newly acquired foreign bank may focus on servicing predominantly large firms, incumbent or *de novo* domestic banks may step up the plate to fill the funding gap. Berger, Goldberg and White (2001) and Berger, Bonime, Goldberg and White (2004) show this to be the case in the US following domestic bank mergers that increased bank size and shifted the merged bank towards large business lending. Bonin and Abel (2000) provide anecdotal evidence that this dynamic effect may have moderated the impact of foreign bank entry in Hungary.

To conclude foreign bank entry may foster competition, efficiency, and stability, in which case firm growth and financing should increase across the board. On the other hand, small firm growth and financing may be negatively affected if foreign banks enter through M&As. In that case the net effect will also depend on the dynamic response by other competing banks.



### III. Methodology and Identification

Identifying the effects of foreign bank entry is not an easy task and poses problems similar to the identification of the effects of financial development on growth. The mere correlation between financial development and growth cannot be interpreted as evidence of causality because financial markets may develop in the anticipation of future opportunities. Analogously, foreign banks may enter and lend to a larger extent in countries that are expected to grow more in the future.

We try to tackle this problem in different ways. First, we analyze the effect of foreign bank lending on firm rather than country growth. Looking at firm growth allows us to partially mitigate the problem of reverse causation because we are able to control for country fixed effects, time-varying growth opportunities, financial development, and GDP per capita.

Second, we can analyze the differential impact of foreign bank lending on firms with different characteristics (small and large firms, firms created before after and during the transition period). In this way, we test the validity of the channels through which foreign bank entry is expected to affect firm growth. Even if average firm growth and foreign bank lending were correlated because of an omitted common factor, it would be difficult to argue that such an omitted common factor affects the relation between foreign bank lending and firm growth in a systematic way for firms with different characteristics.

Third, and perhaps most convincingly, our results become stronger if we instrument foreign bank lending. During the sample period Eastern European countries pursued reforms that improved to varying degrees the protection of investor rights. We employ the creditor rights detailed in Pistor, Raiser and Gelfer (2000) as instruments. In particular, our instruments include: (1) creditors' control of the bankruptcy process, (2) creditors' control of the bankruptcy process, including reorganization consent, (3) the legal provisions on security interests, and (4) the *ex post* creditors' sanctions on management. Previous studies suggest that protection of creditor rights affects foreign bank lending. Esty (2003), for example, finds that different legal and financial systems affect the composition of loan syndicates. In

particular, foreign banks provide a greater share of total funds in countries with strong creditor rights, strong legal enforcement, and less-developed financial systems.

We use predetermined values of the institutional variables as is consistent with a causal link, and exploit changes in investor protection across countries to identify the effect of changes in foreign bank lending on our variable of interest.<sup>4</sup> The intuition behind our identification strategy is similar to Jayaratne and Strahan (1996). They use the deregulation of bank branches in the U.S. as an instrument to show that improvements in the quality of bank lending are positively related to economic performance. Similarly, we analyze how the removal of implicit barriers to foreign bank presence—a weak institutional environment—affects economic performance.

To be able to interpret the relation between foreign bank presence and economic performance as a causal relation, we surmise that foreign banks did not influence the initial configuration of creditor rights or any later amendments.<sup>5</sup> This is likely because foreign banks are not part of the domestic constituency the politicians want to please to be reelected. However, to establish the causal link, we also need that domestic banks and other economic agents did not influence creditor rights in a way that is systematically correlated to expected economic performance. In general, institutional change is never completely exogenous. The process of legal change in Eastern European economies however corroborates our assumptions. These countries started from very different initial conditions and exhibit a tendency to legal convergence Pistor (2000). Legal convergence seems to have been primarily the result of international institutions' technical assistance programs and of the harmonization requirements for countries wishing to join the European Union.

In addition, stronger creditor rights may both help and hurt domestic banks (as creditors and competitors to foreign banks respectively) and incumbents firms. The state of flux in the political process in Eastern Europe and the multitude of parties affected by changes in creditor rights complicated lobbying in a way that it makes arduous to posit and find a systematic link between economic performance and legal change, and particularly not given its timing and speed (which is the variation that we exploit to identify the effects of foreign bank lending). For these reasons, we believe that it is reasonable take legal change as exogenous.

We are aware that institutional characteristics may have a direct effect on growth for instance because they affect financial development. Desai, Gompers and Lerner (2003) for example show that country-specific political, legal, and regulatory variables influence entrepreneurial activity in Eastern European economies. However, Desai, et al. (2003) do not include creditor rights in their study and we further conjecture creditor rights may affect firm financing decisions foremost through its impact on foreign bank presence. Most importantly, we control for aggregate growth, GDP per capita, and in particular financial development, which are the alternative channels through which the institutional framework can affect firm growth.

Finally, we do not look at a single aspect of firm growth. We evaluate the impact of foreign lending on firm growth and look at the mechanisms through which foreign lending may affect growth. When observing a positive relationship between foreign lending and growth for a given category of firms, we can only interpret the correlation as causation if a mechanism consistent with such an interpretation – i.e., this category of firm increases the use of bank credit and decrease the use of alternative source of funds such as trade credit – is supported by the empirical evidence. Additionally, we also evaluate to what extent the results we find using firm level data are present in the aggregate sectoral data. All considered we are confident that our empirical methodology can provide evidence suggestive of a causal impact of foreign bank lending on the growth of entrepreneurial firms across different countries.

## IV. Data and Sample Characteristics

### A. Data Sources

We use data from a variety of sources. To construct our firm and sector specific variables we use the 2003 edition of *Amadeus* compiled by *Bureau Van Dijck*. Giannetti (2003) and recently Desai, et al. (2003) and Klapper, Laeven and Rajan (2004) also employ this dataset.

We extract firm-specific data for 14 Eastern European transition countries, listed in Table 1, for the years 1993 to 2002. The sample includes companies that meet at least one of the following three criteria: (1) its operating revenues are larger than or equal to ten million euros, (2) its book assets are larger than or equal to 20 million euros, and (3) the number of employees is larger than or equal to 150. The criteria are somewhat more restrictive for larger countries, in our sample the Russian Federation and Ukraine: cutoffs then equal 15 million, 30 million, and 200 respectively. Coverage of firm financial information expanded steadily throughout the sample period, but in particular from 1997 to 1998. For example, in 1993 we have information on the main balance sheet items for 1,673 firms, while in 2002 23,541 firms were covered.

To construct our bank sector variables we use the 2003 edition of *Bankscope*. We obtain GDP growth from the *World Development Indicators*, and, as explained in Section III, rely on Pistor, et al. (2000) for the creditor rights indices.

### B. Descriptive Statistics

Table 1 reports sample characteristics by country. We report for each country the number of firms, foreign bank lending as a percentage of total bank lending, and average firm assets, age, and growth in assets in the year 2000 (a typical year for which coverage is optimal).

Our main proxy for foreign bank presence is the percentage of foreign lending (% Foreign Lending). We define % Foreign Lending as the ratio of loans extended by foreign banks to total bank loans in a given country. A bank is defined to be foreign if foreign individuals, corporations, financial institutions, or even foreign governments

combined own more than 50 percent of the bank. This cutoff is similar to the one used in previous literature (see, for instance, Mian (2003)) and reflects common majority voting rules. As the distribution of foreign ownership is highly bimodal, changing the cutoff will hardly affect the results. Indeed, 63 percent of all banks in the sample are 100 percent domestically owned. But foreigners own less than 50 percent in only 11 percent of the banks, while in almost 20 percent of the cases foreigners own more than 90 percent.

Foreign ownership is also more concentrated than domestic ownership. For example, the Herfindahl – Hirschman Index (HHI) (the sum of squared shares) of ownership concentration for domestic banks is only around 0.25, for foreign banks it is almost 0.75 (the difference is statistically significant at the 1 percent level). Hence, foreign banks are controlled by one or two foreign blockholders.

There is a large variation in foreign bank lending across the 14 countries and across time. The percentage foreign bank lending in 1996 for example ranges from 0 in the Republic of Macedonia to almost 92 percent in Bulgaria and across all countries foreign lending increases almost 10 percent in only four years, from 44 percent in 1996 to 53 percent in 2000.

In Table 1 we also categorize the countries by 1996 foreign lending into a high and low group (cutoff: 50 percent). Foreign lending in the low group increases faster. In addition, firm asset size and age are lower and asset growth is higher in the low group. The latter finding is particularly surprising in light of our earlier discussion but taken together with the empirical evidence on size and age demonstrates the value of investigating the differential impact of firm growth within each country.

We measure firm performance by sales and asset growth. As often argued, firm growth should be partly determined by the availability of credit. Some observations on firm sales seemed excessively large. To limit the influence of these outliers, we censored the growth rates at the 1 and 99 percentiles, admittedly *ad hoc* cutoffs. Given the many observations and controls in our empirical models, our key results should not be affected. Table 2 reports firm sales averaged across the sample in US Dollars.

We define sales growth as  $\ln(\text{Sales}_{t+1} / \text{Sales}_t)$  (and present it in percentage terms in all specifications). We denote this variable in the Tables as  $\Delta \ln(\text{Sales})$ . The

logarithm form should again contribute to minimizing the effects of the censored large values. Mean sales growth thus defined equals 11.3 percent. Similarly defined, mean asset growth equals 4.0 percent.

We further assess the effect of the availability of credit on the changes in the firms' capital structure by focusing on the increase in financial debt between  $t-1$  and  $t$  relative to the firm's total assets at time  $t$  ( $\Delta\text{Debt}/\text{Assets}$ ), and the increase in account payables between  $t-1$  and  $t$  relative to the firm's total sales at time  $t$  ( $\Delta\text{Trade Credit}/\text{Sales}$ ).<sup>6</sup> Wider availability of credit should increase leverage, but decrease the use of trade credit. Consistently with this interpretation, the mean change in leverage equals 1.5 percent. The mean change in trade credit is  $-10.5$  percent.

As indicated earlier foreign bank presence in a particular year in a country is measured as the percentage ratio of foreign bank to total bank lending. This variable is one of our main variables of interest. Foreign lending may enhance the availability and allocation of credit, increasing debt capacity (and therefore leverage) and stimulating growth. The mean percentage foreign lending equals 37.9 percent.

To analyze the differential effect of foreign bank presence on different categories of firms, we focus on three important firm characteristics: size, age, and efficiency. Firm *size* is a common measure of firm access to external funds and visibility. Smaller firms are typically expected to grow faster. However, to the extent that foreign banks have difficulties handling soft information or focus on large firm, small firm growth and ability to increase their debt may be stunted. We measure firm size by the logarithm of the number of employees. The mean (median) number of employees equals 645 (296).

Firm *age*, measured in years, commonly stands for the public track record of the firm, and is introduced in logarithmic form to capture the decreasing informational content of such a record as the firm ages. Younger firms are generally smaller, though the coefficient of partial correlation between the proxies for age and size in our sample is actually smaller than one percent. Like small firms, young firms are expected to grow faster. To the extent that foreign banks have difficulties handling private soft information, young firm growth and access to debt may be lower than for other firms. In addition, firm age in transition countries may proxy for the trustworthiness of the public track record. During the transition period that occurred in

those countries roughly between 1989 and 1993 many firms may have been started as a vehicle for asset stripping by dubious management. We call the firms that were created between 1989 and 1993 (the transition period) the “transition firms”. Firms that started before 1989, on the other hand, though possibly trust worthier than the transition firms may have seen their public track record set to null and as a result may have been considered not unlike firms that started after 1993. To account for this non-monotonicity in age we also introduce dummies that equal one if the firm originated before or after the transition period respectively. The mean (median) age equals 18 (11) with 19 percent of the firms established before 1989 and 45 percent after 1993.

Finally, we introduce a measure of firm *efficiency*. Ex ante it is not entirely clear how efficiency will affect firm growth and financing. However, given their better lending practices and technology, foreign banks should have fewer problems finding and funding efficient firms. Moreover, foreign banks being less connected should favor efficient firms instead of related borrowers. Hence, foreign bank presence is expected to foster access to credit and growth for the most efficient firms. To construct a measure of firm efficiency we divide firm sales by the number of employees. We call a firm efficient when its sales per employee exceed that of the mean firm in its industry (first digit NACE), country, and year. According to this definition, 29 percent of the firms are classified as efficient.

In addition to the independent variables discussed above, we include a set of control variables. In all specifications we include up to 13 Country dummies to control for the fact that elements of a country’s institutional and legal framework may affect firm growth and financing, as documented by Desai, et al. (2003) and Giannetti (2003). We also include up to 10 Industry and 9 Year dummies to control for industry and business cycle effects.

## V. Results

### A. Firm Growth

#### 1. Benchmark Specifications

To assess the differential impact of foreign bank lending on firm growth, we start by regressing firm sales growth on foreign lending, firm characteristics, and country, industry, and year dummies. Next we instrument foreign lending using country specific measures of creditor rights and introduce the key interaction terms between foreign lending and firm characteristics.

We report the results in Table 3. We take a few natural steps to arrive at our empirical benchmark specification that is Model IV. In Model I we employ ordinary least squares, in Model II we instrument % Foreign Lending with the four creditor protection variables and add the efficiency and interaction dummies. In Model III we introduce the transition period dummies and in Model IV we add the ratio of total bank lending to GDP as a measure of financial development. We further correct all standard errors for clustering at the firm level. Taken together, the models illustrate the robustness of the estimated coefficients and the need to instrument our measure of foreign lending.

Our first-stage estimates confirm that the four legal protection variables have high explanatory power for foreign lending, as we can reject the null hypothesis that the four coefficients of legal protection variables equal zero at a 1 percent level of significance in a regression of foreign lending on the instruments and all other exogenous variables. In this respect, our instruments do not suffer from the problems of weak instruments described by Bound, Jaeger and Baker (1995).

The coefficients in all models suggest that foreign lending stimulates firm growth. The interaction terms we introduce in the various specifications in Table 4 suggest that small firms and more surprisingly more efficient and older firms benefit less from foreign bank entry. The fact that small firms benefit to a lesser extent from foreign banks suggests that inability to use soft information may indeed represent a handicap for foreign banks. It is at first sight more surprising that foreign banks do not



seem to convey loans to more efficient companies. The latter result however is not robust, economically quite small, and due with all probability to the definition of our proxy for efficiency. This variable, defined as sales per employee, most likely captures whether a firm business is close to the optimal size in terms of sales. This interpretation is consistent with the fact that efficient companies as well as older and large firms have lower growth rates.

The finding that older firms benefit less than younger companies is only apparently in contrast to the evidence that firms with lower degree of information asymmetry such as large firms receive fewer loans from foreign banks. This finding must be interpreted in the light of the experience of the Eastern European economies. Older firms in our sample are more likely to be born during the transition period and are to a large extent run by entrepreneurs who were able to enjoy the favors of politicians. The fact that they do not fully benefit from foreign bank entry simply suggests that foreign banks might be able to mitigate problems of related lending. This interpretation is confirmed by the fact that these companies appear to have worse corporate governance in our sample. Although it is difficult to define corporate governance in a sample that predominantly includes small unlisted companies, like ours, we have information on whether companies have attracted outside shareholders, an indication that they probably have a viable business and promise outside investors a reasonable return (Giannetti and Simonov (2004)). We find that companies born before and after the transition period have more dispersed ownership. In slightly more than 20 percent of them, the controlling shareholder controls less than 25 percent of the capital. In striking contrast, 44 percent of the companies born during the transition period have a shareholder controlling more than 25 percent of the capital. Most importantly, 45 percent of the companies born during the transition period have the state or a bank as a shareholder. Only 24 (21) percent of the companies born after (before) the transition period have the state or a bank as a shareholder. This indicates that problems of related lending may indeed be more pervasive for companies born during the transition period and that foreign banks help to cure these problems.

We further explore the conjecture that foreign banks discriminate against transition firms by including two dummies for firms born before and after the transition period (instead of firm age). We find that a higher percentage of foreign

lending affects only the growth of firms born during the transition period –i.e. those firms with worse corporate governance – negatively and that firms born after 1993 but also the firms that were already in business before 1989 benefit from foreign bank presence. The pre-1989 firms that are still active are likely to be viable businesses. To this extent, these results suggest that foreign banks may enhance capital allocation.

## 2. *Economic Relevancy*

All, but one, reported coefficients in Model III are statistically significant at the 1 percent level. This significance is not surprising given the large number of observations (57,433) we employ. Hence assessing the economic relevance of the estimated coefficients is crucial. Table 4 reports such an assessment of the economic relevance of the various independent variables for sales growth. For easy reference we take the inverse logarithm of the calculated impacts.

Table 4 shows the impact on sales growth of an increase in foreign lending from 20 percent to 50 percent (approximately one half of a standard deviation on each side of the mean). This experiment would entail for example moving from Serbia and Montenegro to Hungary in 2002 or following the path of Romania from 1998 to 2002, of course all *ceteris paribus*. This 30 percent jump in foreign lending increases firm sales growth by almost 16 percent, a substantial effect (in the specification without interaction terms).<sup>7</sup>

The interaction terms suggest that however the effects of foreign bank lending are unevenly distributed across firms with different characteristics. As already indicated, foreign lending nurtures growth especially for large, non-transition, or inefficient firms. Firms larger than 300 employees (approximately the median) grow by more than 17 percent while firms smaller than this cutoff grow at a rate of only 15 percent.

Hence the picture that arises is that foreign bank lending in transition countries fosters firm growth, but that large firms benefit more. This effect is both statistically significant and economically relevant. We find these results in line with common fears (“small firms are hurt when foreign banks enter”) but contrasting with the work by Clarke, et al. (2001) mentioned earlier. Their results indicate that the total effects were moderate, but they did not find significant differences between the impact on

small and large firm growth, possibly because of data and methodological issues. For instance, they were not able to fully control for differences in country growth opportunities as we do, and most importantly they evaluated the effects of foreign bank presence only through the entrepreneurs' declared ease in access to credit.

Foreign lending further fosters growth of the non-transition firms. If foreign bank lending increases for example from zero to 35 percent (the mean in our sample), pre-1989 and post-1993 firms grow by approximately 2 and 4 percent faster than the other firms, *ceteris paribus*. This finding suggests that related lending has a first-order effect on capital allocation and that foreign bank entry contributes significantly to mitigating this problem.

Finally, we also find that efficient firms grow slower and are adversely affected by foreign bank lending. However, in contrast to our other findings, this result is not robust, and may well depend on the fact that, as we note above, our measure of efficiency also captures optimality in scale.

### 3. *Robustness*

A possible critique to our interpretation of the results is that foreign bank presence and our instruments are correlated to some other factors we have not yet controlled for. For example the country and year fixed effects we include may not capture country time-varying growth opportunities. Foreign banks expanding their lending to be able to profit from the host country growth could explain the positive correlation between foreign bank presence and growth. Hence we control for the yearly country growth rate to capture a-synchronicities in business cycles. Although this variable is often positive and significant, our results remain qualitatively unchanged.

More problematic for our interpretation is that growth opportunities correlated with our proxy for foreign bank presence may differently affect the various categories of firms. We could for example observe that foreign banks expand their presence when growth opportunities improve while at the same time large firms grow faster, for reasons independent of their external financing arrangement. We already control for a wide-range of firm characteristics including industrial sector, firm size and age. However, it is plausible that some firms are able to expand sales and investment more

during a boom because of access to internal funds. For this reason we introduce a variable we call Firm Internal Growth that equals  $ROA / (1 - ROA)$  in all specifications. As usual, ROA is the firm's Return on Assets. Results again are virtually unaffected.

Next we explore if the identity of the lending banks matters. First, foreign banks could foster growth not because they are foreign, but simply because they are not state owned. To explore this possibility we include, the percentage of lending granted by private domestic banks or foreign banks. While this variable has generally a positive effect on growth, the effect of foreign bank lending remains positive and significant and, perhaps most importantly, larger from an economic point of view. Second, we explore whether foreign bank lending is correlated with financial development. Hence the positive effect of foreign bank lending on growth could merely reflect the fact that *more* credit is available, rather than *how* it is available. For this reason we include a measure of financial development, defined as total bank lending to GDP, in Model IV. Results are qualitatively almost unaffected. In unreported specifications we also interact our proxy for financial development with the firm characteristics that we employ to explore how the gains from foreign bank presence are distributed. Interestingly enough, financial development affects small and large firms equally, as the coefficient on the interaction term between firm size and financial development is generally not significant. However, this coefficient is mostly negative suggesting that, if anything, financial development *ceteris paribus* favors small firms, a result also found by Beck, Demirguc-Kunt, Laeven and Levine (2004).

We also find that financial development positively affects firm growth, as expected, but only if we do not control for the proportion of foreign lending. In interpreting this surprising finding we must keep in mind that our specification already includes country fixed effects. Hence we identify only the impact of changes in total loans to GDP on firm growth. Our results then indicate that an increase in total loans, in particular an increase of domestic loans to GDP, does not necessarily have a positive impact on firm growth. Our findings are consistent with empirical evidence showing that lending booms often result in an accumulation of bad loans (Gourinchas, Valdes and Landerretche (2001)) and that domestic banks frequently engage in

connected lending. To further explore this issue, we insert both the ratios of domestic loans to GDP and foreign loans to GDP in various specifications. The unreported estimates indicate that only increases in domestic loans to GDP are negatively related to firm growth in a consistent way.

Finally, we replace sales by asset growth and rerun all regressions. We report Model V in the last column of Table 3 and the corresponding economic relevancy tests in the third column in Table 4. All results are unaltered, except that now the coefficient on the interaction between foreign lending and the efficiency dummy becomes insignificant. The magnitudes of the impact on asset growth of changing the independent variables are surprisingly similar to the magnitude of the impact on sales growth.

### *B. Firm Financing*

To investigate the mechanism underlying the results reported so far, we study the impact of foreign bank lending on firm financing. In particular, our interpretation of the empirical evidence on firm growth would be corroborated if we observed that firms – and in particular the firms that are observed to grow faster when foreign bank presence increases – make a larger use of financial loans if foreign banks expand lending. We first analyze growth in firm financial debt relative to total assets, defined as  $((Debt_t - Debt_{t-1}) / Assets_t)$ . Table 5 reports only one of the three steps we take to reach our benchmark specification, as the other two steps are not all that informative. We notice however that going from I to II that foreign lending no longer plays a direct role in affecting leverage growth and that all of the effect in Model II channels through the interaction terms.

As expected on the basis of our previous results, we find that foreign bank presence increases access to credit especially for large firms and non-transition firms. The economic effects remain sizeable. If foreign bank lending increases from 20 to 50 percent, small (large) firms increase their financial debt to asset growth by 0.6 (1) percent. Similarly, firms created before (after) the transition period increase financial debt to asset growth by 0.4 (0.8) percent.

Next, we run a similar set of robustness exercises as in the firm growth section, i.e. we consecutively add country growth, firm internal growth, and country

financial development. We report only the latter specification in Model III. Results are virtually unaffected, except that foreign lending again directly fosters leverage growth when financial development is added to the specification. Interesting, a higher level of credit to GDP does not imply higher leverage. Unreported estimates suggest that while an increase in foreign loans to GDP is related to higher leverage for all firms, this is not true for domestic loans to GDP, possibly suggesting that domestic banks train relatively more of their increase in lending towards the domestic public sector.

Firms appear not only to obtain access to more bank credit, but also the maturity of their liabilities increases (Model IV), especially for large and non-transition firms. Hence the widely held concern that foreign bank lending involves short-term “hot” money that is readily retracted during crises seems misplaced, at least for less risky and less opaque firms (Berger, Espinosa-Vega, Frame and Miller (2004), Ortiz-Molina and Penas (2004)). This finding is however also an indication that foreign bank presence may swing bank lending towards long-term transactional loans, as banks with strong relationships with borrowers generally offer short-maturity loans to be able to exercise control (Berger and Udell (1995)).

The increase in financial debt is also accompanied by a decrease in the cost of debt, defined as interest paid to total financial liabilities (Model V). Foreign banks appear to lower the interest rate in particular to firms without connections. Large firms, which were probably favored by state banks, experience a smaller decrease in the cost of debt.<sup>8</sup>

As financially constrained firms may make more use of trade credit (Petersen and Rajan (1994)), we expect that firms that benefit most from foreign bank entry in terms of growth and access to credit will also make less use of trade credit. To explore this conjecture, we analyze the changes in trade credit relative to sales ( $(\text{Trade Credit}_t - \text{Trade Credit}_{t-1}) / \text{Sales}_t$ ) as a function of the same independent variables we employed so far in Model VI in Table 5. Indeed, we find that companies that are able to make greater use of bank loans when foreign bank presence increases also use less trade credit. This suggests that increased foreign bank presence contributes to relax financial constraints especially for the categories of firms we have identified. However the average effect of foreign lending on the variable measuring changes in

trade credit use is not significant in the specification (not reported) in which we do not include the interaction terms. This result should not come a surprise as all firms in our sample – even the ones that benefit most from foreign bank loans – are likely to be financially constrained (and consequently make large use of trade credit). From an economic point of view, the decrease in trade credit relative to sales due to an increase in foreign lending is however sizeable (Table 6 Model VI). A 20-to-50 increase in foreign lending reduces trade credit growth by 2 percent for transition firms, and by around 4 percent for non-transition firms.

To conclude, foreign lending increases access to foreign loans, relaxes credit constraints, and fosters firm growth. Foreign lending also improves allocational efficiency as the cost of debt decreases for firms without connection with banks (the non-transition firms) to a larger extent.

### *C. Sector Performance*

In this Subsection, we assess the industry effects of foreign bank lending. This assessment is relevant for different reasons. First, this exercise allows us to evaluate the aggregate implications of foreign bank presence. In particular, we will be able to answer the question whether an increase in foreign lending affects firm entry, exit, and industrial structure. Answering this question allows us to further explore the channels through which foreign bank presence affects the economy. If increased foreign bank presence for example helps to mitigate problems of related lending, we expect that the exit rate is higher in countries with stronger foreign bank presence. Similarly, if foreign banks shun small firms, we expect that a country's industrial structure will be affected and that larger companies will command more market share and assets.

The sectoral analysis allows us to further scrutinize the validity of our identification strategy. We introduce a new instrument. From Barth, Caprio and Levine (2001), who compile an international database on commercial banking regulation, we glean the fraction of foreign banks' applications for commercial banking licenses that were rejected minus the fraction of domestic banks' rejected applications. This variable varies across countries but not across time. Hence it is too weak to function as an instrument in the firm level regressions, where we include both

time-series and cross-sectional variation (but control for country and year fixed effects). However, we can exploit this variable as an instrument in the industry level analysis, where, as is customary in the literature (e.g., Rajan and Zingales (1998)), we average across sector by country (but do not use the time-series variation). This new instrument, capturing the real and present barriers to entry for foreign banks, is even less likely to enter directly in the equations we estimate than the creditor protection variables. Employing a Hausman test we can thus use the new variable to test the validity of the creditor protection variables as instruments. In all cases we explored, we are not able to reject the null that the investor protection variables do not have an independent effect in the equation.

We investigate the impact of foreign lending on five sector characteristics: the number of firms, entrants, exits and the percentage of small firm sales and assets (defined as the share of sales and assets, respectively, of firms with employment below the median). We regress the logarithm of each one of these sector characteristics on the instrumented measure of foreign bank lending, and a measure of financial development. As in the previous subsection the latter measure is defined as the ratio of total bank lending to GDP in a country. We also include 74 industry dummies and control for the size of the sector in a given country with the level of employment at the beginning of the period. All values of the explanatory variables are taken at the beginning of the period while the dependent variable is a time average.

Table 7 provides the coefficients, while Table 8 assesses their economic relevancy. The latter exercises are readily interpretable because the impacts are reported in level and at the means. The results further highlight the effects of foreign lending. Take entry and exit rates. Foreign bank lending seems to foster industry dynamics, as it stimulates both industry entry and exit. The effect is both statistically and economically significant as there are 15 (18) more entrants (exits) if the percentage of foreign lending increases from 20 to 50 percent. This is a large effect considering that the average number of entrant (exits) in a sector is 4.3 (2.6) and the standard deviation 12.3 (7.8). There is instead no statistically significant effect of foreign bank presence on the total number of firms. These results suggest that although foreign banks may avoid lending to small firms, which as a consequence invest and grow less, the problems possibly related to the foreign bank inefficiency in using local knowledge,



are not so severe as to discourage entry. Foreign lenders appear both more willing to engage entrants and to push exits.

The fact that financial development is not significantly correlated with exit (or in some unreported specifications even negatively correlated) – after controlling for the fraction of foreign loans – is not surprising in the light of the evidence showing that domestic banks are afflicted by related lending problems. This empirical evidence squares with our previous firm level results showing that foreign bank presence may help to cure these problems. It is more surprising instead that financial development is not significantly correlated with firm entry after controlling for foreign loans. Foreign banks thus appear to spur entrepreneurial activity, at least in countries where domestic banks lack lending expertise and do not have sound lending policies.

Finally, there is a dramatic difference in the way foreign lending and financial development may affect small firms' investment and market share in an industry. An increase in foreign lending from 20 to 50 percent of total loans decreases the proportion of sales (assets) of firms with employment below the median approximately by 37 (18) percent. Again the effect is sizeable as it explains more than one standard deviation of the variable. Hence, foreign lending substantially reduces the percentage of small firms' assets in an industry, while financial development has neither a statistically nor an economic significant effect, another vivid illustration of the important compositional effects of foreign bank lending.

Although the previous specifications allow us to quantitatively evaluate the economic impact of foreign lending, they are subject to the critique that the institutional variables we use to instrument foreign lending have a direct impact on growth. To further check whether the causal interpretation that we give of our estimates is warranted, we follow the methodology suggested by Rajan and Zingales (1998). Arguably, the effects of foreign bank presence should be larger in industries that depend more on bank loans. Similarly to Rajan and Zingales, we measure bank dependence in an industry with the ratio of financial loans to total liabilities. We can thus test whether the impact of foreign bank lending is larger in sectors that are more bank dependent by including an interaction variable between the proxy for bank dependence and foreign lending. Since our new variable of interest varies across sectors within a country, we are able to include country fixed effects that capture

unobserved country heterogeneity. The estimates show that our previous conclusions on the effects of foreign lending are confirmed: only in the equation for the small firms' proportion of sales our variable of interest is no longer statistically significant. From an economic point of view, our results are even more striking. Once we control for country fixed effects, it emerges that while foreign banks favor entry and exit in bank dependent sectors, financial development is negatively correlated with both.

The economic effect of foreign bank presence on entry and exit is halved when we include country fixed effects. This suggests that there is a country-specific component in industry turnover. Most importantly, foreign bank presence seems to be related to sectoral composition. Indeed, the number of firms in bank dependent sectors is significantly larger in countries with stronger foreign bank presence.

Overall, our sector analysis shows that foreign lending, industry churning, and large firm presence go hand in hand. Foreign lending improves credit allocation, but possibly to the detriment of small businesses' investment. Additionally, the quality of lending policies seems to matter significantly more for economic performance than the lending volumes. This finding is consistent with Jayaratne and Strahan (1996), who show that financial liberalization had positive effects in the U.S. not because an increase in the volume of credit but possibly because of improvements in bank efficiency.

## VI. Conclusion

This paper analyzes how and to what extent the process of financial integration can benefit small entrepreneurial firms. In particular we focus on foreign bank lending. Banks represent an important source of capital for small firms. However small firms may not be able to benefit to the full extent from financial integration through foreign bank entry. Foreign banks may lack the local information that is particularly important for lending in countries where asymmetric information problems are severe and legal enforcement is weak. Additionally, foreign banks are often large organizations themselves and may be reluctant or unable to effectively use soft information. Soft information is often the only information available on small and young firms or potential entrepreneurs. Consequently, small firms may be able to benefit from financial integration to a lesser extent than larger and more established companies even if financial integration involves foreign bank entry.

Using a large data set of listed and unlisted companies in Eastern European economies, we find that foreign lending stimulates growth in firm sales, assets, and leverage, but that the effect is dampened for small firms. Even though foreign banks favor entry, lack of local knowledge remains a handicap. Indeed we find that small firms have a lower market share and a lower proportion of total assets in countries with stronger foreign bank presence.

Additionally, since we focus on Eastern European economies, we use the regime shift that took place between 1989-1993 as a natural experiment. We find that firms started during the transition period of 1989-1993, the ones which are more likely to have enjoyed politicians and connected banks' favors, benefit least from foreign bank entry. Foreign banks also increase exit especially in bank dependent industries. This confirms that foreign banks are more willing to take hard choices than domestic banks and thus mitigate connected lending problems.

While the impact and mechanism we identify in this paper seem robust and economically important, the effects we document probably provide a lower bound to the impact of foreign bank presence on industrial structure. In fact, the Eastern European economies became market economies only in the early nineties. Their

banking systems were largely underdeveloped and local banks lacked expertise in allocating loans. To this extent, the destruction of soft information due to acquisitions of domestic banks by foreign banks is likely to have been minimal. Arguably, the differential impact of foreign bank presence on large and small firms may be larger in countries where the acquired banks had a longer experience in extending credit to local firms.

Several other interesting questions remain unanswered. For example, do the mode of entry, the organizational form, the ownership structure, and the country of origin of the foreign banks operating in the country matter for the magnitude of the impact on the small firm sector? And does technological development and deeper economic and financial integration ultimately abate the effect of foreign bank presence on small firm growth and leverage? Finally, do foreign banks benefit firms only directly through their lending? Or do they also have positive effects on domestic banks' efficiency and foreign lending, which may indirectly benefit bank-dependent companies? We leave these questions for future research.

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**TABLE 1. SAMPLE CHARACTERISTICS**

The table reports by country the Number of Firms, Foreign Bank Lending, Firm Assets, Age, and Asset Growth in the indicated year.

By Country	2000 Number of Firms		1996 Foreign Bank Lending		2000 Foreign Bank Lending		2000 Firm Assets		2000 Firm Age		2000 Firm Asset Growth	
			In %		In %		In Million US\$	In years		In %		
BULGARIA	1,661		91.6		63.2		9.1	30.0		10.7		
CROATIA	1,134		61.4		70.7		34.0	32.5		9.6		
CZECH REPUBLIC	3,995		53.3		76.0		22.7	11.1		12.1		
ESTONIA	501		49.0		98.9		15.1	15.1		16.2		
HUNGARY	2,354		45.4		58.7		24.2	10.4		22.4		
LATVIA	594		40.7		41.5		13.0	9.9		11.3		
LITHUANIA	354		81.3		92.1		21.5	10.0		13.3		
POLAND	7,487		61.0		65.0		28.9	13.6		9.2		
REPUBLIC OF MACEDONIA	335		0.0		0.0		91.2	31.9		1.2		
ROMANIA	3,318		4.1		52.5		13.2	9.7		22.1		
RUSSIAN FEDERATION	22,042		17.1		10.8		13.7	7.8		8.9		
SLOVAK REPUBLIC	1,134		82.2		94.7		85.1	11.4		0.5		
SLOVENIA	805		25.8		21.7		40.3	17.2		3.5		
UKRAINE	7,239		3.7		4.4		13.6	19.7		11.6		
Average	3,782		44.0		53.5		30.4	16.5		10.9		
Average 1996 Foreign Lending > 50%	2,627		71.8		77.0		33.6	18.1		9.2		
Average 1996 Foreign Lending < 50%	4,648		23.2		36.1		28.0	15.2		12.2		



**TABLE 2. VARIABLE DEFINITIONS**

The table reports the Variable Names, Definitions, data *Source* (S), Unit (U), Mean, Standard Deviation (SD), Minimum (Min), and Maximum (Max) for the main variables. The sample includes the maximum number of Observations (Obs) available or used in the estimations from 1993 to 2002. Data Sources (S) include: *Amadeus* (A), *Bankscope* (B), *Barth, et al. (2001)* (C), *Pistor, et al. (2000)* (P), and *World Development Indicators* (W). The Units (U) used are: percentage (%), thousands (T), years (Y), and millions of US Dollars (\$).

<i>Variable Groups</i> Variable Names	Definition	S	U	Mean	SD	25%	50%	75%	Obs
<i>Dependent Firm</i>									
Sales	Firm sales	A	\$	184.1	6304	1	3	9	57,453
$\Delta \ln(\text{Sales})$	$= \ln(\text{Sales}_t / \text{Sales}_{t-1})$	A	%	11.3	57.4	-11	8	30	57,453
Assets	Firm assets	A	\$	231.6	6151.8	1	3	11	63,593
$\Delta \ln(\text{Assets})$	$= \ln(\text{Assets}_t / \text{Assets}_{t-1})$	A	%	4.0	44.7	-15	1	20	63,593
Debt / Assets	Ratio of firm financial debt to total assets	A	%	175.9	6898.0	0	5	20	45,994
$\Delta \text{Debt} / \text{Assets}$	$= (\text{Debt}_t - \text{Debt}_{t-1}) / \text{Assets}_t$	A	%	2.6	22.1	-3	0	3	45,994
Trade Credit / Sales	Ratio of firm payables to total assets	A	%	191.2	52.9	6	13	27	44,475
$\Delta \text{Trade Credit} / \text{Sales}$	$= (\text{Trade Credit}_t - \text{Trade Credit}_{t-1}) / \text{Sales}_t$	A	%	-10.5	139.8	-5	-0	4	44,475
LT Debt / Debt	Ratio of firm long-term financial liabilities to total financial liabilities	A	%	46.2	49.0	0	40	98	30,233
$\Delta \text{LT Debt} / \text{Debt}$	$= (\text{LT Debt}_t - \text{LT Debt}_{t-1}) / \text{Debt}_t$	A	%	1.5	37.2	-10	0	9	30,233
Interest / Debt	Ratio of firm interest payments to total financial liabilities	A	%	23.3	17.3	8	17	32	34,827
$\ln(\text{Interest} / \text{Debt})$	$= \ln(\text{Interest}_t / \text{Debt}_t)$	A	%	19.7	15.9	7	16	28	34,827
<i>Dependent Sector</i>									
# Firms	Number of firms in sector $i$ , country $j$ , year $t$	A	-	66.0	215.6	4	13	46	827
# Entrants	Ratio of number entrants to number of firms in sector $i$ , country $j$ , year $t$	A	-	4.3	12.6	0	1	4	827
# Exits	Ratio of number of exits to number of firms in sector $i$ , country $j$ , year $t$	A	-	2.6	7.8	0	1	2	827
% Small Firm Assets	Ratio of assets of firms below median in number of employees to total assets in sector $i$ , country $j$ , year $t$	A	%	68.9	21.0	56	73	85	827
% Small Firm Sales	Ratio of sales of firms below median in number of employees to total sales in sector $i$ , country $j$ , year $t$	A	%	51.7	27.8	33	59	72	827

<i>Independent Country</i>									
% Foreign Lending	Ratio of foreign loans to total bank lending in country <i>j</i> , year <i>t</i>	B	%	37.9	29.2	4	45	57	63,593
Financial Development	Ratio of total bank lending to GDP in country <i>j</i> , year <i>t</i>	B	%	17.7	15.9	6	10	31	63,593
% GDP Growth	GDP growth in country <i>j</i> , year <i>t</i>	W	%	3.0	14.1	-3	4	16	63,593
<i>Independent Sector</i>									
Financial Dependence	Ratio of financial loans to total liabilities in sector <i>i</i>	A	%	31	10	25	30	34	812
Sector Employment	Number of employees in sector <i>i</i>	A	T	0.8	1.7	0	0	1	735
<i>Independent Firm</i>									
Firm Employees	Firm number of employees	A	-	645.3	1848	200	296	557	57,453
ln(Firm Employees)	= ln(Firm Employees <sub><i>t</i></sub> )	A	-	5.7	1.3	5	6	6	57,453
d(Firm Employees)	A dummy variable that equals one if the firm number of employees is larger than 300 (median)	A	-	0.51	0.50	0	1	1	57,453
Firm Age	Firm age	A	Y	17.8	20.8	9	11	13	57,453
ln(Firm Age)	= ln(Firm Age <sub><i>t</i></sub> )	A	-	2.5	0.7	2	2	2	57,453
d(Firm Before 1989)	A dummy variable that equals one if the firm started before 1989	A	-	0.19	0.40	0	0	0	57,453
d(Firm After 1993)	A dummy variable that equals one if the firm started after 1993	A	-	0.45	0.50	0	0	1	57,453
Sales / Firm Employees	Ratio of firm sales to number of employees	A	-	77,213	2,666,285	733	2,117	5,975	57,453
d(Efficient Firm)	A dummy variable that equals one if the firm sales per employee is larger than the average firm sales per employee in the firm's sector, country and year	A	-	0.29	0.45	0	0	1	63,593
Firm ROA	Return on assets	A	%	3.9	129.4	-1	2	8	57,166
Firm Internal Growth	= ROA <sub><i>t</i></sub> / (1 - ROA <sub><i>t</i></sub> )	A	%	8.2	134.6	-1	2	8	57,165

*Instrumental*

Creditor's control of the bankruptcy process	P	-	3.7	1.1	4	4	4	63,593
Creditor's control of the bankruptcy process, including reorganization consent	P	-	3.3	1.3	3	4	4	63,593
Legal provisions on security interests	P	-	1.3	0.8	1	1	2	63,593
Ex post creditors' sanctions on management	P	-	1.1	0.6	0.7	1	2	63,593
Proportion of rejected foreign bank licenses minus proportion of rejected domestic banks licenses	C	%	-14	22	-17	0	0	774

**TABLE 3. FIRM GROWTH**

The table reports the coefficients and significance levels from ordinary least squares (Model I) and instrumental variable (Models II to V) estimations. Standard errors that are corrected for clustering at the firm level are reported in parentheses. The dependent variables are the % growth rate in the log of firm Sales in Models I to IV and the % growth rate in the log of firm Assets in Model V. The definition of the variables can be found in Table 2. All specifications include up to 14 Country, 10 Industry, and 9 Year Dummies. \*, \*\*, and \*\*\* = significant at 10%, 5% and 1% level, two-tailed.

Model	I	II	III	IV	V
Dependent Variable	$\Delta \ln(\text{Sales})$	$\Delta \ln(\text{Sales})$	$\Delta \ln(\text{Sales})$	$\Delta \ln(\text{Sales})$	$\Delta \ln(\text{Assets})$
Number of Observations	57,453	57,453	57,453	57,453	63,593
% Foreign Lending	0.87 *** (0.02)	0.66 *** (0.03)	0.38 *** (0.03)	1.17 *** (0.05)	0.55 *** (0.02)
$\ln(\text{Firm Employees})$	-9.46 *** (0.28)	-9.65 *** (0.37)	-9.41 *** (0.37)	-8.92 *** (0.37)	-9.23 *** (0.28)
$\ln(\text{Firm Age})$	-7.75 *** (0.44)	-5.25 *** (0.45)	-8.07 *** (0.54)	-5.76 *** (0.52)	-6.71 *** (0.32)
$d(\text{Efficient Firm})$		-5.20 *** (1.41)	-5.24 *** (1.39)	-7.65 *** (1.28)	-0.21 (0.87)
% Foreign Lending * $d(\text{Firm Employees})$		0.10 *** (0.01)	0.07 *** (0.01)	0.07 *** (0.01)	0.10 *** (0.01)
% Foreign Lending * $d(\text{Firm Age})$		-0.19 *** (0.01)			
% Foreign Lending * $d(\text{Efficient Firm})$		-0.08 *** (0.03)	-0.07 ** (0.03)	-0.02 (0.02)	0.02 (0.02)
% Foreign Lending * $d(\text{Firm Before 1989})$			0.25 *** (0.02)	0.11 *** (0.01)	0.16 *** (0.01)
% Foreign Lending * $d(\text{Firm After 1993})$			0.22 *** (0.01)	0.24 *** (0.01)	0.11 *** (0.01)
Financial Development				-0.40 *** (0.02)	
Constant	102.12 *** (12.94)	61.02 *** (13.08)	69.64 *** (13.62)	60.42 *** (13.71)	71.68 *** (8.08)
R squared	0.11	0.12	0.12	0.06	0.19

**TABLE 4. IMPACT OF FOREIGN LENDING ON FIRM GROWTH**

The table reports the percentage change in the dependent variable as a result of the indicated change in independent variables in Models III and V reported in the previous table. All other variables are set equal to their means. For easy reference we take the inverse log of the calculated impacts and we also repeat the significance levels on the respective coefficients. The dependent variables are the % growth rate in firm Sales and Assets. The definition of the variables can be found in Table 2. For easy reference we also repeat the significance levels on the respective coefficients. \*, \*\*, and \*\*\* = significant at 10%, 5% and 1% level, two-tailed.

Model	III	V
Dependent Variable	$\Delta \text{Sales}_t / \text{Sales}_{t-1}$	$\Delta \text{Assets}_t / \text{Assets}_{t-1}$
<i>If % Foreign Lending increases from 20 to 50%</i>		
% Foreign Lending	13.6 ***	19.0 ***
% Foreign Lending * d(Firm Employees)	1.2 ***	1.6 ***
% Foreign Lending * d(Efficient Firm)	-0.5 **	0.3
% Foreign Lending * d(Firm Before 1989)	1.5 ***	1.0 ***
% Foreign Lending * d(Firm After 1993)	3.4 ***	1.6 ***

**TABLE 5. FIRM FINANCING**

The table reports the coefficients and significance levels from instrumental variable estimations. Standard errors that are corrected for clustering at the firm level are reported in parentheses. The dependent variables are the % growth rate in firm Debt/Assets in Models I to III, the % growth rate in firm Trade Credit/Sales in Model IV, the % growth rate in firm Long-Term Debt/Debt in Model V, and the % log of firm Interest payment/Debt in Model VI. The definition of the variables can be found in Table 2. All specifications include up to 14 Country, 10 Industry, and 9 Year Dummies. \*, \*\*, and \*\*\* = significant at 10%, 5% and 1% level, two-tailed.

Model	I	II	III	IV	V	VI
Dependent Variable	$\Delta$ Debt/Assets	$\Delta$ Debt/Assets	$\Delta$ Debt/Assets	$\Delta$ LTDebt/Debt	$\ln(\text{Interest/Debt})$	$\Delta$ Trade/Sales
Number of Observations	45,994	45,994	45,994	30,233	34,827	44,475
% Foreign Lending	0.10 (0.01) ***	0.01 (0.01)	0.08 (0.01) ***	0.13 (0.02) ***	-0.04 (0.01) ***	-0.07 (0.05)
$\ln(\text{Firm Employees})$	-2.16 (0.15) ***	-2.14 (0.15) ***	-2.09 (0.15) ***	-1.72 (0.25) ***	0.19 (0.12)	4.96 (0.77) ***
$\ln(\text{Firm Age})$	-0.83 (0.13) ***	-1.52 (0.14) ***	-1.41 (0.14) ***	-2.51 (0.36) ***	0.45 (0.18) **	3.88 (0.85) ***
$d(\text{Efficient Firm})$	1.89 (0.46) ***	1.93 (0.46) ***	1.60 (0.45) ***	4.92 (0.96) ***	-2.63 (0.39) ***	-0.90 (2.22)
% Foreign Lending * $d(\text{Firm Employees})$	0.02 (0.00) ***	0.02 (0.00) ***	0.02 (0.00) ***	0.02 (0.01) **	0.01 (0.00) **	-0.16 (0.04) ***
% Foreign Lending * $d(\text{Firm Age})$	-0.06 (0.00) ***					
% Foreign Lending * $d(\text{Efficient Firm})$	-0.02 (0.01) ***	-0.02 (0.01)	-0.01 (0.00)	-0.08 (0.02) ***	0.03 (0.00) ***	0.19 (0.07) **
% Foreign Lending * $d(\text{Firm Before 1989})$		0.06 (0.00) ***	0.04 (0.00) ***	0.06 (0.01) ***	-0.08 (0.00) ***	-0.38 (0.04) ***
% Foreign Lending * $d(\text{Firm After 1993})$		0.05 (0.00) ***	0.05 (0.00) ***	0.03 (0.01) ***	-0.07 (0.00) ***	-0.14 (0.02) ***
Financial Development			-0.02 (0.00) ***			
Constant	7.65 (2.49) ***	14.59 (3.02) ***	16.53 (3.00) ***	26.28 (5.76) ***	7.58 (5.78)	-55.37 (13.31) ***
R squared	0.07	0.07	0.07	0.03	0.09	0.21

**TABLE 6. IMPACT OF FOREIGN LENDING AND FINANCIAL DEVELOPMENT ON FIRM FINANCING**

The table reports the percentage change in the dependent variable as a result of the indicated change in independent variables in Models II, IV, V, and VI reported in the previous table. All other variables are set equal to their means. For easy reference we take the inverse log of the calculated impacts and we also repeat the significance levels on the respective coefficients. The dependent variables are the % growth rate in firm Debt/Assets, Trade Credit/Sales, and Long-Term Debt/Debt and the change in the % firm Interest payment/Debt respectively. The definition of the variables can be found in Table 2. For easy reference we also repeat the significance levels on the respective coefficients. \*, \*\*, and \*\*\* = significant at 10%, 5% and 1% level, two-tailed.

Model	II	IV	V	VI
Dependent Variable	$\Delta$ Debt/Assets	$\Delta$ LTDebt/Debt	$\Delta$ (Interest/Debt)	$\Delta$ Trade/Sales
<i>If % Foreign Lending increases from 20 to 50%</i>				
% Foreign Lending	0.6	4.1 ***	-1.5 ***	-2.1
% Foreign Lending * d(Firm Employees)	0.4 ***	0.5 **	0.3 **	-2.3 ***
% Foreign Lending * d(Efficient Firm)	-0.1	-0.6 ***	0.3 ***	1.3 **
% Foreign Lending * d(Firm Before 1989)	0.4 ***	0.4 ***	-0.6 ***	-2.0 ***
% Foreign Lending * d(Firm After 1993)	0.8 ***	0.5 ***	-1.2 ***	-1.9 ***

**TABLE 7. SECTOR PERFORMANCE**

Both panels report the coefficients and significance levels from instrumental variable (IV) estimations. The specifications in the upper panel include up to 74 industry dummies, the specifications in the lower panel in addition include up to 15 country dummies. The dependent variables are the log of number of Firms, Entrants, and Exits and the log of the percentage Sales or Assets by Small Firms. The definition of the variables can be found in Table 2. The lower panel reports the change in the number of Firms, Entrants, and Exits and the percentage Sales or Assets by Small Firms at the means of these variables as a result of the indicated change in the independent variables. \*, \*\*, and \*\*\* = significant at 10%, 5% and 1% level, two-tailed.

Model	I	II	III	IV	V
Dependent Variable	# Firms	# Entrants	# Exits	% Small Firm Sales	% Small Firm Assets
% Foreign Lending	0.01 (0.03)	0.04 *** (0.01)	0.07 *** (0.01)	-4.12 ** (1.73)	-1.02 *** (0.21)
Financial Development	0.00 (0.01)	-0.00 (0.00)	0.00 (0.00)	0.02 (0.12)	0.02 (0.04)
Sector Employment	0.12 ** (0.06)	0.01 (0.04)	-0.01 * (0.04)	-5.75 (5.32)	-1.75 (10.23)
Constant	-0.20 (0.60)	-2.70 ** (1.04)	-6.24 *** (1.24)	-168.72 ** (78.67)	-33.38 *** (10.71)
R squared	0.25	0.24	0.47	0.04	0.19
Number of Observations	697	697	697	642	567
% Foreign Lending * Financial Dependence	0.10 *** (0.03)	0.09 *** (0.03)	0.10 *** (0.03)	-4.97 (4.31)	-8.69 *** (1.53)
Financial Development * Financial Dependence	-0.01 *** (0.00)	-0.01 *** (0.00)	-0.01 *** (0.00)	1.28 * (0.71)	6.17 *** (0.09)
Sector Employment	-0.01 * (0.00)	-0.01 *** (0.00)	-0.10 *** (0.03)	-0.90 (4.91)	0.78 (1.60)
Constant	-2.25 *** (0.43)	0.99 ** (0.52)	0.80 (0.59)	-377.55 ** (128.88)	-45.86 *** (22.10)
R squared	0.81	0.87	0.78	0.39	0.36
Number of Observations	648	648	648	557	724



**TABLE 8. IMPACT OF FOREIGN LENDING AND FINANCIAL DEVELOPMENT ON SECTOR PERFORMANCE**

Both panels report the change in the dependent variable as a result of the indicated change in independent variables in Models I to V reported in the previous table. All other variables are set equal to their means. For easy reference we take the inverse log of the calculated impacts and we also repeat the significance levels on the respective coefficients. The dependent variables are the number of Firms, Entrants, and Exits and the percentage Sales or Assets by Small Firms. The definition of the variables can be found in Table 2. For easy reference we also repeat the significance levels on the respective coefficients. \*, \*\*, and \*\*\* = significant at 10%, 5% and 1% level, two-tailed.

Model	I	II	III	IV	IV
Dependent Variable	# Firms	# Entrants	# Exits	% Small Firm Sales	% Small Firm Assets
<i>If % Foreign Lending increases from 20 to 50%</i>					
% Foreign Lending	52.6	15.0 ***	18.0 ***	-37.1 **	-17.8 ***
<i>If Financial Development increases from 10 to 25%</i>					
Financial Development	12.5	-0.7	0.3	2.2	2.7
<i>If % Foreign Lending increases from 20 to 50%</i>					
% Foreign Lending * Financial Dependence	124.0 ***	7.8 ***	4.9 ***	-25.1 **	-37.6 ***
<i>If Financial Development increases from 10 to 25%</i>					
Financial Development * Financial Dependence	-24.9 ***	-1.8 ***	-1.0 ***	8.6	4.0 ***

## NOTES

<sup>1</sup> Levine (2004) provides a comprehensive review of the literature.

<sup>2</sup> See Simonson (2001) for evidence on the Czech Republic.

<sup>3</sup> Berger and DeYoung (2001) study the effect of physical distance on bank branch control. Lending to small firms across large distances and borders is less common (Berger, Miller, Petersen, Rajan and Stein (2005)) and possibly less profitable for the bank (Degryse and Ongena (2005)).

<sup>4</sup> This is a direct consequence of the inclusion of country fixed effects.

<sup>5</sup> Kroszner and Strahan (1999) argue that U.S. state level deregulation of restrictions on bank branching and interstate banking, the instrument used by Jayaratne and Strahan (1996), was influenced by small-bank financial health and hence success in lobbying. See also Strahan (2004).

<sup>6</sup> Our definitions minimize the impact of changes in assets on leverage and of changes in sales on trade credit availability.

<sup>7</sup> Mean sales growth is 11 percent. In Berger, Hasan and Klapper (2004) an increase in Foreign Share, defined as the market share held by foreign-owned banks, from 20 to 50 percent raises GDP growth by between 1 and 2.5 percent. Mean GDP growth between 1994 and 2000 for the 28 developing countries in their sample equals 3 percent.

<sup>8</sup> Interestingly, if we consider the ratio of financial expenses (instead of only the interest paid) and total financial liabilities, we observe that these increase when foreign bank lending increases. This suggests that foreign banks may offer more expensive financial services to firms.

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