Cross-border Bank Acquisitions: Is there a Performance Effect?

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Abstract

This paper uses a unique database that includes deal and bank balance sheet information for 220 cross-border acquisitions between 1994 and 2003, to analyze the characteristics and performance effects of international takeovers on target banks. A discrete choice estimation shows that banks are more likely to get acquired in a cross-border deal if they are large, bad performers, in a small country, and when the banking sector is concentrated. Post-acquisition performance for target banks does not improve in the first two years relative to domestically-owned financial institutions. This result is explained by a decrease in the banks' net interest margin in developed countries and an increase in overhead costs in emerging economies.

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1. Introduction

For the last 15 years the international financial system has experienced significant changes that have reshaped its structure and exposure to global shocks. An important issue in this trend has been the increasing presence of foreign banks in developed and emerging countries. The existing literature has associated financial liberalization with an increase in growth (Levine, 2005), stability (Crystal *et al*., 2001), and better credit allocation (Giannetti and Ongena, 2005) in emerging economies. It has also become one of the main policy recommendations from multilateral organizations.[1]

This paper uses a unique cross-border Mergers and Acquisitions (M&As) database to answer four questions: Which factors influence cross-border acquisitions? Do these type of acquisitions improve the target's performance? Is there any post-acquisition difference in performance for targets in developed and emerging economies? Is it influenced by host-country or home-country characteristics?

The determinants of cross-border acquisitions are evaluated using 220 deals that took place between 1994 and 2003. A discrete choice model is estimated to test the factors that increase the probability of an international takeover. This study finds that the target's bank size, pre-acquisition profitability, and the level of concentration in the host country's banking sector are significant determinants of cross-border deals. For emerging economies, regulatory restrictions decrease the probability of bank acquisitions by Multinational Banks (MNBs).

The effects of bank acquisitions have been studied in developed economies and cross-border deals in Europe. The evidence shows limited performance improvements in the post-acquisitions period. In contrast, foreign banks in emerging economies are found to be better performers than their domestic counterpart.[2] This paper focuses on the first two years after a cross-border acquisition to test if foreign acquirers are able to increase

[1] See Mishkin (2001) and Tschoegl (2004) for a discussion on the benefits and costs of foreign bank entry as a policy to prevent financial crises.
[2] Micco *et al*. (2006) show evidence on performance indicators divided by type of ownership.

the target's efficiency in the short run in emerging economies.

Post-acquisition changes in performance are tested using a sub-sample of 102 deals with information for at least two years before and after the cross-border deal. A difference-in-difference analysis is used to control for economy-wide and country specific effects. Banking indices by country serve as the counterfactual to the targets' profitability measures. I find that acquired banks perform worse, or at the same level of the country-specific indices after a takeover. This is explained by a decline in net interest margins. Loan loss provisions decrease, partially compensating the negative effect of the deal.

A comparison of deals in developed and emerging economies shows similar results in terms of the targets' performance. The change in *Overhead* costs is the only measure that is statistically different when comparing emerging and developed countries. Median expenditures in non-interests and personnel costs decline in the latter countries while the opposite is the case in the former. This result shows the difficulties in improving efficiency in different institutional, economic, and cultural environments.[3]

Finally, I test for diseconomies in managing foreign subsidiaries due to differences in language, legal origin and geographical distance. Targets perform better if the home country of the acquirer and the host country share the same language. This factor is particularly relevant in determining post-acquisition *Overhead* costs in developed and emerging economies. In contrast, difference in neither legal origin nor distance appears to affect performance negatively in the post-acquisition period.

The rest of the paper is organized as follows. Section 2 reviews the literature on cross-border acquisitions and their impact on bank performance. Section 3 describes the empirical methodology used to answer the questions posed in this study. Section 4 describes the data and sample selection criteria. Section 5 presents the main results.

[3] Demirgüc-Kunt *et al*. (2004) do a cross-country comparison of the link between regulation and national institutions and bank overhead costs and interest margins.

Finally, Section 6 concludes.

2. Motivation and Related Literature

The literature on cross-border acquisitions has approached the subject from different perspectives. A first set of studies analyzes the determinants of this type of deals. The motivation for cross-border consolidation ranges from the "follow-your-customer" hypothesis (Miller and Parkhe, 1998, Esperanca and Gulamhussen, 2001) to differences in efficiency between acquirers and target banks (Berger *et al*., 2000). Some studies have explained these deals using arguments from the Foreign Direct Investment (FDI) literature (Goldberg, 2004) and New Trade Theory (Berger *et al*., 2004) literature. Cross-border acquisitions have been relatively scarce compared to their domestic counterpart. Buch and DeLong (2004) attribute this phenomenon to information costs and regulatory restrictions. Using a sample of OECD countries, Focarelli and Pozzolo (2005) find that it is more likely for MNBs to enter countries "where the expected economic growth is higher", banking sector concentration is lower and the regulatory environment is less stringent.[4]

This paper expands the literature reviewed above by analyzing both the determinants of financial FDI at the country level, and also focusing on the target specific characteristics that motivate cross-border acquisitions. The framework used in this study is similar to the approaches followed in Focarelli *et al*. (2002) for Italian banks and Hannan and Rhoades (1987) for U.S. institutions.

Another body of research discusses the effect of M&As on stock prices and operating performance. Piloff and Santomero (1998) and Calomiris and Karceski (2000) review the findings in this literature for U.S. institutions.[5] The effects of M&As on stock market value are negligible for most of the deals analyzed in these studies. There is a

[4] For a theoretical explanation of banking M&A's, see Milbourn *et al*. (1999).
[5] These authors argue that there are several shortcomings in the empirical methods used in these performance studies, and recommend more M&A case-study analysis.

transfer of wealth from the acquirer to the target shareholders mostly explained by high premiums paid on these transactions. The lack of comparable stock price information internationally, outside of Europe, has limited the amount of studies using the event methodology to analyze performance effects after cross-border M&As.[6] Amihud *et al*. (2003) focus on acquirers involved in international acquisitions and find that there is no reduction in risk for those banks that diversify by acquiring financial institutions abroad. Moreover, the cumulative abnormal returns for the acquirers in these transactions are negative and significant.

Other studies use accounting data to asses the effect of M&As on operating performance. Chamberlain (1998) analyzes a sample of deals that took place in the U.S. in the eighties and finds that these transactions did not yield any operating efficiencies. This result is consistent with similar evidence that shows no improvements in Return on Assets (ROA) or growth in operating income in the same time period (Linder and Crane (1992)). There are few studies that show positive changes in performance after a deal, for instance, Cornett and Tehranian (1992) find an increase in the post-acquisition Return on Equity (ROE) and operating cash flow.

Vander Vennet (2002) analyzes a sample of European cross-border deals and finds an increase in profit efficiency for the target bank on the first year after an acquisition. Nevertheless, the same improvements do not show in the cost efficiency and ROA measures. These mixed results are the only comprehensive evidence on cross-border deals and their impact on target performance. The current paper uses the same operating performance methodology but expands the sample of deals to include targets in developed and emerging economies.

The literature reviewed in this section shows mixed effects in terms of the impact of M&As on banks in developed economies. Alternatively, some empirical studies find that foreign bank presence benefits emerging economies. In countries with MNBs, the

[6] See Cybo-Ottone and Murgia (2000) and Beitel and Schierek (2001) for evidence on the performance effect in European M&As.

domestic banking sector is more efficient (Claessens *et al*., 2001, Bayraktar and Wang, 2004), stable (Crystal *et al*., 2001), capital allocation improves (Giannetti and Ongena, 2005), and economic growth is enhanced (Levine, 2001). By expanding the sample of deals to emerging countries, this study attempts to test if cross-border acquisitions increase bank performance in less developed economies.

3. Empirical Methodology

3.1. Determinants of Cross-Border Acquisitions

This section describes the methodology used to test the first question addressed by this study. Following Vander-Vennet (2002) and Focarelli *et al*. (2002), I use a probit-model to estimate the characteristics of banks that have been involved in cross-border acquisitions in comparison to those that were not part of any deal during the sample period. The dependent variable is a binary choice variable equal to one, the year a bank is the target in a takeover where the acquirer is a foreign financial institution. The model to estimate is given by:

$$\Pr(Y_{ijt} = 1) = \Phi\left(X_{it-1}, Z_{jt-1}, M_{jt-1}\right) \tag{1}$$

where Y_{ijt} equals one when bank i in country j gets acquired in year t by a foreign bank and zero otherwise. Φ is the standard cumulative normal probability distribution; X_{it-1} is a vector of bank-specific variables; Z_{jt-1} represents a vector of country characteristics, including macroeconomic aggregates and financial indicators; M_{jt-1} is a vector of variables that describe the regulatory environment and concentration level in the banking sector by country.

All explanatory variables enter in the regression with one lag. This specification assumes that buyers take the decision to acquire a target using information available to them at the end of the year before the acquisition takes place. The coefficients on the regressors included in this model indicate the change in the probit score in terms of

standard deviations, following a one-unit increase in the predictors. To establish the relevant characteristics determining cross-border deals, I test the significance and magnitude of these coefficients.

Following Focarelli and Pozzolo (2000), four sets of variables are included in these estimations. The first group of variables consists of *ex ante* measures of bank profitability, size, capital, and lending activity. The second set draws from the literature on the determinants of growth, and includes real GDP, inflation and GDP *per capita* growth. The third group includes variables that proxy for regulatory restrictions and bank concentration.[7] These proxies measure the degree of bank competition in the host country and implicit limitations to bank entry. Finally, the last set of variables measure the degree of financial development in the host country, proxied by the value of stock market and private and public bond market capitalization to GDP.

3.2. Performance Effect

The second question outlined in this paper analyzes the change in performance for target banks after a cross-border acquisition. In order to measure this change, this paper has to determine what performance would have been if the acquisition had not taken place. This study draws on Cornett *et al*. (2005) and measures the counterfactual of the target's performance with a country-specific bank index. Then, the effect of the deal is calculated by subtracting this benchmark from the acquired-bank performance indicators, and comparing this measure between the before and after acquisition period. This estimation technique controls for possible differences in accounting methods across countries, regulatory environments and country specific-economic activity.

The empirical methodology in this section follows Chamberlain (1998). The target's performance is assumed to be given by:

[7] Bank Concentration is measured as the share of the three largest banks by country and year.

$$r_{\tau i} = \mu_z + c_{\tau i} + \eta_{\tau i} \tag{2}$$

where $r_{\tau i}$ represents the performance proxy for target i at event time τ; μ_z is a constant treatment effect; $c_{\tau i}$ is an unobserved target control effect; and $\eta_{\tau i}$ represents a target specific error term.

The control effect ($c_{\tau i}$) is measured with error using the country (j) specific industry index. This measure is defined as:

$$\mathrm{c}_{\tau \mathrm{j}} = c_{\tau i} + \varepsilon_{\tau j} \tag{3}$$

It is assumed that $\eta_{\tau i}$ and $\varepsilon_{\tau j}$ are mutually and cross-sectionally independent, but could be correlated over time. Then, by subtracting (3) from (2) I obtain:

$$r_{\tau i} - \mathrm{c}_{\tau \mathrm{j}} = \mu_z + \eta_{\tau i} - \varepsilon_{\tau \mathrm{j}} = \widehat{\mu}_{\tau i} \tag{4}$$

With this expression I can compute the pre-acquisition ($\widehat{\mu}_{bi}$) and post-acquisition ($\widehat{\mu}_{ai}$) relative performance measures by averaging all $\widehat{\mu}_{\tau i}$ in each period. These measures will proxy for the treatment effect μ_z with an error that is independent across observations. Using the sample distributions of $\widehat{\mu}_{bi}$ and $\widehat{\mu}_{ai}$, I test for changes in the target's relative performance (ρ) after an acquisition. By subtracting $\widehat{\mu}_{bi}$ from $\widehat{\mu}_{ai}$, ρ plus an error term (ν_i) are obtained:

$$\widehat{\mu}_{ai} - \widehat{\mu}_{bi} = \rho + \nu_i = \widehat{\rho}_i \tag{5}$$

The Sign Test and $\widehat{\rho}_i$ are used to examine the null hypothesis that the number of positive and negative relative differences are equal.[8] In other words, this method tests if

[8] The Sign Test is used instead of the t-test because the sample distributions of the relative (differenced

cross-border acquisitions had an effect on the acquired banks' performance. The only requirement for the Sign Test is that each ν_i has to come from a continuous median zero distribution.

Bank performance is measured using three accounting ratios: Return on Average Assets (*ROA*), Return on Average Equity (*ROE*) and the *Cost to Income Ratio*.[9] In addition, I analyze the post-acquisition change in four revenue and cost components: *Net Interest Margin*, *Non-Interest Income*, *Overhead* and *Loan Loss Provision*.[10]

An additional test divides the sample between targets located in emerging and developed economies. Following Barth *et al*. (2001) a bank is defined as being located in a developed country, if GDP *per capita* in the host-country is above 10,000 dollars (1995 U.S. dollars). Then, performance and other income indicators are compared using the Sign Test, Wilcoxon Test and the Median Test.

3.3. Performance, Economic Integration and Information Costs

The third set of tests deal with the effect of economic integration and information costs on the target's performance after a cross-border acquisition takes place. Buch and DeLong (2004) find that information costs and regulation decrease the amount of cross-border M&A activity.[11] The following empirical specification includes these factors to measure their effect on post-acquisition bank profitability:

$$y_{ijt} = \alpha_0 + \alpha_1 Yr0 + \alpha_2 Yr12 + \alpha_1 Yr3^{+} + X_{jh}\beta' + Z_{jt}\gamma' + \upsilon_i + \eta_j + \varepsilon_{ijt} \qquad (6)$$

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with respect to the country index) accounting ratios are skewed. This would make the use of parametric techniques inappropriate. See Section 5.

[9] The *Cost to Income Ratio* is defined as *Overhead* costs divided by *Net Interest Revenue* and Non-interest Income.

[10] These variables are all divided by *Average Assets*. This measure is calculated by averaging *Assets* using *t* and *t-1* information.

[11] Berger *et al*. (2004) use similar variables to analyze exports and imports of financial Foreign Direct Investment (FDI) across countries.

where y_{ijt} is the performance proxy for year t, country j, and deal i. This variable is a transformation of the original balance sheet ratios into percentile ranks in the distribution of all non-acquired banks by country.[12] This method makes it possible to control for changes in the distribution of the relevant variables over time, as well as comparing the target banks to their relevant peer group. *Yr0*, *Yr12* and $Yr3^{+}$ are indicator variables equal to 1 for event year 0, 1 and 2, and 3 or more respectively; X_{jh} is a vector of bilateral variables representing information costs and the level of integration between the host country j and the home country h; Z_{jt} is a vector of macroeconomic aggregates and bank competition variables; η_j and υ_i are host-country and target fixed effects, respectively.

As discussed by Berger and DeYoung (2001), there are diseconomies in managing subsidiaries that are located at longer distance relative to their parent's bank location. The same argument applies to other dimensions of distance like the difference in language and legal systems across countries. Vector X controls for these factors as it includes a dummy indicating if the country of the acquirer and target share the same principal language (*Same Language*); another indicator variable equals one if both countries have similar legal systems (*Same Legal*).[13] *Log distance* measures the geographical distance between the host country and home country of the acquirer; *Same Region* is a dummy variable equaling one if the target and acquirer are located in the same region.[14] In addition, following Berger *et al*. (2004) I include an index of comparative size (*Similar GDP*) and another index measuring comparative economic development (*Similar GDP PC*) between the home and host countries.[15] These indices range from 0 to 1, with a value of 1 indicating that both countries have the same size or the same GDP *per capita*. These set of variables will measure the effect of economic integration and information cost on the target bank's performance.

[12] Berger (1998) and Focarelli *et al.* (2002) use the same transformation.
[13] There are five legal origin categories: British, French, Socialist, German and Scandinavian.
[14] See Appendix 1 for a definition of these regions by country.
[15] Similar GDP and Similar GDP PC are equal to $1-\left[abs\left(X_j - X_h\right)\right]\Big/\max\left(X_j, X_h\right)$, where X is defined as GDP in the former case and GDP *per capita* in the latter.

4. Data Description

To estimate the models defined in the previous section, I construct a sample of banks involved in cross-border deals between 1994 and 2003. For this purpose, two databases are matched: the first one includes bank financial data and the second has information on cross-border M&As. Data on banks' financial statements is collected from the Bankscope database maintained by Bureau van Dijk. This dataset contains annual statements for listed and unlisted banks in 179 countries starting at the beginning of the nineties. For M&A information, I use the Zephyr database from Bureau van Dijk, the SDC Platinum database from Thompson Financial Securities Data, and individual bank web pages.

In addition to bank information, data at the country level is also included in the estimations. Macroeconomic and financial aggregates are from the World Development Indicators (WDI) database published by the World Bank. The Banking Freedom index is constructed by the Heritage Foundations.[16] Institutional variables are taken from La Porta *et al.* (2002), and bilateral data were compiled by Rose and Spiegel (2004).

The next two sub-sections describe the sample selection process for banks included in the estimations described in sub-sections 3.1 and 3.2. In addition, the last sub-section outlines the construction of the control indices used in the performance estimations.

4.1 Sample Selection

Two data samples were constructed to estimate the regressions described in the previous section. The first one includes all financial institutions classified as Commercial Banks in Bankscope between 1994 and 2004 (3564).[17] Table 1 shows the distribution of banks across countries. A large percentage of the sample is represented by financial institutions

[16] The Banking Freedom Index was renamed the Finance Freedom Index by the Heritage Foundation in 2007. It has values between 0 and 100. Countries with higher values for this index have less stringent financial regulations.

[17] This paper focuses on Commercial Banks due to their central role in retail banking in emerging economies. In addition, some Bank Holding Companies are included due to their similarities to Commercial Banks, especially in countries different from the U.S. I use unconsolidated financial statements when available (codes U1 and U2 in Bankscope).

from the United States (25.3%), Germany (5.1%) and France (4.9%). Amongst emerging economies, Brazil (2.6%), Argentina (1.9%) and Panama (1.7%) have the largest shares.[18] The second sample is limited to a group of banks acquired in cross-border transactions.

To construct the first sample, the Bankscope dataset is matched to an M&A database, which is comprised of information for all cross-border acquisitions between 1994 and 2003.[19] This paper requires two conditions for a deal to be defined as a cross-border acquisition: first, the transaction has to give the acquiring bank a majority stake (more than 50%) in the target bank, provided that it previously held either no shares or a minority stockholding in the target. Additionally, the headquarters of the target bank has to be located in a country different from the home-country of the ultimate parent of the acquirer. The result is 328 deals matched to Bankscope.

The next step is to exclude all bank-year observations that are defined as outliers in terms of their income and balance sheet components.[20] This restriction reduces the number of deals to 220 as shown in Table 1. One third of the deals involve targets in the United States, France, Germany, Brazil, Argentina and Poland. Panel A in Table 2 shows that 174 of these targets were acquired by Western European institutions. The preferred destinations of these acquirers are Western and Eastern European countries (56 and 55, respectively), closely followed by Latin American (40) targets.

Table 3 displays summary statistics for this sample. Acquired and non-acquired banks are similar in terms of their level of equity as shown in Panels A and B, but the median size, defined as Real Assets, is larger for the former group. The three performance measures for non-acquired banks, *ROA*, *ROE* and the *Cost to Income Ratio*, have larger medians in the first two cases and lower in the last case, relative to the target

[18] Panama is an international financial center.
[19] Deals where the same target is acquired more than once are excluded.
[20] Bank-year observations are excluded if *Equity* to *Total Assets*, *Non-interest Income* or *Net Loans to Total Assets* are less than 0. I also exclude observations with *Net Interest Margins* below -2.5 or above 28; *ROA* less than -10 or more than 12; *ROE* less than -100; *Cost to Income Ratios* below 0 or above 244; *Non-interest Expenses to Average Assets* above 100.

banks. These statistics show that the median acquired bank performed less efficiently than its non-acquired counterpart during this sample period.

For the performance estimations described in Section 3.2., the sample is restricted to deals with at least two years of information before the cross-border acquisition and two years after. This creates a sample of 102 deals shown in the last two columns of Table 1. A significant share of targets is located in Germany (7.8%), Belgium (5.9%), Brazil (5.9%), Poland (6.9%), and the United States (5.9%). The share of Argentinean (1%) banks in this sample decreases relative to the full set of deals in this country, due to missing and outlier observations attributed to the banking crises in 2001. Panel B in Table 2 shows that most of the acquirers are based in Western European countries (84). These financial institutions are mostly involved in deals within the region (33) or in Eastern European (25) and Latin American (17) countries.

Figure 1 shows the number of all matched deals by year and those used in the performance estimations. Most of the deals are clustered around the last years of the nineties. Data restrictions for the performance estimations reduce the sample of deals considerably.

To estimate the regressions in Section 3.3., the restriction of information for two years before and two years after the deal are relaxed to one year before and one year after. This increases the sample to 132 cross-border deals for the period between 1994 and 2003.

4.2 Control Indices

As it was described in Section 3.2., to calculate the change in performance before and after a cross-border acquisition, I have to control for overall changes in banking activity at the country level. This study uses the methodology from Cornett and Tehranian (1992) and Linder and Crane (1992), and calculates banking industry indices for each country in the sample.

The selection of banks included in these indices, starts with the sample of non-acquired banks described in the previous sub-section. First, countries with less than five banks wit non-missing information in any year between 1994 and 2004 are excluded. Then, with this sample of banks, averages for the relevant performance and income statement variables are computed. These indices by country and variable are used as the counterfactual to the target banks' profitability measures.

In Section 3.3., y_{ijt} was defined as a percentile rank transformation of the performance ratios. The peer group used to calculate these ranks is the same sample of banks used to compute the industry indices by country.

5. Results

5.1. Determinants of Cross-Border Acquisitions

Table 4 shows the results of the probit estimation described in equation (1). Columns (1) through (3) include bank, country and banking market characteristics as regressors. These columns differ in the performance proxy used in the estimations. The coefficients for *ROA* and *ROE* are negative, and positive and significant for the *Cost to Income Ratio* at the 1% level. This suggests that there is a higher probability for *ex ante* poorly performing banks of being acquired in a cross-border deal. In addition, larger banks are more likely to be targets, especially if they are located in smaller countries. This is supported by the coefficients on *Log Assets* and *Log GDP*, respectively. Finally, *Concentration* has a positive and significant coefficient, with a similar level across the three columns.

The results on the performance variables could be explained as in Vander Vennet (2002) by efficiency motivations. MNBs are more likely to acquire *ex ante* poor performers with above average size in small countries with concentrated banking sectors. Better technology, geographical diversification and management skills are factors that

may induce MNBs to acquire targets of considerable importance in local market where they could exert some market power and turn around the profitability ratios. The concentration result differs from the evidence found in Focarelli and Pozzolo (2005), who find that this variable has a negative effect on cross-border bank entry using a sample of OECD countries.

Columns (3) through (6) include three additional proxies for financial development. Missing observations reduces de number of countries and deals covered from 80 to 34 and from 214 to 125, respectively. The coefficients on performance is still significant, and with the same sign as in previous estimations. The coefficient on *Market Cap. to GDP* enters with a negative and significant sign in the regressions. A more developed stock market competes with the banking sector in the allocation of resources. This reduces market power and makes entry less attractive for international banks.[21]

In Table 5 the model described in Section 3.1. is estimated separately for acquisitions in emerging and developed economies. Columns (1) through (3) show the results for the former group. As in Table 4, the coefficients for the three performance proxies, bank size, and concentration are significant. In addition, the *Banking Freedom Index* enters with a positive coefficient that is significant in the estimations including *ROA* and *ROE*. These results suggest that MNBs are attracted to poor performing large banks in concentrated banking markets with less stringent regulatory environments. Columns (4) through (6) display the same estimations restricting the sample to developed economies. In this case, performance and concentration have significant coefficients. As opposed to emerging countries' estimations, *Log GDP per capita* has a negative and significant coefficient. This signals that acquisitions primarily take place in smaller countries within this group.

5.2. Performance Effect

This section displays the results for the difference-in-difference estimations described in Section 3.2. Tables 6 through 8 provide distributional characteristics on the acquired

[21] For a discussion on market-based and bank-based economies see Demirgüç-Kunt and Levine (2001).

banks (*Targets*), control country-indices (*Industry*) and on the differences between these two measures (*Targ-Ind*). The columns headings in Tables 7 and 8 indicate pre-acquisition (Before), acquisition-year (Yr0), post-acquisition (After) and changes (Change) in the performance and income statement items of target banks. The Sign Test statistically evaluates the null hypothesis of a median equal to zero for *Targ-Ind* in each one of this event stages.

Table 6 shows summary statistics for the sample of 102 deals in the two pre-acquisition years and compares them to the country-industry indices. Targets in this sample are smaller than controls as measured by median real assets, and have a lower *Equity to Total Assets* ratio. Only the latter difference is significant (at the 1% level) as shown by the Sign Test. In terms of the level of net loans in the balance sheet, the null hypothesis of a zero median for the differences in ratios between target and industry indices can not be rejected.

Table 7 compares the three performance proxies, *ROA*, *ROE* and *Cost to Income Ratio*, for targets and controls before and after the acquisitions. In particular, the null hypothesis of no changes in performance is evaluated by testing the *Targ-Ind* median in the *Change* column.[22] Although the *Return on Assets* and *Return on Equity* are lower for acquired banks after a cross-border deal, I can not reject the null hypothesis of a zero median relative change. In contrast, the median *Cost to Income Ratio* is 8.07 percentage points higher in the post-acquisition period for targets while the industry index decreases by 0.15. The median adjusted change in the *Cost to Income Ratio* is 9.1 percentage points higher, and the Sign Test rejects the null hypothesis of an equal share in positive and negative values for this measure. In total, 64% of targets experience an increase in their costs relative to interest and non-interest income.

Table 8 reports the main earning components in the banks' income statement. Excluding *Overhead* costs and *Non- Interest Income*, the targets' have similar indicators

[22] Estimations using matched pair controls instead of industry indices yield similar results.

relative to controls in the pre-acquisition period. After the deal takes place, *Net Interest Margins* are lower for targets, but the median net change is not significantly different from zero. These results are consistent with more competition in the local banking sector after MNB acquisitions, or a reduction in prices and fees implemented to gain market share.[23]

The items representing bank costs, like median *Overhead* expenditures, have a slight increase for targets in the post-acquisition period, but its median relative change is not different from zero. These findings show that in the short run there are few gains in terms of cost efficiency for this sample of cross-border deals. In contrast, the result on *Loan Loss Provisions* shows that there is a significant decline in this accounting measure for the target banks. The fraction of negative net changes is 36%, which in turn implies that the median is significantly different from zero. This is caused by a decrease in lending in the post-acquisition period.

These tests confirm the findings in Vander Vennet (2002) for a sample of European M&As, in which there is no positive performance effect in the short term after a cross-border acquisition. Profitability is affected by a reduction in interest income, and by a lack of cost-efficiency gains. This pattern is also found in Chamberlain (1998) for U.S. mergers during the eighties, but it contrasts with the positive performance results described in Cornett *et al*. (2005) for U.S. banking M&As in the nineties.

Table 9 divides the sample between targets located in developed and emerging economies. Column (1) shows that the number of deals is evenly divided across these two groups. The three performance measures deteriorate in the post-acquisition period, but only the change in the *Cost to Income Ratio* is significant. The proxies for revenues decrease for developed countries, but these figures are not significantly different from the median observed for target banks located in emerging countries. In contrast, the Median

[23] Bayraktar and Wang (2004) show that there is a decrease in *Net Interest Margins*, *Non-interest Income* and profitability as foreign banks increase their share in the local banking sector. This is true for countries that liberalized the stock market first. See also Demirgüç-Kunt and Huizinga (1999) for cross-country evidence on net interest margins and profitability.

test shows that changes in *Overhead* costs are significantly different at the 11% level amongst the targets in the two sets of countries. For emerging economies there is a median relative increase of 0.59, while for targets in developed countries this ratio decreases by 0.10. This result shows that cost efficiencies are harder to realize in emerging countries in the short run. Finally, like in the full sample case, there is a decrease in *Loan Loss Provisions* without differences based on the host country's level of development. This is explained by a reduction in the loan portfolio for targets located in emerging economies, but this is not observed in the data for banks in developed countries. The latter effect could be attributed to earnings management (Scholes *et al*., 1990) or the use of better techniques in loan monitoring and screening.

To summarize, dividing the target banks by the host country's level of development provides the same aggregate results. The only noticeable difference is a change in *Overhead* expenditures. It appears that cost reductions are more difficult to implement in emerging markets.

5.3. Performance, Economic Integration and Information Costs

Tables 10 and 11 show the results for the regression outlined in equation (6). This section tests the presence of diseconomies associated with operating subsidiaries after being acquired in a cross-border deal. The dependent variable is measured in terms of percentile ranks relative to the relevant peer group defined in Section 4.2. An *x* percentile rank indicates that the target bank ranks above *x* percent of the peer group banks in terms of performance, revenue or income for a particular year. The sample used in these estimations includes deals with at least one pre-acquisition and one post-acquisition year of data.

In Table 10A the dependent variables are the *ROA*, *ROE* and the *Cost to Income Ratio*. Three sets of variables are included as regressors: event dummies for the year of the deal (*Yr0*), one and two years after (*Yr12*) and three or more years after ($Yr3^{+}$); country pair characteristics reflecting similarities between the host and home countries;

and host country market and macroeconomic characteristics. The coefficients on the event time indicator variables are negative in almost all cases in the three columns. These results confirm the findings in the last sub-section, namely, that there is a negative effect on the target's performance in the short run triggered by a cross-border acquisition.

In Table 10B the deals are divided by the host country's level of development. Columns (1) through (3) estimate the model using deals where the acquired bank is located in a developed economy. In contrast to the estimations including all deals, performance increases in the post-acquisition period for this sub-sample of targets. This result is significant for the *ROE* after the second post-acquisition year. As expected, the coefficients for *Same Language* and *Similar GDP* are positive. Alternatively, the coefficients for *Same Legal* and *Similar GDP PC* are negative and significant. This result implies that differences in legal systems and GDP *per capita* do not act as barriers when managing subsidiaries abroad.

The results for emerging economies shown in Columns (4) through (6) are in line with the aggregate estimations displayed in Table 10A. The coefficients on the event time indicators are all negative but only significant in the *Cost to Income Ratio* estimation. Country pair characteristics do not enter the regressions with significant coefficients although language, legal and comparative economic size have the right signs in most of the cases.

Lastly, Tables 11A and 11B use the same estimating equation to determine the factors that influence revenue and cost items for targets. For all estimations but *Non-interest Income* and *Net Interest Margins* in developed countries, the coefficient on the time-event dummies are negative. Acquired banks have higher *Net Interest Margins* if the host and home countries are similar in terms of GDP *per capita*, especially when the host is located in an emerging country (Column (4), Table 11B). *Overhead* costs are lower in the post-acquisitions period if the countries share the same language or are located in the same region. The opposite result is true if they share the same legal origin. These results are influenced by deals within the EU. In emerging economies bank concentration

reduces the incentive for target to decrease these costs as shown in Table 11B, Column (5). Finally, the results on *Non-interest Income* are very different for emerging and developed economies. For the former group, having the same language increases the percentile rank of targets after an acquisition, while the opposite applies to the latter set of countries.

These results show significant information costs associated with the language used in the host and home countries, especially when measuring *Overhead* costs and *Non-interest Income* after an acquisition. On the other hand, difference in legal origin and geographical distance do not affect post-acquisition performance.

6. Conclusions

This paper uses a unique database on cross-border acquisitions to examine the determinants of international takeovers and their impact on the performance of target banks. The results show that banks are more likely to get acquired in a cross-border deal if they are large, bad performers, when the host economy is growing and when the banking sector concentration is high. Nevertheless, post-acquisitions performance does not improve in the first two years after the acquisition. This is caused by a decrease in *Net Interest Margins* and an increase in *Overhead* costs in targets located in emerging economies. The absence of net performance gains is linked to diseconomies in managing international subsidiaries, in particular differences in language between the host and home-country.

The effect of M&As has been studied in developed economies or using cross-border deals in Europe. Evidence from emerging economies is mostly limited to acquisitions in Eastern European countries or to static analysis of efficiency. The current paper shows dynamic evidence on performance and expands the sample of transactions to 220 in 58 different countries. Moreover, using the same database, it analyzes both the determinants of cross-border deals, as well as its impact on post-acquisition efficiency.

Foreign bank entry liberalization has been recommended as a policy designed to increase stability in the domestic banking sector and prevent financial crises. In addition, foreign bank presence has been linked to growth and better allocation of resources in emerging markets. The results shown in this paper do not challenge these findings, but indicate that bank performance benefits are not observed in the short run.

There are three extensions to further develop the questions outlined in this paper. The addition of new data points in the last three years to the database should help increase the number of deals with sufficient information to be included in the estimations. This provides a larger dataset and a longer post-acquisition period to test the changes in performance. Another extension would be to create a database of stock prices for target banks located in emerging economies to conduct event studies on the effect of cross-border acquisitions. These results would complement the findings in the current paper. Finally, it would be important to produce a series of case-studies for targets in emerging economies to understand why foreign bank acquisitions have a limited effect on bank performance in the short run.

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Appendix 1: Countries and Regions

Country	*Region*	*Country*	*Region*
Albania	Eastern Europe	Republic of Korea	East Asia
Argentina	Latin America	Latvia	Eastern Europe
Australia	Oceania	Lebanon	Middle East
Austria	Western Europe	Lithuania	Eastern Europe
Barbados	Latin America	Luxembourg	Western Europe
Belarus	Eastern Europe	Macau	East Asia
Belgium	Western Europe	Macedonia (Fyrom)	Eastern Europe
Bolivia	Latin America	Malaysia	East Asia
Bosnia-Herzegovina	Eastern Europe	Mexico	Latin America
Brazil	Latin America	Mongolia	East Asia
Bulgaria	Eastern Europe	Morocco	Africa
Cameroon	Africa	Netherlands	Western Europe
Canada	US and Canada	New Zealand	Oceania
Cape Verde	Africa	Nicaragua	Latin America
Chad	Africa	Nigeria	Africa
Chile	Latin America	Norway	Western Europe
Colombia	Latin America	Pakistan	East Asia
Croatia	Eastern Europe	Panama	Latin America
Czech Republic	Eastern Europe	Paraguay	Latin America
Denmark	Western Europe	Peru	Latin America
Dominican Republic	Latin America	Philippines	East Asia
Ecuador	Latin America	Poland	Eastern Europe
Egypt	Africa	Portugal	Western Europe
El Salvador	Latin America	Romania	Eastern Europe
Estonia	Eastern Europe	Russian Federation	Eastern Europe
Finland	Western Europe	Saudi Arabia	Middle East
France	Western Europe	Slovakia	Eastern Europe
Germany	Western Europe	Slovenia	Eastern Europe
Ghana	Africa	South Africa	Africa
Greece	Western Europe	Spain	Western Europe
Guatemala	Latin America	Sweden	Western Europe
Honduras	Latin America	Switzerland	Western Europe
Hong Kong	East Asia	Thailand	East Asia
Hungary	Eastern Europe	Tunisia	Africa
India	East Asia	Turkey	Western Europe
Indonesia	East Asia	Uganda	Africa
Ireland	Western Europe	Ukraine	Eastern Europe
Israel	Middle East	United Kingdom	Western Europe
Italy	Western Europe	Uruguay	Latin America
Jamaica	Latin America	United States	US and Canada
Japan	East Asia	Venezuela	Latin America
Kenya	Africa	Western Samoa	Oceania

Table 1: Banks and Deals by Country

Deal data is from Zephyr, SDC and the banks' webpages. Bank data is from Bankscope. The deals' sample period ranges between 1994 and 2003. Bank balance sheet and income statement information covers the 1994-2004 period.

	Total Banks		*Total Deals*		*Performance Deals*	
	Banks	*Percentage*	*Deals*	*Percentage*	*Deals*	*Percentage*
Albania	5	0.1%	0	0.0%	0	0.0%
Argentina	66	1.9%	11	5.0%	1	1.0%
Australia	25	0.7%	1	0.5%	1	1.0%
Austria	47	1.3%	3	1.4%	2	2.0%
Belarus	9	0.3%	1	0.5%	0	0.0%
Belgium	35	1.0%	7	3.2%	6	5.9%
Bolivia	11	0.3%	2	0.9%	1	1.0%
Bosnia-Herzegovina	15	0.4%	2	0.9%	1	1.0%
Brazil	94	2.6%	12	5.5%	6	5.9%
Bulgaria	22	0.6%	5	2.3%	3	2.9%
Cameroon	4	0.1%	1	0.5%	0	0.0%
Canada	47	1.3%	2	0.9%	0	0.0%
Cape Verde	2	0.1%	0	0.0%	0	0.0%
Chad	3	0.1%	0	0.0%	0	0.0%
Chile	24	0.7%	4	1.8%	2	2.0%
Colombia	23	0.6%	2	0.9%	2	2.0%
Croatia	32	0.9%	4	1.8%	2	2.0%
Czech Republic	17	0.5%	7	3.2%	2	2.0%
Denmark	53	1.5%	3	1.4%	2	2.0%
Dominican Republic	24	0.7%	1	0.5%	0	0.0%
Ecuador	23	0.6%	0	0.0%	0	0.0%
Egypt	28	0.8%	4	1.8%	2	2.0%
El Salvador	7	0.2%	1	0.5%	0	0.0%
Estonia	5	0.1%	3	1.4%	0	0.0%
Finland	5	0.1%	1	0.5%	0	0.0%
France	173	4.9%	12	5.5%	6	5.9%
Germany	182	5.1%	12	5.5%	8	7.8%
Ghana	10	0.3%	1	0.5%	0	0.0%
Greece	10	0.3%	0	0.0%	0	0.0%
Guatemala	27	0.8%	0	0.0%	0	0.0%
Honduras	14	0.4%	0	0.0%	0	0.0%
Hong Kong	14	0.4%	0	0.0%	0	0.0%
Hungary	27	0.8%	4	1.8%	1	1.0%
India	58	1.6%	0	0.0%	0	0.0%
Indonesia	49	1.4%	4	1.8%	2	2.0%
Ireland	15	0.4%	0	0.0%	0	0.0%
Israel	14	0.4%	0	0.0%	0	0.0%
Italy	110	3.1%	1	0.5%	1	1.0%
Jamaica	6	0.2%	1	0.5%	0	0.0%
Japan	133	3.7%	0	0.0%	0	0.0%
Kenya	23	0.6%	0	0.0%	0	0.0%
Republic of Korea	13	0.4%	0	0.0%	0	0.0%
Latvia	19	0.5%	7	3.2%	1	1.0%
Lebanon	43	1.2%	1	0.5%	0	0.0%
Lithuania	10	0.3%	6	2.7%	0	0.0%
Luxembourg	102	2.9%	4	1.8%	2	2.0%
Macau	5	0.1%	1	0.5%	1	1.0%
Macedonia (Fyrom)	10	0.3%	2	0.9%	1	1.0%
Malaysia	26	0.7%	0	0.0%	0	0.0%
Mexico	36	1.0%	6	2.7%	3	2.9%
Mongolia	3	0.1%	0	0.0%	0	0.0%
Morocco	7	0.2%	1	0.5%	1	1.0%
Netherlands	21	0.6%	2	0.9%	2	2.0%

Table 1 (cont.): Banks and Deals by Country

Deal data is from Zephyr, SDC and the banks' webpages. Bank data is from Bankscope. The deals' sample period ranges between 1994 and 2003. Bank balance sheet and income statement information covers the 1994-2004 period.

	Total Banks		*Total Deals*		*Performance Deals*	
	Banks	*Percentage*	*Deals*	*Percentage*	*Deals*	*Percentage*
New Zealand	8	0.2%	0	0.0%	0	0.0%
Nicaragua	8	0.2%	1	0.5%	1	1.0%
Nigeria	46	1.3%	0	0.0%	0	0.0%
Norway	12	0.3%	3	1.4%	2	2.0%
Pakistan	19	0.5%	0	0.0%	1	1.0%
Panama	59	1.7%	3	1.4%	0	0.0%
Paraguay	18	0.5%	1	0.5%	0	0.0%
Peru	16	0.4%	3	1.4%	1	1.0%
Philippines	22	0.6%	1	0.5%	1	1.0%
Poland	39	1.1%	11	5.0%	7	6.9%
Portugal	21	0.6%	1	0.5%	0	0.0%
Romania	14	0.4%	4	1.8%	2	2.0%
Russian Federation	80	2.2%	0	0.0%	0	0.0%
Saudi Arabia	8	0.2%	0	0.0%	0	0.0%
Slovakia	12	0.3%	7	3.2%	4	3.9%
Slovenia	17	0.5%	3	1.4%	3	2.9%
South Africa	32	0.9%	0	0.0%	0	0.0%
Spain	74	2.1%	7	3.2%	3	2.9%
Sweden	9	0.3%	0	0.0%	0	0.0%
Switzerland	157	4.4%	8	3.6%	3	2.9%
Thailand	7	0.2%	1	0.5%	1	1.0%
Tunisia	15	0.4%	1	0.5%	1	1.0%
Turkey	10	0.3%	0	0.0%	0	0.0%
Uganda	12	0.3%	1	0.5%	0	0.0%
Ukraine	29	0.8%	0	0.0%	0	0.0%
United Kingdom	63	1.8%	2	0.9%	1	1.0%
Uruguay	31	0.9%	2	0.9%	1	1.0%
United States	900	25.3%	12	5.5%	6	5.9%
Venezuela	37	1.0%	5	2.3%	2	2.0%
Western Samoa	3	0.1%	1	0.5%	0	0.0%
Total	3564		220		102	

Table 2: Deals by Region

Deal data is from Zephyr, SDC and the banks' webpages. The deals' sample period ranges between 1994 and 2003. See Appendix 1 for a description of the countries included in each region.

Panel A: All Deals

		Acquirer								
		Latin America	*Eastern Europe*	*East Asia*	*Western Europe*	*US and Canada*	*Oceania*	*Africa*	*Middle East*	*Total*
	Latin America	7	0	0	40	7	0	0	1	55
T	*Eastern Europe*	0	8	1	55	2	0	0	0	66
a	*East Asia*	0	0	3	3	1	0	0	0	7
r	*Western Europe*	1	3	0	56	5	0	0	1	66
g	*US and Canada*	1	0	1	10	2	0	0	0	14
e	*Oceania*	0	0	0	1	0	1	0	0	2
t	*Africa*	0	0	0	9	0	0	0	0	9
	Middle East	0	0	0	0	0	0	0	1	1
	Total	9	11	5	174	17	1	0	3	220

Panel B: Performance Deals

		Acquirer								
		Latin America	*Eastern Europe*	*East Asia*	*Western Europe*	*US and Canada*	*Oceania*	*Africa*	*Middle East*	*Total*
	Latin America	0	0	0	17	2	0	0	1	20
T	*Eastern Europe*	0	1	0	25	1	0	0	0	27
a	*East Asia*	0	0	2	2	1	1	0	0	6
r	*Western Europe*	1	3	0	33	0	0	0	1	38
g	*US and Canada*	1	0	1	2	2	0	0	0	6
e	*Oceania*	0	0	0	1	0	0	0	0	1
t	*Africa*	0	0	0	4	0	0	0	0	4
	Middle East	0	0	0	0	0	0	0	0	0
	Total	2	4	3	84	6	1	0	2	102

Table 3: Summary Statistics

Bank Balance Sheet and Income Statement data is from Bankscope. The sample period is 1994 to 2004. The variable *Real Assets* is defined in terms of millions of 2000 U.S. dollars. The rest of the variables are defined in terms of percentage points.

Panel A: Acquired Banks

	Obs.	Mean	Median	Std. Dev.	Min.	Max.
Real Assets	1576	6356.5	1075.2	15617.6	5.3	150291.8
Equity to Avg. Assets	1578	12.22	9.28	10.8	1.0	95.2
ROA	1578	1.02	0.84	2.0	-8.8	11.8
ROE	1577	9.09	9.34	18.5	-96.9	135.4
Cost to Income Ratio	1578	71.80	67.55	27.6	3.4	232.4
Net Loans to Avg. Assets	1577	48.37	49.56	20.7	0.0	98.8
Net Interest Margins	1578	4.82	3.80	3.9	-1.8	27.8
Non-Interest Inc. to Avg. Ass.	1578	2.73	1.86	3.3	0.0	54.6

Panel B: Non-Acquired Banks

	Obs.	Mean	Median	Std. Dev.	Min.	Max.
Real Assets	37016	10375.6	756.6	51370.6	0.0	1352996.0
Equity to Avg. Assets	37747	12.74	8.86	13.6	0.0	100.0
ROA	37760	1.21	0.97	1.8	-10.0	12.0
ROE	37707	11.64	10.65	20.0	-100.0	928.0
Cost to Income Ratio	37760	63.73	62.38	24.4	0.0	244.0
Net Loans to Avg. Assets	37398	51.17	54.80	22.9	0.0	100.0
Net Interest Margins	37760	4.29	3.61	3.5	-2.3	28.0
Non-Interest Inc. to Avg. Ass.	37760	2.54	1.33	4.2	0.0	92.5

Table 4: Determinants of Cross-Border Acquisitions

The empirical model in equation (1) has been estimated using a probit specification. The dependent variable equals one if a bank is acquired by a foreign institution in year *t* and zero otherwise. The model is explained in Section 3.1.; the sample is defined in Section 4.1. The model is estimated for the 1994-2004 period. Columns (1) through (6) differ in the performance proxy included. In Columns (1) and (3) profitability is measured by the Return on Average Assets (*ROA*). Columns (2) and (5) include the Return on Average Equity (*ROE*). In Columns (3) and (6) performance is defined as the *Cost to Income Ratio*. Columns (4) to (6) include Financial Development proxies in addition to the variables included in the first three columns.

	ROA	***ROE***	***Cost to Income Ratio***	***ROA***	***ROE***	***Cost to Income Ratio***
	(1)	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***
Performance	-0.0463**	-0.0060***	0.0056***	-0.0619***	-0.0070***	0.0059***
	[0.0184]	[0.0020]	[0.0011]	[0.0186]	[0.0017]	[0.0014]
Log Assets	0.0630***	0.0638***	0.0766***	0.0418	0.0407	0.0544**
	[0.0177]	[0.0179]	[0.0182]	[0.0264]	[0.0268]	[0.0264]
Equity to Assets	0.0019	0.0001	0.0019	-0.001	-0.0026	-0.0015
	[0.0024]	[0.0025]	[0.0026]	[0.0033]	[0.0032]	[0.0034]
Net Loans to Assets	0	-0.0001	0.001	0.0002	0	0.0013
	[0.0016]	[0.0016]	[0.0014]	[0.0020]	[0.0020]	[0.0017]
Non-Interest Income to Assets	0.0047	0.0038	0.0015	0.0166***	0.0134**	0.0114*
	[0.0051]	[0.0047]	[0.0050]	[0.0060]	[0.0054]	[0.0063]
Log GDP	-0.1030***	-0.1055***	-0.1103***	-0.0826	-0.0816	-0.0937*
	[0.0200]	[0.0199]	[0.0187]	[0.0552]	[0.0562]	[0.0536]
GDP Per Capita Growth	0.0005	0.0009	0.0006	-0.0023	-0.0022	-0.0031
	[0.0069]	[0.0073]	[0.0077]	[0.0034]	[0.0034]	[0.0032]
Inflation	-0.0006	-0.0006	-0.0005	-0.0088	-0.009	-0.0103*
	[0.0014]	[0.0014]	[0.0017]	[0.0061]	[0.0061]	[0.0056]
Banking Freedom Index	-0.0024	-0.0022	-0.002	0.0022	0.0023	0.0024
	[0.0023]	[0.0023]	[0.0023]	[0.0033]	[0.0033]	[0.0033]
Concentration	0.4811**	0.4717**	0.4467**	0.3052	0.3049	0.2673
	[0.1970]	[0.1981]	[0.1916]	[0.2309]	[0.2355]	[0.2382]
Market Cap. to GDP				-0.0016**	-0.0016**	-0.0015**
				[0.0006]	[0.0006]	[0.0006]
Priv. Bond Mkt. Cap. to GDP				-0.1918	-0.1949	-0.1681
				[0.1512]	[0.1512]	[0.1333]
Pub. Bond Mkt. Cap. to GDP				-0.31	-0.324	-0.3256
				[0.3192]	[0.3253]	[0.3108]
Observations	26235	26206	26235	17348	17336	17348
Countries	80	80	80	34	34	34
LR chi2	80.48	94.75	143.3	132.8	141.6	155.2
Pseudo R^2	0.049	0.0519	0.0606	0.0621	0.0645	0.0742

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

Table 5: Determinants of Cross-Border Acquisitions - Emerging vs. Developed Economies

The empirical model in equation (1) has been estimated using a probit specification. The dependent variable equals one if a bank is acquired by a foreign institution in year *t* and zero otherwise. The model is explained in Section 3.1.; the sample is defined in Section 4.1. The model is estimated for the 1994-2004 period. Columns (1) through (6) differ in the performance proxy included. In Columns (1) and (3) profitability is measured by the Return on Average Assets (*ROA*). Columns (2) and (5) include the Return on Average Equity (*ROE*). In Columns (3) and (6) performance is defined as the *Cost to Income Ratio*. Columns (4) to (6) include Financial Development proxies in addition to the variables included in the first three columns. A country is defined as an Emerging Economy if its real GDP *per capita* is below US$10,000 in 2000 prices. Developed Economies are defined as the complement to this group.

	Emerging Economies			***Developed Economies***		
	ROA	***ROE***	***Cost to Income Ratio***	***ROA***	***ROE***	***Cost to Income Ratio***
	(1)	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***
Performance	-0.0435**	-0.0054**	0.0057***	-0.0503	-0.0062**	0.0046***
	[0.0212]	[0.0023]	[0.0014]	[0.0374]	[0.0026]	[0.0014]
Log Assets	0.1259***	0.1260***	0.1431***	0.0102	0.0106	0.0192
	[0.0264]	[0.0267]	[0.0273]	[0.0278]	[0.0287]	[0.0263]
Equity to Assets	0.0027	0.0009	0.0031	0.0012	-0.0005	0.0011
	[0.0027]	[0.0027]	[0.0027]	[0.0043]	[0.0043]	[0.0045]
Net Loans to Assets	-0.0017	-0.0019	-0.0004	0	-0.0001	0.0007
	[0.0021]	[0.0021]	[0.0019]	[0.0022]	[0.0023]	[0.0019]
Non-Interest Inc. to Assets	-0.0002	-0.001	-0.0016	0.0095	0.0072	0.0033
	[0.0081]	[0.0082]	[0.0082]	[0.0085]	[0.0057]	[0.0061]
Log GDP	-0.0625	-0.0663	-0.0755*	-0.0535***	-0.0556***	-0.0633***
	[0.0438]	[0.0437]	[0.0407]	[0.0164]	[0.0169]	[0.0151]
GDP Per Capita Growth	0.0145	0.0152	0.0157	-0.0039	-0.0038	-0.0044
	[0.0134]	[0.0133]	[0.0130]	[0.0038]	[0.0039]	[0.0039]
Inflation	-0.0013	-0.0012	-0.0015	0.0031	0.0068	0
	[0.0032]	[0.0031]	[0.0038]	[0.0386]	[0.0388]	[0.0386]
Banking Freedom Index	0.0050*	0.0048*	0.0046	-0.0045*	-0.004	-0.0041
	[0.0029]	[0.0029]	[0.0029]	[0.0025]	[0.0026]	[0.0025]
Concentration	0.8784***	0.8518**	0.8648***	0.5018***	0.4977***	0.4486***
	[0.3337]	[0.3339]	[0.3347]	[0.1266]	[0.1290]	[0.1325]
Observations	9012	8986	9012	17223	17220	17223
Countries	56	56	56	25	25	25
LR chi2	64.15	68.15	90.04	143.6	148.2	155.2
Pseudo R2	0.0491	0.0517	0.0616	0.033	0.0344	0.0401

Robust standard errors in brackets

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

Table 6: Ex-Ante Target and Bank Indices Characteristics

Bank Balance Sheet and Income Statement data is from Bankscope. The sample period is between 1994 and 2003. The variable *Real Assets* is defined in terms of millions of 2000 U.S. dollars. The rest of the variables are defined in terms of percentage points. Frac>0 is the fraction of deals with positive *Targ-Ind* values. The Sign Test statistically evaluates the null hypothesis of a median equal to zero for *Targ-Ind* in each event stage. t(mean) tests the null hypothesis that mean *Targ-Ind* is equal to zero.

		Total Assets (Millions 1995 $US)	***Equity to Total Assets***	***Net Loans to Average Assets***	***Net Loans to Customer Funds***
Targets	Mean	7956.9	11.33	48.17	62.53
	Std. Dev.	20232.2	8.86	21.52	31.85
	Median	1121.9	8.86	50.11	62.42
Industry	Mean	5050.7	13.40	47.25	65.69
	Std. Dev.	5232.5	5.10	12.99	18.48
	Median	2785.4	11.83	47.61	64.42
Targ-Ind	Mean	2906.2	-2.08	0.93	-3.17
	Std. Dev.	19630.9	8.18	18.80	29.99
	Q1	-4147.0	-6.80	-11.91	-26.79
	Median	-450.5	-2.98	2.45	-2.69
	Q3	2873.6	0.10	13.13	12.69
	Frac>0	0.44	0.25	0.56	0.44
	Sign Test[+]	0.28	0.00	0.28	0.28
	t(mean)	1.50	-2.57	0.50	-1.07

[+] P-Value

Table 7: Difference-in-Difference Analysis - Performance

The variables of interest are *Return on Assets*, *Return on Equity* and the *Cost to Income Ratio*. The difference-in-difference methodology is explained in Section 3.2.; variables are defined in Section 4. The sample includes 102 deals with at least to pre and post-acquisition years. Rows display summary statistics for acquired banks (*Targets*), control country-indices (Industry) and differences between these two measures (*Targ-Ind*). The column headings indicate pre-acquisition (*Before*), acquisition-year (*Yr0*), post-acquisition (*After*) and changes (*Change*) in the dependent variable. Construction of the control-country indices is explained in Section 4.2. Frac>0 is the fraction of deals with positive *Targ-Ind* values. The Sign Test statistically evaluates the null hypothesis of a median equal to zero for *Targ-Ind* in each event stage. t(mean) tests the null hypothesis that mean *Targ-Ind* is equal to zero.

		Return on Assets (%)				***Return on Equity (%)***				***Cost to Income Ratio (%)***			
		Before	***Yr0***	***After***	***Change***	***Before***	***Yr0***	***After***	***Change***	***Before***	***Yr0***	***After***	***Change***
Targets	Mean	1.03	0.48	0.73	-0.31	6.67	3.44	6.12	-0.54	67.87	76.51	77.53	9.65
	Std. Dev.	1.71	2.35	2.10	2.26	22.33	24.31	21.24	30.85	24.11	36.33	30.26	30.56
	Median	0.99	0.61	0.67	-0.35	9.15	8.52	7.91	-1.53	63.54	68.74	71.63	8.07
Industry	Mean	1.12	1.07	0.99	-0.13	8.96	9.38	9.38	0.43	66.52	65.83	67.15	0.64
	Std. Dev.	0.83	0.95	0.79	0.78	8.94	17.51	9.43	10.47	9.51	9.27	8.76	9.71
	Median	1.05	1.02	0.95	-0.03	8.62	9.81	9.97	0.09	67.39	65.20	67.60	-0.15
Targ-Ind	Mean	-0.09	-0.59	-0.26	-0.17	-2.29	-5.95	-3.26	-0.97	1.36	10.67	10.37	9.02
	Std. Dev.	1.51	2.29	1.86	2.08	21.87	23.21	19.35	28.29	24.08	35.23	29.08	29.73
	Median	-0.10	-0.26	-0.18	-0.11	0.57	-1.47	-2.07	-1.18	-2.35	3.35	4.27	9.08
	Frac>0	0.43	0.52	0.44	0.46	0.53	0.54	0.46	0.44	0.44	0.74	0.59	0.64
	Sign Test[+]	0.20	0.01	0.28	0.49	0.62	0.03	0.49	0.28	0.28	0.26	0.09	0.01
	t(mean)	-0.60	-2.52	-1.43	-0.84	-1.06	-2.90	-1.70	-0.35	0.57	3.20	3.60	3.06

[+] P-Value

Table 8: Difference-in-Difference Analysis – Income Statement Components

The variables of interest are *Net Interest Margin to Average Assets*, *Non-Interest Income to Average Assets*, *Overhead costs to Average Assets* and *Loan Loss Provisions to Average Assets*. The difference-in-difference methodology is explained in Section 3.2.; variables are defined in Section 4. The sample includes 102 deals with at least to pre and post-acquisition years. Rows display summary statistics for acquired banks (*Targets*), control country-indices (Industry) and differences between these two measures (*Targ-Ind*). The column headings indicate pre-acquisition (*Before*), acquisition-year (*Yr0*), post-acquisition (*After*) and changes (*Change*) in the dependent variable. Construction of the control-country indices is explained in Section 4.2. Frac>0 is the fraction of deals with positive *Targ-Ind* values. The Sign Test statistically evaluates the null hypothesis of a median equal to zero for *Targ-Ind* in each event stage. t(mean) tests the null hypothesis that mean *Targ-Ind* is equal to zero.

		Net Interest Margin to Avg. Assets (%)				***Non-Interest Income to Avg. Assets (%)***			
		Before	***Yr0***	***After***	***Change***	***Before***	***Yr0***	***After***	***Change***
Targets	Mean	4.05	3.74	3.38	-0.67	2.50	2.28	2.25	-0.25
	Std. Dev.	3.04	2.78	2.32	2.01	2.75	2.11	1.83	2.26
	Median	3.34	3.13	3.00	-0.37	1.83	1.59	1.57	-0.03
Industry	Mean	4.06	3.92	3.75	-0.31	2.54	2.53	2.46	-0.07
	Std. Dev.	2.23	2.33	2.17	0.91	1.85	1.55	1.56	1.36
	Median	3.60	3.22	3.30	-0.15	2.09	2.00	2.03	-0.03
Targ-Ind	Mean	-0.02	-0.19	-0.38	-0.36	-0.04	-0.25	-0.21	-0.17
	Std. Dev.	2.02	1.86	1.54	1.76	1.92	1.86	1.81	1.89
	Median	-0.17	-0.32	-0.48	-0.10	-0.31	-0.54	-0.36	-0.09
	Frac>0	0.46	0.58	0.33	0.44	0.41	0.56	0.38	0.49
	Sign Test[+]	0.49	0.14	0.00	0.28	0.09	0.08	0.02	0.92
	t(mean)	-0.08	-1.03	-2.46	-2.07	-0.20	0.27	-1.18	-0.93

		Overhead to Avg. Assets (%)				***Loan Loss Prov. to Avg. Assets (%)***			
		Before	***Yr0***	***After***	***Change***	***Before***	***Yr0***	***After***	***Change***
Targets	Mean	4.12	4.26	4.10	-0.02	1.11	1.01	0.61	-0.50
	Std. Dev.	2.70	2.55	2.37	2.07	1.86	1.66	1.25	2.20
	Median	3.54	3.64	3.52	0.07	0.52	0.37	0.27	-0.11
Industry	Mean	4.30	4.17	4.14	-0.16	0.74	0.80	0.75	0.01
	Std. Dev.	2.18	2.12	2.16	1.18	0.57	0.68	0.61	0.51
	Median	3.81	3.68	3.41	-0.09	0.63	0.63	0.62	0.00
Targ-Ind	Mean	-0.18	0.09	-0.03	0.14	0.38	0.20	-0.13	-0.51
	Std. Dev.	2.47	1.96	1.99	2.22	1.63	1.44	1.00	1.97
	Median	-0.57	-0.09	-0.04	0.06	-0.01	-0.06	-0.24	-0.11
	Frac>0	0.36	0.65	0.48	0.52	0.49	0.63	0.29	0.36
	Sign Test[+]	0.01	0.80	0.77	0.77	0.92	0.55	0.00	0.01
	t(mean)	-0.72	1.26	-0.16	0.66	2.33	2.43	-1.35	-2.61

[+] P-Value

Table 9: Difference-in-Difference Analysis - Emerging vs. Developed Economies

The variables of interest are defined as difference-in-difference using the country-indices as controls. The methodology is explained in Section 3.2.; variables are defined in Section 4. The sample includes 102 deals with at least two pre and post-acquisition years. A country is defined as being developed if GDP *per capita* is above US$10,000 in 2000 prices. The Sign Test statistically evaluates the null hypothesis of a median equal to zero for the difference-in-difference measure. Frac>0 is the fraction of deals with positive *Targ-Ind* values. The Wilcoxon Test evaluates the hypothesis that two independent samples (i.e., unmatched data) are from populations with the same distribution. The Median Test evaluates the null hypothesis that the samples of developed and emerging country deals were drawn from populations with the same median.

		Change in Relative Performance							
		Deals	***Mean***	***Std Dev***	***Median***	***Frac>0***	***Sign Test*** [+]	***Wilcoxon***	***Median***
		(1)	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***
Return on Assets (%)	Developed	48	-0.17	1.24	-0.08	0.46	0.67	-0.27	0.00
	Emerging	54	-0.18	2.62	-0.11	0.46	0.68		
Return on Equity (%)	Developed	48	-1.83	19.61	-0.95	0.46	0.67	-0.31	0.00
	Emerging	54	-0.21	34.39	-1.18	0.43	0.34		
Cost to Income Ratio (%)	Developed	48	12.32	26.81	7.06	0.65	0.06*	-0.44	0.16
	Emerging	54	6.08	32.08	9.74	0.63	0.08*		
Profits Before Taxes and Provisions (%)	Developed	48	-0.20	1.71	-0.24	0.40	0.47	0.04	0.00
	Emerging	54	-0.18	2.86	-0.28	0.43	0.68		
Net Interest Margin (%)	Developed	48	-0.07	0.87	-0.13	0.35	0.06*	-0.17	0.63
	Emerging	54	-0.62	2.25	0.14	0.52	0.89		
Non-Interest Income (%)	Developed	48	-0.23	1.32	-0.13	0.44	0.47	0.72	0.63
	Emerging	54	-0.13	2.30	0.19	0.54	0.68		
Overhead Costs (%)	Developed	48	0.27	1.45	-0.10	0.44	0.47	0.72	2.52
	Emerging	54	0.04	2.75	0.59	0.59	0.22		
Loan Loss Provisions (%)	Developed	48	-0.38	1.06	-0.11	0.29	0.01***	0.13	0.00
	Emerging	54	-0.63	2.53	-0.10	0.43	0.34		

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

[+] P-Value

Table 10A: Performance, Economic Integration and Information Costs

The dependent variable is a percentile rank transformation of the performance measure. The models are explained in Section 3.3.; variables are defined in Section 4. The models are estimated for the 1994-2004 period. Three sets of variables are included as regressors: event dummies for the year of the deal (Yr0), one and two years after (Yr12) and three or more years after (Yr3+); country pair characteristics reflecting similarities between the host and home countries; and host country market and macroeconomic characteristics. The regressions include deal and country fixed effects.

	ROA	***ROE***	***Cost to Income Ratio***
	(1)	***(2)***	***(3)***
Yr0	-0.132	-0.007	-0.152
	[0.106]	[0.111]	[0.104]
Yr12	-0.073	0.048	-0.144
	[0.106]	[0.111]	[0.104]
Yr3+	-0.066	0.042	-0.13
	[0.106]	[0.111]	[0.103]
Same Language	0.059	0.109**	0.148***
	[0.041]	[0.043]	[0.042]
Same Legal	-0.073*	-0.117***	-0.152***
	[0.040]	[0.041]	[0.039]
Similar GDP PC	-0.128	-0.126	-0.129
	[0.092]	[0.094]	[0.092]
Similar GDP	0.075	0.124*	0.115**
	[0.064]	[0.068]	[0.055]
Log Distance	0.013	-0.001	0.022
	[0.016]	[0.017]	[0.017]
Same Region	0.035	0.022	0.07
	[0.067]	[0.072]	[0.069]
Concentration	-0.029	0.016	-0.076
	[0.111]	[0.109]	[0.098]
GDP Growth	0.004	0.001	0.004
	[0.003]	[0.003]	[0.003]
Inflation	0.01	0.017***	0.005
	[0.006]	[0.006]	[0.008]
Observations	1196	1178	1191
R-squared	0.45	0.46	0.51

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

Table 10B: Performance, Economic Integration and Information Costs – Emerging vs. Developed Economies

The dependent variable is a percentile rank transformation of the performance measure. The models are explained in Section 3.3.; variables are defined in Section 4. The models are estimated for the 1994-2004 period. A country is defined as being developed if GDP *per capita* is above US$10,000 in 2000 prices. Three sets of variables are included as regressors: event dummies for the year of the deal (Yr0), one and two years after (Yr12) and three or more years after (Yr3+); country pair characteristics reflecting similarities between the host and home countries; and host country market and macroeconomic characteristics. The regressions include deal and country fixed effects.

	Developed Economies			***Emerging Economies***		
	ROA	***ROE***	***Cost to Income Ratio***	***ROA***	***ROE***	***Cost to Income Ratio***
	(1)	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***
Yr0	0.262	0.279	0.018	-0.235	-0.119	-0.344**
	[0.187]	[0.182]	[0.150]	[0.188]	[0.200]	[0.167]
Yr12	0.269	0.277	0.005	-0.146	-0.027	-0.317*
	[0.188]	[0.185]	[0.150]	[0.189]	[0.200]	[0.166]
Yr3+	0.28	0.303*	0.036	-0.164	-0.077	-0.320*
	[0.186]	[0.184]	[0.149]	[0.192]	[0.202]	[0.168]
Same Language	0.082	0.101*	0.173***	0.02	0.104	0.119
	[0.056]	[0.052]	[0.044]	[0.063]	[0.071]	[0.074]
Same Legal	-0.185***	-0.252***	-0.177***	0.072	0.041	-0.102
	[0.051]	[0.049]	[0.042]	[0.061]	[0.069]	[0.069]
Similar GDP PC	-0.348***	-0.314**	-0.340***	-0.059	-0.06	-0.116
	[0.133]	[0.123]	[0.103]	[0.167]	[0.176]	[0.171]
Similar GDP	0.254***	0.219**	0.273***	-0.073	0.035	0.038
	[0.092]	[0.088]	[0.066]	[0.087]	[0.101]	[0.088]
Log Distance	-0.031	-0.027	0.009	0.008	-0.017	0.014
	[0.030]	[0.029]	[0.025]	[0.021]	[0.023]	[0.024]
Same Region	-0.054	0.034	0.024	0.012	-0.131	-0.105
	[0.096]	[0.094]	[0.078]	[0.141]	[0.176]	[0.169]
Concentration	0.202	0.141	-0.086	-0.089	-0.015	-0.115
	[0.178]	[0.189]	[0.174]	[0.138]	[0.135]	[0.122]
GDP Growth	-0.002	0	0.012	0.005*	0.001	0.003
	[0.010]	[0.009]	[0.009]	[0.003]	[0.003]	[0.003]
Inflation	0.54	0.564	-0.501	0.010*	0.016***	0.005
	[1.760]	[1.645]	[1.421]	[0.006]	[0.006]	[0.008]
Observations	495	495	495	701	683	696
R-squared	0.54	0.56	0.64	0.41	0.41	0.43

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

Table 11A: Costs, Revenue, Economic Integration and Information Costs

The dependent variable is a percentile rank transformation of the income statement ratios. The models are explained in Section 3.3.; variables are defined in Section 4. The models are estimated for the 1994-2004 period. Three sets of variables are included as regressors: event dummies for the year of the deal (Yr0), one and two years after (Yr12) and three or more years after (Yr3+); country pair characteristics reflecting similarities between the host and home countries; and host country market and macroeconomic characteristics. The regressions include deal and country fixed effects.

	Net Interest Margins (1)	***Overhead Costs (2)***	***Non-Interest Income (3)***
Yr0	-0.142*	-0.133	-0.079
	[0.085]	[0.082]	[0.093]
Yr12	-0.149*	-0.143*	-0.055
	[0.085]	[0.083]	[0.091]
Yr3+	-0.123	-0.127	-0.112
	[0.087]	[0.082]	[0.092]
Same Language	-0.053	0.108***	-0.011
	[0.033]	[0.031]	[0.030]
Same Legal	0.01	-0.059**	0.021
	[0.032]	[0.030]	[0.031]
Similar GDP PC	0.099	-0.155**	-0.068
	[0.067]	[0.069]	[0.065]
Similar GDP	-0.002	0.031	0.017
	[0.047]	[0.044]	[0.045]
Log Distance	0.029**	0.016	0.002
	[0.013]	[0.013]	[0.015]
Same Region	-0.032	0.151***	-0.035
	[0.050]	[0.050]	[0.046]
Concentration	0.147	-0.141*	0.098
	[0.096]	[0.082]	[0.093]
GDP Growth	0.006**	0.004*	0.002
	[0.002]	[0.002]	[0.003]
Inflation	0.01	-0.008	-0.011*
	[0.006]	[0.008]	[0.006]
Observations	1196	1189	1195
R-squared	0.64	0.63	0.52

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

Table 11B: Costs, Revenue, Economic Integration and Information Costs – Emerging vs. Developed Economies

The dependent variable is a percentile rank transformation of the income statement ratios. The models are explained in Section 3.3.; variables are defined in Section 4. The models are estimated for the 1994-2004 period. A country is defined as being developed if GDP *per capita* is above US$10,000 in 2000 prices. Three sets of variables are included as regressors: event dummies for the year of the deal (Yr0), one and two years after (Yr12) and three or more years after (Yr3+); country pair characteristics reflecting similarities between the host and home countries; and host country market and macroeconomic characteristics. The regressions include deal and country fixed effects.

	Developed Economies			***Emerging Economies***		
	Net Interest Margins (1)	***Overhead Costs (2)***	***Non-Interest Income (3)***	***Net Interest Margins (4)***	***Overhead Costs (5)***	***Non-Interest Income (6)***
Yr0	0.148	-0.14	0.167	-0.135	-0.141	-0.005
	[0.105]	[0.118]	[0.106]	[0.176]	[0.147]	[0.150]
Yr12	0.139	-0.168	0.191*	-0.139	-0.134	0.015
	[0.108]	[0.119]	[0.109]	[0.177]	[0.147]	[0.147]
Yr3+	0.155	-0.155	0.115	-0.111	-0.126	-0.017
	[0.115]	[0.117]	[0.110]	[0.178]	[0.148]	[0.150]
Same Language	-0.061	0.105***	-0.090***	-0.051	0.121**	0.08
	[0.037]	[0.029]	[0.033]	[0.054]	[0.061]	[0.054]
Same Legal	0.01	-0.047*	0.046	-0.013	-0.068	-0.018
	[0.034]	[0.028]	[0.035]	[0.056]	[0.058]	[0.057]
Similar GDP PC	0.097	-0.286***	0.012	0.325**	-0.153	-0.107
	[0.070]	[0.067]	[0.081]	[0.158]	[0.134]	[0.143]
Similar GDP	0.068	0.027	-0.042	-0.114	0.069	0.045
	[0.063]	[0.042]	[0.051]	[0.071]	[0.075]	[0.074]
Log Distance	-0.014	0.014	-0.039**	0.046**	0.005	0.007
	[0.016]	[0.019]	[0.017]	[0.018]	[0.019]	[0.022]
Same Region	-0.082	0.103*	-0.140***	-0.011	0.048	0.106
	[0.055]	[0.058]	[0.052]	[0.118]	[0.128]	[0.087]
Concentration	0.199	-0.053	-0.043	0.149	-0.194*	0.189
	[0.140]	[0.108]	[0.140]	[0.124]	[0.108]	[0.123]
GDP Growth	0.004	-0.002	-0.003	0.006**	0.004*	0.003
	[0.006]	[0.006]	[0.008]	[0.002]	[0.002]	[0.003]
Inflation	2.680***	-0.759	2.502**	0.01	-0.008	-0.013**
	[0.966]	[0.861]	[1.186]	[0.006]	[0.008]	[0.006]
Observations	495	495	495	701	694	700
R-squared	0.83	0.79	0.72	0.49	0.53	0.41

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

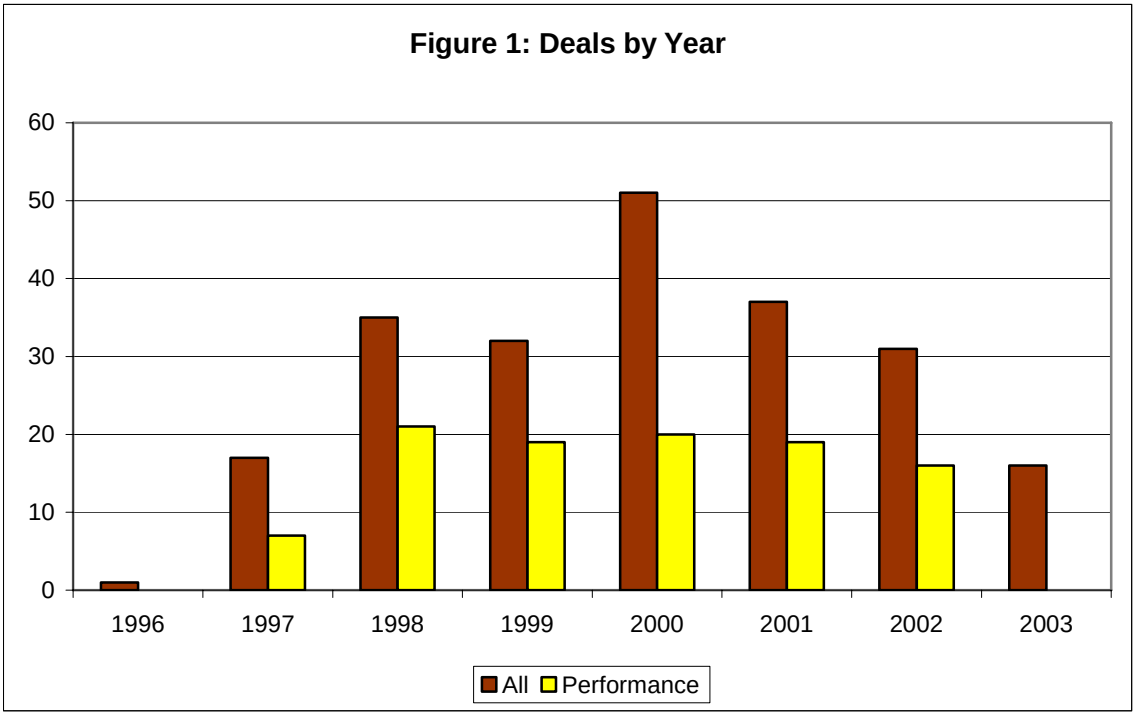
Figure 1: Deals by Year
60
50
40
30
20
10
0
1996
1997
1998
1999
2000
2001
2002
2003
All
Performance