

Foreign Bank Presence and Bank Spreads: Evidence from Turkey

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Received 19 April 2010; Accepted 26 September 2010

Abstract Using bank-level data for Turkey, this paper examines whether foreign banks are able to operate with lower spreads and whether the overall level of foreign bank participation in the banking system lowers spreads among domestic banks. Empirical analysis yields that foreign banks are able to charge lower spreads than domestic banks in Turkey. However, findings indicate that the overall level of foreign bank participation in the Turkish banking system does not affect spreads of domestic banks directly. Instead, the overall level of foreign bank participation in the banking system affects the spreads indirectly through its effects on overhead expenses. Overhead expenses of all banks decrease as foreign bank participation increases.

Keywords Foreign banks, Turkey, emerging markets

JEL classification G32, N25

1. Introduction

Banking systems of many emerging market and transition economies have recently faced with extensive entry of foreign banks. Foreign bank entry was encouraged by local banking authorities following banking crises to reduce the cost of recapitalizing domestic banking system. Consequently, there is a growing number of studies in the literature discussing the impacts of foreign banks entry in host country's economy. One aspect of foreign bank entry is the impact of foreign bank participation on domestic bank spreads.

Borrowers in the host country can benefit both directly and indirectly from presence of foreign banks. Borrowers in the host country can benefit directly from the presence of foreign banks when foreign banks operate with lower spreads and indirectly when foreign bank competition forces domestic banks to reduce their spreads.

However, the impact of foreign bank participation on domestic bank spreads is ambiguous. On the one hand, domestic banks can reduce their spreads when foreign bank competition forces domestic banks to become more efficient or to quit some of the margins they were used to earn before. On the other hand, foreign bank competition may force domestic banks to serve less desirable clients with higher risks and higher level of information and transaction costs from whom they are able to obtain higher spreads. This may lead to higher spreads of domestic banks (Lensink and Hermes 2004).

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Although substantial body of literature has explored various determinants of bank spreads, limited numbers of cross-country and country-level empirical studies have investigated the impact of foreign bank entry on bank spreads. The empirical evidence on the relationship between foreign bank entry and bank spreads is also mixed.

Schwaiger and Liebeg (2007) investigated the determinants of banks' interest margins in Central and Eastern Europe in the late transition period from 2000 to 2005 by using unbalanced panel of 247 banks (930 observations) and concluded that foreign ownership has a positive effect on interest margins. Claeyns and Vander Venet (2008) analyzed bank interest margins for 36 countries in Western and Eastern Europe. They concluded that bank interest margins are primarily determined by operational efficiency rather than market structure in Eastern Europe and more competition with foreign bank entry drive margins down. Martinez-Peria and Mody (2004) investigated the impact of foreign bank participation and concentration on bank spreads in a sample of Latin American countries (Argentina, Chile, Colombia, Mexico, and Peru) and found that especially *de novo* foreign banks (new entrants) were able to charge lower spreads relative to domestic banks. However, Claessens et al. (2001) investigated the role of foreign banks in domestic financial systems in a cross-country study and found that foreign banks tend to have higher net interest margins. Cross-country study of van Horen (2007) indicates that origin of foreign banks also matters for bank spreads, whereby foreign banks from developing countries have a higher interest margin than foreign banks from high income countries.

In regard to country-level studies on the subject, Barajas et al. (1999) find evidence of a decline in bank spreads following foreign bank participation in Colombia's financial sector. By examining the interest rate margins of Czech banks in 2000–2006, Horváth (2009) found that increasing foreign ownership presence leads to more efficient banks to exhibit lower interest margins. While Beck and Hesse (2009) report that foreign banks charge lower interest rate spreads than domestic banks in Uganda. There was no systematic reduction of bank spreads as a result of foreign bank participation in the case of Philippine. Manzano and Neri (2001) report that high bank spreads persisted and increased in the period 1994–97 despite entry of new banks in Philippine. Dabla-Norris and Floerkemeier (2007) found that foreign banks over all do not contribute to lower spreads and margins in the case of Armenia. However, their origin matters for banking efficiency. While presence of foreign banks from developed countries is associated with lower spreads, the presence of foreign banks from developing countries is associated with higher spreads in Armenia.

Turkey also provides an important case study for the impact of foreign bank entry on the bank spreads since Turkish banking system has recently undergone significant changes following financial crisis in the year 2001. As a result of restructuring programme, foreign bank entry and the share of foreign banks in the banking system have increased significantly in the Turkish banking system. This paper contributes to the studies in the literature on the impact of foreign bank entry on bank spreads in developing countries by providing country level evidence from Turkey.

In this study, the impact of foreign bank participation on bank spreads in Turkey is investigated. Using bank-level data for Turkey, this study examines whether foreign

banks are able to operate with lower spreads and whether the overall level of foreign bank participation in the banking system lowers spreads among domestic banks.

The remaining part of the paper is organized as follows. I analyze foreign banks in the Turkish banking system in the next section. Methodology and estimation results are discussed in Section 3. Section 4 concludes.

2. Foreign banks in the Turkish banking system

There are two kinds of conventional banks in Turkey: commercial banks, and investment and development banks. While both kinds of banks can provide lending services, investment and development banks are not allowed to collect deposits. Investment and development banks do not represent large share of conventional banks in Turkey and they account for about 4 percent of total assets of the banking system. Banks can also be classified according to their ownership, whereby they can be state-owned, savings-and-insurance-fund-owned, privately-owned and foreign-owned. When banks fail in Turkey, the ownership of the bank is transferred to the savings and insurance fund according to the banking law.

The number of commercial banks in Turkey remained stable during the 1970–1980 periods as a result of banking regulations. Although the number of commercial banks operating in Turkey increased rapidly following the financial liberalization in 1980's, their number decreased significantly following the banking crisis in 2001. Thus, the number of commercial banks in Turkish banking system increased from 40 in 1980 to 46 in 1990 and 61 in 2000 and decreased to 46 in 2001 and 32 in 2008. The number of foreign banks remained stable during the 1970–1980 periods and increased significantly in 1990's. Although the number of foreign banks decreased after the year 2000, their numbers started rising after 2006 (see Table 1).

Table 1. The number of banks operating in Turkey

| | 1970 | 1980 | 1990 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Commercial | 44 | 40 | 46 | 62 | 61 | 46 | 40 | 36 | 35 | 34 | 33 | 33 | 32 |
| State-owned | 12 | 12 | 8 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Privately-owned | 27 | 24 | 25 | 31 | 28 | 22 | 20 | 18 | 18 | 17 | 14 | 11 | 11 |
| SDIF-owned | | | | 8 | 11 | 6 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Foreign-owned | 5 | 4 | 23 | 19 | 18 | 15 | 15 | 13 | 13 | 13 | 15 | 18 | 17 |

Source: The Banks Association of Turkey, Banks in Turkey, various years.

As the number of foreign banks increased in the Turkish banking system, their market share in terms of total assets, total loans and total deposits were also increased. However, market share of foreign banks remained low compared to their numbers. The share of foreign bank in total assets increased to 15 percent in 2008 from 5 percent in 2000. The share of total deposits in foreign banks rose to 13 percent in 2008 from 5 percent in 2000. The share of foreign bank in total loans increased to 18 percent in 2008 from 4 percent in 2000 (see Table 2).

Table 2. Market share of foreign banks in the Turkish banking system (%)

| | 1990 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|----------------|------|------|------|------|------|------|------|------|------|------|
| Total assets | 3 | 5 | 3 | 3 | 3 | 3 | 5 | 12 | 15 | 15 |
| Total deposits | 2 | 5 | 2 | 2 | 2 | 3 | 5 | 10 | 14 | 13 |
| Total loans | 2 | 4 | 3 | 4 | 4 | 5 | 7 | 15 | 19 | 18 |

Source: The Banks Association of Turkey, Banks in Turkey, various years.

3. Methodology and Empirical Results

Bank spreads are estimated as a function of a set of explanatory variables which are identified as useful determinants of bank spreads by the empirical literature (e.g. Martinez-Peria and Mody 2004, Claessens et al. 2001). The sample includes 28 privately owned domestic and foreign banks. Out of 28 banks in the sample, 15 banks are foreign banks. The period under study is between 1990 and 2006. The data are annual unbalanced panel data and are taken from various issues of Banks in Turkey of the Banks Association of Turkey. In order to analyze the impact of foreign bank participation on bank spreads in Turkey, the following random effect model is estimated:

$$SPREAD_{it} = \beta_1 + \beta_2 LIQAS_{it} + \beta_3 OVERHEAD_{it} + \beta_4 NPL_{it} + \beta_5 EQ_{it} + \beta_6 BANKMASH_{it} + \beta_7 TOP10BANK_t + \beta_8 FOREIGN_{it} + \beta_9 FORBAPAR_t + \beta_{10} INFLATION_t + \beta_{11} OUTPTGR_t + \beta_{12} INTEREST_t + \varepsilon_i + u_{it},$$

where it subscript stands for the i -th banks's observation value at time t for the particular variable, ε_i is a random error term, which is constant through the time and characterizes the bank specific factors not considered in the regression, u_{it} is error term of the regression.

The dependent variable and the explanatory variables capturing bank specific factors and macroeconomic factors are defined in Table 3, whereas Table 4 presents some summary statistics.

Dependent variable of this study is *SPREAD*. *SPREAD* is calculated by taking the total interest received by banks on loans during one year divided by the total loans for that period and subtracting from it the total interest paid on deposits throughout the year divided by total deposits.

LIQAS refers to the ratio of liquid to total assets. High liquidity ratios impose an opportunity cost on banks since they have to give up holding higher yielding assets. Thus, as long as banks are able to transfer this opportunity cost to borrowers, we expect a positive association between liquid assets and spreads.

OVERHEAD is the ratio of overhead expenses to total assets. Higher overhead expenses increase the cost of banks. Thus, as long as banks are able to transfer this cost to borrowers, we expect to find that overhead expenses have a positive impact on bank spreads.

Table 3. Description of the variables

| Variable | Definition |
|------------------|---|
| <i>SPREAD</i> | The total interest received by banks on loans during one year divided by the total loans for that period and subtracting from it the total interest paid on deposits throughout the year divided by total deposits. |
| <i>LIQAS</i> | The ratio of liquid to total assets. |
| <i>OVERHEAD</i> | The ratio of overhead expenses to total assets. |
| <i>NPL</i> | The ratio of non-performing loans to total loans. |
| <i>EQ</i> | The share of bank equity to total assets. |
| <i>BANKMASH</i> | The ratio of each banks assets to total assets. |
| <i>TOP10BANK</i> | The share of loans held by the top 10 largest banks. |
| <i>FOREIGN</i> | It takes the value of 1 if a bank is foreign owned at each point in time, otherwise it takes the value of 0. |
| <i>FORBAPAR</i> | The share of loans in the hand of foreign banks. |
| <i>INFLATION</i> | The percentage change in the consumer price index. |
| <i>OUTPTGR</i> | The rate of change of the real GNP. |
| <i>INTEREST</i> | Real interest rate: nominal average compounded interest rate on government bonds minus the average inflation rate. |

NPL stands for the ratio of non-performing loans to total loans. We expect to have a positive correlation between non-performing loans and spreads. Non-performing loans increase the credit risk of the bank. Banks with higher credit risk have to charge higher rates on their loans since equity holders demand higher returns.

EQ is the share of bank equity to total assets. We expect a positive coefficient on *EQ* variable since holding large equity ratios can be costly for banks.

BANKMASH refers to the ratio of each bank's assets to total assets in the banking system. This variable intends to capture market power. Banks with higher market share may be able to charge lower spreads due to the presence of economies of scale (Saunders and Schumacher 2000). Thus, we expect market power to have a negative impact on bank spreads.

TOP10BANK is the share of loans held by the top 10 largest banks. This variable intends to capture banking sector concentration. On the one hand a bank concentration due to the restricted entry may result in higher spreads (Samuel and Valderrama 2006), on the other hand a bank concentration due to the efficient operations of the leading banks in the banking system may result in lower spreads (Berger and Hannan 1989; Barajas et al. 1999). Thus, coefficient on *TOP10BANK* variable is expected to be ambiguous.

FOREIGN is a dummy variable. It takes the value of 1 if a bank is foreign owned at each point in time, otherwise it takes the value of 0. This variable is introduced to test whether the average spread for foreign banks is significantly different from the average spread for domestic banks.

FORBAPAR stands for the share of loans in the hand of foreign banks. This variable

Table 4. Descriptive statistics

| | No. of obs. | Mean | | | Standard deviation | | |
|------------------|-------------|--------|----------|---------|--------------------|----------|---------|
| | | All | Domestic | Foreign | All | Domestic | Foreign |
| <i>SPREAD</i> | 414 | 11.859 | 16.590 | 5.334 | 33.474 | 17.867 | 46.477 |
| <i>OVERHEAD</i> | 411 | 6.633 | 5.911 | 7.656 | 4.744 | 3.537 | 5.919 |
| <i>EQ</i> | 416 | 16.722 | 14.234 | 20.147 | 12.425 | 8.091 | 16.049 |
| <i>BANKMASH</i> | 476 | 1.494 | 2.464 | 0.244 | 2.874 | 3.518 | 0.445 |
| <i>NPL</i> | 410 | 7.212 | 5.137 | 10.170 | 20.357 | 10.801 | 28.761 |
| <i>LIQAS</i> | 415 | 33.129 | 26.766 | 41.941 | 18.921 | 13.953 | 21.265 |
| <i>FORBAPAR</i> | 476 | 3.654 | 3.468 | 3.894 | 4.776 | 4.564 | 5.037 |
| <i>TOP10BANK</i> | 476 | 76.411 | | | 4.078 | | |
| <i>INFLATION</i> | 476 | 57.050 | | | 32.365 | | |
| <i>OUTPTGR</i> | 476 | 4.316 | | | 5.795 | | |
| <i>INTEREST</i> | 476 | 23.824 | | | 17.180 | | |

is contained to find out whether lower spreads charged by foreign banks create pressure on domestic banks to lower their spreads.

INFLATION is the percentage change in the consumer price index. Inflation can affect bank spreads since the flexibility of loan rates can be affected by the inflation rate.

OUTPTGR refers to the rate of change of the real GNP. Changes in output can affect lending rates through creditworthiness of borrowers, and thus bank spreads (Bernanke and Gertler 1989). Creditworthiness of borrowers will decrease as output growth slows down. *Ceteris paribus*, deterioration of creditworthiness of borrowers will increase bank loan rates and hence bank spreads. Thus, a negative correlation between growth rate of real output and spreads is expected.

INTEREST is the real interest rate. It is calculated as nominal average compounded interest rate on government bonds minus the average inflation rate. This variable intends to capture marginal cost of funds faced by banks.

Table 5 below presents estimation results for the determinants of spreads among all banks, among only domestic banks, and among only foreign banks.

Among macroeconomic variables, output growth has a negative and significant impact on bank spreads for the sample including all banks. Whereas output growth continues to have a negative impact on bank spreads within the sample of domestic banks, it is not statistically significant within the sample of foreign banks. Output growth is not statistically significant in cross-country studies of Claessens et al. (2001) and Martinez-Peria and Mody (2004) on determinants of bank interest spreads. In contrast to their studies, we found that bank spreads in Turkey is negatively influenced by output growth. The observed negative relationship between spread and real output is in accordance with country-level study of Khawaja and Din (2007) on Pakistan.

Table 5. Determinants of bank spreads

| | All banks | Domestic banks | Foreign banks |
|------------------|--------------------|-------------------|--------------------|
| Constant | -14.083 (0.682) | 7.945 (0.733) | -46.127 (0.557) |
| <i>LIQAS</i> | 0.023 (0.830) | 0.224 (0.007) | -0.113 (0.594) |
| <i>OVERHEAD</i> | 1.587 (0.000) | 0.564 (0.110) | 2.332 (0.008) |
| <i>NPL</i> | 0.090 (0.237) | 0.107 (0.312) | 0.112 (0.354) |
| <i>EQ</i> | 0.031 (0.867) | -0.181 (0.229) | -0.099 (0.779) |
| <i>BANKMASH</i> | -0.876 (0.347) | -0.447 (0.172) | 1.622 (0.858) |
| <i>FOREIGN</i> | -15.992 (0.012) | | |
| <i>FORBAPAR</i> | -0.400 (0.420) | -0.371 (0.283) | -0.747 (0.508) |
| <i>TOP10BANK</i> | 0.384 (0.394) | 0.101 (0.741) | 0.668 (0.516) |
| <i>INFLATION</i> | -0.063 (0.397) | 0.006 (0.905) | -0.174 (0.312) |
| <i>OUTPTGR</i> | -0.505 (0.090) | -0.864 (0.000) | 0.000 (0.999) |
| <i>INTEREST</i> | -0.009 (0.925) | -0.017 (0.800) | 0.015 (0.947) |
| R ² | 0.082 | 0.216 | 0.084 |
| No. of obs. | 404 | 240 | 164 |
| No. of banks | 28 | 16 | 15 |

Note: P-values are in parentheses.

Among the bank-specific variables, it is found that overhead expenses have a positive and significant impact on bank spreads for the sample including all banks. Overhead expenses continue to have a positive impact on bank spreads among foreign banks. This finding is consistent with the cross-country studies of Claessens et al. (2001) and Martinez-Peria and Mody (2004) and country-level study of Beck and Hesse (2009) on Uganda.

Within the sample of domestic banks, we also found that liquidity significantly affects bank spreads. This finding indicates that domestic banks that hold a high proportion of their assets in the form of liquid assets seem to charge higher spreads and they are able to transfer opportunity cost of holding liquid assets to borrowers. This finding is consistent with the country-level studies of Khawaja and Din (2007) on Pakistan, Dabla-Norris and Floerkemeier (2007) on Armenia, and Martinez-Peria and Mody (2004) on Latin America while it contradicts with the country-level study of Angbazo (1997) on the U.S. banking system, whereby he found that the ratio of liquid assets to total liabilities is negatively related to the bank interest margins.

Foreign variable is negatively signed, suggesting that foreign banks, on average, charge lower spreads than domestic banks. This may indicate that domestic banks are forced to increase their lending to the least transparent borrowers from whom they are able to obtain the highest spreads. This result supports the studies on the importance of foreign bank presence in lowering bank interest spreads.

The coefficient on the foreign bank participation variable is statistically insignificant for the sample including all banks. This result could imply either that lower spreads charged by foreign banks do not create sufficient pressure on other banks to lower their spreads or that the overall level of foreign bank participation in the banking system affects spreads indirectly. We continue to find that changes in foreign bank participation do not seem to directly affect the overall level of spreads for domestic or foreign banks separately.

Foreign bank participation in the banking system may affect spreads through the impact of foreign competition on overhead expenses. In order to test the hypothesis that the presence of foreign banks can affect spreads indirectly through its impact on overhead expenses, we regress overhead expenses on other variables. Table 6 presents the determinants of overhead expenses for all banks and separately for domestic and foreign banks.

Table 6. Determinants of overhead expenses

| | All banks | Domestic banks | Foreign banks |
|------------------|-------------------|-------------------|-------------------|
| Constant | 3.824 (0.399) | 6.885 (0.115) | 1.521 (0.868) |
| <i>BANKMASH</i> | -0.119 (0.415) | -0.169 (0.165) | 0.190 (0.859) |
| <i>FOREIGN</i> | 2.079 (0.043) | | |
| <i>FORBAPAR</i> | -0.153 (0.017) | -0.113 (0.076) | -0.199 (0.119) |
| <i>TOP10BANK</i> | 0.037 (0.528) | 0.004 (0.937) | 0.084 (0.485) |
| <i>INFLATION</i> | 0.000 (0.946) | -0.001 (0.923) | -0.001 (0.976) |
| <i>OUTPTGR</i> | -0.048 (0.210) | -0.079 (0.030) | -0.003 (0.966) |
| <i>INTEREST</i> | 0.013 (0.317) | -0.005 (0.673) | 0.041 (0.126) |
| R ² | 0.066 | 0.083 | 0.063 |
| No. of obs. | 411 | 241 | 170 |
| No. of banks | 28 | 16 | 15 |

Note: P-values are in parentheses.

The coefficient on the foreign bank participation variable is statistically significant for the samples including all banks and domestic banks. Thus, foreign bank presence seems to create a downward pressure on the administrative costs of banks.

However, the spread estimations in Table 5 ignore possible common shocks or time trends. Foreign banks in Turkey increased their market share after the banking crisis in 2001. Foreign bank entry was also encouraged by banking authority following banking crisis in 2001 in order to recapitalize domestic financial system. To control for possible time trends, we created an interaction term by multiplying foreign bank share with a dummy that equals one for the period 2001 and beyond (see Table 7).

Table 7. Determinants of spread including *DUMMY 2001+* and interaction with *FORBAPAR*

| | All banks | Domestic banks | Foreign banks |
|--------------------------------------|--------------------|-------------------|--------------------|
| Constant | -20.665 (0.549) | 4.965 (0.833) | -59.897 (0.448) |
| <i>LIQAS</i> | 0.022 (0.841) | 0.222 (0.013) | -0.107 (0.614) |
| <i>OVERHEAD</i> | 1.625 (0.000) | 0.470 (0.194) | 2.476 (0.005) |
| <i>NPL</i> | 0.107 (0.170) | 0.176 (0.120) | 0.129 (0.293) |
| <i>EQ</i> | 0.036 (0.844) | -0.154 (0.327) | -0.192 (0.597) |
| <i>BANKMASH</i> | -0.776 (0.414) | -0.449 (0.209) | 1.536 (0.865) |
| <i>FOREIGN</i> | -15.981 (0.013) | | |
| <i>FORBAPAR</i> | 14.663 (0.126) | 0.367 (0.955) | 34.345 (0.122) |
| <i>DUMMY 2001+</i> | 9.734 (0.400) | -7.480 (0.361) | 34.961 (0.197) |
| <i>FORBAPAR</i> × <i>DUMMY 2001+</i> | -14.735 (0.118) | -0.539 (0.934) | -34.564 (0.114) |
| <i>TOP10BANK</i> | 0.292 (0.533) | 0.217 (0.502) | 0.315 (0.767) |
| <i>INFLATION</i> | -0.143 (0.163) | -0.082 (0.237) | -0.228 (0.339) |
| <i>OUTPTGR</i> | -0.748 (0.025) | -0.994 (0.000) | -0.336 (0.661) |
| <i>INTEREST</i> | 0.127 (0.315) | 0.035 (0.683) | 0.274 (0.353) |
| R ² | 0.089 | 0.231 | 0.100 |
| No. of obs. | 404 | 240 | 164 |
| No. of banks | 28 | 16 | 15 |

Note: P-values are in parentheses.

The spread estimations reported in Table 5 also assume that there are no structural shifts over time in the relation between bank spreads and their determinants. To test for structural shifts in the relation between spreads and their determinants over time, we interact overhead expenses (the most consistently significant variable across all spread

Table 8. Determinants of spread including *DUMMY 2001+* and interaction with *OVERHEAD*

| | All banks | Domestic banks | Foreign banks |
|--------------------------------------|--------------------|-------------------|--------------------|
| Constant | -14.793 (0.667) | 6.048 (0.796) | -44.776 (0.572) |
| <i>LIQAS</i> | 0.009 (0.931) | 0.205 (0.019) | -0.099 (0.648) |
| <i>OVERHEAD</i> | 1.680 (0.001) | 0.417 (0.336) | 2.486 (0.009) |
| <i>NPL</i> | 0.107 (0.174) | 0.164 (0.165) | 0.121 (0.333) |
| <i>EQ</i> | 0.045 (0.809) | -0.158 (0.316) | -0.058 (0.874) |
| <i>BANKMASH</i> | -0.844 (0.368) | -0.443 (0.195) | 1.580 (0.863) |
| <i>FOREIGN</i> | -15.720 (0.013) | | |
| <i>FORBAPAR</i> | -0.324 (0.531) | -0.180 (0.616) | -0.877 (0.472) |
| <i>TOP10BANK</i> | 0.448 (0.329) | 0.225 (0.474) | 0.643 (0.541) |
| <i>DUMMY 2001+</i> | -3.322 (0.696) | -9.336 (0.109) | 5.713 (0.784) |
| <i>OVERHEAD</i> × <i>DUMMY 2001+</i> | -0.300 (0.700) | 0.194 (0.768) | -0.801 (0.639) |
| <i>INFLATION</i> | -0.123 (0.226) | -0.083 (0.231) | -0.189 (0.429) |
| <i>OUTPTGR</i> | -0.622 (0.055) | -0.992 (0.000) | -0.057 (0.938) |
| <i>INTEREST</i> | 0.023 (0.830) | 0.030 (0.679) | 0.015 (0.951) |
| R ² | 0.084 | 0.230 | 0.085 |
| No. of obs. | 404 | 240 | 164 |
| No. of banks | 28 | 16 | 15 |

Note: P-values are in parentheses.

specifications) with a dummy that equals one for the period 2001 and beyond (see Table 8).

As seen at Table 7 and 8, all interaction terms are always insignificant and our main results remain unchanged.

4. Conclusion

In this paper, the impact of foreign bank participation on bank spreads in Turkey is empirically analyzed. By utilizing bank-level data for Turkey, this study examines whether foreign banks are able to operate with lower spreads and whether the overall level of foreign bank participation in the banking system lowers spreads among domestic banks.

Our empirical analyses yield that foreign banks are able to charge lower spreads and have lower costs than domestic banks in Turkey. However, our findings indicate that the overall level of foreign bank participation in the banking system does not affect directly spreads among domestic banks. Instead, the overall level of foreign bank participation in the banking system influences spreads through its impacts on overhead expenses (costs). Greater participation of foreign banks lowers costs all around.

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