

## **The Effects of Increased Foreign Ownership on Korean Domestic Banks\***

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We use annual banking panel data from 2001 to 2006 to examine the effects of foreign ownership on Korean domestic banks' performance in four areas of loan market behavior, management efficiency, transmission of advanced financial techniques, and profitability. Several conclusions emerge. First, increases in foreign bank ownership do not directly increase loans to large-sized firms. Also, no significant evidence suggests that increased foreign ownership of domestic banks reduces loans to small- and medium-sized firms. Consumer loans significantly increase with the level of foreign ownership. Second, the increase in foreign ownership does not produce statistically significant cost saving, such as more layoffs and shutdowns of branches. Third, we do not find any statistically significant relationship between non-interest income and foreign ownership. We do find that higher foreign holding associates with higher foreign-related activities and lower derivative-related activities, suggesting that foreign investors prefer a more stable and safer bank management, particularly with foreign exchange control, rather than more aggressive management practices, such as derivatives. Finally, we do not discover a statistically significant relationship between foreign ownership and profitability as measured by return on assets (ROA). A statistically significant negative relationship does exist, however, between foreign ownership and return on equity (ROE).

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## I. INTRODUCTION

Over the last two decades foreign banks significantly increased their ownership shares of emerging market bank systems.<sup>1)</sup> The Asian financial Crisis in 1997 highlighted the importance of strong domestic financial systems in the overall economic development process. While no general agreement exists on the role of foreign banks in achieving this goal, the market structure of the banking industry in many developing countries recently experienced dramatic changes. The Korean bank system was no exception. This trend reflects several factors, perhaps most notably the need for recapitalization of banking sectors in the wake of financial crisis, but also global market trends in financial market integration, privatization, liberalization, and mergers as well as acquisitions (M&As). Increased foreign ownership in the Korean banking sector is particularly striking. The financial structure of Korean banks underwent dramatic changes since the Asian Financial Crisis. After the crisis, the flows of foreign capital played a significant role by injecting foreign financial resources into Korean companies to help alleviate severe liquidity problems. These domestic changes could portend important implications for domestic financial intermediation.

Few studies explore the effect of foreign ownership on the performance of domestic banks. A number of recent studies focus on the efficiency effects associated with increased foreign ownership and resulting increase in competition for the domestic banking market. For example, Claessens, Demirguc-Kunt, and Huzinga (2001) find that increased foreign ownership deteriorates domestic banks' profitability by increasing the competition in the banking industry, while improving cost efficiency in domestic banks. Martinez-Peria and Schmukler (2001) discover that increased foreign

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<sup>1)</sup> The growing presence of foreign-owned banks ranks as one of the most striking structural changes in financial sectors of emerging markets. Foreign ownership in banking systems does increase significantly during the second half of the 1990s in Latin American and Central European countries. Asian countries follow a similar path during the first half of the 2000s.

ownership associates with lower profitability, but with improved efficiency of domestic banks in Latin American.

Empirical analysis of the effects of broad foreign participation in the Korean banking industry proves quite limited. Kim (2006) reports that increased foreign direct investment positively affects profitability, but does not affect bank management efficiency. On the other hand, Lee (2006) determines that foreign banks' entry significantly contributes to improved cost efficiency of Korean banks, but does not affect their profitability.

We explore these issues, using annual Korean bank panel data from 2001 to 2006. First, we describe the recent trends in foreign bank ownership in the Korea banking industry, summarizing the existing evidence on the causes and implications of foreign bank presence. We entertain four hypotheses about the effects of foreign ownership on Korean domestic banks' performance — loan market behavior, management efficiency, transmission of advanced financial techniques, and profitability.

Foreign capital can enter the Korean banking industry in three different ways. A foreigner bank can participate in Korean bank market either through foreign bank branches making corporate loans, through running both its retail and wholesale level bank business under its own brand name, or through directly acquiring stock ownership in the stock market. We use the foreign holding share as a proxy variable of foreign ownership, which comes from KISVALUE provided by National Information & Credit Evaluation, Inc and annual report of each bank.

Our findings include the following. First, increases in foreign bank ownership do not directly relate to increases in loans to the large-sized firms or to decreases in loans to small- and medium-sized firms, but does associate with increases in consumer and housing loans. Second, the increase in foreign ownership does not produce statistically significant cost saving, such as higher layoffs and shutdowns of branches. Third, we do not find any statistically significant relationship between foreign ownership and non interest income. We do find, however, that higher foreign ownership increases foreign-related activities and lower derivative-related activities,

suggesting that foreign investors prefer a more stable and safer bank management, particularly with foreign exchange control, rather than more aggressive management practices, such as derivatives. Finally, increases in foreign ownership do not affect return on assets (ROA). A statistically significant negative effect does exist between higher foreign ownership and return on equity (ROE). This finding proves consistent with the results in other emerging countries, where increased foreign ownership deteriorates the domestic banks' profitability due to the competitive pressure on the banking sector.

The paper proceeds as follows. Section 2 reviews the institutional and structural changes of the foreign ownership that occurred in Korean banking industry before and after the Asian financial crisis. Those changes include the opening of the Korean banking industry to foreign capital investment and the introduction of bank holding companies. Section 3 examines the effects of governance change from domestic to foreign ownership on bank performance. In other words, attracting foreign investment may produce different investment outcomes and returns. Section 4 tests the four hypotheses of foreign ownership on the bank management variables in the Korean banking industry, using annual panel data from 2001 to 2006. Section 5 provides a summary as well as policy implications.

## 2. FOREIGN OWNERSHIP OF KOREAN BANKS

This section briefly reviews the institutional and structural changes in the foreign banks' entry in Korean bank market. As in other emerging market, foreign participation (i.e., foreign banks) in Korea injected foreign currency loans into domestic firms during the 1970s and 1980s. The Korean government gave foreign banks more favorable treatment in certain areas relative to domestic banks.<sup>2)</sup> From the mid-1980s, the Korean government

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<sup>2)</sup> The Korean government assigned Korean domestic banks the task of making relatively riskier loans to small- and medium-sized firms than foreign banks and to invest in less-

began phasing out this preferential treatment of foreign banks. The Korean financial authority significantly relaxed its control over the financial sector, launching five-year financial liberalization blue prints in 1993. In 1994, regulators significantly lowered foreign entry barriers and abolished the economic needs test previously mandated for foreign bank investment. In 1995, regulators further eliminated the requirement to establish a representative office prior to opening other branches. These deregulatory measures ushered in a rapid increase in foreign entry. As a result, foreign direct investment (FDI) in the Korean financial sector through the opening of branches increased from \$27.1 million in 1994, to \$536.1 million in 1995, and to \$447.2 million in 1996.

The types of foreign entry into the Korean banking sector, however, experienced a tipping point, after the 1997 Asian (Korean) financial crisis.<sup>3)</sup> That is, the injection of foreign capital into the banking sector changed from opening branches to the investment of foreign capital into banks themselves.<sup>4)</sup> The Foreign Investment Promotion Act of 1998 opened up the vast majority of corporations and financial institutions to foreign investors. By offering tax and other incentives, this Act created a more transparent and open business environment. The second wave of the rapid increase of FDI in financial sector occurred in 1999. FDI in the financial sector increased from \$341 million in 1997, to \$2,580 million in 1999, and to \$1,925 million in 2000.

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profitable securities, such as monetary stabilization bonds.

<sup>3)</sup> Although Korea experienced relatively high economic growth and low inflation in the early 1990s, some weaknesses existed in the financial sector — low international reserves as well as poor government regulation and supervision of the banking system. Regional and nationwide commercial banks overused short-term foreign lending as a source of funds. The lack of transparency of balance sheets, income statements, and management practices all led to a crisis of confidence in Korean institutions.

<sup>4)</sup> More specifically, opening branches provided the most important organizational form of foreign entry before the Asian financial crisis. But, green-field investment and M&As largely replaced branch openings since 1999. The Ministry of Commerce, Industry, and Energy's (MOCIE's) foreign investment data for financial sector reports that around 75 percent of foreign investment in the financial sector occurred as green-field investment and M&As, on average. Due to the lack of disaggregated data on the mode of foreign entry to the banking sector, the MOCIE data include foreign direct investment in the financial and insurance industries.

The Korean government eased long standing legal restrictions on the foreign ownership of domestic banks, including 100 percent foreign ownership, as a consequence of the Asian financial crisis. Two reasons explain this action. First, the Korean government wanted to attract foreign capital into the Korean financial sector to facilitate restructuring of the financial sector. Second, the government believed that the entry of foreign equity would strengthen the financial and domestic banking systems. Actually, foreign banks began to play a substantially greater role in the domestic banking sector in 1998 and 1999. In early 1999, a group headed by Goldman Sachs invested \$500 million to acquire a 17% stake in Kookmin Bank, Korea's largest retail bank. Commerzbank invested \$167 million to acquire one-third ownership in the Korean Exchange Bank. Moreover, New Bridge Capital invested \$417 million in fall 1999 to acquire a major stake in the Korea First Bank. These transactions generated a widespread expectation during and just after the Asian financial crisis that foreign investors would acquire a large part of the Korean banking sector, as government restructured and sold off recently nationalized banks. These expectations did not materialize, however. The proposed purchase of Seoul Bank by Hong Kong and Shanghai Banking Corporation (HSBC) collapsed in the second half of 2000.<sup>5)</sup> Moreover, the government abandoned its announced plan to sell its majority stakes in Chohung Bank and Hanvit Bank and its minority stakes in Korea First Bank and Korea Exchange Bank in December 2000 and instead injected additional public funds and moved several of the financial institutions into a financial holding company.

The importance of foreign capital in the recovery and restructuring of the Korean banking system fell well below its initial expectation and substantially below that in parts of Latin America. For example, foreign banks controlled 45% of all banking assets in Mexico by the end of 2000, just five years after the Mexican financial crisis. Foreign financial institutions

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<sup>5)</sup> The Korean Financial Supervisory Commission hired Deutsche Bank to restructure Seoul Bank. Deutsche Bank may eventually acquire a significant stake in Seoul Bank, as a consequence.

**Table 1 Financial Performance of Domestic Banks**

Variable	1995	1997	1999	2001	2003	2005	2006
BIS Capital Ratio	9.3	7.0	10.8	10.8	10.4	12.4	12.3
Non-Performing Loans to Total Loans	5.2	6.0	13.6	3.3	2.7	1.3	0.9
ROA	0.3	-0.9	-1.3	0.8	0.1	1.2	1.1
ROE	4.2	-14.2	-23.1	15.9	2.2	20.3	15.6

Note: All entries in percentages. Data come from the Korean Financial Supervisory Commission.

played an important role in providing capital and, thereby, boosting the economy. But, similar to the experience of other Asian countries to the financial crisis, the Korean economy first plummeted and then recovered quickly, tracing out a V-shaped pattern. Thus, foreign capital ultimately played a less important role in rehabilitating the Korean banking system and boosting the Korean economy than initially expected. Instead, the Korean government incurred massive increases in domestic debt, associated with protecting depositors. After injecting the second 40 trillion Korean won of public funds, restructuring of the banking sector drew to a close. Table 1 reports the financial performance of Korean domestic banks, which improved dramatically over time.

Nonetheless, foreign entry into the financial sector through green-field investment and M&A's after the Asian financial crisis did create a high degree of foreign ownership. Foreign ownership in the Korean commercial banking sector increased from 33.5% in 1999 to 63.1% in 2006, on average. See table 2. Of the seven major domestic banks — Kookmin Bank, Woori Bank, Hana Bank, Shinhan Bank, Korean Exchange Bank, Korean Citi Bank, Standard Chartered First Bank, only Woori Bank is not foreign owned at the end of 2006, where the foreign holding share exceeds 50%. See table 3. In addition, Korean commercial banks' foreign ownership exceeds 50% except for the Woori and Jeonbuk banks. This expansion facilitated the bank

**Table 2 Foreign Capital Participation in the Korean Banking Sector**

	1999	2000	2001	2002	2003	2004	2005	2006
Domestic Banks	33.5	35.9	37.8	44.4	47.7	57.7	63.0	63.1
Nationwide Domestic Banks	35.5	38.3	40.5	46.8	49.8	59.5	65.0	64.8
Regional Domestic Banks	3.2	1.9	4.1	11.2	23.3	39.0	40.6	41.3

Note: All entries in percentages. Data come from the Korean Financial Supervisory Commission.

**Table 3 Foreign Ownership of Stock (2006)**

Bank	Kookmin	Woori	Hana	Shinhan	KEB	SC First	Citi
Foreign Ownership	82.70	9.52	80.21	58.90	77.06	100.00	100.00
Bank	Daegu	Pusan	Jeonbuk	Jeju	Gwangju	Kyongnam	
Foreign Ownership	65.72	56.10	28.11	Shinhan BHC	Woori BHC	Woori BHC	

Note: All entries in percentages. Ownership data come from KISVALUE provided by National Information & Credit Evaluation, Inc and annual report of each bank, as the measures of participation and control by foreign banks.

restructuring undertaken in the wake of Asian (Korean) financial crisis by selling off a number of ailing domestic banks to domestic and foreign bidders.

### 3. FOREIGN OWNERSHIP AND BANK MANAGEMENT

#### 3.1. The Effects of Foreign Banks' Entry

The reduced barriers and restrictions on foreign banks' activities in Korea beginning in the early 1990s leveled the playing field between foreign and domestic banks. Did increases in foreign bank operations affect the bank

management?<sup>6)</sup> On the positive side, foreign banks provide an important channel for foreign capital inflows to finance a net expansion of domestic activities. An increase in foreign participation through green-field investment and M&A's establishes a better business environment. Foreign bank participation in the banking industry can play a positive role in its developments by improving bank management efficiency, delivering advanced financial techniques. Furthermore, foreign banks can increase competition in domestic markets and they can also promote improvements in government regulation and supervision of the financial system by importing business practices forged by more stringent home country regulations.

On the negative side, foreign banks favor profitability rather than stability. The foreign banks can increase the volatility of domestic financial markets. The foreign capital channel provided by foreign banks not only encourages an *inflow* of capital in good times but also expedites a rapid *outflow* of foreign capital when a financial crisis occurs. Also, rather than improving the regulatory or supervisory process, foreign banks can create complex problems for the domestic government.<sup>7)</sup> Recent global financial crises reaffirm this negative side of foreign capital in the Korean financial market.

As noted above, the Korean banking market accommodated foreign capital in three different ways. First, foreign capital enters through the traditional route of foreign bank branches that deal with corporate loans, which characterized Korea in the second half of twentieth century. Second, a bank, such as Citibank, for example, runs both its retail and wholesale level bank business in Korea, under its own US brand name. Third, and quite differently, foreign buyers directly invest and acquire the stock of Korean domestic banks through the financial markets, achieving higher ownership in Korean banks. Although those shares frequently do not come with voting

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<sup>6)</sup> Claessens, Demirgüç-Kunt, and Huizinga (2001) note that foreign banks, operating in developing countries, generally achieve higher profitability than domestic banks; the opposite occurs in developed countries.

<sup>7)</sup> When the Asian crisis hit, the supply of foreign lending evaporated quickly, confronting the domestic banks with a liquidity crisis. Moreover, some commentators indict the initial International Monetary Fund (IMF) rescue programs as worsening the liquidity crisis by requiring tighter credit (Radelet and Sachs, 1998; Stiglitz, 2002).

rights, they do allow the foreign buyers to monitor the Korean domestic banks efficiently and effectively.

### **3.2. Empirical Studies of Foreign Ownership Effects**

Although few empirical studies examine the effect of the foreign ownership on the performance of domestic banks, we identify two lines of empirical analysis. First, some researchers analyze systemic bank efficiency effects associated with foreign banks' entry and the resulting increase in competition for domestic banks. The general findings of these studies produce mixed results, depending on the nature of the market. The foreign banks in developing markets prove more efficient in both profits and costs than domestic banks, whereas the opposite holds for developed markets (see footnote 6).

Second, other researchers consider differences in lending patterns across domestic and foreign owned banks and, thereby, the stability of the financial system. By studying bank-specific data on lending by domestic- and foreign-owned banks in Argentina and Mexico, Goldberg, Dages, and Kinney (2000) report that foreign banks generally exhibit higher loan growth rates than their domestically-owned counterparts, with lower volatility of lending, contributing to lower overall volatility of credit. Clarke, Cull, and Martinez-Per á (2001) find that all enterprises, including small- and medium-sized firms, report facing lower financing obstacles in countries with higher levels of foreign bank involvement, by analyzing 35 developing and transition economies with data on the degree of foreign bank involvement across these countries.

Since the Asian financial crisis caused significant changes in the market structure of the Korean banking industry, few studies consider the efficiency effects associated with increased foreign ownership and resulting increase in competition in the Korean domestic banking market. The findings showed mixed results. Demirguc-Kunt, Levine, and Min (1998) and Martinez-Peria and Schmukler (2001) discover that increased foreign ownership associates

with lower Korean bank profitability, but with higher efficiency of domestic banks, Lee (2006) finds similar results on Korean bank efficiency, investigating the determinants of foreign banks' entry into Korea and their effects on domestic banks' management performance. Lee considered whether foreign banks' entry can affect the domestic banks' performance, controlling for various factors determining bank performance. Lee reported that foreign banks' entry significantly contributes to the cost efficiency of Korean banks regardless of Asian financial crisis, but did not find any evidence that it also positively affects their profitability.

Contrary to Lee (2006), Kim (2006) analyzes the effects of increased foreign direct investment on domestic bank performances from 1993 and 2004. Kim discovers that the higher foreign ownership causes a positive effect on profitability, but no significant effect on improving efficiencies of bank management, such as advanced financial techniques.

The existing research in the Korean banking industry generates a complex picture, particularly on the effects of foreign banks' entry on management efficiency and the stability of the banks. Lee (2002) finds that foreign banks' entry positively relates to the size of trade and foreign direct investment before the financial crisis, and positively associates with foreign countries' ratios on financial interrelation after the crisis. He also concludes that foreign banks' entry did not affect Korean bank profitability, either ROA or ROE, but the increased competition reduced domestic banks costs. He uses the ratio of the average level of loans by foreign branches to the average level of loans by domestic banks as a proxy variable of foreign participation.

Kang and Kim (2005) use the ratio of average level of assets held by foreign banks to the average level of assets held by domestic banks as a proxy variable of foreign participation. They conclude that increased foreign participation associates with increased operational costs and capital ratios, but with reduced loans to large-sized firms. The increased foreign participation, however, does not show any statistically significant effect on bank profitability, asset soundness, or growth of domestic banks.

Lee and Lee (2005) consider how the entry of foreign capital affects the

management of financial institutions, such as banks, securities companies, and insurance companies. They document that higher foreign capital associates with higher profitability and more stability, decreasing corporate loans with higher risks. Higher foreign ownership associates with more consumer loans to total loans and fewer corporate loans. Foreign banks exhibit higher capital ratios and higher non-performing loan ratios than domestic banks. This holds partly because foreign banks employ narrower interest margin than domestic banks. Kang and Kim (2006) argue that the recent increase in acquisition of domestic banks by private equity funds associates with an increase in small- and medium-sized firms' loans, capital ratios, and profitabilities.

## 4. EMPIRICAL ANALYSIS

### 4.1. Econometric Specification

Although Korean banks experienced a large inflow of foreign capital, its effects on the Korean banking system and on the Korean economy are not fully explored. Using bank data from Bank Management Statistics and Korean macroeconomic data enable us to examine the empirical effects.<sup>8)</sup> We propose and test the following four hypotheses about foreign ownership in the Korean banking industry, using annual panel data from 2001 to 2006.

**Hypothesis 1:** *More foreign ownership of Korean banks lowers the ratio of loans to medium and small enterprises to total loans and increases loans to households more than loans to enterprises.*

**Hypothesis 2:** *More foreign ownership of Korean banks improves business efficiencies by reducing human resources and the number of branches.*

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<sup>8)</sup> The related literature includes Lee (2006), Park and Lee (2006), Kang and Kim (2005), and Jeong and Lee (2006), and Choi and Lee (2006).

**Hypothesis 3:** *More foreign ownership of Korean banks enables the introduction of advanced marketing strategies that generates a higher ratio of non-interest income to interest income (e.g., foreign exchange transactions and financial derivatives).*

**Hypothesis 4:** *More foreign ownership of Korean banks increases the profitability of domestic banks.*

Typical measures of foreign penetration into the domestic banking industry include the following: the ratio of the sum of the total assets of those banks in which foreigners own more than either 40% or 50% of total equity to total bank assets or the ratios of the sum across all banks of the assets of each bank multiplied by the percentage of equity held by foreigners to total bank assets. Our focus measures the foreign penetration of individual banks in the banking system. Thus, we use the foreign holding share of equity as a proxy variable of foreign ownership. See table 3. We obtain the ownership data from KISVALUE provided by National Information & Credit Evaluation, Inc and annual report of each bank, as the measures of participation and control by foreign banks.

We use the “bank management statistics” of the Financial Supervisory Commission for bank management variables. In this paper, in order to focus on the foreign ownership effects on the domestic bank management, we use information from thirteen nation-wide banks.<sup>9)</sup> The econometric specification is as follows.

$$Y_{it} = \alpha_{it} + c_i + \beta \cdot FO_{it} + \delta \cdot Macro_t + \gamma \cdot Control_{it} + \varepsilon_{it}, \quad (1)$$

where  $i$  refers to the bank,  $t$  refers to the year,  $Y_{it}$  equals one of the various bank management variables,  $FO_{it}$  is the foreign ownership share of total

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<sup>9)</sup> The banks include Woori, SCFirst, Hana, KEB, Shinhan, Citi, Kookmin, Daegu, Pusan, Kwangju, Jeju, Jeonbuk, and Kyounghnam. We exclude from our analysis five special banks.

outstanding stock,  $Macro_i$  refer to the macroeconomic control variables (i.e., GDP per capita, the unemployment rate, and total assets of the bank, and  $Control_{it}$  is a dummy variable that captures whether a bank exhibits complete foreign ownership (i.e., 100 percent value for foreign ownership).

The bank management variables for the four hypotheses are as follows: Hypothesis 1: the ratio of household (consumer) loans to total loans and the ratio of small- and medium-sized-firms' loans to total loans; Hypothesis 2: the number of employees, the number of executives, and the number of branches; Hypothesis 3: the ratio of net non-interest revenue to net interest revenue, foreign currency and derivative revenue to net interest revenue, foreign currency revenue to net interest revenue, derivative revenue to net interest revenue, and risk averse related revenue to net interest revenue; and Hypothesis 4: return on assets and return on equity

We determine the effect of foreign participation on the domestic banking sector as measured by the size and sign of  $\beta$ . We use the random effects model with several dummy variables where the fixed-effects models are not estimable. In our model specification, the heterogeneous component of  $c_i$  is often unobserved or omitted. When  $c_i$  and the error term are correlated ( $Cov(c, \varepsilon) \neq 0$ ), this random effects model in the panel structure is a suitable model specification.

We assign the foreign dummy variable to 1 for the Korean Exchange Bank since 2003, when the Loanstar, a private equity fund, injected new capital into KEB. We also assign the foreign dummy to 1 for Korea Citi-bank since 2004, and 1 for SC First since 2005.

## 4.2. Econometric Results

Table 4 reports the findings for Hypotheses 1 and 2. It suggests that the foreign ownership does not significantly affect loans to small- and medium-sized enterprises, but does significantly and positively affect household loans. Since households likely repay loan providers, they represent secure loans. Thus, banks with a higher foreign ownership prefer a safer, more stable loan

**Table 4 Test Results for Hypotheses 1 and 2**

	Hypothesis 1		Hypothesis 2		
	Small Business Loans to Total Loans	Home Loans to Total Loans	Number of Employees	Number of Executives	Number of Branches
Constant	0.308 (2.66)	0.461 (3.01)	4560.470 (2.16)	0.175 (0.01)	210.425 (1.58)
Foreign Ownership	-0.033 (-0.73)	0.144 (2.510)	644.568 (0.84)	-1.842 (-0.27)	-20.252 (-0.44)
Unemployment Rate	0.081 (3.669)	0.011 (0.38)	174.069 (0.42)	0.738 (0.19)	1.079 (0.04)
GDP Per Capita	-0.062 (-1.33)	-0.130 (-2.18)	-2760.527 (-3.43)	5.096 (0.72)	-88.967 (-1.81)
Total Assets	-0.026 (-0.95)	0.097 (2.95)	6190.100 (14.4)	18.200 (5.03)	492.900 (19.93)
Foreign Bank Dummy	-0.014 (-0.58)	0.053 (1.68)	-76.128 (-0.18)	2.495 (0.64)	-25.780 (-0.94)

Note: We transform the original data by multiplying ownership by 100, income by 1000, and total assets by 1,000,000. While the main interest goes to the coefficients of foreign ownership variable on other policy-oriented dependent variables, the macroeconomic influence and bank size were controlled by including the unemployment rate, GDP per capita and total assets. Other variables were included as robust checks, but the coefficients of the foreign ownership are stable and thus other results are omitted (available upon request). The values in brackets are *t*-statistics.

strategy, rather than more profitable, but higher risk, loans.<sup>10)</sup> Also, although higher foreign ownership alters the management of Korean banks, this foreign ownership does not translate into significantly lower numbers of employees, executives, and branches. Thus, we conclude that foreign ownership of Korea banks does not yet lead to significantly lower levels of labor and branches.

<sup>10)</sup> Higher foreign ownership does not imply significantly lower levels of loans to small- and medium-sized enterprises, since the negative coefficient of foreign ownership is not significant.

**Table 5 Test Results for Hypothesis 3**

	Net Noninterest Revenues to NIR	Foreign Currency and Derivatives to NIR	Foreign Currency to NIR	Derivatives to NIR	Risk Averse- Related Net Revenues to NIR
Constant	0.440 (2.06)	1.202 (1.45)	2.627 (1.57)	-1.091 (-0.94)	-0.283 (-1.09)
Foreign Ownership	-0.004 (-0.05)	0.828 (3.79)	1.212 (3.59)	-0.532 (-2.43)	0.084 (1.71)
Unemployment Rate	0.025 (0.59)	-0.149 (-0.87)	-0.377 (-1.07)	0.176 (0.72)	0.045 (0.84)
GDP Per Capita	-0.268 (-3.49)	-0.385 (-1.38)	-0.797 (-1.47)	0.333 (0.9)	0.078 (0.93)
Total Assets	0.076 (2.12)	-0.138 (-1.33)	-0.338 (-2.22)	0.203 (2.07)	-0.010 (-0.47)
Foreign Bank Dummy	0.024 (0.54)	-0.127 (-0.79)	-0.480 (-1.67)	0.414 (2.16)	0.010 (0.23)

Note: See table 4, NIR equals net non-interest revenues. The values in brackets are *t*-statistics.

Table 5 reports the findings for Hypothesis 3. It indicates that higher foreign ownership does not change the bank's management patterns, such as interest-related versus non-interest-related activities, although we anticipated that higher foreign ownership would provide pressure to expand business into areas with higher rates of return. We do find that the higher foreign ownership causes significantly higher foreign-related activities and significantly lowers derivative-related activities. Thus, strong evidence exists that higher foreign ownership produces more stable and safer bank management, rather than more aggressive management practices such as significant use of derivatives.<sup>11)</sup> We note that large banks, other things equal,

<sup>11)</sup> While banks can use derivatives to reduce risk, recent experience suggests that many banks actually increase their exposure to risk through the use of derivatives. As an anonymous referee suggests, we will analyze the relation between dividend paying strategy and foreign ownership in a future extension of this paper.

**Table 6 Test Results for Hypothesis 4**

	Hypothesis 4	
	ROA	ROE
Constant	-1.274 (-0.95)	-50.984 (-1.64)
Foreign Ownership	-0.243 (-0.76)	-13.541 (-2.3)
Unemployment Rate	0.054 (0.20)	32.791 (5.02)
GDP Per Capita	1.208 (2.73)	-23.762 (-2.39)
Total Assets	0.125 (0.84)	0.269 (0.10)
Foreign Bank Dummy	0.052 (0.21)	3.274 (0.64)

Note: We transform the original data by multiplying ownership by 100, income by 1000, and total assets by 1,000,000. The values in brackets are *t*-statistics.

pursue a more aggressive strategy with higher non-interest revenue to net interest revenue and higher derivative revenue to net interest revenue.

In summary, the domestic banks in Korea did not experience much pressure from foreign owners to aggressively pursue riskier sources of revenue, but did see safer, rather than more aggressive, management strategies. This environment provides higher protection to the investors, but it may not improve the efficiency of banks or the welfare of the Korean economy.

Table 6 reports the findings for Hypothesis 4. It shows that higher foreign ownership does not significantly affect profitability of the domestic banks, as measured by ROA, but significantly lowers ROE. This result may capture reverse causality. That is, foreign ownership increases in just the banks that experience operating difficulties during the Asian (Korean) financial crisis and became takeover targets only after the Korean government injected significant amount of capital into them.

## 5. CONCLUSION AND POLICY IMPLICATIONS

A most striking structural change in the Korean banking industry is the remarkable increase in foreign ownership after the 1997 Asian (Korean) financial crisis. The method of foreign participation changed from opening branches to facilitate a bank's own country's corporate financing to green-field, M&A, and portfolio investment. As the Korean government eased the long standing legal restrictions on the foreign ownership of domestic banks, it served as a catalyst to enlarge foreign ownership. The Korean government wanted to attract foreign capital into the Korean financial sector to facilitate restructuring in the financial sector right after the financial crisis. The entry of foreign equity, however, was expected to strengthen the financial and domestic banking systems, since then. As a result, the increase in foreign entry into the financial sector through green field investment and M&A after the Asian financial crisis created a high degree of foreign ownership and foreign management control of domestic banks. Six out of seven major domestic banks are now foreign owned, where the foreigner ownership rate hovers around 80 percent.

In this paper, we analyze the economic effects of foreign ownership on Korean banking performance. We examine the effects of foreign ownership on banking industry in four areas — loan market behavior, transmission of advanced financial techniques, management efficiency, and profitability. We use annual banking panel data from 2001 to 2006 to analyze these issues.

First, increases in foreign bank ownership do not directly affect loans to small- and medium-sized-firms. Household (consumer) loans do increase as the level of foreign ownership increases. Second, the increase in foreign ownership does not significantly generate cost savings, such as layoffs and shutdowns of branches. Third, higher foreign ownership does not significantly affect non-interest revenue. We do find that higher foreign ownership does associate with higher foreign-related activities and lower derivative-related activities. The foreign investors prefer a more-stable, safer

bank management, especially with foreign exchange activity, rather than a more-aggressive management practices such as derivative activity. Finally, higher foreign ownership significantly decreases return on equity, but does not significantly affect return on assets.

Higher foreign participation in the Korean banking sector induces some cost efficiency gains and service improvements for domestic banks, presumably by intensifying competitive pressures. This higher foreign participation, however, also evokes criticism about the public-good characteristics of the banking industry and the extension of loans to the corporate sector, especially reductions in lending to small- and medium-sized businesses. Our empirical results do not support this view. Questions also emerge on whether foreign ownership of domestic banks may contribute to greater soundness of the Korean banking system. In general, the optimal level of foreign ownership of domestic banks depends on the profitability of the bank industry. Absent entry and exit barriers, then participation of foreign capital will continue to increase, as long as the Korean banking industry continues to exhibit sustainable growth.

The Korean government plans to further expand and open the Korean financial markets and Korean financial institutions to promote the Korean financial industries as a new engine of the economy. Recently, the Korean government executed several important deregulatory changes.<sup>12)</sup> Whether foreign participation takes the form of wholly-owned branch banks or a direct ownership role in domestic banks, foreign financial firms provide substantial competitive pressure.

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<sup>12)</sup> These changes included the additional abolition of requiring permission in capital transactions (January 2006), zero-based financial deregulation (the first step in November 2005 and second step in February 2006), deregulation of the asset management businesses (June 2005), and the early execution of the plan for foreign exchange liberalization (moved up to 2009 from 2011).

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