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ARTICLE

Financial Reform and the Efficiency of Credit Allocation in Korea

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ABSTRACT This study analyzes some of the structural problems associated with the Korean financial sector, and investigates the efficiency of credit allocation by the financial system over the period from 1970 to 1996. Using data at the level of 32 industrial branches, we find no evidence that credit flows were directed sectors that were more profitable, either before or after financial reforms were initiated in the 1980s. We also find that the financial support did not contribute to improve the performance of the favored industries over time.

KEY WORDS: Credit allocation, Financial reform, Korea

JEL CODES: E44, G15, O16, O53

Introduction

The spread of the East Asian crisis to Korea in late 1997 was perhaps one of the most surprising developments in the regional debacle. A member of the original 'four Asian tigers' (the other three being Hong Kong SAR, Singapore and Taiwan Province of China), and a recent addition to the OECD club, Korea had shown a remarkable economic performance for decades. Korea's economic situation clearly did not fit the mold of the typical configuration of a balance of payments crisis. Foreign debt was low, the fiscal position was quite strong, and the

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exchange rate was hardly overvalued. Moreover, notwithstanding the large terms of trade deterioration of 1996–97, the current account deficit had remained modest and export growth continued at a remarkable pace.

While a healthy debate on many aspects of the Asian crisis is likely to continue for a long time, there will surely be a consensus on the fact that the financial sector was the Achilles heel of the Korean economy.[1] However, it was paradoxical that the crisis arose when Korea was trying to accelerate a process of financial reforms that, albeit in a gradual and piecemeal way, had started as long as one decade earlier. How far had these reforms gone in correcting distortions in a system that was characterized as over-guaranteed and poorly regulated (Krugman, 1998).

The purpose of this study is to look for evidence that the pre-1997 reforms had yielded discernible results, in particular in improving the efficiency of credit allocation. The structural problems that affected the Korean financial sector were not unlike those that have been stressed in the recent literature on banking crisis more generally, such as government intervention, connected lending, and deficient prudential regulation and supervision (see Goldstein and Turner, 1996; Demirguc-Kunt and Detragiache, 1998). In Korea, the government had traditionally used the banking sector as the instrument of choice for industrial policy initiatives. Furthermore, the influence and sheer economic power of a few large conglomerates (the chaebols) dominated credit allocation and nearly obviated the need for project evaluation and monitoring by banks. In spite of the general move to a more market-oriented system, explicit or implicit government interventions had not disappeared, and the influence of the chaebols had hardly declined by 1997.

The paper evaluates whether the financial system has allocated credit in an efficient way, before and after the start of the process of financial reform.[2] Using data at the level of 32 industrial branches over the past 30 years, we test whether credit flows were directed to relatively more profitable activities, and we find no evidence to support this proposition, either before or after the financial reforms. We also examine the converse proposition, namely, whether the flow of credits contributed to improve the performance of the favored industries over time. Again, we find no evidence to support this proposition both before and after the reforms.

Financial Sector and Financial Reform in Korea

In this section, we describe briefly the main features of the Korean financial sector and the financial reforms implemented since the mid-1980s.

1. See, for example, IMF (1997), World Bank (1998), Goldstein (1998), Krugman (1998), Corsetti *et al.* (1999), and Radelet and Sachs (2000).
2. In Borensztein and Lee (2002), we look at the evidence immediately after the crisis.

Financial Development and Government Intervention

The Korean financial sector had grown dramatically in the three decades prior to the crisis of 1997.[3] The ratio of M3 to GDP, which is the sum of M2 plus deposits in all non-bank financial institutions (NBFIs), tripled from 48% in 1980 to 146% in 1996. The structure of the financial sector changed significantly too, with non-bank financial institutions (NBFIs) growing fast and reaching a market share of about 68% of deposits in 1996, thanks to a relatively free regulatory environment. Stock markets had also grown impressively, with market capitalization increasing from 7% of GNP in 1980 to approximately 30% of GNP in 1996.

This expansion took place under close control by the Korean government, which intervened extensively in the financial sector, mainly in pursuit of industrial policy objectives. The government was a major stockholder of the five nationwide commercial banks until 1983 and it still operates a number of specialized banks. The government used allocation of credit with preferential interest rates as a powerful tool to promote the development of targeted industries. For most of the period since 1970, the nominal interest rates on deposits and loans were kept low relative to the inflation rate, which created a chronic excess demand for credit. In addition to the interest rate ceilings, the government sponsored various types of policy loans, such as export loans, national investment funds, and special loans for agriculture and fisheries, which received preferential interest rates lower than the general lending rates. By contrast, firms that were not favored by official policies had to resort to the informal, 'curb' market, where interest rates were much higher than both bank lending rates and corporate bond rates.[4]

Government intervention in the financial system intensified during the period of the heavy and chemical industries (HCI) drive in the 1970s.[5] Over-investment in the HCI sector left a sequel of non-performing loans in the commercial banks' portfolio. At the end of 1986, according to Bank of Korea's estimates, nonperforming loans at the five largest commercial banks amounted to over 11% of total credit and to three times the banks' total net worth (Park and Kim, 1994). Under market principles, most of the largest banks would have been considered insolvent. During 1985 and 1987, the government initiated several programs aimed at restructuring troubled or insolvent firms, and relieving banks of the financial burden they had incurred because of the policy lending programs. This resulted in more subsidized loans by the Bank of Korea carrying interest rates of 3–6% per annum in the unit of domestic currency (Nam, 1994).

3. See Cole and Park (1983), Nam (1994), and Park (1994, 1998) for comprehensive discussion of the Korean financial sector.
4. The exact volume of the curb market has not been known, although it is regarded as having shrunk significantly after deregulation allowed non-bank financial institutions to expand.
5. See Stern *et al.* (1995) for the detailed analysis of heavy and chemical industry drive in Korea.

The government also controlled the allocation of foreign loans tightly, again with industrial policy goals in mind. All foreign loans had to be officially authorized and nearly all of them were guaranteed by the government either directly or by financial institutions that were owned or controlled by the government. Since the cost of borrowing abroad (adjusted for exchange rate depreciation) was generally lower than the cost of borrowing from domestic sources, the allocation of foreign loans provided the government with the opportunity to subsidize strategic industries.

Chaebols and Corporate Debts

Korea's industrial structure in which large conglomerates (chaebols) dominate has influenced many aspects of credit policy. In 1995, for instance, the valued added of the largest 30 groups (excluding the valued added created by their financial affiliates) accounted for 16% of GNP and for 41% of value added in the manufacturing sector (Choi, 1996). The 30 largest chaebols received 18.3% of total bank credit and 42.1% of total non-bank credit in 1989 (BOK data reported by Park and Kim, 1994).

Government policy toward chaebols has been somewhat ambivalent over time (see Leipziger and Petri, 1993; Yoo, 1999). While the government initially encouraged the formation and growth of chaebols in the belief that large-scale firms were necessary to compete effectively in global markets, it later became concerned about an excessive concentration of power in the Korean society, and tried to check the growth of the chaebols. For instance, to prevent chaebols from owning financial institutions, the government limited bank shareholdings by a single owner to 4% of capital. Yet the government continued, until the 1997 crisis, its policy of supporting financially distressed chaebols. The view that chaebols were 'too big to fail' had become pervasive by the time events started to unfold, and had contributed to the crisis of the financial sector in Korea.

Liberalization and Deregulation

Realizing that government intervention had resulted in a backward financial system, the Korean authorities embarked in a gradual process of financial liberalization and deregulation in the 1980s. The major elements of the financial reform were the elimination of many administrative controls, decontrol of interest rates, privatization of major commercial banks, diversification of financial services, and a reduction of entry barriers.[6] In December 1988, the government announced that direct government controls on the allocation of loans would be abolished and most bank and non-bank lending rates and some long-term deposit rates would be decontrolled. However, implicit and indirect controls continued even after the announcement because of the opposition from firms that depended heavily on bank loans (Chung, 1994). In

6. Nam (1994) and Park (1994, 1998) provide details on Korea's financial reform since the 1980s.

1993, a wide range of lending interest rates was liberalized, followed by a liberalization of interest rates on deposits in 1994 and 1995.

The reforms also partially opened domestic financial markets to foreign investors. Branches of foreign commercial banks were allowed to offer a broad range of banking services and were given national treatment in 1986. However, foreign banks were not allowed to acquire Korean commercial banks or to name foreign senior managers for their local branches. In 1992, foreign investors were allowed to purchase Korean stocks, but their holdings were subject to an overall ceiling of 10% of the shares and some companies remained off-limits.

Notwithstanding the significant measures undertaken since the 1980s toward a liberalization of the financial sector, Korea's financial sector continued to be subject to considerable government intervention and influence. The share of subsidized, policy-directed loans, which had reached about 50% of total domestic credit by financial institutions in the 1970s, decreased only gradually, and still accounted for about 30% of total credit in 1990. It is still believed that the government maintains a close relation and may directly influence important decisions of financial institutions.

Despite those limitations, financial liberalization helped to strengthen competitive forces and to eliminate some distortions in the Korean financial sector. The government's direct control of the financial system was replaced by market forces to a certain degree. In principle, in a more competitive market environment, financial intermediaries are free and motivated to apply lending policies that were more selective. It seemed, however, that bank management that was accustomed to the earlier repressed environment did not adapt quickly to acquire the requisite expertise to monitor and evaluate projects on a market basis. Furthermore, liberalization appeared to induce some financial institutions – smaller ones in particular – to undertake excessively risky positions, further affecting the overall soundness of financial institutions (Park and Kim, 1994). The pursuit of profit margins that was not possible through domestic lending, and the evasion of domestic controls also encouraged risky strategies in foreign borrowing by financial institutions. As a result of the web of existing regulations, banks relied in foreign currency-denominated short-term borrowing to fund long-term domestic currency-denominated loans. With inadequate prudential regulation, the partial capital market liberalization left the financial sector highly exposed to external shocks.

To summarize, although financial markets had been liberalized and deregulated to some extent, government intervention in financial markets remained substantial, and the environment faced by financial institutions still did not provide the most adequate incentives. The next section investigates the extent to which these financial reforms resulted in a measurable improvement in credit allocation practices by financial institutions.

Testing the Efficiency of the Financial System

To what extent did the financial reform that started in the mid 1980s reduce distortions and improved the allocation of financial resources in Korea? We

approach this question by looking for changes in two dimensions: the relationship between access to credit and the profitability of the industry, and the impact of access to credit on economic performance in later years.

Some previous studies, including Leipziger (1987) and Chung (1994), argued that the financial sector in Korea was not efficient in allocating savings among investment projects but their conclusions are not based on a formal empirical analysis. In contrast, World Bank (1993) and Cho and Kim (1995) make a generally positive evaluation of credit policies in Korea. Dailami and Kim (1994), based on firm-level data for the period 1984–86, show that subsidized credit did not stimulate business investment in productive assets, but instead encouraged corporations to hold more financial assets and increase their investment in real estate operations.

A Look at the Data

Table 1 summarizes the distribution of bank loans and foreign loans across sectors for two sub periods: before financial reforms (1970–1984), and from the start of reforms until the financial crisis (1985–1996).[7] The data show that there has been some convergence in the access to bank and foreign loans among different sectors, as indicated by the decline in the standard deviation of the ratio of loans (total loans, bank loans and foreign loans) to the (accounting measure of) capital stock. This, in principle, suggests the emergence of a more level playing field among Korean industries. Table 1 also shows that the standard deviation of average borrowing costs has declined, although slightly, suggesting that access to subsidized credit may have been equal across sectors.[8]

Furthermore, note that remaining differences in the cost of credit and level of access to financing across sectors do not necessarily imply the existence of financial distortions. In a perfectly competitive and efficient financial market, financial intermediaries would normally charge different interest rates to different borrowers and cap their credit exposure to different industries at different levels, based on economic criteria. However, the presence of large disparities in the marginal return to capital among different sectors *is* an indicator of distortions in the allocation of investment. Abstracting from risk and transaction costs; when resources are allocated efficiently, the marginal return to capital should be equalized across different industries. Although this proposition applies to *ex ante* rates of return, and we observe only their *ex post* values, it is still a valid test of efficiency if *ex-post* rates of

7. All data come from the Bank of Korea, *Financial Statement Analysis*, issued annually since 1969, which reports aggregate balance sheets and income statements by industry branch. For 1996, the publication covered 41% of all firms and 91% of total corporate sales. The manufacturing sector is disaggregated into 32 sectors based on the classification of the Korea Standard Industry Classification (KSIC).
8. Cho (1988) argues that financial liberalization in Korea led to more efficiency in the allocation of credit by showing that the variance of borrowing costs for the 68 four-digit manufacturing industries declined significantly over the period from 1972 to 1984.

Table 1. Capital Structure and Profitability in 32 Korean Manufacturing Industries (averages, in percent)[a]

	Period 1 (1970–1984)		Period 2 (1985–1996)	
Variable	Average (%)	SD	Average (%)	SD
Total loans/capital	35.3	7.9	28.6	3.7
Bank loans/total capital	28.3	7.8	26.8	3.8
Foreign loans/total capital	7.0	6.8	1.8	1.5
Average borrowing cost[b]	20.3[c]	6.5	16.4	4.4
Profit rate[d]	4.0	3.1	2.8	1.4
Productivity of capital[e]	15.4	4.5	12.9	2.1
Debt/total capital	75.8	8.5	76.2	6.5

Source: Authors' estimates from Bank of Korea, *Financial Statement Analysis,* various issues.
[a]All figures are constructed from the original data available in domestic currency.
[b]The share of financial expenses in total borrowing.
[c]Average over the period from 1979 to 1984.
[d]The share of normal profit (ordinary income) in total capital stock.
[e]The ratio of capital's share of valued added in total capital stock.

return are unbiased estimates of the *ex-ante* rates, and an assumption we see no reason to dispute.

The standard deviations of profit rate and marginal efficiency of capital have also declined, which suggests an improvement in the efficiency in credit allocation. A closer look, however, is less sanguine. Figure 1 shows a scatter plot of the allocation of bank loans against the average industry profitability for the two sub-sample periods.[9] The plot suggests a *negative* correlation between the allocation of loans and the average profitability in the corresponding manufacturing sector over both sample periods. While other factors may have contributed to this unflattering result, the extremely weak performance of sectors that were prime targets of industrial policy, such as aircraft and shipbuilding is certainly suggestive. Figure 2, shows that access to foreign loans has been even more concentrated on favored sectors, in particular in the earlier years. Again, higher access to foreign loans does not correlate with stronger economic performance.

Econometric Evidence on the Efficiency of Credit Allocation

We assess more formally, whether credit allocation was efficient in the Korean manufacturing sector using an industry-level panel of 32 manufacturing sectors for the period from 1969 to 1996. The specific question we pose is whether financial resources have been directed to more (*ex-post*) efficient sectors after the financial reform process got started.

9. The pictures are very similar when we replace the profit rate with the marginal product of capital.

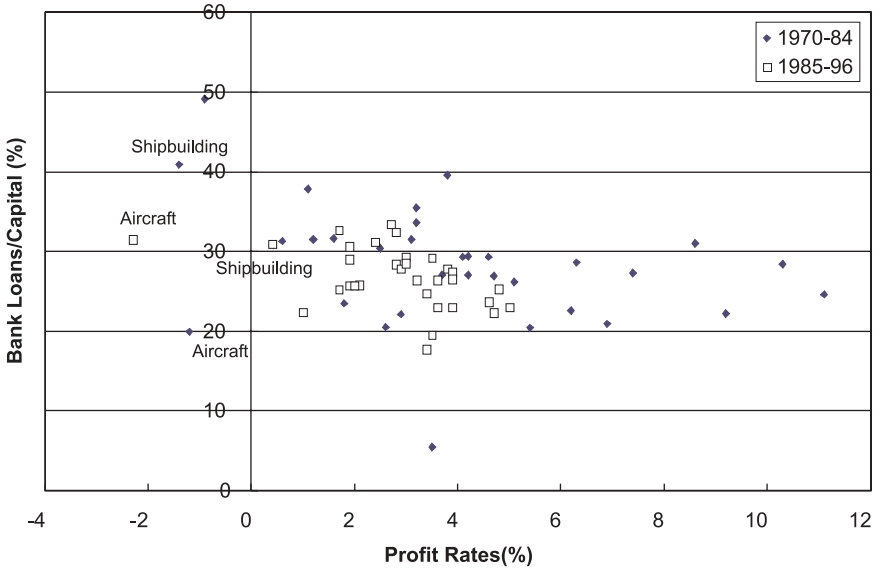

Figure 1. Bank loans and profit rates in 32 manufacturing industries

We first test whether access to credit improved for sectors that had been more profitable in the previous year. In the regressions, the dependent variable is the net flow of total loans as a proportion of the total capital stock over one year in each sector. We measure the efficiency of investment by the

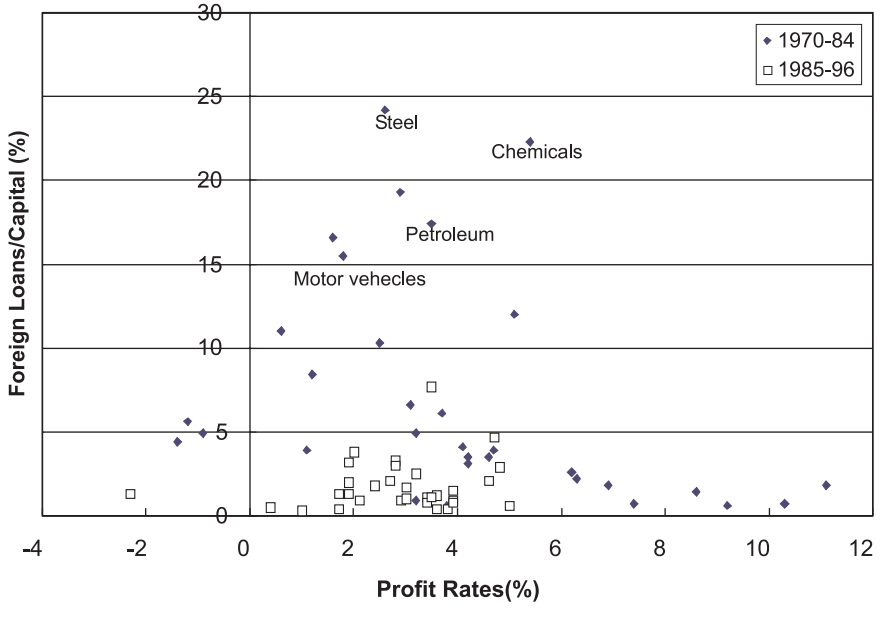

Figure 2. Foreign loans and profit rates in 32 manufacturing industries

accounting profit rate or the marginal productivity of capital in alternative specifications.[10] In addition to the efficiency variable, we include other control variables (mainly industry characteristics) that may help explain the allocation of credit. These additional explanatory variables are the lagged value of total loans as a ratio to the total capital stock, the logarithm of the fixed capital, the average debt-capital ratio, and the export-output ratio. In order to minimize endogeneity problems, we entered all the efficiency measures and the industry characteristic variables lagged by one year. In the equations we also add year dummies (not reported in the table.) The model was estimated applying the random effects GLS method.[11]

The results, reported in Table 2, show that the profitability of investment did not play an important role in the allocation of credit. In fact, given other industry characteristics and year dummies, the previous year's profit rate turns out to have a *negative* effect (although sometimes not a statistically

Table 2. Determinants of Credit Allocation in 32 Manufacturing Sectors

	Increase in (total loans/capital)					
Dependent variable	1970–1996		1970–1984		1985–1996	
	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)
Loans/capital (t–1)	–0.522	–0.519	–0.489	–0.480	–0.619	–0.628
	(–16.3)	(–16.4)	(–11.0)	(–11.0)	(–13.3)	(–13.6)
Log(fixed capital)(t–1)	0.648	0.622	0.543	0.514	0.642	0.658
	(3.06)	(2.94)	(1.61)	(1.51)	(2.64)	(2.78)
Debt/capital (t–1)	0.089	0.091	0.096	0.100	0.087	0.078
	(2.44)	(2.70)	(1.84)	(1.97)	(1.70)	(1.90)
Export/output (t–1)	0.034	0.029	0.043	0.038	0.024	0.021
	(2.83)	(2.38)	(2.30)	(2.01)	(1.75)	(1.50)
Profit rate (t–1)	–0.160		–0.157		–0.116	
	(–1.91)		(–1.45)		(–0.81)	
Productivity of capital (t–1)		–0.147		–0.110		–0.247
		(–2.54)		(–1.45)		(–2.47)
R^2	0.34	0.35	0.32	0.32	0.42	0.43
No. of observations	850	850	470	470	380	380

Notes: The dependent variable is the change in the ratio of total loans to the capital stock over a year in each of 32 manufacturing industries. The term (t–1) denotes that the variable corresponds to the previous year. The estimation is by random effect GLS. Year dummies are included but not reported. Z-statistics are reported in parentheses. A value of the Z-statistics greater than 1.96 implies the coefficient is significant at the 5 percent significance level.

10. Another test in the same spirit was conducted by Jaramillo *et al.* (1993) with reference to financial reforms in Ecuador. See also Schiantarelli (1994) for a survey of empirical studies on the effects of financial liberalization on credit allocation, and Galindo *et al.* (2001) for an empirical test based on data for 12 developing countries.
11. The estimation results, reported in Tables 2–4, do not change qualitatively when we adopt the fixed effects technique to control for unobserved industry-specific factors.

significant one) on the current year's flow of credit. Similarly, the marginal productivity of capital also has a negative effect on credit flows. These results certainly do not suggest that credit was efficiently allocated among Korean manufacturing industries.

The coefficient on total fixed capital is generally positive, which implies that the probability of obtaining credit is higher in industries with larger firms. The positive effect of the fixed capital variable could also capture the greater availability of collateral, although it is likely that it is capturing the power of larger firms to access to credit. The coefficient on the previous year's debt ratio is positive and significant, suggesting that the alleged 'evergreening' of loans to struggling firms did in fact take place.

The coefficient on export-output ratio comes out significantly positive, confirming that the broad targeting of credit to export-oriented firms. In Korea, exporters from all industries had access to subsidized credits and the firm's export performance was a key criterion in allocating credit (World Bank, 1993, p. 281; Hong, 1998).

We tested the impact of the financial liberalization and deregulation that started in the 1980s by dividing the sample into two periods: before and after 1985. Regressions (2.3–2.6) show that the profitability of investment still appears to have negative effects on credit in either sub sample, which does not indicate an improvement in efficiency allocation. This could result from the burden of past debts, and because bank/client relationships continued to be a strong determinant of credit decisions.

We conducted the same test for a breakdown of total loans in domestic bank loans and foreign loans (Table 3). We still find negative, although less significant, effects of the efficiency variables on credit flows in Korea for the period 1969 to 1996.[12] There is a difference, however, in the effects of total fixed capital and debt ratios on credit allocation. Total fixed capital is positively related to foreign loans but negatively related to bank loans. Conversely, the debt ratio is positively related to bank loans but negatively, though statistically insignificantly, related to foreign loans. This suggests that evergreening was more widespread in domestic bank credit than in foreign loans, and that firm size may have been an important requirement to gain access to foreign loans.

Effects of Credit Allocation on Productivity Growth

The results of the previous section indicate that credit was allocated preferentially to the less profitable sectors of Korean manufacturing. This credit allocation may have been motivated by strategic objectives, 'infant' industry considerations, or to help industries which faced temporary difficulties. However, whether one agrees with those objectives or not, if the economic performance of the beneficiary sectors does not improve over time, such

12. The impacts of the efficiency variables on credit flows remain either negative or insignificant in the regressions based on the sub samples before and after 1985.

Table 3. Determinants of the Allocation of Bank and Foreign Loans in 32 Manufacturing Sectors, 1970–1996

Dependent variable	Increase in bank loans/ capital		Increase in foreign loans/ capital	
	(3.1)	(3.2)	(3.3)	(3.4)
Lagged dependent variable	–0.488	–0.486	–0.244	–0.246
	(–15.6)	(–15.6)	(–11.6)	(–11.7)
Log(fixed capital)(t–1)	–0.369	–0.384	0.386	0.380
	(–1.87)	(–1.95)	(3.48)	(3.43)
Debt/capital (t–1)	0.101	0.098	–0.016	–0.020
	(2.91)	(3.03)	(–0.99)	(–1.32)
Export/output(t–1)	0.048	0.046	–0.006	–0.007
	(4.15)	(3.92)	(–1.11)	(–1.28)
Profit rate (t–1)	–0.047		–0.017	
	(–0.61)		(–0.44)	
Productivity of capital(t–1)		–0.060		–0.030
		(–1.10)		(–1.09)
R^2	0.32	0.32	0.21	0.21
No. of observations	850	850	850	850

Notes: The dependent variable is the change in the ratio of either bank loans to capital stock (for regressions 3.1 and 3.2) or foreign loans to capital stock (for regressions 3.3 and 3.4) over a year in each of 32 manufacturing industries. The term (t–1) denotes that the variable corresponds to the previous year. The estimation is by the random effect GLS. Z-statistics are reported in parentheses.

policies will eventually compromise the soundness of the financial system. We tested the effects of access to credit on the subsequent evolution of the industry.

The test uses two economic performance measures: the profit rate and the marginal productivity of capital. In order to capture a possible long-run effect of credit allocation on an industry's performance, we constructed the data as a nine three-year periods panel of 32 sectors from 1970 to 1996 (1970–72, 1973–75, 1976–78, 1979–81, 1982–84, 1985–87, 1988–1990, 1991–93, 1994–96). On this panel, we tested if the previous period's independent variables had any effect on this period's profit rate or productivity of capital. Since all the regressors are included as one-period lagged values, endogeneity problems are minimized.[13]

The regression results indicate that, although the level of significance of the coefficient varies across specifications, credit availability is never found to

13. While this seems a reasonable test, we recognize that this empirical framework does not capture externalities, if any, which may radiate from a favored sector to other sectors. Additionally, it is possible that the subsidized credit granted to a specific sector generates productivity gains after a period substantially longer than three years. However, when we have included two-period (six years) lagged values of the credit variables in the regressions, the results change little.

Table 4. Effect of Credit Allocation on Performance in 32 Manufacturing Sectors (9 Sub-periods, Averaged over three-years from 1970 to 1996)

Dependent variable	Profit rate (avg. t to t+2)		Productivity of capital (avg. t to t+2)	
	(4.1)	(4.2)	(4.3)	(4.4)
Lagged dependent variable	0.360	0.351	0.477	0.475
	(5.58)	(5.38)	(9.68)	(5.38)
Debt/capital (avg. t–1 to t–3)	–0.058	–0.064	–0.056	–0.058
	(–2.26)	(–2.42)	(–1.92)	(–1.95)
Total loans/capital (avg. t–1 to t–3)	–0.047		–0.020	
	(–2.19)		(–0.74)	
Bank loans/capital (avg. t–1 to t–3)		–0.038		–0.015
		(–1.54)		(–0.47)
Foreign loans/capital (avg. t–1 to t–3)		–0.060		–0.026
		(–2.28)		(–0.81)
R^2	0.54	0.54	0.54	0.54
No. of observations	285	285	285	285

Notes: The dependent variable is profit rate (for regressions 4.1 and 4.2) or productivity of capital (for regressions 4.3 and 4.4), averaged over three years from the period 1970–1996 in each of 32 manufacturing industries. All independent variables are one period lagged (i.e. an average of one to three years lagged values). The estimation is by the random effect GLS. Period dummies are included but not reported. Z-statistics are reported in parentheses.

have served to improve the productivity of the chosen sectors (Table 4). In regressions (4.1) and (4.2), there are strong negative effects from total credit to future profit rates. Bank loans or foreign loans have also negative coefficients. In regressions (4.3) and (4.4) in which the productivity of capital is the dependent variable, either total loans, bank loans or foreign loans have negative, though not statistically significant, effects on the productivity of capital. The other clear result is that the sectors with higher debt have been less productive than other sectors.

Concluding Remarks

Although Korea presented none of the traditional imbalances that make debtor countries vulnerable to balance of payments crisis, it still fell into a deep foreign exchange and financial crisis at the end of 1997. Korea had a moderate level of external debt, a non-overvalued exchange rate, and (at least) balanced budgets. Yet the weak position of the financial sector made Korea vulnerable to the regional turbulence. It is paradoxical that, by the time the crisis hit, Korea had already broken away from a strategy of industrial development supported by directed lending and had been taking steps to liberalize financial markets for several years. However, the strategy for financial reform had been timid and slow, and had not encouraged sufficient competition, with the result that financial institutions had taken hardly any

action to restructure their loan portfolios and avoid questionable but traditional clients. The empirical results in this paper show, in fact, that it is difficult to discern any change in lending policies of financial institutions after the financial reforms were put under way.

Although government intervention in financial markets may be justified by the existence of externalities and information asymmetries, the degree and nature of the desirable interventions is a difficult question. In most cases, government interventions in financial markets do not remedy market distortions and instead cause different new distortions in credit allocation and pricing. The history of Korea seems to suggest that the costs of heavy controls and repression exceeded the benefits, as for example in the HCI drive of the 1970s. On average, government failure seems to have been greater than market failure in Korea. Therefore, the aim for the Korean financial reform should be on strengthening the autonomy of the financial institutions and insulating them from government intervention.

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