“Determinants of dividend policy in Korean banking industry”

AUTHORS	Seok Weon Lee
ARTICLE INFO	Seok Weon Lee (2009). Determinants of dividend policy in Korean banking industry. *Banks and Bank Systems*, *4*(1)
RELEASED ON	Tuesday, 05 May 2009
JOURNAL	"Banks and Bank Systems"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES **0**

NUMBER OF FIGURES **0**

NUMBER OF TABLES **0**

Seok Weon Lee (Korea)

Determinants of dividend policy in Korean banking industry

Abstract

From the panel data of Korean banks during 1994-2005, we find that, consistent with the general findings of the previous research, the banks with higher profitability or performance pay more dividends. Furthermore and more importantly, we find very strong, significant, and consistent evidences that the safer banks pay more dividends. In the test for the partitioned sample, the tendency of the banks with higher safety and profitability to pay more dividends is observed more strongly and transparently. Considering that banks are subject to monitoring and surveillance of regulator about their operation and riskiness in addition to the pressure form capital market, dividend policy of banks would be more closely associated with their riskiness than other types of industries.

Keywords: dividend policy, banking industry, bank risk, bank profitability, bank regulation.
JEL Classification: G21.

Introduction

Dividend policy is a very important issue because it determines what funds flow to investors and what funds are retained by the firm for future reinvestment. It affects firm value as a result of distributing the output from investment and financing decision to stockholders. Dividend can also provide important information to the stockholders regarding the firm's performance. This is referred to as a signaling effect. Through the signaling effect managers are subject to the pressure form capital market that they have to pay optimal amount of dividend to stockholders, and this mechanism plays the role of monitoring managers, and therefore, solving what's called agency problem.

The issues regarding dividend policy have been examined by many researchers. Linter (1956), Baker, Farrely and Edelman (1985) examined what factors managers consider when determining the amount of dividend from the interview survey of U.S. firms. The results show that managers tend to consider future expected profit, past dividend payment, and the availability of free cash flow when determining current dividend, while the expenditure on investment is not considered. Rozeff (1981) finds a negative relationship between dividend payout ratio and the factors such as the growth rate of sales, insider ownership, and the beta of the firm. Crutchley and Hansen (1989) find that the greater the size of the firm, the greater the risk of the firm's operation, and the lower the costs of capital, the greater the dividend payout ratio the firm has. Jensen, Solberg and Zorn (1992) find that the lower the level of insider ownership, the greater the level of profit, the lower the growth rate, and the lower the level of investment, the greater the level of payout ratio the firm has.

This paper continues the above line of research by examining what factors significantly affect the dividend policy of Korean banks. From the panel data of Korean banks during 1994-2005, we find that, consistent with the general findings of the previous research, the banks with higher profitability or performance pay more dividends. Furthermore and more importantly, we find very strong, significant, and consistent evidences that the safer banks pay more dividends. In the test for the partitioned sample, the tendency of the banks with higher safety and profitability to pay more dividends is observed more strongly and transparently. Considering that banks are subject to monitoring and surveillance of regulator about their operation and riskiness in addition to the pressure form capital market, dividend policy of banks would be more closely associated with their riskiness than other types of industries.

1. Sample and data

We collect various balance sheet measures and payout ratio of the banks from the Statistics of Bank Management for each year, from 1994 to 2005, published by the Korean Financial Supervisory Service. The variables used in this paper include capital-to-asset ratio, loan-to-asset ratio, the ratio of non-performing loans-to-asset, the ratio of investment securities-to-asset, return on asset, and the payout ratio.

2. Testable hypotheses and testing models

To examine how the dividend policy of the banks which is measured by the payout ratio is associated with various measures capturing the bank's level of safety (or riskiness) and profitability, firstly we estimate the following pooled time-series/cross-sectional regression equation over the period of 1994-2005.

$$(Payout\ ratio)_{i,t} = \beta_0 + \beta_1(Capital\text{-}to\text{-}asset)_{i,t} + \beta_2(Loan\text{-}to\text{-}asset)_{i,t} + \beta_3(Nonperforming\ loans\text{-}to\text{-}asset)_{i,t} + \varepsilon_{i,t} \quad (1)$$

As the explanatory variables for the bank's dividend policy, we employ the three variables: capital-to-asset, loan-to-asset, and nonperforming loans-to-asset. Following the implications of the finance literature, higher capital-to-asset ratio, lower loan-to-asset ratio, and lower nonperforming loans-to-asset ratio are believed to represent lower risk or higher safety. In the subsequent regression equations in this paper, we employ some other variables for the safety and profitability, in turn, such as investment securities-to-asset ratio, return on asset as well. If the bank with less riskiness and higher profitability tends to pay more dividend, the sign of the coefficient β_1 would be positive, β_2 would be negative, and β_3 would be negative in equation (1).

3. Empirical results for regression analysis

3.1. Full sample tests. Table 1 shows the regression results for the case where the following three variables measuring the safety of the bank are used as the independent variables: capital-to-asset ratio, loan-to-asset ratio, and nonperforming loans-to-asset ratio. As discussed in the previous section of this paper, the banks with greater capital ratio, lower loan ratio, and lower nonperforming loan ratio are believed to be safer, other things being equal. The table shows that the coefficient on capital ratio is significantly positive, that on loan ratio is significantly negative, and that on nonperforming loans' ratio is significantly negative. All of these results very strongly indicate that the safer the bank, the greater payout ratio the bank has. In Table 2, we use investment securities-to-asset ratio as an alternative independent variable. The coefficient on investment securities-to-asset ratio is significantly positive. This result is very consistent with those in Table 1, since the banks with greater investment securities-to-asset ratio are generally believed to be safer. In Table 3, in addition to capital ratio and loan ratio measuring the riskiness of the bank, we include the return on asset as another independent variable measuring the profitability of the bank. The table shows a significantly positive coefficient on the return on asset, with the same results for capital ratio and loan ratio as those found in Tables 1 and 2. All of these results indicate that the banks with less risk and better performance or greater profitability tend to pay more dividends to the shareholders. Similar results are observed in Table 4 when loan ratio is replaced by investment securities ratio.

Table 1. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2(\text{Loan-to-asset})_{i,t} + \beta_3(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively.

	Coefficient	t-value	p-value
Constant	6.8838 ***	4.01	8.08×10-5
Capital-to-asset	30.3201 ***	2.64	0.0089
Loan-to-asset	-9.8643 ***	-3.06	0.0025
Nonperforming loans-to-asset	-0.2570 ***	-4.22	3.45×10-5
Adjusted R^2	0.15		
Number of observations	225		
Standard error of regression	3.5686		
F-statistic	12.5480 ***		

Table 2. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2(\text{Investment securities-to-asset})_{i,t} + \beta_3(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}.$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively.

	Coefficient	t-value	p-value
Constant	-1.9807	-1.56	0.1196
Capital-to-asset	33.0100 ***	2.89	0.0041
Investment securities-to-asset	13.2688 ***	3.89	0.0001
Nonperforming loans-to-asset	-0.2401 ***	-4.13	5.5×10-5
Adjusted R^2	0.17		
Number of observations	225		
Standard error of regression	3.5244		
F-statistic	14.7241 ***		

Table 3. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2(\text{Loan-to-asset})_{i,t} + \beta_3(\text{Return on asset})_{i,t} + \varepsilon_{i,t}.$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively.

	Coefficient	t-value	p-value
Constant	5.9752 ***	3.63	0.0003
Capital-to-asset	21.9291 *	1.74	0.0825
Loan-to-asset	-9.4038 ***	-2.90	0.0040
Return on asset	0.5418 ***	3.90	0.0001
Adjusted R^2	0.14		
Number of observations	225		
Standard error of regression	3.5887		
F-statistic	11.5887 ***		

Table 4. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2(\text{Investment securities-to-asset})_{i,t} + \beta_3(\text{Return on asset})_{i,t} + \varepsilon_{i,t}.$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively.

	Coefficient	t-value	p-value
Constant	-2.4731 **	-1.95	0.0506
Capital-to-asset	25.5646 **	2.05	0.0410
Investment securities-to-asset	12.6906 ***	3.71	0.0002
Return on asset	0.4966 ***	3.74	0.0002
Adjusted R^2	0.16		
Number of observations	225		
Standard error of regression	3.5476		
F-statistic	13.5760 ***		

3.2. Partitioned sample tests. From Tables 5 to 7, we reexamine the bank's dividend policy by including the dummy interaction variable D for the higher profitability. Each year, the bank with higher profitability (those whose return on asset is greater than the median for that year) takes the value of 1, and 0 otherwise. Then, we multiplied the dummy variable for higher return-on-asset to each of the three independent variables: capital-to-asset, loan-to-asset and nonperforming loans-to-asset in Table 5. Therefore, the coefficient on the dummy interaction variable indicates how much the relationship between each independent variable and dividend payout ratio is different for the group of banks with higher profitability from those of lower profitability. The significantly positive coefficient on (D × Capital-to-asset) and the significantly negative coefficient on (D × Nonperforming loans-to-asset) indicate that tendency of the banks with higher capital ratio and lower nonperforming loans to pay more dividends is more transparent and much stronger as the banks have higher return on asset. This is another very strong evidence that the safer and the more profitable the bank, the greater payout ratio the bank has. The significantly positive coefficient on (D × Investment securities-to-asset) in Table 7 has the similar and consistent interpretation.

Table 5. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3(\text{Loan-to-asset})_{i,t} + \beta_4 D\times(\text{Loan-to-asset})_{i,t} + \beta_5(\text{Nonperforming loans-to-asset})_{i,t} + \beta_6 D\times(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}.$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D = 1 if the bank belongs to higher return on asset group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	7.2653 ***	4.52	9.75×10-6
Capital-to-asset	-2.5880	-0.16	0.87
D × Capital-to-asset	57.4069 ***	2.81	0.0053
Loan-to-asset	-11.4603 ***	-3.43	0.0007
D × Loan-to-asset	2.5468	1.01	0.3131
Nonperforming loans-to-asset	-0.1625 ***	-2.61	0.0095
D × Nonperforming loans-to-asset	-0.3822 ***	-2.86	0.0045
Adjusted R^2	0.29		
Number of observations	225		
Standard error of regression	3.2823		
F-statistic	14.62 ***		

Table 6. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3(\text{Loan-to-asset})_{i,t} + \beta_4 D\times(\text{Loan-to-asset})_{i,t} + \beta_5(\text{Return on asset})_{i,t} + \beta_6 D\times(\text{Return on asset})_{i,t} + \varepsilon_{i,t}.$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D = 1 if the bank belongs to higher return on asset group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	5.6478 ***	3.61	0.0003
Capital-to-asset	-7.9748	-0.44	0.6542
D × Capital-to-asset	51.8438 **	2.33	0.0205
Loan-to-asset	-8.7974 ***	-2.61	0.0094
D × Loan-to-asset	-0.3257	-0.13	0.8931
Return on asset	0.3531 **	2.30	0.0218
D × Return on asset	0.3677	1.05	0.2904
Adjusted R^2	0.25		
Number of observations	225		
Standard error of regression	3.3710		
F-statistic	11.9776 ***		

Table 7. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3(\text{Investment securities-to-asset})_{i,t} + \beta_4 D\times(\text{Investment securities-to-asset})_{i,t} + \beta_5(\text{Nonperforming loans-to-asset})_{i,t} + \beta_6 D\times(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}.$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D = 1 if the bank belongs to higher return on asset group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	-1.1660	-0.98	0.3236
Capital-to-asset	7.2023	0.46	0.6399
D × Capital-to-asset	47.5138 ***	2.56	0.0111
Investment securities-to-asset	7.5420 *	1.76	0.0792
D × Investment securities-to-asset	6.7624 *	1.77	0.0775
Nonperforming loans-to-asset	-0.0941	-1.36	0.1726
D × Nonperforming loans-to-asset	-0.4934 ***	-3.37	0.0008
Adjusted R^2	0.31		
Number of observations	225		
Standard error of regression	3.2339		
F-statistic	16.15 ***		

Tables 8-10 show the regression results for the case where the full sample is partitioned by the capital ratio which is a measure of the level of safety of the bank. In this case, each year, the bank with higher safety (those whose capital-to-asset ratio is greater than the median for that year) takes the value of 1, and 0 otherwise. We multiply the dummy interaction variable D for higher capital ratio to each of the three independent variables. In Table 8, the signs of all the three coefficients, (D × Capital-to-asset), (D × Investment securities-to-asset), and (D × Nonperforming loans-to-asset), are as expected, however, they are not statistically significant. In Table 9, the coefficient on (D × Nonperforming loans-to-asset) is significantly negative. Overall, the results in Tables 8-10 confirm the previously-found findings that the safer and the more profitable the bank, the greater payout ratio the bank has.

Table 8. Regression results

$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3 (\text{Investment securities-to-asset})_{i,t} + \beta_4 D\times(\text{Investment securities-to-asset})_{i,t} + \beta_5(\text{Nonperforming loans-to-asset})_{i,t} + \beta_6 D\times(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}.$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D = 1 if the bank belongs to higher capital-to-asset ratio group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	-1.6464	-1.21	0.2238
Capital-to-asset	19.4399	0.88	0.3788
D × Capital-to-asset	12.9445	0.54	0.5846
Investment securities-to-asset	12.2248 ***	3.25	0.0013
D × Investment securities-to-asset	2.3911	0.57	0.5637
Nonperforming loans-to-asset	-0.1861 **	-2.36	0.0190
D × Nonperforming loans-to-asset	-0.1734	-1.46	0.1437
Adjusted R^2	0.18		
Number of observations	225		
Standard error of regression	3.5181		
F-statistic	8.02 ***		

Table 9. Regression results

$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3 (\text{Loan-to-asset})_{i,t} + \beta_4 D\times(\text{Loan-to-asset})_{i,t} + \beta_5(\text{Nonperforming loans-to-asset})_{i,t} + \beta_6 D\times(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}.$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D = 1 if the bank belongs to higher capital-to-asset ratio group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	7.5877 ***	4.27	2.84×10-5
Capital-to-asset	23.6339	0.90	0.3685
D × Capital-to-asset	3.2015	0.11	0.9131
Loan-to-asset	-12.1154 ***	-2.96	0.0033
D × Loan-to-asset	2.8088	0.88	0.3778
Nonperforming loans-to-asset	-0.1980 ***	-2.48	0.0136
D × Nonperforming loans-to-asset	-0.1784 *	-1.63	0.1029
Adjusted R^2	0.16		
Number of observations	225		
Standard error of regression	3.5563		
F-statistic	7.07 ***		

Table 10. Regression results

$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3 (\text{Loan-to-asset})_{i,t} + \beta_4 D\times(\text{Loan-to-asset})_{i,t} + \beta_5(\text{Return on asset})_{i,t} + \beta_6 D\times(\text{Return on asset})_{i,t} + \varepsilon_{i,t}.$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D=1 if the bank belongs to higher capital-to-asset ratio group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	6.5207 ***	3.81	0.0001
Capital-to-asset	-8.3458	-0.23	0.8140
D × Capital-to-asset	28.7432	0.77	0.4397
Loan-to-asset	-8.8773 **	-2.14	0.0326
D × Loan-to-asset	-0.9762	-0.28	0.7728
Return on asset	0.5615 **	2.35	0.0191
D × Return on asset	0.1526	0.53	0.5957
Adjusted R^2	0.15		
Number of observations	225		
Standard error of regression	3.5845		
F-statistic	6.3927 ***		

Tables 11-13 show the regression results for the case where the dummy interaction variable D for the lower nonperforming loan ratio is used. The significantly positive coefficient on (D × Capital-to-asset) and the significantly negative coefficient on (D × Nonperforming loans-to-asset) in Table 11, the significantly positive coefficient on (D × Investment securities-to-asset) in Table 12, and the significantly positive coefficient on (D × Return on asset) show that the safer and the more profitable the bank, the greater dividend payout ratio the bank has.

Table 11. Regression results

$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3 (\text{Loan-to-asset})_{i,t} + \beta_4 D\times(\text{Loan-to-asset})_{i,t} + \beta_5(\text{Nonperforming loans-to-asset})_{i,t} + \beta_6 D\times(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}.$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D = 1 if the bank belongs to lower nonperforming loan ratio group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	6.6213 ***	3.62	0.0003
Capital-to-asset	16.7863	1.16	0.2470
D × Capital-to-asset	41.1114 *	1.90	0.0575
Loan-to-asset	-9.9320 ***	-2.91	0.0039
D × Loan-to-asset	1.0595	0.38	0.7020
Nonperforming loans-to-asset	-0.1828 ***	-2.65	0.0085
D × Nonperforming loans-to-asset	-0.4112 **	-2.19	0.0293
Adjusted R^2	0.20		
Number of observations	225		
Standard error of regression	3.4802		
F-statistic	8.99 ***		

Table 12. Regression results

$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3 (\text{Investment securities-to-asset})_{i,t} + \beta_4 D\times(\text{Investment securities-to-asset})_{i,t} + \beta_5(\text{Nonperforming loans-to-asset})_{i,t} + \beta_6 D\times(\text{Nonperforming loans-to-asset})_{i,t} + \varepsilon_{i,t}.$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D = 1 if the bank belongs to lower nonperforming loan ratio group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	-1.1479	-0.91	0.3626
Capital-to-asset	35.9257 ***	2.48	0.0136
D × Capital-to-asset	9.8210	0.49	0.6191
Investment securities-to-asset	4.4964	0.92	0.3555
D × Investment securities-to-asset	10.5411 **	2.37	0.0184
Nonperforming loans-to-asset	-0.0600	-0.76	0.4466
D × Nonperforming loans-to-asset	-0.6906 ***	-3.35	0.0009

Table 12 (cont.). Regression results

Adjusted R^2	0.24
Number of observations	225
Standard error of regression	3.3988
F-statistic	11.19 ***

Table 13. Regression results

$$(\text{Payout ratio})_{i,t} = \beta_0 + \beta_1(\text{Capital-to-asset})_{i,t} + \beta_2 D\times(\text{Capital-to-asset})_{i,t} + \beta_3(\text{Loan-to-asset})_{i,t} + \beta_4 D\times(\text{Loan-to-asset})_{i,t} + \beta_5(\text{Return on asset})_{i,t} + \beta_6 D\times(\text{Return on asset})_{i,t} + \varepsilon_{i,t}.$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D=1 if the bank belongs to lower nonperforming loan ratio group, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	5.4121 ***	3.3354	0.0010
Capital-to-asset	11.6393	0.7441	0.4575
D × Capital-to-asset	32.9224	1.4464	0.1494
Loan-to-asset	-8.8396 ***	-2.7004	0.0074
D × Loan-to-asset	-0.1473	-0.0599	0.9522
Return on asset	0.3679 **	2.4305	0.0158
D × Return on asset	0.6450 **	1.9988	0.0468
Adjusted R^2	0.20		
Number of observations	225		
Standard error of regression	3.4681		
F-statistic	9.30 ***		

Concluding comments

From the panel data of Korean banks during 1994-2005, we find that, consistent with the general findings of the previous research, the banks with higher profitability or performance pay more dividends. Furthermore and more importantly, we find very strong, significant, and consistent evidences that the safer banks pay more dividends. In the test for the partitioned sample, the tendency of the banks with higher safety and profitability to pay more dividends is observed more strongly and transparently. Considering that banks are subject to monitoring and surveillance of regulator about their operation and riskiness in addition to the pressure form capital market, dividend policy of banks would be more closely associated with their riskiness than other types of industries.

References

1. Baker, H.K., Farreley G.E. and R. Edelman, 1985, "A Survey of Management View on Dividend Policy", *Financial Management*: 78-84.
2. Crutchley, H. and R. Hansen, 1989, "A Test of the Agency Theory of Managerial Ownership, Corporate Leverage and Corporate Dividend", *Financial Management*: 36-46.
3. Demsetz, R.S., and Strahan, P.E., 1997, "Diversification, Size, and Risk at Bank Holding Companies", *Journal of Money, Credit, and Banking* 29 : 300-313.
4. Galloway, T.M., W.B. Lee, and D.M. Roden, 1997, "Banks' Changing Incentives and Opportunities for Risk Taking," *Journal of Banking and Finance* 21 (509-527).
5. Jensen, M.C., Solverg, D.P. and T.S. Zorn, 1992, "Simultaneous Determination of Insider Ownership, Debt and Dividend Policies", *Journal of Financial and Quantitative Analysis*: 517-529.
6. Linter, J., 1956, "Distribution of Incomes of Corporations among Dividends, Retained Earnings and Taxes", *American Economic Review*: 97-113.
7. Rozeff, M., 1981, "Growth, Beta and Agency Cost as Determinants of Dividend Payout Ratios", *Working Paper Series No. 80-11*, University of Iowa.
8. Saunders A., E. Strock, and N.G. Travlos., 1990, "Ownership Structure, Deregulation, and Bank Risk Taking", *Journal of Finance* 2 (643-654).