

VI. FISCAL AND MONETARY POLICY AND THE RATIO OF RETENTIONS TO FRESH ISSUES

1. Introduction

In chapter V, we studied the effects of fiscal and monetary policies on the ratio of equity to debt finance. The empirical analysis indicated that the discriminatory tax-treatment of equity finance as compared to debt finance (by way of deducting interest payments for computing the taxable earnings of a company) has a significant effect on the proportion of corporate investment financed by equity and debt, respectively. In this chapter, we study another aspect of corporate financial policy, *viz.*, the effects of the differential tax-treatment of corporate retentions and distributed dividends (through the 'double-taxation' of distributed dividends) on the composition of equity finance represented by the ratio of corporate retentions to fresh issue of share capital. In section 2, we specify the factors which, on an *a priori* basis, may be expected to affect the ratio of retentions to fresh issues. In section 3, we discuss the econometric exercises carried out to ascertain the determinants of this ratio, using the company finance data published by the Reserve Bank of India and in section 4, we present the major conclusions derived from the econometric estimation of the effects of the selected factors on the same ratio. However, as a prelude to sections 2 and 3, we present here the general trend in the ratio of corporate retentions to fresh issues.

Table VI.1 depicts the ratio of retentions to fresh issues for the large and medium public limited companies for the period from 1956-57 to 1975-76. From the point of view of the temporal behaviour of the ratio, the whole period of study clearly falls into two distinguishable sub-periods; the period preceding 1966-67 and the period following it. The ratio shows a marked tendency to rise in the second period whereas no definite trend is discernible in the first period. An appreciation of the year to year variations in the ratio requires an analysis of the factors determining it. To

TABLE VI.1

The Ratio of Increase in Reserves and Surplus to Fresh Issues : Medium and Large Public Limited Companies : 1956-57 to 1975-76

Year	Reserves and surplus as a proportion of fresh issues
1956-57	1.4995
1957-58	0.5277
1958-59	0.5686
1959-60	1.3868
1960-61	3.2338
1961-62	1.3844
1962-63	1.5397
1963-64	2.1896
1964-65	2.8326
1965-66	2.5616
1966-67	0.1842
1967-68	0.6834
1968-69	1.2603
1969-70	2.1412
1970-71	5.4855
1971-72	5.3452
1972-73	6.8666
1973-74	10.6116
1974-75	11.8416
1975-76	2.0875
Annual average for 1956-57 to 1965-66	1.7724
Annual average for 1967-68 to 1975-76	5.1470

- Sources: 1. Reserve Bank of India (1977): *Financial Statistics of Joint Stock Companies in India 1970-71 to 1974-75*.
2. Reserve Bank of India (1975): *Financial Statistics of Joint Stock Companies in India 1960-61 to 1970-71*.
3. Reserve Bank of India (1967): *Financial Statistics of Joint Stock Companies in India 1950-51 to 1962-63*.

this we turn in section 2, paying special attention to such determinants of the ratio, as the opportunity cost to the shareholders of retentions in terms of the net dividends foregone and the direct controls on the equity market imposed by the Controller of Capital Issues.

2. The Model

As in the case of the ratio of equity to debt finance, the determinants of the ratio of retentions to fresh issues have attracted much attention in the theory of corporate finance. Following Modigliani and Miller (1958), one of the conventional hypothesis in the theory of corporate finance is that in a perfect capital market and in the absence of differential tax-treatment of corporate retentions and distributed dividends, the cost of capital is independent of the composition of equity finance in terms of retentions and fresh share capital. Put differently, this hypothesis says that the composition of equity finance is a matter of indifference for corporate decision making. As a sequel to this conventional hypothesis, recent studies (e.g. King, 1977) concentrated on the implications of tax systems on the composition of equity finance in the capital structure of a firm as distributed profits are taxed at a different (generally higher) rate than retained profits. Against the backdrop of these theoretical developments and in the light of Indian experience, we selected the following variables as the principal determinants of the ratio of retentions to fresh issues.

(a) *The shareholders' personal income tax rate*

As was shown by King (1977), given the proportion of corporate investment financed by debt, the ratio of retentions to fresh share capital depend on the shareholders' opportunity cost of retained profits in terms of the net dividends foregone. A tax system in which retentions are taxed at the same rate as distributed dividends does not affect this opportunity cost. However, a common feature of most tax systems is the double taxation of distributed dividends, first when it accrues to the company (corporation tax) and second when it accrues to the individual shareholders as income (personal income tax). A tax system which involves such double taxation affects the opportunity cost to the shareholders of retained profits in terms of the net dividends foregone. King had further shown that in a perfect capital market and under a classical tax system this opportunity cost is a decreasing function of the personal income tax rate applicable to dividend income. In other words, as the personal income tax rate applicable to dividend income rises, the opportunity cost of retained profits in terms of the net dividends foregone falls; consequently, given the debt-financed

portion of corporate investment, the ratio of retentions to fresh share capital rises.

In a progressive personal income-tax system, the rates of income tax differ with the income of the shareholders and, as such, there is no common tax rate applicable to all the shareholders. However, it was not possible to take all these rates individually in our empirical work. Accordingly in our econometric exercise, we have represented the series of marginal personal income tax rates by their arithmetic mean. This mean marginal tax rate is computed as follows: *The All India Income Tax Statistics* published by the Directorate of Inspection, Ministry of finance gives data on the distribution of dividend income according to ranges of assessed income of the individual shareholders. *The Finance Acts* published by the Ministry of Finance give the marginal personal income-tax rates applicable to different ranges of income. When these two pieces of information are juxtaposed, we obtain a frequency distribution giving the proportions of dividend income taxed at the respective marginal personal income tax rates. From this frequency distribution, we have computed the arithmetic mean of the marginal income tax rates applicable to dividend income.

(b) *The proportion of investment financed by debt*

A priori, it is not clear whether the relationship between the proportion of investment financed by debt and the ratio of retentions to fresh share capital is positive, negative or zero. To illustrate, suppose the proportion of investment financed by debt falls. At the one extreme, this fall in debt finance could be made good by an increase in fresh share capital, in which case the ratio would fall. At the other extreme, the fall in debt finance could be made good by an increase in retentions, in which case the ratio would rise. As an intermediate case, the fall in debt finance could be made good partly by an increase in fresh issues and partly by an increase in retentions. Thus, the effect of the fall in debt finance on the ratio of retentions to fresh issues would be positive, negative or nil according as the increase in retentions is greater than, smaller than, or equal to, the increase in fresh share capital. In other words, the effect of a change in the proportion of investment financed by debt on the ratio of retentions to fresh issues depends on two offsetting effects, one on the numerator and the other on the denominator of the ratio.

(c) *The Yield on Corporate Shares*

There are two channels *via* which the yield on corporate shares may affect the ratio of retentions to fresh share capital — one through the supply side of the equity market and the other through the demand side. On the supply side, given the debt financed portion of corporate investment and the personal income tax rates of the existing shareholders, an increase in the prevailing yield-rate on shares would increase the opportunity cost of fresh share capital *vis-a-vis* retentions, thereby reducing the flow-supply of equity. On the demand side, however, an increase in the yield-rate would increase the flow-demand for equity. Hence, the overall effect of changes in the yield on corporate shares on the ratio of retentions to fresh share capital would depend on these two offsetting effects.

(d) *Control of Capital Issues*

In his study, King assumes a perfect capital market in which, among other things, there are no direct controls on the quantum of fresh issues in the equity market. In such a model, flow-supply of and flow-demand for shares determine the amount of fresh issue of shares. However, the Indian equity market is not a completely free market. The government intervenes in determining the quantity-variables by fixing a limit to the fresh issue of shares. Like many other markets, the equity market in India is subject to direct controls over the amount of fresh issues by the Controller of Capital Issues. Companies have to obtain prior consent from the Controller of Capital Issues for fresh issues of share capital.

However, it is not easy to quantify the restrictiveness of the controls exercised by the Controller of Capital Issues; consequently, we used some proxy variables to represent this restrictiveness. In our empirical exercise, we used one such proxy, *viz.*, the ratio of the amount sanctioned by the Controller of Capital Issues to the amount applied for consents. *A priori*, we expect that the ratio of retentions to fresh issues would be a negatively sloped function of this variable.

(e) *The Corporate Tax Rate*

A priori, it appears that the major effect of the corporate tax rate would be on the ratio of equity to debt finance. However,

there is a general feeling in the private sector in India that the corporate tax rate also affects the composition of equity finance by affecting the availability of internal funds. More specifically, the argument runs as follows: given the profits before tax, an increase in the effective corporate tax rate reduces the profits after tax. The fall in the profits after tax compels firms to reduce retentions. Given the proportion of investment financed by debt, this fall in retentions compels firms to resort to more fresh share capital to finance a given level of investment, thereby leading to a fall in the ratio of retentions to fresh share capital. To test whether the corporate tax rate has this effect on the ratio of retentions to fresh share capital we included the effective corporate tax rate as one of the explanatory variables in our regression equations.

3. The Equations and Their Interpretation

Using the *a priori* specifications of section 2, we estimated a few regression equations of the factors affecting the ratio of retentions to fresh share capital. In this econometric exercise we confined ourselves to two alternative concepts of retentions:

- (i) Aggregate reserves as shown in the Sources and Uses of Funds of the companies; and
- (ii) Aggregate reserves less the development rebate reserve.

Conceptually, the latter concept corresponds to what can be called "free reserves". Analytically, the significance of the distinction between the two concepts of retentions is that free reserves would be largely dependent on the factors mentioned in section 2, whereas the development rebate reserve would be largely determined by the statutory provisions relating to fiscal incentives. We shall first discuss the econometric results obtained by using the concept of aggregate reserves and then shall go on to discuss the results obtained by using the concept of free reserves.

In Table VI.2 are presented the results of estimating a few equations on the determinants of the ratio of retentions to fresh issues for the medium and large public limited companies. These equations are estimated by using the data for the period from 1956-57 to 1975-76. The first equation in Table VI.2 has only one explanatory variable, *viz.*, the mean marginal rate of personal income tax applicable to dividend income (MITR). The coefficient of MITR is

TABLE VI.2
The Ratio of Retentions to Fresh Issues : Regression Results

Equation No.	Constant	MITR	DF/I	RD	CI	ECTR	R ²	F-value	D.W. Statistic
1	-15.9926 (2.4149)**	0.4624 (2.9099)***					0.320	8.468	1.0031
2	-9.1557 (-1.3357)*	0.3766 (2.4980)**	-6.6178 (-2.1284)**				0.463	7.329	1.203
3	1.7115 (0.2581)	0.3054 (2.4342)**	-4.6835 (-1.7876)**	-1.3478 (-3.0685)***			0.662	10.444	1.454
4	-2.1148 (-0.2009)	0.3286 (2.3895)**	-4.7829 (-1.7756)**	-1.3047 (-2.8409)***	0.0285 (0.4759)		0.667	7.511	1.518
5	-3.0433 (-0.9747)	0.2637 (2.0431)**	-7.2892 (-2.1347)**	-1.2463 (-2.8148)***		0.1503 (1.1710)	0.690	8.357	1.739

Note : (i) The figures in brackets are t-values.

(ii) ***, ** and * denote that the regression coefficient is significant at 1 per cent, 5 per cent and 10 per cent levels, respectively.

statistically significant at one per cent level with the theoretically expected sign. Taken alone, this variable explains around 32 per cent of the yearly variations in the ratio of retentions to fresh share capital. However, there are two aspects of equation (1) which are rather disturbing—one is the positive auto-correlation of the regression residuals as indicated by the D.W. statistic and the other is the unbelievably high constant term. These results could be the direct consequence of leaving out variables like the proportion of debt-financed investment and the yield-rate on corporate shares from the estimated equation. Accordingly, in equation (2) we introduce the proportion of debt-financed investment (DF/I) as an additional explanatory variable.

As can be seen from equation (2), the addition of DF/I as an explanatory variable leads to an increase of R^2 by around 45 per cent. Moreover, the D.W. statistic in equation (2) is in the inconclusive range. As regards the sign of the coefficient of DF/I, it is important to keep in mind that *a priori* we have hypothesised that the sign could be positive, negative or zero. Accordingly, the t-test relevant for assessing the significance of the coefficient of DF/I is a two-tailed one. On a two-tailed t-test, the coefficient of DF/I comes out significant at the 10 per cent level with a negative sign. This indicates that a change, say, a fall in the proportion of debt-financed corporate investment leads firms to “resort to” more of fresh equity than of retentions. As we mentioned in section 3, a possible interpretation of this result is that firms while deciding about the pattern of financing investment, attempt, among other things, to strike a balance between internal and external finance.

In equation (3), we introduce the yield-rate on corporate shares (RD). As in the case of DF/I, the t-test relevant for the coefficient of RD is a two-tailed one. However, even on a two-tailed test, the coefficient of RD in equation (3) is statistically significant at the five per cent level with a negative sign. The negative sign of RD indicates that the effect of a change in the yield rate on the flow-demand for shares outweighs the effect on the flow-supply of shares. The explanatory power of equation (3) is also higher than that of equation (2); the increase in the R^2 from equation (2) to (3) is of the order of 43 per cent. As regards the D.W. test, although the D.W. statistic in equation (3) is better than in equation (2), it is still in the inconclusive range. The constant term of equation (3) is not significantly different from zero as compared to the negative and significantly

higher constant terms of equations (1) and (2).

In section 2, we had mentioned that in the Indian equity market the government intervenes in determining the volume of fresh issue of shares. To capture the effect of such government intervention we have selected a proxy variable, viz., the ratio of the amount sanctioned by the Controller of Capital Issues to the amount applied for consents (CI). Equation (4) introduces this proxy variable. As can be seen from this equation, the coefficient of this variable is not significantly different from zero. However, this result should not be interpreted to mean that the capital issues control has no effect on the pattern of corporate finance. It is possible that the proxy we have chosen does not represent the true restrictiveness of capital issues control. However, it is extremely difficult to model econometrically the effect of the capital issues control on the pattern of corporate finance.

In equation (5) we drop the capital issues control variable and include the effective corporate tax rate (ECTR) instead. However, this variable does not seem to have the type of effect we have hypothesised. It was hypothesised in section 2 that an increase in the effective corporate tax rate may reduce retentions and hence lead to a fall in the ratio of retentions to fresh issues. The coefficient of this variable, although insignificant, is positively signed in equation (5). However, the wrong sign of the coefficient of ECTR may be due to the high multi-collinearity between ECTR and DF/I; the simple correlation coefficient between these two variable is as high as 0.6. It is also possible that the sudden increase in the value of the coefficient of DF/I in equation (5) is the result of this multi-collinearity. However, we made an attempt to test the hypothesis that changes in the effective corporate tax rate affect retentions through a reduction in the profits after tax by regressing the dividend pay-out ratio on the effective corporate tax rate. The estimated equation is given below:

$$\frac{DD}{PAT} \% = 65.914 - 0.0307 \text{ ECTR} \quad R^2 = 0.0002$$

$$\quad \quad \quad = (2.2521)**(-0.0636) \quad \quad \quad \text{D.W.} = 0.961$$

where,

DD is distributed dividends, and
 PAT is profits after tax.

It is important to note that
 $(1 - DD/PAT) = RP/PAT$

where,

RP is retained profits.

The coefficient of ECTR in the above equation is not significantly different from zero, thus indicating that the dividend pay-out ratio and hence the ratio of retained profits to profits after tax is invariant to changes in the effective corporate tax rate. The implication of this result is that a change, say, a given percentage reduction in the profits after tax due to an increase in the effective corporate tax rate reduces retained profits by the same percentage. In the face of these two somewhat conflicting results we are inclined to conclude that the empirical quantification of the effect of the effective corporate tax rate on the composition of equity finance remains, largely, an unsettled issue.

The results obtained by using the concept of free reserves are presented in Table VI.3. Since the data on statutory reserves are not available for the fifties, the period covered in this exercise is from 1961-62 to 1975-76. The results of Table VI.3 are broadly comparable to those in Table VI.2 except for minor differences in t-value of the coefficients and the values of R^2 . As mentioned earlier in this section, the rationale of differentiating between free reserves and statutory reserves is the conjectural hypothesis that statutory reserves are largely determined by statutory provisions regarding fiscal incentives and as such are exogenous to the corporate units. However, since the results obtained by using an alternative concept of retentions are not very different from the ones obtained by using total retentions, it appears that this conjectural hypothesis is not supported by empirical evidence. The reason for this empirical result could be that there was not much variation in the rates relating to the development rebate reserves and/or that although the development rebate reserve is statutory in nature, corporate units have enough leeway in determining the yearly variations in the quantum of the development rebate reserve.

In the light of the above discussion of the regression results, it may be concluded that our econometric exercise has shown that the marginal rate of personal income tax of individual shareholders, the proportion of debt-financed investment and the yield rate of corporate shares each have an impact on the composition of equity finance but that it has not yielded a definite conclusion regard-

TABLE VI.3
The Ratio of Increase in Free Reserves to Fresh Issues : Regression Results

Equation No.	Constant	MITR	DF/I	RD	CI	ECTR	R ²	F-value	D.W. Statistic
1	-13.0030 (-2.0902)**	0.3662 (2.4688)**					0.319	6.095	1.029
2	-5.2374 (-0.7238)	0.2439 (1.6117)*	-5.4270 (-1.7747)*				0.461	5.126	1.305
3	2.9397 (0.4968)	0.2173 (1.9302)**	-3.1734 (-1.3388)	-1.2908 (-3.2860)***			0.728	9.807	1.554
4	1.6279 (0.1158)	0.2241 (1.6631)*	-3.2361 (-2.2656)**	-1.3099 (-2.9050)***	0.0125 (0.1040)		0.728	6.696	1.600
5	-2.1241 (-0.1436)	0.2137 (1.5657)*	-4.7505 (-1.5429)*	-1.1795 (-2.4698)**	-0.0145 (-0.1162)	0.1369 (0.9021)	0.751	5.420	1.750

Note : (i) The figures in brackets are t-values.

(ii) ***, ** and * denote that the regression coefficient is significant at 1 per cent, 5 per cent and 10 per cent levels, respectively.

ing the role of capital issues control and the corporate tax rate in determining the composition.

4. Major Conclusions

The conclusions summarised here are based on equation (3) in Table VI.2 which we have selected as the most preferred variant of the model of the ratio of retentions to fresh share capital.

The first important conclusion that we can draw from our econometric exercise is that the mean marginal rate of personal income tax of the shareholders has a significant effect on the composition of equity finance. In other words, the double taxation of distributed dividends in India seems to have a positive effect on retentions as compared to fresh equity. That is, the higher the rate, the higher is the ratio of retentions to fresh issues. This is evident from the fact that in all our regression equations this variable come out statistically significant with a positive sign. Viewed against the meagre econometric evidence that is available in India on the effects of the tax system on the pattern of corporate finance, this result is very interesting.

As regards the magnitude of the effect of the personal income tax rate on the ratio of retentions to fresh share capital, we find that, on an average, every one per cent increase (decrease) in the mean marginal rate of personal income tax induces the corporate units to increase (decrease) the ratio of retentions to fresh share capital by around 4 per cent¹⁵. The policy implication of this result is very important. Taken with our earlier result that the corporate tax rate has a significant effect on the ratio of equity to debt finance, this result suggests that the tax policy of the government has a significant impact on the pattern of corporate finance. More specifically, as a part of the total package of tax policy, the personal income tax structure can be used as one of the policy instruments to increase (or decrease) the internal plough-back of the corporate sector.

The second important conclusion is that an increase (decrease) in the yield rate on corporate shares has a significant negative

¹⁵In this context it may be mentioned that in his study of the effects of public policy on the pattern of corporate finance in the United Kingdom, King (1977) found a significant positive effect of the variations in the personal income tax rate applicable to the shareholders on the ratio of retentions to fresh share capital.

(positive) effect on the ratio of retentions to fresh share capital. In section 2, we have hypothesised that the direction of the effect of a change in the yield rate on shares on the ratio of retentions to fresh equity may depend on the two offsetting effects on the demand for and supply of fresh equity. It appears from the econometric results that the effect on the demand side outweighs the effect on the supply side.

As for the magnitude of the effect, we find that for every one per cent increase (decrease) in the yield rate on corporate shares the ratio of retentions to fresh equity falls (increases) by around 2.8 per cent. An important implication of this result is that the flow-demand for corporate shares in India tends to be highly elastic with respect to the yield rate on shares.

Thirdly, our econometric study indicates that the variations in the proportion of debt financed corporate investment have a significant effect on the ratio of retentions to fresh share capital. *A priori*, it was hypothesised in section 2, that the direction of the effect of this variable on the ratio of retentions to fresh share capital is indeterminate. However, the econometric results show that the ratio of retentions to fresh share capital is inversely related to the proportion of corporate investment financed by debt. This means that a fall in the proportion of debt-financed investment induces corporate units to opt for more of fresh issues than of retentions. The explanation for this result could be that firms generally try to maintain a balance between internal and external finance; consequently, any fall in the proportion of debt financed investment is made good by an increase in fresh equity rather than by retentions.

The elasticity of the ratio of retentions to fresh equity with respect to the proportion of debt financed investment is -0.7 . In other words, a one per cent fall in the proportion of debt-financed investment leads to an increase in the ratio of retentions to fresh equity by 0.7 per cent and conversely.

Fourthly, the results of our econometric exercise do not throw much light on the role of capital issues control in determining the composition of equity finance. The coefficient of the proxy variable which we included to capture the restrictiveness of capital issues control turned out to be statistically insignificant in our regression equations. However, this result should not be interpreted to have settled the role of controls on capital issues in determining the pattern of corporate finance. It is possible that the

proxy which we considered, *viz.*, the ratio of the amount sanctioned by the Controller of Capital Issues to the amount applied for consents, is a poor surrogate for representing the restrictiveness of the complex structure of capital issues control. A more detailed analysis of the effects of capital issues control might help one to have a better understanding of its role in corporate financial policy.

Finally, regarding the effect of the corporate tax rate on the composition of equity finance, our result is largely inconclusive. In our regression equations on the ratio of retentions to fresh share capital, this variable turns out to be statistically insignificant. However, this statistical result could be mainly attributed to the presence of a high degree of multi-collinearity between the effective corporate tax rate and the proportion of debt-financed investment. However, it may be mentioned that an attempt by us to test independently the hypothesis that a higher effective corporate tax rate reduces the retained profits (by causing a reduction in profits after tax) yielded results which indicated that a one per cent increase (fall) in the effective corporate tax rate leads to a fall (increase) in the retained profits of the same order of magnitude; in other words, the ratio of retained profits to profits after tax seems to be invariant to variations in the effective corporate tax rate. Against the background of these conflicting and somewhat perplexing pulls of evidences, we are inclined to conclude that the effect of the corporate tax rate on the composition of equity finance is largely an unsettled issue.