

ANNEXURE III

REVIEW OF ECONOMETRIC STUDIES ON THE PATTERN OF CORPORATE FINANCE IN INDIA

Econometric studies on the pattern of corporate finance in India are rather few. Among the important studies are those of H. Mazumdar (1959), V.K. Sastry (1966), K. Krishnamurthy and D.U. Sastry (1971 and 1975), D. Swamy and V.G. Rao (1975) and T.R. Venkatachalam and Y.S.R. Sarma (1978).

Mazumdar presented a time series analysis of corporate savings for the period from 1946 to 1955. Using the corporate finances data available in the *Taxation Enquiry Committee Report* (for the period 1946 to 1951) and the Reserve Bank of India studies (for the period 1951 to 1955), Mazumdar attempted to explain corporate savings (or retained profits) in terms of profits and net worth.

While Mazumdar's study (1959) concentrated mainly on the determinants of internal financing, the study by Sastry concentrated on the determinants of external financing, V.K. Sastry's model explained external financing in terms of gross retained earnings, investment and the stock of net debt; the results suggested that the net flow of external finance was a negatively sloped function of stock of net debt and gross retained earnings and a positively sloped function of investment outlays. The negative effect of the stock of net debt on external finance seemed to support the Kaleckian principle of increasing risk.

In their cross-section study of the finances of a sample of public limited companies in the chemical industry, Krishnamurthy and Sastry (1971) estimated an external finance equation, very much similar to the one estimated by Sastry (1966). However, as regards the role of the debt-stock variable it was interesting to note that unlike Sastry's results, the results of Krishnamurthy and Sastry did not support the principle of increasing risk.

In their more elaborate study of the financing of corporate investment in India, Krishnamurthy and Sastry (1975) estimated equations for net flow of debt (flow of debt—short and long, but net of financial

assets) as a proportion of gross fixed assets for selected industries. The explanatory variables were gross retained earnings representing internal resources available to the firm, investment outlays representing the demand for funds and the stock of net debt representing the risk-factor. The Ordinary Least-Squares (OLS) estimates they presented for the pooled cross section exercise generally supported principle of increasing risk. The coefficient of the stock of net debt variable was negative for all the seven industries studied and significant in five, *viz.*, jute, sugar, paper and paper board, chemicals and engineering. In line with the results obtained by other researchers, the impact of retained earnings on the flow of external finance was negative and significant in all the industries. Fixed investment expenditures had positive impact in all the industries and were significant except in the case of cement. Their two stage least-squares (2 SLS) results were broadly in line with the OLS results.

In addition to the pooled cross section exercise, Krishnamurthy and Sastry presented some industry-wise time series results for the period 1955-56 to 1970-71. Retained earnings and investment (fixed and inventory) once again emerged as the major determinants of external finance. Fixed investment expenditures seemed to have a larger impact on external finance than retained profits. However, it was interesting to note that the impact of the stock of debt observed in three industries in the cross section exercise was generally absent in the time series exercise except in the case of cement.

Whereas the studies reviewed so far attempted to explain aggregate external finance, Swamy and Rao in their study (1975) of the flow of funds went beyond aggregate external finance and estimated equations for short-term bank borrowings and long-term loans separately. They attempted to explain bank-finance in terms of liquidity ratio and investment (fixed and inventory separately) and the rate of interest on bank borrowings as well as on other sources of finance. Long-term borrowing was made a function of fixed investment and interest rates—own and on alternative sources. The most important inference that Swamy and Rao drew from their exercise was that “availability” rather than the “cost” of funds was the major factor affecting the pattern of corporate finance.

The study by Venkatachalam and Sarma (1978) was modelled more or less on the lines of that of Swamy and Rao in that they used

the analytical framework of sources and uses of funds. Venkatachalam and Sarma presented an econometric model of the sources and uses of funds in the private corporate sector covering non-financial public and private limited companies. The basic data for the analysis were drawn from the studies on finances of public and private limited companies published by the Reserve Bank of India. The sample period of the study was from 1958-59 to 1974-75.

On the sources' side of corporate finance, Venkatachalam and Sarma estimated separate equations for fresh capital raised from the equity market, borrowings from banks, borrowings from others and trade dues. Fresh capital raised was found to be related negatively to the average yield on variable dividend industrial securities and positively to sales. Bank borrowings was explained by the cost of credit represented by the advance rate of scheduled commercial banks and the cost of borrowing from alternative sources represented by the bazar bill rate. Thus, one of the important findings of this study was that the "cost" of credit was an important factor in determining the volume of borrowings from the commercial banks by the private corporate sector. This conclusion was in direct contrast to the one reached by Swamy and Rao that it was the "availability" rather than the "cost" of credit that affected the pattern of corporate finance.

It was revealing to find that available studies on the pattern of corporate finance in India had, by and large, attempted to explain the demand for finance from each source as a function of availability of funds from other sources, the level of investment expenditure and a proxy for the risk-factor, represented either by the stock of debt or by the debt-equity ratio. Almost all of the studies found that the first two of these factors had significant effects on the demand for external finance in the Indian private corporate sector. However, the evidence on the role of the risk-factor in the demand for external finance by corporate firms seemed inconclusive. Generally, cross section studies reported a significant negative effect of this variable on the demand for external finance, whereas time series studies did not show such an effect.

Another interesting feature of these studies was that these studies generally ignored the effects of fiscal and monetary policies on the pattern of corporate finance. It is generally agreed in the theory of corporate finance—(Modigliani and Miller 1958), (Fama and Miller 1972), (King 1977) and (Miller 1977)—that double taxation

of dividend income (first, when it accrues to the firms and second, when it is distributed to the shareholders)—which is a common feature of almost all tax systems—does affect the relative cost of different methods of financing corporate investment. The provision for deducting interest costs from the earnings of a company while computing the tax liability also affects the relative costs of different methods of financing. Moreover, the cost and the availability of loanable funds in the economy—both of which can be affected by monetary policy—could also affect the pattern of corporate finance. More direct controls such as the control of capital issues may also affect the pattern of financing corporate investment. The role of these macro policy variables on the pattern of financing corporate investment in India thus needs examination.