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7.1 SUMMARY OF THE DISCUSSIONS

This chapter presents a brief summary of the discussions of the preceding chapters and the major findings and conclusions emerging from the present research work. We have begun the study by providing a discussions on the origin and growth of the Indian corporate sector with an emphasis portraying, how from the embryonic days the private corporate enterprises have played a leading role in the industrialisation process of the economy. An in-depth analysis and discussion covering the envisaged scope of the research has been schematically presented in the subsequent chapters. The aspects of investigation dealt with include the time pattern of growth of the real fixed capital assets estimated using the Perceptual Inventory Method (PIM) and, the factors determining investment on real capital assets; structural composition of inventory and, the econometric models fit to study the factors influencing corporate inventory investments, the composition and behavioural characteristics of the costs of production and, the short run nature of cost functions, the compositional characteristics of corporate liquidity and, the determinants of corporate liquidity (cash and bank balances), the trends in corporate profitability, determinants of corporate profitability, and, the sharing of corporate income among the labour, capital owners and the government. In all these analyses, the subject has been examined giving emphasis on the six major RBI's use based industrial classification for the time period 1969-70 to 1988-89. In all, 24 industry categories belonging to the medium and large public limited corporate sector enterprises forms the core of the research investigation.

7.2. CAPITAL STOCK, INVESTMENT GROWTH AND ITS DETERMINANTS

7.2.1 ESTIMATES OF REAL CAPITAL STOCK

For the purpose of estimating the corporate sector's real capital stock i.e. fixed capital assets for the time period 1969-70 to 1988-89, the standard Perceptual Inventory Method (PIM) has been employed and the time series data was normalised using the whole sale price indices of the Machinery and Transport Equipments to the base 1970-71. For the 24 industry categories the real gross capital stock was estimated to be around an average magnitude of Rs.660.23 lakhs during the study period. The period's average size of gross fixed capital was greater than the mean of the 24 industry categories in the cement, the Transport equipments, the Rubber and rubber products, the 'Other' chemical products, the
Paper and paper products, the Motor vehicles and the Hotels and restaurants respectively belonging to the Basic, Capital, Intermediate, Consumer and service sector industry groups. Across the select industries the mean magnitude of the real gross fixed assets outlined greater degree of variation outlining heterogeneous capital size prevalent in the Indian corporate sector enterprises. However, the yearly variations of the individual industries from their period's mean was quite low implying greater degree of stability characterising yearly additions to real fixed assets in India during 1969-70 to 1988-89.

The trend has registered an annual compound growth rate at around 6.79 per cent. This reflects an impressive rate of capital accumulation in the select Indian corporate sector industries. The rate of capital growth was greater than the mean rate in the fast growing industries like the Basic industrial chemicals, Non-electrical machinery, 'Other' chemical products, Pottery china earthenware, the Tea plantations, the Sugar, Cotton textiles and all the three service sector industry categories viz., the Construction, the Trading and the Hotels and restaurants industries. The higher rate of capital formation in the above industries undoubtedly reveals the emerging significance of them in India's derive towards building better resilience in its industrial sector.

The trend pattern of growth in the six major industrial segments implied the following characteristic feature. Among the industries in the Basic goods sector the rate of capital formation was comparatively better during the 80's than the 70's in respect of 'Other' non-ferrous and non-ferrous industries. In the Electrical machineries and the Foundries and emerging workshops belonging to the capital goods categories annual additions to capital assets was approximately linear in its nature during 1969-70 to 1988-89. In the Transport equipments industry the trend implied not only higher absolute magnitudes but also steep rate of yearly additions. However its susceptibility to suffer due to recession characterises the industry during such years when the economy was gripped due to crisis.

Among the industries constituting the Intermediate goods sector, the growth of real fixed capital marks higher rates during the late 70's and the 80's, the ones engaged in 'Other' chemical products, the pottery china earthenware and structural clay products and the Rubber and rubber products category. Gradual additions to gross real fixed assets marks the study period, in respect of the coffee and Rubber plantation industries. In the Tea plantations industry steep rates of growth during the 80's was evident.
In the consumer goods sector, the growth of real gross fixed capital has been quite gradual and stable in the Edible vegetable and hydrogenated oils industry. In the sugar and the cotton textiles industries the rate of additions to real capital assets was particularly impressive during the 80's vis-a-vis the 70's. This reflects the change in government policy relating to modernisation and the overall economic revival giving fillip to these industries in India. More or less a similar tendency was found in the Silk and Rayon textiles. But, during years of economic crisis downward swing in capital additions was rather sharp. Though, the real capital growth in the Medicine and Pharmaceuticals industry was quite moderate, the additions after 1982-83 upto 1988-89 has been phenomenal in India. The policy derive of the government to achieve self sufficiency in all Drugs and medicinal products through amendments relating to imports and exports provides a strong causal reason for this character being evident in our study. The growth of fixed capital assets has been highly impressive in the motor vehicles industry category. The changing life style of the upper middle and middle class segment of the Indian population whose income growth has been relatively higher due to better performance of the overall industrial and service sector industries the Motor vehicles industry responding through higher build up of production capacity seems a proximate reason for the growth of capital in the motor vehicles industry. However, their susceptibility to the adverse impact of recession also was reflected during 1971-72, 1976-77 and 1984-85.

The rate of gross capital assets in all the service sector industries viz., the Trading, Construction and Hotels and restaurants corresponded with better additions during periods of expansionary phase of the overall economic activity and declines during the recessionary phases. In general the absolute capital base in the trading industry was low in magnitude vis-a-vis others.

7.2.2. DETERMINANTS OF INVESTMENT GROWTH IN REAL CAPITAL ASSETS.

Directed by the neo-classical theoretical frame work, the fit regression models to study the factors determining investment growth in real capital assets have yielded following salient features.

In model(1) current year value of sales, retained earnings, Depreciation Provisions net worth and change in sales were the explanatory variables used in predicting the growth of investments on real capital assets for the time-series data 1969-70 to 1988-89. The current year net sales defined a positive influence in 15 of the 24 industry categories and of
them in ten it emerged statistically significant. Industries experiencing growing market such as the Basic industrial chemicals, Transport equipments, Non-electrical Machinery, Silk and Rayon Textiles, Sugar and Motor vehicles are the notable among them. Significant inverse relationship also was found in the 'Other' non-ferrous metal products, the Coffee and Rubber plantations and the trading industrial enterprises. The effect of retained earnings while was positive in five, in a majority of industries i.e. in 19 it turned out to be negative on the growth of real capital assets. In other words in nearly 79.17 per cent of the industry categories empirical evidence proves that retained earnings were not capitalised.

The accumulated depreciation funds on the other hand have proved to be a significant source of growth in real capital assets in 18 corporate industry categories in India. The parameter $\beta_4$ of the variable networth defined a positive impact on the growth of investments on real capital assets in 20 of the Indian corporate industry categories. On the whole statistically net worth has turned out to be significant in defining positive capital growth in 51.67 per cent of the industries. The $\beta_4$ with a negative magnitude in the Basic industrial chemicals, the Non-electrical Machinery, the Rubber and rubber products and the construction has empirically defined, perhaps income maximisation rather than wealth maximisation being their major concern during 1969-70 to 1988-89. The one year time lagged effect of sales on current year real capital investments, as predicted obtained a positive sign in 19 and emerged significant in ten. Hence, the principle of acceleration is found having its empirical validity in nearly 41.67 per cent of the select corporate sector industries in India.

Model(2) was formulated to predict the growth of real fixed assets using sales, retained earnings, net worth and change in sales as exogenous variables. This model emerged with high $R^2$ values confirming the predictive capacity in 18 industry categories. The positive influence of sales variable has empirically supported the working of the accelerator principle in 16 industries. The specified positive effect of the retained earnings became evident from the regression parameter $\beta_2$ only in five industries and hence in 19 the result implied the use of retained earnings for other purposes than investment on capital assets. With the exclusion of the cement, the Rubber and rubber products and the trading, net worth's direct positive impact became evident in 21 industry categories and also emerged significant in 13 of them. The change in sales as a variable has defined its positive contribution to the growth of fixed capital assets in 23 industry categories. The theoretical
hypothesis outlining positive time lagged acceleration as a causal factor was empirically confirmed eleven cases.

For the purpose of studying the influence of sales, depreciation funds, net worth and sales change on the investment growth of fixed capital assets of the Indian corporate enterprises model(3) was fit for the time-series data 1969-70 to 1988-89. The regression model has emerged with significant explanatory power in 22 industry categories. The current year sales has proved its positive impact on capital growth in 14 industries. In ten industries its impact was characterising an inverse relationship. Accumulated depreciation funds empirically proved its predominant significance to account for fixed capital growth in 23 industries and emerged statistically significant in 15. The growth of fixed capital assets has emerged in model(3) with a positive relationship in 16 industries and negative in eight. In a number of consumer goods industries the extent of this influence has tended to be more than 50.0 per cent. The magnitude of change in sales was found emerging with a positive influence on capital growth as per the regression parameter $\beta_4$ of model (3) in 17 industry categories. However, the adverse influence could not be ruled out because in seven $\beta_4$ assumed negative magnitudes. Thus, in the absence of retained earnings in model(3) the empirical significance of the variable viz. change in sales became quite apparent.

The growth of real fixed capital in 22 of the 24 corporate industrial categories has been statistically well determined due to the influence of sales, retained earnings, retained earnings plus depreciation funds, net worth and change in sales as per the $R^2$ values of model(4). Positive influence of the accelerator variable viz. sales was observed in 15 industry categories, while in nine the relationship was empirically negative. However, sales as a variable was statistically significant in fifty per cent of the corporate industries in reference. Contrary to the specification of the model retained earnings defined a negative impact in 23 of the 24 industry categories in model(4). Hence, empirically we observe retained earnings meeting other corporate needs than its use for capital investment. However, $\beta_3$ which captures the joint influence of the retained earnings and accumulated depreciation funds on the growth of investments on capital assets has obtained the predicted positive impact in 22 industry categories and emerged highly significant in 18 of them. As in other models, net worth has defined positive influence on capital growth in 20 industries and was significant in 13. The positive relationship binding variations in the sales change on capital growth empirically became established in nearly 79.17 per cent of
the 24 select medium and large public limited corporate enterprises as per the β5 of the model(4).

The model(5) based on the distributed lag investment function has yielded statistically significant coefficient of multiple determination in 91.67 per cent of the industry categories in reference. The β1 parameter of the variable viz. current year change in sales has obtained the specified positive sign in 14 industry categories and negative in ten. The tβ1 has outlined weak statistical significance. While the retained earnings obtained the predicted positive sign in 13, in 11 industries it turned out to be negative. Hence, a certain degree of ambivalence characterises the relationship of capital growth with retained earnings. The parameter β3 of the variable external sources of funds by obtaining the specified positive sign in 22 industries and being significantly different from zero in 15 of them provides a strong empirical support that investment growth on capital assets are predominantly dependent upon this variable. In 19 out of 24 industry categories empirical evidence proves a complementary relationship between inventory growth and real fixed assets in the Indian corporate sector during 1969-70 to 1988-89.

The distributed lag investment function model (6), has in addition to the explanatory variables considered in model (5) the sales variable lagged by one year. This model fit for the 24 industry categories has emerged with significant predictive capacity in 21 industries. The parameter β1 capturing the influence of the accelerator variable has satisfied the predicted specification in 11 industry categories and contrarily assumed a negative sign in 13. Very weak statistical significance also became evident from the estimates of tβ1. However, the one year lagged influence of sales on capital growth has satisfied the model specification with a positive causal relation in 20 industry categories. But with its statistical significance confirmed only in two the underlying theoretical hypothesis has remained quite weak.

The internal sources of funds through the regression parameter β3 has defined a positive contribution to capital growth in 15 industry categories and an inverse relationship in nine. The statistical significance of the external funds was confirmed in a more number of consumer goods industries than other categories in reference. The external flow of funds as a source of capital growth has not only defined a positive impact in 22 industries but also has emerged significant in 17 of them. Hence, there is a strong empirical evidence to belief the corporate sector enterprises relying heavily on external funds to build up their
fixed capital base. A complementary relationship was evident between capital growth and inventory investments in 17 category of industries and an inverse causation in 7 cases. In a majority of the industrial categories (i.e. 17) this relationship between inventory and capital growth was statistically significant.

7.3. INVENTORY BEHAVIOUR AND ITS DETERMINANTS

7.3.1 STRUCTURAL COMPOSITION OF INVENTORY

Trends in the structural composition of inventory provides useful behaviour characteristics in regard to the relative significance of the different types of inventories maintained by the corporate sector industries while carrying out production and sales activities. In the following section we provide a summary of the analysis carried out in section 3.7 of the chapter - III.

The share of raw materials inventory in total inventory for the 24 corporate sector industry categories for the study period as a whole was observed to be around 29.42 per cent. Understandably in the Tea plantations, the Sugar and the Construction industries the raw materials inventory share in the total was quite low. Across the industries their period's mean from the aggregate mean outlined moderately high degree of variation, implying the need to hold raw materials inventory is dictated by their varying nature of output activities. The yearly deviation of the actual raw materials inventory share to total inventory from the period's mean of the respective industries was found to be quite consistent in the Transport equipments, Electrical Machinery, "Other" chemical products, Medicine and Pharmaceuticals and the Motor vehicles. The implication is that in these industries the manufacturing activities were defined with stable levels of carrying raw materials inventory.

The average annual compound growth rate at which during the reference period all the corporate industries would increase their proportion of raw materials inventory total inventory was estimated at a low level of 0.36 per cent. In fact in 14 categories the growth rate implied marginally retrogressive tendency. Improved availability of the raw materials needed for the different industry categories due to progressive industrialisation offers the explanation for this feature being present in India during 1969-70 to 1988-89. Across the cross-sectional data, a general decline in the inter-industry variation characterises the 80's vis-a-vis the 70's due to better economic resilience in the nation.
As much as 50.65 per cent of the total inventory holdings of the 24 industry categories during the study period, on the average was held in the form of semi-finished and finished goods stocks. Among the six major industrial groups, industries belonging to consumer goods in general tended to hold a greater per cent of semi-finished and finished goods stocks in their total inventory. Period’s mean of the individual industry’s inventory of this type was found defining low degree of variation from the aggregate mean suggesting greater degree of uniformity prevalent across them. A similar conclusion empirically was found valid in respect of the yearly stocks of the semi-finished and finished goods inventory of the 24 industry categories viewed from their period’s mean magnitude. Further the estimated growth rate with 0.18 per cent additions per annum outlined a low level of accumulation during 1969-70 to 1988-89. The cross-section mean of the industries also testifies this tendency with a progressive increase from low of 46.22 per cent in 1973-74 to 54.52 per cent in 1987-88. The coefficient of variation of the industries from the yearly mean values empirically outlines uniformity in holding semi-finished and finished goods stocks evolving during the reference period in India.

Nearly 22.35 per cent of total inventory stocks was estimated to be the characteristic of the study period held by the 24 industry categories in the form of Stores, Spares and ‘Other’ forms of inventory holdings. The period’s mean of the individual industries from the above aggregate mean with a high degree of coefficient of variation outlines lack of uniformity in holding this category of inventory. The industries involving higher investments on plant and machinery to manufacture the final product such as the Ferrous and non-ferrous metal products, the cement, the electrical machinery, the cotton textiles, the Medicine and pharmaceuticals are encouragingly characterised with greater stability in the present study implying better efficiency in managing this inventory category. On the whole, a low yearly compound growth rate was evident in the 24 industry categories. In fact in 15 industries a deceleration characterises the proportion of Stores, spares and “Other” forms of inventory to total inventory registering a decline during 1969-70 to 1988-89. Our cross-section analysis of inventories held in this category distinctively characterised lack of uniformity in the Indian corporate sector enterprises in reference.

7.3.2. SHARE OF INVENTORY STOCKS TO WORKING CAPITAL

During the reference period the share of total inventory to working capital for the 24 industry categories has defined a mean magnitude around 51.59 per cent. Reflecting the nature of the production system in the Coffee and Rubber plantations, the trading and the Hotels and restaurants total inventory to working capital was observed to be quite low...
during the study period. This proportion of inventory was relatively high in all the industries engaged in manufacturing activities. The mean of the individual industries from the grand mean was indicative of a fair degree of uniformity across select corporate entities. A similar behaviour of consistent yearly trends against the estimated mean of the period also became evident in our analysis. The period as a whole was marked by around -1.11 per cent annual deceleration characterising the select industries in reference. The cross-section analysis for understanding inter-industry variations has not been associated with any year characterising abnormal mean or variational characteristics.

Nearly 15.90 per cent was characterising the study period as the aggregate average magnitude of raw materials inventory to working capital. In most of the industries whose output activity involved value adding in the manufacturing process, the study reveals a higher per cent of raw materials inventory to working capital. The study period's mean was characterised by a high degree of variance in the 24 industry categories. As a per cent of working capital the proportion of raw materials inventory on the average was found recording a decelerating annual growth at a magnitude around -0.87 per cent. However, in process involved output generating industries the period was marked by positive growth rates. The cross-sectional behaviour outlined considerable reductions in the raw materials inventory to working capital since the turn of 80's vis-a-vis the 70's.

For the study period as a whole, the average share of semi-finished and finished goods inventory holdings was estimated to be around 26.43 per cent of the working capital. A closer examination of the period's mean value revealed that in most of the consumer goods industries this proportion of inventory to working capital was considerably high in magnitude. Further the mean of the industries were reflective of heterogeneous tendency across the 24 industry categories. The yearly magnitudes of this ratio from the period's mean for the individual industry categories was found defining highly consistent pattern in 18 while in six an element of instability was present. The proportion of semi-finished and finished goods inventory to working capital in the 24 industry categories registered an annual compounded retrogression of the order of -0.19 per cent. This underline the point that when the economy is in a path of expansive activity, industries will tend to reduce this inventory as a proportion of working capital.

The proportion of stores, spares and "other" forms of inventory to working capital for the 24 industry categories was found defining an aggregate mean value around 10.58 per cent during the reference period. In most of the industries whose output generation involved
multi stage production process this proportion was found to be generally higher in the present analysis. Reflecting the heterogeneous nature of industries in reference, the period's mean magnitude of the individual industry categories were marked by a high degree of variance from the aggregate mean. However, when the yearly behaviour of this inventory holdings in working capital was compared with their period's mean in 15 industry categories a highly consistent pattern was evident in our empirical investigation. On the whole the period had witnessed a general decline in the annual proportion of stores, spares and 'other' forms of inventory to working capital around a magnitude of -0.93 per cent for the period 1969-70 to 1988-89.

7.3.3. DETERMINANTS OF INVENTORY GROWTH

For empirically examining the determinants of inventory investment growth in the medium and large public limited corporate sector industries, in the present study we have fit econometric models outlined in Chapter - III. In the following section we present the major findings and conclusions emerging from our regression analysis.

7.3.3.1 SIMPLE ACCELERATOR MODEL

The fit model for the time-series data has emerged statistically significant in all the 24 industry categories in reference. The influence of the accelerator variable i.e. the volume of sales by obtaining less than unitary magnitude outlined economies of scale significantly predicting inventory growth in all the industries. A positive average stock of inventory holdings became an empirical fact in 18 industry categories.

7.3.3.2 TRANSACTIONS AND PRECAUTIONARY INVENTORY MODEL

With statistically significant $R^2$ value the fit model emerged capable of predicting inventory growth being brought about by the corresponding levels of net sales and cash and bank balances. A positive influence of transaction on inventory growth while characterised the presence of scale economies in all the 24 industries, its statistical significance was confirmed in 20 cases. As specified by the model the presence of substitution between inventory and cash and balances was observed in 16 industries. In eight a complementary relationship was indicated by our fit model. A positive average inventory holdings characterises the period in 19 industry categories.
7.3.3.3. TRANSACTIONS AND COST MINIMISATION INVENTORY MODEL

The empirical estimate of the coefficient of multiple determination has yielded statistically significant fit of this model in all the 24 industry categories. The influence of transactions demand for inventory investment through the \( \beta_1 \) parameter has outlined economies of scale being operative in all the industries in reference and emerged statistically significant in 20. Hike in interest cost obligations was found observed by reductions in inventory investments in 10 industries. In the remaining 14 industries expansionary output activity has defined a positive causation. In nearly one third of the industries in reference in one way or the other inventory investments was found significantly dependent upon the interest cost obligations. The regression constant outlined positive average inventory holdings in 22 industries and was significant in 16 of them.

7.3.3.4. METZLER'S ACCELERATOR MODEL WITH EXPECTATIONAL ERRORS

The fit model confirmed its empirical significance in 14 industry categories while in ten the suitability of the model was indeterminate. The time lagged effect of the accelerator variable while emerged with the predicted positive impact on inventory investments in 17 industry categories in seven an inverse causation became apparent in our regression result. A closer examination revealed the inverse relationship to be specifically applicable in a more number of consumer goods industries. While the positive causation was statistically significant in 12 industry cases in none of the industries where negative influence was observed has emerged significant. The influence of the change in current year sales over the previous year has yielded the specified positive impact in 18 industry categories and negative in six. By and large the rate of influence was quite low as per our empirical estimates. The statistical significance underlying this relationship was quite weak.

The influence of the variable viz. the change in sales lagged by two years has defined a negative impact on the current year inventory investments in 16 of the 24 industry categories in reference. This ambivalent result by emerging significant only in four industry categories renders a weak empirical support in the present study. Towards understanding the nature and speed of current year inventory investments due to the stocks held at the beginning of the year this variable has been incorporated in our model. The \( \beta_4 \) parameter reflecting the impact of this relationship has yielded positive but a low rate of adjustment in 20 industry categories. However, the statistical significance remained quite weak. Of the four explanatory variables, the empirical estimates show the working of the accelerator
with specific reference to one year time lag was more significant in the present study. A positive rate of average inventory holdings has characterised in 17 industry categories.

7.3.3.5. DISTRIBUTED LAG/FLEXIBLE ACCELERATOR INVENTORY MODEL

The fit regression mode (5) based on the distributed lag inventory function with high explanatory capacity emerged significant in 14 and remained indeterminate in ten industrial categories. The impact of change in sales has defined the specified positive impact in 15 and emerged significant in only three of the total 24 industries in reference. The influence of the variable, retained earnings i.e., profits net of dividends and taxes but gross of depreciation has outlined its positive relationship on the levels of current year inventory investment in 12 industries. In the remaining 12 industry categories with a negative sign this variable has proved its employment in other forms of assets than assets in the form of inventories. Hence, an ambivalence characterises the relationship between retained earnings and investments on inventories. The parameter $\beta_3$ of the variable, external funds was found accounting for positive inventory investment growth in six industries and negative in 18. Hence, there is every reason to believe that in a majority of the Indian corporate industries the external funds were not employed on the inventory investments. However, this variable has been significant in ten of the 24 industry categories in reference.

The current year volume of fixed capital has, as per the model specification defined a complementary relationship on the current year inventory investments in 17 industry categories, while in the remaining seven the relationship was found to be inverse in character. The underlying hypothesis characterising the relationship was found empirically significant in 16 industry categories. The speed of current year inventory investment due to the impact of inventories lagged by one year has, as per the model specification defined positive rate of adjustment in 17 of the 24 industry categories. However, the empirical significance of this variable has remained weak in our regression estimates.

The coefficient of multiple determination $R^2$ of the model (6) has ensured its statistical validity in 16 and remained indeterminate in eight industry categories. Contrary to the predicted behaviour the influence of the sales change variable has defined an inverse relationship on the current year inventory investments in 13 industries. Though a positive impact was evident scale economies were found to be quite low in the remaining 11 industry categories. On the whole the statistical relevance remained quite weak. As per
the model specification in 11 industries the retained earnings was found exerting a positive influence on current year inventory investments. Alternatively with an inverse sign the retained earnings in 13 industry categories in model (6) was indicative its use for purposes other than inventory investments. This ambivalent nature of relationship became statistically confirmed in eight of the 24 industry categories during 1969-70 to 1988-89. The influence of external funds for positive additions to current year inventory investments became evident in seven while in the remaining 17 industry categories its influence has turned out to be negative. Hence, our empirical findings does not confirm external fund being used for inventory investments.

Growth of fixed capital investments was found accounting for a corresponding growth in inventory investments in 17 of the 24 industry categories. Among them in 13 its impact has emerged statistically significant. Alternatively of the seven industries in which this relation was found to be negative in four it was found statistically significant. Hence, this variable is crucial in determining inventory investments in the Indian corporate sector industries as per our regression estimates. The speed by which current year inventories will adjust with the previous year inventory stocks was found to be positive in 15 and negative in nine industries. The statistical significance being confirmed in only seven, the model outlines a weak empirical support for the underlying hypothesis.

7.4. STRUCTURAL COMPOSITION OF THE COSTS OF PRODUCTION AND COST FUNCTIONS

7.4.1. STRUCTURAL COMPOSITION OF THE COSTS OF PRODUCTION

Directed by the objective of developing a critical understanding of the structural composition of the costs of production that characterised the time period 1969-70 to 1988-89, the 24 medium and large public limited private sector industry categories, we have provided a detailed discussion in section 4.9 of the chapter -IV. A summary and the major findings that emerge from the discussion are presented below.

7.4.1.1. Materials Cost to Total Cost

The cost incurred on materials used up in the value adding process to total costs, for the 24 industry categories as a whole for the period averaged to around 56.48 per cent. If the period’s mean of the individual industries are compared with the aggregate mean, in all such industries involving multi-stage production process this proportion of cost, understandably defined higher magnitudes. Average annual trend growth was around 0.23 per cent for the select 24 industry categories. However, the associated measure of variance
implied higher degree inter-industry variation. Hence, the trend growth rate outlines that the materials cost to total cost to be highly industry specific dictated by the dynamic changes prevalent during the period under investigation. The yearly deviations of this cost structure, viewed from the respective means of the period, has implied high degree of stability in 19 industry categories. In five the associated co-efficient of variation with high magnitudes implied instability faced in stabilising the proportion of materials cost to total cost. These include ‘Other’ non-ferrous metal products, Pottery china earthenware and structural clay products, Tea plantations, the Construction and the Hotel and restaurants industries in India.

7.4.1.2. Power and Fuel Costs to Total Cost

The period’s mean proportion power and fuel costs to total cost for the 24 industries in reference was found averaging to 8.91 per cent. This high proportion of this cost structure implied the following industries to be energy intensive. These include Basic industrial chemicals, the Cement, the Foundries and engineering workshops, the Pottery china earthenware and structural clay products, the Silk and rayon textiles, the Paper and paper products, the Construction and the Hotels and restaurants category of the corporate industries. On the average this proportion of cost witnessed an annual compound growth rate around 2.77 per cent. In 12 industries mostly involving energy input as an essential ingredient in the value adding process have registered relatively high annual growth. The yearly deviations from the period’s mean magnitude with a low coefficient of variation implied a fair degree of stability in nearly 50 per cent of the industries. However, empirical estimates revealed sharp increase in this proportion of costs coupled with world oil price hike during 1972-73 and 1981-82.

7.4.1.3. Wage Cost to Total Cost

As a proportion of total costs incurred during the reference period, our estimate revealed nearly 17.15 per cent being on the wages and salaries. In the pottery, china earthenware and structural clay products, Tea and Rubber plantations, the Cotton textiles, the construction and the Hotels and restaurants, which are relatively more labour intensive this proportion of wage cost was observed to higher in India. On the whole in the 24 industry categories, the proportion of wage cost to total cost for the period witnessed an average rate of retrogression around -1.41 per cent. The associated coefficient of variation was found characterising this decelerating trend to be more uniform across the 24 industries. In the ‘Other’ non-ferrous metal products, the Tea plantations, the Coffee plantations, the Sugar industries and the Hotels and restaurants industries a positive
annual growth of this cost element was observed to be the characteristic feature. The yearly deviations from the estimated period’s mean outlined a great deal of consistency in 14 industries in our study.

7.4.1.4. Repairs on Buildings and Machinery to Total cost

The expenses incurred towards the repairs on buildings and machinery to total cost during 1969-70 to 1988-89, for the 24 industry categories in reference was found averaging to around 2.20 per cent. Viewed from this mean in nine industry categories a higher proportion was seen in the Basic industrial chemicals, the Cement, the pottery, china earthenware and structural clay products, all the plantation industries, the sugar, the paper and paper products and the Hotels and restaurants category of industries. The period’s compounded annual growth of this proportion in the 24 industries recorded around 1.73 per cent. But, across the industries lack of uniformity became evident in our investigation. In all the plantation industries and industries with multistage production process we have observed a higher annual growth rate. The yearly trend of this cost element in the total cost from the period’s mean also revealed high degree of fluctuation across the select industries in the study.

7.4.1.5. Selling Commission to Total Cost

Of the total costs the expenses incurred on selling costs during the study period for the industry categories as a whole defined an average per cent around 0.82 per cent. A relatively higher proportion of this expenditure was observed in the Basic industrial chemicals, the Non-electrical machinery, the ‘Other’ industrial chemicals, the Tea plantations, the Cotton textiles, the Silk and Rayon textiles, the Medicine and pharmaceuticals and the Hotels and restaurants industries. For the period as a whole a retrogressive growth of the order of -0.36 per cent was seen characterising the 24 industry categories in reference. In general the industries operating under competitive structure were characterised with positive annual average growth rate in their selling costs as a proportion of the total costs. The yearly behavioural pattern viewed from period’s mean of the 24 industries, in 15 industries we have indications of a marked degree of fluctuation in the study.

7.4.1.6. Capital Depreciation Cost to Total Cost.

The volume of expenses kept aside for capital depreciation charges during the reference period as a per cent of total cost in the 24 industry categories was found averaging to around 3.77per cent. In 11 industries characterised by multi-stage production operations
involving higher capital investment on plant machinery we have found provisions for depreciation for the period to be higher than the aggregate mean magnitude. For the period as a whole, growth of depreciation funds has averaged to 0.175 per cent in the select industries in reference. Understandably due to both vintage differences and volume of capital investments being highly different across the industries this proportion of cost in total cost implied much diversity in the study. The yearly behavioural pattern of the individual industries from their respective mean values revealed greater volatility in 11 industries.

7.4.1.7. ‘Other’ Manufacturing Expenses to Total Cost

Of the total costs incurred by the 24 industries in their output activities the ‘Other’ manufacturing costs for the period has defined an average magnitude around 9.53 per cent. In 11 industries their mean values of this cost element in total cost has tended to assume magnitudes greater than the aggregate mean. These industries are found commonly characterised by multi-stage production process. Further all the plantations industries were found associated with the above tendency. The 24 industry categories as a whole for the study period was found witnessing a mean annual growth rate around 1.19 per cent. A high degree of inter-industry variations also was found characterising the trend growth rate in our investigation. The yearly behavioural pattern of the proportion of ‘Other’ manufacturing expenses to total costs across the individual industries seem to expose lack of uniformity among the 24 industries in the present study.

7.4.2. EMPIRICAL ESTIMATION OF COST FUNCTION MODELS

In the following section we briefly summarise the major findings of the study emerging from the fit cost function models based on the neo-classical theoretical foundations.

7.4.2.1. Total Cost Function Models

In model[1], the fit cubic cost function outlining the behavioural relationship between total cost and output, has emerged with very high explanatory power and statistical significance in all the 23 industry categories in reference. The parameter $\beta_1$ associated with the output variable though obtained the specified positive sign in all the industries it emerged significant in 18. Of these 18 while a more than proportionate growth in cost was found in the ‘Other’ non-ferrous metal products the Ferrous and non-ferrous metal products, the Cement and the Sugar industries in the remaining 14 cost to output relationship was less than unity in nature. The other two crucial parameters viz. $\beta_2$ and $\beta_3$
respectively associated with incremental output growth and cubic value raised output obtained the specified negative and positive value only in eight industries. Alternatively in nine industries the empirical estimates of $\beta_2$ and $\beta_3$ yielded respectively positively and negative sign in our study. A closer examination of the $\beta_3$ magnitudes implied values very close to zero suggesting quadratic nature of total cost to be empirically more appropriate.

In order to understand the influence of the capacity variable, we have also fit a model incorporating it as an additional variable to output. Our regression fit of the model(2), with high coefficient of multiple determination emerged significant in all the 24 industry categories. The $\beta_1$ parameter of the output variable yielded well behaved positive causation on total cost with less than unitary magnitude in all the 24 industries and also emerged statistically significant. In 23 of the 24 industries in reference, the K/Q variable measuring the influence of capacity utilisation rates contrary to the model specification yielded a positive sign and implied lower rates of capacity utilisation will result in the escalation of total costs. The statistical significance of the K/Q variable was found significant in 13 industries in the present study.

7.4.2.2. Materials Costs Function

The fit quadratic materials cost function has in our regression estimate emerged with significant explanatory power as the coefficient of multiple determination $R^2$ took a range between 64.70 and 92.93 per cent, in the 24 industry categories of the study. As the estimated sign and value magnitudes of $\beta_1$ and $\beta_2$ respectively associated with the output and incremental output variables an inverted 'U' shaped materials cost function was found characterising 14 industry categories in the present study. In the remaining ten industry categories the beta parameters implied their empirical nature corresponding to an inverted 'L' shape. Hence, in the present study we don't have support from the fit model, the usual 'U' shaped nature characterising the behavioural pattern of the materials cost function. The observed empirical behaviour has emerged statistically significant in eleven industry categories.

The materials cost function with output and capacity (K/Q) variables, has obtained slightly higher range of $R^2$ values in predicting the behavioural characteristic in all the 24 industries of the study. The output variable has satisfied the theoretical specification in all the 24 industries by not only assuming positive sign with less than unitary magnitudes but also with $t\beta_1$ values significantly different from zero. The $b_2$ of the capacity variable with a negative
contribution to growth in materials cost has implied empirically that as the industries improve their capacity utilisation i.e. more output for the given capital stock the materials costs to decelerate in 13 industry categories. In the remaining eleven industries capacity variable by assuming a positive magnitude characterised expanding scale of operation.

7.4.2.3. Wage Cost Function

The fit regression model of the quadratic wage cost function with an explanatory power ranging between 66.75 and 99.71 per cent has emerged statistically significant in all the 24 industry categories in the present study. In 16 of the 24 industries, b1 and b2 by assuming respectively positive and negative magnitudes in our estimate implied an inverted 'U' shape characterising the growth in wage cost during 1969-70 to 1988-89. This behavioural pattern statistically was found significant in 13 industries. In the remaining eight industries which included the labour intensive industries like all the plantations category and all the service sector category an inverted 'L' was found emerging from our regression estimates of b1 and b2. Hence, these industries though have faced increase in wage cost due to expanding output, were tending to reach a maximum beyond which wage cost implied to remain constant.

The wage cost function with output and capacity as explanatory variables by yielding well behaved R² values confirmed the statistical significance in all 24 industry categories of the present investigation. The growth in output uniformly in all 24 industry assuming statistically significant positive values less than one, has satisfied the underlying theoretical specification. The capacity variable from the empirical estimate of the β2 parameter outlined decelerating wage cost on account of better capacity use in nine industries. In the remaining 15 industries growth in K/Q also resulted in the growth of wage cost, extending support for the argument that expansions in operational levels will be accompanied by increasing volume of wage cost. However, being significant in only nine industries our study yields a weak empirical support of the underlying hypothesis.

7.5. STRUCTURAL COMPOSITION OF CORPORATE LIQUIDITY AND DETERMINANTS OF DEMAND FOR MONEY

7.5.1. STRUCTURAL COMPOSITION OF CORPORATE LIQUIDITY

An analysis of the structural composition of corporate liquidity has been discussed in detail in 5.6. of the chapter-V in the present study. Liquidity, kept in various forms meet the specific functional needs so as to ensure smooth and efficient use of them as inputs in
the production process. A brief summary of our findings are enlisted below. Cash on hand to total liquidity for the reference period in the 24 industry categories are found to average to a magnitude around 16.32 per cent. The period's mean of the individual industries with a variance from the above aggregate mean has implied lack of uniformity. A majority of industries were found holding this cash on hand around one-fourth to one fifth in our study. The yearly holdings of this proportion of liquidity form the respective mean of the individual industries revealed greater instability in such industries where a minimum proportion was observed. Further, this proportion of cash on hand, during the reference period has registered an annual retrogression in growth around -0.13 per cent to total liquid assets held by the Indian corporate sector industries. The annual growth rates recorded a high deceleration in the Pottery, china earthenware and structural clay products while high positive growth was observed in the paper and products industry. An absence of uniformity in the growth rates renders support for the now-classical explanation that industries' demand for cash reserves are more influenced by the day to day needs specific to particular industries and that no long-term characteristic could be predicted on the yearly trend behaviour. Over the reference period the cross-section data reveals that during years of industrial revival viz. 1976-77, to 1977-78 and 1987-88, due to assured availability of material inputs coupled by tight bank borrowing limits the cash on hand as a per cent of total liquidity has recorded low levels. However, heterogeneous tendency characterises this liquidity structure during the 20 year reference period in the Indian corporate industries.

The ratio of fixed deposits to total liquid assets for the 24 industry categories in reference as a whole for the period assumed an average magnitude around 32.49 per cent. Across industries this tendency was found to be a general characteristic. This empirical finding of the study strengthens the argument that firms irrespective of what happen to their day to day need for cash will be maintaining certain secure levels of short-run fixed cash balances in the banking institutions in order to ensure financial solvency to meet transaction activities. In general, the Trading industries were observed holding low proportion of fixed deposits to total liquid assets, positively due to their higher day to day turn over in sales activities. This proportion of liquid asset holding for the period was found registering an annual compound growth rate around 2.34 per cent. In all in 24 industry categories the study reveals positive growth rate. An analysis of the cross-section data unmistakably reveals the inter-industry variations in the proportion of fixed bank deposits to total liquid assets tending to converge, outlining some sort of uniformity emerging in the Indian corporate industry categories.

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Nearly 50.19 per cent of all the 24 industry categories in reference were found on the average holding their total liquidity in the form of 'Other' bank balances during the study period. In 14 industries the mean of the period was found hovering more than 50.0 per cent. The variations associated with the period's mean in the 24 industry categories were indicative of a greater degree of uniformity during 1969-70 to 1988-89. The period's average annual compound growth rate by averaging to -0.10 per cent characterises a deceleration in holding this form of liquidity in their total liquid assets. Such a deceleration was found to be typical of 13 industries, in 11 categories the growth rate was positive in nature. The cross-section data in its behaviour was marked by pronounced levels of inter-industry variations revealing lack of any uniform pattern to characterise the holding of 'Other' bank balances as a form of liquidity.

7.5.2. DETERMINANTS OF CORPORATE DEMAND FOR MONEY

An attempt was made to study the determinants of corporate demand for money in the 24 industry categories by fitting econometric models following the neo-classical theoretical formulations in chapter-V and section 5.5. The following section provides the salient findings emerging from the regression results of the present research.

7.5.2.1. TRANSACTIONS DEMAND FOR MONEY

The regression model fit to study the transactions demand hypothesis has emerged with high degree of explanatory capacity in 23 of the 24 industry categories in reference. Only in the silk and Rayon textiles the predictive capacity of the model was not confirmed. The parameter β1 of the variable viz. the volume of transactions has emerged with the theoretically specified positive sign with magnitudes less than unity in 23 industry categories. Of them in 22, tβ1 confirmed the statistical significance. Thus, the results have confirmed economy in the use of money for carrying out given levels of transaction activities. A positive average level of holding liquidity was evidenced by the fit model in nine while such holding of liquidity was found defining a positive functional relation only after a certain critical level of transactions to be valid in 15 industry categories.

7.5.2.2. TRANSACTION AND WEALTH DEMAND FOR MONEY

Model(2), in the present study was fit in addition to net sales, with the proportion of wealth to net sales in order to determine the demand for cash and bank balances (money). The coefficient of multiple determination R² yielded statistically significant fit in 23
industries. The influence of the volume of transactions was found exerting a positive but less than unitary influence in 18 industries, in six its influence was negative in its characteristic. Hence, on the whole our study reveals economy in demand for money as the salient future. The underlying theoretical hypothesis emerged statistically significant in 23 industry categories. In the Cotton textiles the significance transaction motive on demand for money remained unconfirmed. The parameter β2 by obtaining negative value in 10 industries outlined a preference to hold wealth rather than liquid money assets. In the remaining 14 industries involving more number of consumer goods category complementary relation characterises our empirical finding. In ten industries this functional relationship emerged significant in the study.

7.5.2.3. TRANSACTIONS AND INTEREST ELASTICITY DEMAND FOR MONEY

For estimating this functional model log-linear expression is used in the regression equation. The statistical fit of the model was highly significant in predicting the demand for money in all the 24 industry categories in reference. The regression coefficient β1 measuring the transactions elasticity on the demand for money has emerged with positive sign and well behaved magnitudes in 16 of the 24 industries in reference. In eight it defined negative elasticity. The underlying theoretical hypothesis was confirmed by the estimate tβ1 in 18 industrial categories rendering much empirical support in the present study. The coefficient of interest elasticity has obtained specified negative impact on demand for money in 15 corporate sector industries implying the motive to keep down the cost of holding the financial assets. However, in the remaining nine industries the empirical result by characterising a positive coefficient β2 indicated expanding scale of operation resulting in a simultaneous growth of interest cost and demand for money. However, the empirical significance remained weak because only in eight industries the coefficient was different from zero.

7.5.2.4. TRANSACTIONS AND TOTAL BANK LOANS FUNCTION OF DEMAND FOR MONEY

This model(4) in the present study also was estimated by expressing the function in log-linear form. The fit model by obtaining significant R² magnitudes characterised empirical adequacy in 23 industry categories with the exclusion of the Silk and Rayon textile in which the model was indeterminate. The coefficient β1 of the variable has defined a positive influence of transactions with magnitudes greater than unity with respect to demand for money in 17 industry categories. Conversely in seven the relationship was negative. Hence, the inclusion of total bank loans as an additional variable has caused

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upward bias in the transactions demand for money. The underlying hypothesis emerged significant in 21 industry categories. The influence of bank loans emerged positive in determining demand for money in nine industries while in 15 the functional relation has turned out to be negative. Hence, an ambivalence became a characteristic future of the present empirical result. Since, only in eight industries the coefficient $\beta_2$ was statistically significant, no conclusive proof has come forth in regard to the influence of bank loans on the demand for money.

7.5.2.5. GENERALISED DEMAND FUNCTION FOR MONEY

Besides the above four models which examined the transactions demand with the inclusion alternative variables as additional explanatory variables, we have also fit a generalised demand function for money in model(5) by considering the following explanatory variables viz. the net sales, inventory investments, net receivables, rate of interest and the general whole sale price level. The model was fit expressing the variables in log structure. The fit model has yielded well behaved coefficient of multiple determination and emerged significant in all the 24 industry categories in reference. The elasticity coefficient of net sales satisfied the theoretical specification in all the 24 corporate industries and positively accounted for the growth of demand for money. However, the inclusion of additional explanatory variables has generally caused more than unitary demand in 12 industry categories. The statistical significance was confirmed nine industries. The elasticity of inventory investments as predicted, by obtaining in 19 industries an inverse impact on demand for money has characterised short-run substitution characterising financial assets and real assets during 1969-70 to 1988-89. In five, a complementary relation defined inventory investments with demand for cash balances. The coefficient $\beta_2$ being significant in only four industries did not support any general conclusion that could be drawn from the empirical result.

The model specification, that if, the net receivables were to increase by one per cent the industries will absorb it by corresponding reductions in idle cash and bank balances we found empirically well supported in nine of the 24 corporate industry categories in reference. In the remaining 15 industries both were found correspondingly increasing outlining possible expansion in the scale of output activity providing the logical explanation. On the whole the statistical significance of this variable has emerged significant only in seven industrial categories. The coefficient $\beta_5$ of the variable General price level by yielding positive magnitude in 16 industries outlined demand for cash and
bank balances increasing as the price level in the system scales an upward movement. Empirically we also have evidence that the corporate industrial categories, nearly eight, tending to scale down their demand for idle cash and bank balances consequent upon a general price increase in the system as a device to achieve better economics. The underlying theoretical hypothesis in the present study emerged statistically weak since only in five it was different from zero.

7.6. PROFITABILITY TRENDS, SHARING OF INCOME AND DETERMINANTS OF PROFITABILITY

7.6.1. TRENDS IN PROFITABILITY AND SHARING OF INCOME

In the present study we have presented detailed analysis of the trends in profitability and sharing of income in the 24 corporate sector industry categories. For easy comprehension the discussion was provided in section 6.5 of Chapter-VI, categorising these industries into six major use based classification. The analysis of profitability examined the behaviour in profit after tax to networth, gross profit to net worth and gross profit to capital employed. The discussion on the sharing of income traces the flow of value added to labour as wages and salaries, to capital owners as profit and interest and the government by way of direct corporate tax and indirect excise duties. A summery of the major findings emerging is presented in the following section.

7.6.1.1. BASIC GOODS SECTOR INDUSTRIES

All three indices of profitability revealed susceptibility to decline during periods of recession in the mid seventies and early eighties. In general steep increase became evident in the 'Other' non-ferrous metal products industry in India in regard to its profitability during most part of the years during the 80's. The net profit after tax to networth during the study period averaged to around 7.48 per cent. While the gross profit to networth scaled an average of 33.75 per cent during 1969-70 to 1988-89, that of gross profit to capital resources employed was found averaging to 16.21 per cent. On the whole net profit after tax to net worth revealed more volatility than the gross profit rates.

Of the total net income generated during the reference period the flow of wages and salaries has averaged to around 40.32 per cent. The yearly variations of the income that accrued to labour in the 'Other'- non ferrous metal products industry was more stable in nature. The share of capital owners (profit and interest) was found averaging to around 21.05 per cent. This flow of income to the capital owners with low degree of yearly variation
was quite stable. On the average nearly 38.63 per cent of the income generated during the study period has been appropriated by the government through corporate income tax and excise duty levied on the 'Other' non-ferrous metal products. The general picture is that nearly more than one-third of the income was appropriated by the government while one-fifth went to the capital owners and the rest to the labour.

In the Ferrous and non-ferrous metal products industry, the post oil-stock period accounts for a general decline in all three profitability measures. During the crisis years of the 80's a negative rate of net profit after tax to net worth has made it impossible for the industry to achieve stability during the study period in reference. Late 80's mark a general up trend in all three profitability indices. For the period as a whole the profitability averaged to 6.61 per cent, 33.10 per cent and 14.87 per cent respectively in net profit after tax and gross profit to net worth, and gross profit to capital resources employed. The Ferrous and non-ferrous metal products industry of the Indian corporate sector though revealed better gross profit earning capacity due to policy changes on taxes, net profit after tax seemed to be more volatile in nature.

The labour employed in this industry category has accounted for an average share 39.83 per cent of income generated during 1969-70 to 1988-89. The income appropriated by the capital owners and the government has averaged to about 20.64 per cent and 39.53 per cent respectively. On the whole, great deal of stability characterises the flow of income to the government. The time pattern of income while revealed an upward growth to the capital owners, the share of wages and salaries was subjected to a decline, implying a conflict in the Ferrous and non-ferrous metal products industry in India during the reference period.

In the Basic industrial chemical products industry the estimated indices of profitability on the whole reflected their yearly movements of increase and decrease being dictated by the general economic conditions that obtained India viz. the post-oils shock and early 80's economic crises. The net profit after tax to networth which assumed period's average around 12.47 per cent was observed to be more unstable due to high degree of yearly variations. The gross profitability measured interms of net worth and capital resources employed took period's mean value respectively around 21.82 and 17.32 per cent. The time pattern of behaviour generally implied net profit after tax to net worth to be more unstable vis-a-vis gross profit.
A smoothly increasing share of labour from the income generated by the Indian Basic industrial chemical products characterises the reference period with a mean value around 21.88 per cent. The flow of profit and interest to the capital owners has averaged to 26.98 per cent. The yearly trend implied better rates of income flow to the capital owners during the 70's. On the average around 51.14 per cent was the period's income appropriated by the government in this industrial category. Over the period income flow to the government has declined and that was found facilitating capital owners to gain more than the labour.

The estimated indices of profitability in the Cement industry was dotted by increase and decrease corresponding to four facets of period. A low net profit after tax to net worth became evident with an average value of the period at 4.77 per cent. The gross profit to net worth and gross profit to capital employed scaled average profitability during 1969-70 to 1988-89 respectively around 20.16 per cent and 8.95 per cent. A moderate degree of instability though became evident in all profitability indices, the 1980-81 crisis seemed to be quite severe.

Nearly 32.45 per cent of the income generated by the Indian Cement industries during the reference period was observed to the share of labour in the form of wages and salaries. The period after 1982-83 accounts the share of labour settling around 26.0 to 29.0 per cent. The period's claim of capital owners by way of profit and interest has settled around a mean magnitude of 15.08 per cent. A steady decline reaching a minimum of 3.98 per cent was evident during 1982-83 to 1988-89. The government's share of income for the period was around 52.13 per cent. The pursuance of administrated price explains why the share of capital owners has tended to be rather low in this industrial category in India.

7.6.1.2. CAPITAL GOODS SECTOR INDUSTRIES

In the corporate sector industries engaged in the manufacture of Transport equipments, all three measures of profitability has borne certain element of common behavioral pattern during the study period. The impact of economic crises were found adversely affecting the indices of profitability. An average of 11.37 per cent characterises the net profit after taxes to net worth the period. While gross profit to net worth has averaged to 35.70 per cent that of gross profit to capital resources employed assumed an average around 14.67 per cent. The yearly trends revealed marked levels of fluctuations in net profitability, the behaviour of gross profitability was more stable during the time period under investigation.
The share of wages and salaries from the period's income generated averaged to about 42.36 per cent. The 80's in general characterises a declining trend, in the share of income flows to the labour. The average of income accounted by the capital owners in the form of profit and interest for the reference period was around 36.23 per cent. The income appropriated by the government through corporate income tax and excise duty for the period stood at an average of 21.44 per cent. On the whole instability in the income has become an apparent feature of the Indian Transport equipments industry during 1969-70 to 1988-89.

The estimated indices of profitability has outlined similarities in their yearly pattern in the Indian Electrical Machinery industry during the time period under investigation. The adversities of the post-oil price hike and the recession of 1980-82 did cause a decline in the rates of profitability. The period mean rate of net profit after taxes to net worth, gross profit to net worth and gross profit to capital resources employed were found respectively around the average magnitudes of 10.35, 39.35 and 19.90 per cent. From the three measures of profitability the net profit after taxes to net worth revealed good deal of volatility implying lack of profit stabilisation in this regard in Indian Electrical Machinery industry.

The average flow of income by way of wages and salaries received by the labour during the reference period amounted to 39.94 per cent. Though the general trend was one of increasing nature a fall became apparent during 1979-80 and 1980-81. The profit and interest paid to the capital owners has averaged to 18.16 per cent of the income generated during the study period. Further, the trend appeared less susceptible to yearly variations. Nearly 41.97 per cent of the period's flow of income was found appropriated by the government by using its fiscal tools of resource mobilisation.

During the reference period 1969-70 to 1988-89, the three indices of profitability in the Indian Non-electrical machinery manufacturing industries, the behavioural pattern revealed the adverse effects of the oil price hike and the crisis of the early 80's causing sharp declines. The mean rate of profit after tax to net worth defined a level around 9.87 per cent for the study period. Similar mean of the gross profit to net worth and gross profit to capital employed were found to be around 36.27 and 15.72 per cent. While volatility characterised the time pattern of behaviour of the net profitability, a general stability was observed in the rates of gross profitability indices.
Our analysis of income shares revealed an average share of to be around labour 40.78 per cent during the reference period by way of wages and salaries in the Non-electrical machinery manufactures in India. The capital owners share of profit and interest payment for the period accounted an average around 19.24 per cent. The yearly trends of this share was associated with marginal falls during the recessionary periods. The income appropriated by the government had averaged to around 39.38 per cent for the reference period. On the whole a general stability in the income flows became evident in our study.

The estimated indices of profitability of the Indian Foundries and engineering workshops reflected sharp declines during the mid-seventies and early half of the eighties implying their susceptibility to economic crisis. Even though the profit after tax to net worth took a healthy looking period's mean around 8.17 per cent, the yearly pattern implied a high degree of fluctuation during 1969-70 to 1988-89. The gross profitability indices measured as a per cent of networth and capital resources employed have been around an average of 35.63 and 13.64 during the study period marked by a fair degree of stability.

Of the total income generated during 1969-70 to 1988-89, the labour through wages and salaries have received an average flow around 36.38 per cent. A closer study reveals a disturbing trend of decline from 51.26 per cent at the beginning of the study period to 29.96 per cent at the end of 1988-89. The flow of income to the capital owners viz., profit and interest averaged to around 24.75 per cent for the period in reference. The government on its part was observed netting an average share of the period around 38.86 per cent. The yearly trend reflected a certain degree of fluctuation in the flow of income to the government.

7.6.1.3. INTERMEDIATE SECTOR INDUSTRIES

For the period as a whole the profit after tax to net worth, in the Rubber and rubber products industry was found defining an average rate of 9.06 per cent. Gross profit measured from the base of networth and capital resources employed have defined period's average respectively around 32.12 and 15.32 per cent. Even though the rates of profitability were more stable during the study period, all. three indices were found adversely affected by the crisis that followed the oil price hike and recession during the early 80's.

The labour employed in the Rubber and rubber products industry in India, by way of wages and salaries were found accounting for an average income share of 34.53 per cent.
during the study period. The capital owners share of income through profit and interest were found receiving an average flow around 18.51 per cent. The extent of income appropriated by the government was at an average for the period around 46.96 per cent. But, it widely ranged between 70.14 per cent and 40.32 per cent.

In the Indian corporate sector industries engaged in the manufacture of 'Other' chemical products, the period's net profit after tax to net worth was found assuming an average around 13.42 per cent. While the average tendency for the period in gross profit to net worth was around 37.40 per cent, gross profit to capital resources employed was at 17.93 per cent. Even though a general behavioural pattern became empirically visible, the impact of economic adversities contained during 1969-70 to 1988-89 was more strongly reflected in the rates of gross profit to capital resources rather than the other two profitability measures.

The wages and salaries paid to labour of the total income generated during the study period in 1969-70 to 1988-89, in the 'Other' chemical products industry has averaged to 8.23 per cent. The yearly trend was indicative of a moderate decline. The income share of the capital owners was at an average of 16.07 per cent. This share of income of the capital owners marked a steady increase after the mid seventies. The share of income appropriated by the government through its fiscal tools during the period has averaged to around 55.78 per cent. On the whole, instability became evident as regards the income share of capital owners.

Estimated three indices of corporate profitability for the reference period in the Pottery china earthenware and structural clay products industry was found defining average of 6.67 per cent in regard to net profit after tax to net worth. The gross profit to net worth and gross profit to capital employed have respectively assumed average magnitudes around 26.43 per cent and 15.45 per cent. As in the case of other intermediate goods industries the sensitivity of the profit indices to decline became apparently associated with post oil shock years and the early 80's crises.

Of the total income generated during the reference period by the Indian pottery, China earthenware and structural clay products industry the labour share of income was observed to be around 36.34 per cent. The share of income accounted by the capital owners through profit and interest payment was found averaging to 14.39 per cent. The government by way of resource augmentation during the period has accounted for an
average flow of income around 49.27 per cent. A general stability characterises the income flow in this category.

7.6.1.4. PLANTATION INDUSTRIES

In the Indian Tea plantations industry estimated indices of profitability revealed the following general picture. The average rate of net profit after tax to net worth, for the reference period implied around 11.24 per cent. The rates gross profit measured from the base of net worth and capital resources employed have defined the period's average to be respectively around 37.08 per cent and 21.69 per cent. The time pattern of behaviour revealed three distinctive phases viz. 1970-71 to 1972-73, 1978-79 to 1980-81 and 1984-85 to 1986-87 in which a fall in all three profitability was found reflecting a sort of crisis faced by this industry.

Of the net income generated during the reference period, the labour employed in the tea plantations industry was found receiving an average income share around 48.25 per cent. A share of 11.79 per cent characterises the mean income share of the capital owners in this industry. The income appropriated by the government from the income generated of the Tea plantations industry has averaged to 39.98 per cent during the study period. In general some sort of conflicting yearly trends became evident in the study between the share of labour and the government.

During the period 1969-70 to 1988-89, the net profit after tax to net worth has recorded an average of around 15.20 per cent in the Indian coffee plantations industry category. The rate of gross profit to net worth and gross profit to capital resources employed were found defining period's mean magnitude around 39.09 and 40.19 per cent respectively. The time pattern of behavior was more uniform in regard to gross profitability indices. A sharp decline in all profitability measures was observed during 1972-73 to 1977-78.

The share of labour in the period's net income generated in the Indian coffee plantations industry stood at an average of 39.71 per cent, despite progressive decline characterised the years between 1972-73 and 1978-79. The mean level of profit and interest payments made to the capitalists defined an average share around 20.68 per cent. The share of income augmented by the government by using its fiscal authority averaged to about 39.61 per cent of the total income generated during the period under investigation. The yearly trends implied opposite movements as regards the income flows between government and the labour.
In the Indian Rubber plantations industry, during 1969-70 to 1988-89, clearly evidenced the rates of profitability inclining to fall wherever the economic system in general witnessed periods of strain viz. the post oil hike years and recession of the early 80's. The average rate of net profit after tax to net worth defined a level around 9.06 per cent during the study period. While gross profit to net worth defined a mean rate of 27.04 per cent, the gross profit to capital employed was found averaging to around 22.59 per cent. The actual rates of profit from the respective means was found characterising greater degree of variance in gross profits, than net profit after tax to net worth.

The share of wages and salaries that has accrued as the labour as the income from the net value added of the period in the Rubber plantations industry has averaged to 55.81 per cent. Though not much fluctuations were not found, decline was observed during 1978-79 to 1981-82. Nearly 11.52 per cent of the period's income generated was found defining the average share flowing to the capital owners. The trend seemed susceptible and tied up with the overall climate of the Indian economy. The resource mobilised by the government on the income flow from the Rubber plantations averaged to 32.77 per cent during the reference period. The pattern of the income shares reveal that whenever the claim of the government had increased, it was absorbed by reducing the income share of labour.

7.6.1.5. CONSUMER GOODS INDUSTRIES

The estimated indices of profitability in respect of net profit after tax to net worth, for the period has defined an average rate around 10.62 per cent in the corporate industries engaged in the manufacture of the Edible vegetable and hydrogenated oil products in India. As regards gross profit to net worth and gross profit to capital employed the period's mean rates were observed to be around 33.75 and 15.48 per cent respectively. The yearly behavioural pattern had certain element of fluctuating trends. The crisis of the early 80's seemed to have depressed the rates profit in all three indices.

The share of labour through wages and salaries of the period's net income generated was accounting for an average of 27.12 per cent. The trend implied sustained increase in the income share of labour since 1974-75 upto 1984-85. The capital owners of the Edible vegetable and hydrogenated oil industries by way of profit and interest have accounted for a mean share around 19.73 per cent during the period under investigation. The government on its part was found augmenting its share from the income generated around an average of 53.17 per cent over the study period. On the whole the pattern of income shares revealed decline in the share of labour whenever, capital owners share had increased.
In the Indian sugar manufacturing industries the estimated indices of profitability characterised net profit after tax to net worth being more volatile depending upon the overall economic climate of the nation. Though, a similar pattern was noticed in gross profitability measures by and large the movement was not that violent in nature. The period's average net profit after tax to networth has averaged to around 4.04 per cent. Gross profit to net worth assumed the period's mean value around a high magnitude of 42.55 per cent implying the incidence of tax and interest payment considerably lowering net profit. The average magnitude of gross profit to capital was around 11.94 per cent for the period in the Indian Sugar industries.

The estimated average flow of net income during 1969-70 to 1988-89 to labour employed in the Sugar industries was around 35.23 per cent. The trend over the years implied a general decline. The income flow to the capital owners through profit and interest for the period defined an average magnitude around 21.58 per cent. The income appropriated by the government using its fiscal authority has netted an average share of income around 43.19 per cent on the average. The general pattern of yearly income flows was more stable for the government vis-a-vis the labour and capital owners.

Among the three measures of profitability in the Indian cotton textiles industry, though the yearly pattern revealed certain degree of uniformity prevailing, in regard to profit after tax to networth and gross profit to networth a marked degree of fluctuations were observed during the reference period which by and large corroborated with the overall economic climate of the nation. The period’s average net profit after tax to networth was around 3.8 per cent. As regards gross profit for the base viz. networth and capital resources employed, we in the present study observe them to take average magnitudes respectively around 30.19 and 10.75 per cent.

Of the net income generated during the reference period by the Indian cotton textile industry the share of labour defined an average around 53.98 per cent. The overall pattern was one declining as regards the share of labour rather than increasing in our study. By way of profit and interest the capital owners have accounted during the study period the share averaging to about 15.98 per cent. The income appropriated by the government from the cotton textiles industry for the period was around an average of 30.10 per cent.

The estimated indices of profitability in the silk and rayon textiles industry, during 1969-70 to 1988-89 has borne common behavioural pattern. A high degree of sensitive behaviour seem to cause profit after tax to net worth to suffer a decline whenever economic
crisis has overtaken the economy. The period was defining the mean rate around 6.40 per cent in net profit after tax to net worth. Similar mean characteristic was around 25.81 per cent in gross profit to networth and in the gross profit to capital employed it was around 16.18 per cent.

The average share of income for the period out of the net income generated during the period under investigation, for the labour has averaged to around 34.20 per cent. The income share of labour in general was on the decline during the 80's vis-a-vis most years during the 70's. The share of capital owners claim from the net income generated during the study period averaged to 20.48 per cent. Using the fiscal tools the income appropriated by the government stood around an average magnitude of 45.32 per cent during the reference period. The yearly behavioural pattern was indicative of conflicting income flows been the labour and the capital owners.

In the Indian Corporate sector industries engaged in the manufacture of Medicine and pharmaceutical products, the study period was found characterising common behavioural pattern in all three indices of profitability. An upward trend growth was observed especially during 1983-84 to 1988-89. For the period as a whole the average rate of net profit after tax to net worth took a magnitude around 13.02 per cent gross profit to net worth and gross profit to capital resources employed the period was found defining the mean rates respectively around 40.66 and 26.14 per cent. Further, our study reveals greater stability in gross profitability rates than net profitability.

During the period under investigation of the total net income generated the share of labour viz. the wages and salaries was found assuming a mean rate around 35.16 per cent. The flow of income share to the capital owning class through profit and interest was accounting for an average of 14.87 per cent marked by a great deal of stability during 1969-70 to 1988-89. The share of income appropriated by the government was found averaging to around 49.97 per cent. In general the government was found scaling down its claim from 58.02 per cent in 1970-71 to 48.08 in per cent 1988-89.

Sharp rates of increase and decrease in the estimated indices of profitability was emerging to be the salient feature of the study period witnessed by the Indian paper and paper products industry. The impact of oil stock and the recession of early 80's has been found causing profitability to register a fall in our analysis. A low mean rate averaging to around 5.62 per cent became evident during the study period in regard to the rate of net
profit after tax to net worth. The gross profit to the base of net worth while assumed the period's mean value around 23.55 per cent, the gross profit to capital employed was found associated with a mean rate around 11.92 per cent. The rates of gross profit seemed more stable during the study period.

The wages and salaries that has accrued to the labour from the income generated by the paper products industry in India has defined the mean share around 33.46 per cent. A sustained rate of increase was evident during 1975-76 to 1983-84. The capital owners claim of income share by way of profit and interest has secured an average level around 20.96 per cent during the reference period. While the time trend marked an increase during 1976-77 to 1985-86, the later half of the 80's marks a decline. The government was seen accounting for an average share of income around 45.50 per cent in our study.

During the study period the rate of net profit after tax to net worth in the Indian motor vehicles manufacturing industry has defined an average magnitude around 12.34 per cent. Similar mean magnitudes respectively for the gross profit to net worth and gross profit to capital employed were assuming values around 36.52 and 15.32 per cent. The time pattern characterises steep increase in profit after tax to net worth during 1975-76 to 1981-82. More or less similar pattern at slightly higher magnitude characterised the indices of gross profitability.

Of the total income generated by the motor vehicles industry during the reference period the labour share of income has stood at average magnitude around 41.65 per cent. The trend in general registered an increase during the 80's. The profit and interest paid as the share of income to the capital owners was seen averaging to around 22.88 per cent. The 70's generally marked a down trend in the income share of the capitalist class. The government on its part was found appropriating an income share averaging for the period at around 35.97 per cent. Sharp degrees of fluctuation became the feature characterising the income flow to the government in the 80's.

7.6.1.6. SERVICE SECTOR INDUSTRIES

In the Indian construction industry, among the three estimated indices of profitability, over the reference period no common pattern became discernible in the present study. However, their susceptibility to register a down trend during periods of economic crisis like the post oil shock years and early 80's was apparently visible. The profit after tax to net worth was defining the period's mean magnitude at a level of 6.83 per cent. The yearly
magnitudes from this mean rate has implied a high degree of volatility. The period’s mean rate of gross profits to net worth and gross profits to capital resources employed have respectively marked magnitudes around 29.51 and 5.76 per cent in the present study.

Of the total income generated by the Indian construction industries the share of wages and salaries accruing to labour has scaled a higher per cent around 54.54. The labour intensity provides reasonable explanation for this characteristic feature. The share of income that was accounted by the capital owners of this industry in India during 1969-70 to 1988-89 had averaged to 12.27 per cent. The income appropriated by the government to be its claim of income stood around an average magnitude of 33.19 per cent. Understandably the income share of labour in the construction industry has exhibited a high degree of stability during the study period.

The estimated indices of profitability, in regard to net profit after tax to net worth was found accounting a mean rate for the period around a healthy level of 10.33 per cent in the Indian Trading industry. The rate of gross profit measured to the base viz. net worth and capital employed have characterised the period under investigation respectively around 48.50 and 20.81 per cent. Uniquely this industry revealed considerable degree of stability in net profit after tax to net worth than the rates in gross profitability. The period’s of economic crises were found causing sharp and continues decline in the rates of gross profit.

Of the net income generated by the Trading Industry in India, the labour by way of wages and salaries have accounted for an average of 32.68 per cent. The share of profit and interest that has accrue to the capital owning class during the study period has averaged to 18.44 per cent. The government by way of resource mobilisation is seen augmenting nearly an average share of 48.86 per cent of the income generated by the Trading Industry in India.

In the Indian corporate Hotels and restaurant category of industries the study period revealed common behavioral tendencies in all the three estimates of profitability indices. A progressive decline in the rates of profit is found corresponding during the recessionary years of the study period. The yearly trend in gross profit to capital employed was found marked by ups downs in alternative years. Nearly 10.96 per cent characterises the mean rate of profit after tax to net worth to be the behavioural tendency in the present study. The gross profit to net worth for the period assumed a mean rate around 30.81 per cent.
Viewed from the capital resources employed the rate of gross profit took period's average magnitude around 13.42 per cent. On the whole consistency in gross profit rates emerged as the salient feature.

The wages and salaries paid as the share of the labour from the period's net income generated in the Hotels and restaurants industry has averaged to 29.45 per cent. An upward trend in the income share of labour became evident during 1978-79 to 1985-86. The income share that has been appropriated by the capital owners was found assuming the period's mean around 25.84 per cent, which happens to be the highest among the industries in reference. Using the fiscal authority the government was found accounting for an income share during the reference period amounting to an average of 44.52 per cent. Greater stability in the income share of the government characterises the yearly trend of the Hotels and restaurants industry category.

7.6.2. DETERMINANTS OF PROFITABILITY

7.6.2.1. PROFITABILITY FUNCTION –(1)

In this model we have tried to study the determinants of the growth of Gross profits in the select 24 corporate industry categories. The fit model has yielded generally well behaved regression estimates satisfying the functioned specification for the time series data 1969-70 to 1988-89. The coefficient of multiple determination emerged statistically significant in all the industries in reference. The effect of the scale of operation by obtaining the predicted positive sign with values less than unity in all the 24 industries confirmed its functional significance in 21. The variable K/Q has defined an inverse relation on the gross profits earned in all 24 industries and confirmed the theoretical hypothesis that improvements in capital productivity will positively contribute to the profit earning capacity in 22 corporate industries. The variable β3 has captured in 19 industries the expected positive impact of the gross profits of the last year on the current year profit rates. This relation was absent in all the service sector industries implying lack of historical continuity. The statistical validity remained weak since only in eight industries it turned out to be different from zero. An increase in the proportion of wage cost to total sale revenue outlined the specified negative impact on gross profit in 14 while expanding scale of operation was implied in 10 industries not causing conflicts between profit and wages to such. Being significant in six industries the empirical significance remained weak. The period's average gross profit was found to be positive in all 24 and was significant in 18 industrial categories.
7.6.2.2. PROFITABILITY FUNCTION - (2)

The fit regression model to trace the determinants of operating profits obtained significant explanatory power in 23 industries, while in the cotton textiles the fitness of the model remained indeterminate. The β1 parameter of the fixed capital variable by obtaining the specified positive with less than unitary values rendered support for the theoretical hypothesis in 23 and statistically confirmed the presence of scale effect in 15 industries. In 21 industry categories capital productivity empirically defined positive relationship i.e. when K/Q increases operating profits will decline. In 18 industries the current year levels of operating profit were found positively dependent upon the previous year magnitudes and was significant statistically in ten. A negative time rate of adjustment was found in the Ferrous and non-ferrous metals, the Rubber and rubber products, the Tea and Rubber plantations, the Sugar and the Trading industries. In nearly 66.67 per cent of the industries in reference i.e in 16 out of the 24, the effect of increase in wages and salaries in gross sales was found depressing operating profits through its negative influence. In eight industries excluding the capital goods sector, in the other groups in one or the other a positive relationship became evident. A weak empirical support characterises this variable in predicting operating profits. With the exclusion of the Silk and Rayon textiles, the 20 year time period was characterised by positive operating profit levels in 23 of which in 18 it was significantly different from zero in statistical terms.

7.6.2.3. PROFITABILITY FUNCTION - (3)

This model fit to examine the determinants of profit after interest and tax payments (PAIT) by obtaining high coefficient of determination R² has emerged significant in 22 industries. The statistical adequacy of the model was not confirmed in the Basic industrial chemicals and the Silk rayon textiles industry. The operational size i.e. the volume of gross capital stocks as per the model predication with a positive sign and less than unitary value empirically became operative in 20 industries. A negative scale effect on PAIT was implied the β1 parameter in the Cement, Transport equipments, Edible vegetable and hydrogenated oils and the Motor vehicles industry categories. The statistical validity of the predicted relation was confirmed in 15 industries. Growth of capital productivity i.e. a decline in K/Q capable of positively determining PAIT growth in our time series model became evident 22 industries, while in the Cotton textiles and the Hotels and restaurants the relationship has turned out to be positive. This variable has emerged significant in determining PAIT in 17 industries. The one year time lagged effect of PAIT on the current year revealed positive time rate of adjustment in 15 industries leaving nine to imply a
negative causation in the present study. In 18 industries growth of wages and salaries in gross sales was found accounting for a retrogression in PAIT. However, in the Cement, the 'Other' chemical products, the Pottery, china earthenware and structural clay products, the Silk and rayon textiles, the construction and the Hotels and restaurants industry category a complementary rate of growth in PAIT and wages and salaries to gross sales was observed as the salient feature in our study. This relationship on the whole being significant only in six rendered weak empirical support. Except for the Hotels and restaurants industry in 23 industries the period was defining a positive average PAIT rates with statistical validity confirmed in 17 of them.

7.7. SIGNIFICANT FINDINGS AND MAJOR CONCLUSIONS OF THE STUDY

The estimates of real fixed capital stock based on the Perpetual Inventory Method has conclusively established a large capital base prevailing in the medium and large public limited private sector corporate enterprises in the Cement, the Transport equipments, the Rubber and rubber products, the 'Other' chemical products, the Paper and paper products, the Motor vehicles and the Hotels and restaurants industrial categories. Across the select 24 industries, the average size of real fixed capital characterises heterogeneity during the study period. However, the yearly trends reflected the period being characterised by stability in the estimated magnitudes of real fixed capital stock. On the average an annual growth i.e. net additions to capital stock was around 6.79 per cent. Among the 24 industries the rate at which real fixed capital registered a growth was specifically significant in the Basic industrial chemicals, the Non-electrical machinery, the Pottery china earthenware and structural clay products, the Tea plantations, the Sugar, the Cotton textiles, the Motor vehicles and in all the three Service sector industries viz., the Construction, the Trading and the Hotels and restaurants. A closer examination of the growth contains salient trend that reflected the recessionary years being followed by a general decline in the growth and period's of recovery coinciding with better rates of capital growth.

Of the different econometric models based on the neo-classical theory of investment growth (real fixed capital assets), from the empirical results of the study, we have found in all such industries where the relative size of capital was large and those industries whose capital growth per annum was greater than others, following variables have emerged statistically significant. If placed in their order of empirical validity we have found external sources of funds to be highly significant in a majority of the industries, followed by accumulated depreciation, historical rate of growth, volume of sales especially lagged by
one year and net worth. Though, retained earnings by itself was not a significant factor, but when taken together with accumulated depreciation its significance became well founded in the study. Hence, there is scope to argue that the medium and large public limited corporate industries do not use the entire portion of retained earnings for capital accumulation. Rather, corporate capital growth to a greater extent was dependent upon the external sources of funds and expanding market as revealed by sales lagged by one year.

Among the various forms, the 24 corporate sector industries in India were found holding uniformly around 50.65 per cent of the total inventory in the form of semi-finished and finished goods stocks. The yearly pattern of this inventory holding was more fluctuating in most of the Consumer goods and Intermediate sector industries during the study period. Lack of stable and sustained increase in the demand for Consumer goods and the interception of economic crisis owing to world oil price hike during 1972-73 and the recession of 1980-81 throws significant light as to why this volatility was evident in the Consumer and Intermediate goods sector industries. As regards the stock of raw materials to total inventory, both the volume and yearly average growth was found to be greater in the Capital heavy and high capital growth oriented industries like the Transport equipments, the Paper and paper products, the 'Other' chemical products, the Electrical machinery, etc. On the whole the period seem to be associated with moderate decline in raw materials inventory to total inventory at a rate around -0.36 per cent. If viewed from the overall industrial climate that prevailed during 1969-70 to 1988-89, the emerging picture of diversified industrialisation process in the Indian economy has made it possible for the corporate sector in 13 industry categories to progressively reduce their raw material inventory to total inventory stocks. Our analysis of the structure of inventory holding across the 24 industry categories and their composition to working capital, more or less yields the picture that corresponds to the one outlined above.

The Neo-classical theory based inventory function models fit to examine the empirical validity in the Indian corporate sector, our time-series results have confirmed the significance of the accelerator principle in determining growth of inventory stocks. While the simple accelerator model empirically confirmed economies of scale characterising inventory holdings during 1969-70 to 1988-89, the inclusion of other explanatory variables did cause perceptible changes both in terms of the nature and the extent of the influence exerted by accelerator variable on inventory holdings. This finding empirically confirmed multiple causal factors involved in the determining the inventory stocks in the Indian
corporate sector industries. In a majority of the industries in reference we find significant empirical support that when cash and bank balances increase, the holding of inventories tend to decline on the average. Hence, the presence of substitution in the short-run between real quick assets and liquidity became significantly evident in our research investigation. Similarly, when the interest costs have increased, empirical evidence is found that most corporate industries will tend to hold lesser stocks of inventory in order to avoid diseconomies in the cost of holding idle inventories.

The fit Metzlers' Accelerator Model incorporated with expectational errors, though was adequate in predicting the inventory behaviour in the Indian corporate setting, the time lagged effect of accelerator variable was found yielding statistically weak results. Though, current year inventory was positively related to inventory lagged by one year in 17 industries, the results did not confirm the statistical significance in a majority of them. Hence, inventory holdings are found to be predominantly directed by the current year volume of sales or the transactions. The empirical results of the distributed lag inventory functions empirically was found providing the significance of the growth of real capital stocks as an important determinant of inventory in the Indian corporate environment. Ambivalence in the use of retained earnings also became a well established finding in predicting the growth of inventory. One salient finding relates to the fact that the Indian public limited medium and large corporate industries have not made use of the external funds for building up inventories.

The expenses incurred on materials formed nearly 56.48 per cent of the total production costs during 1969-70 to 1988-89 in the 24 corporate sector industry categories in India. The study has found in all such industries involving multi-stage value adding process viz., the 'Other' non-ferrous metal products, Ferrous and non-ferrous metal products, Basic industrial chemicals, Transport equipments, Electrical machinery, Non-electrical machinery, Foundries and engineering workshops, Rubber and rubber products, 'Other' chemical products, Edible vegetables and hydrogenated oils, the Sugar, the Cotton textiles, the Silk and rayon textiles, Medicine and pharmaceuticals, the Motor vehicles industries this proportion of materials cost was relatively greater than other industries. Most of these industries also are capital heavy in nature. The trend growth rate has confirmed high degree of variation across the industries reflecting the structure of this cost to be highly industry specific in nature.
The proportion of power and fuel cost to total cost in the present study outlines the Basic industrial chemicals, the Cement, the Foundries and engineering workshops, the Pottery china earthenware and structural clay products, the Silk and rayon textiles, the Paper and paper products, the Construction and the Hotels and restaurants to be highly energy intensive. The period was found forcing these industries to spend a greater proportion of total cost on power and fuel expenses due to the oil price hikes during 1972-73 and 1981-82.

The proportion of wage cost to total cost was found to be distinctively higher in the Pottery china earthenware and structural clay products, the Tea and Rubber plantations, the Cotton textiles, the Construction and the Hotels and restaurants industries. Among these, while labour oriented production system except for the textiles explains the reason for the wage cost to be high, in the Cotton textiles the cost of living index based wage and large number of employees with long years work experience due to historically old nature of the industry seems offering the reason for the observed phenomenon. Our study also finds the expenses on Repair on building and machinery to be greater mostly in heavy capital based and multi-stage production involved industries than others. Cost structure also empirically coincides with consumer goods manufacturing industry categories incurring more expenses on selling commission as a proportion of total cost relative to other industry categories in the present study. The capital depreciation cost is found defining similarity as regards what we have found in respect of the repair on buildings and machinery.

The short run cost function models fit for tracing the behavioural characteristics of total cost, materials cost and wage cost have implied following major conclusions emerging from the study. The cubic total cost function estimates in all industries implied the β3 magnitudes tending to be almost equal to zero. Hence, its theoretical validity was not well founded in our study, though the model on the whole was significant. The total cost function with output and K/Q as explanatory variables has yielded well behaved cost-output relationship and implied economies of scale to be a valid empirical phenomenon in the Indian industries. The capacity variable, K/Q has proved that higher capital productivity or better capacity utilisation will contribute significantly to achieve reductions in total costs in the Indian corporate industries.

An inverted 'U' shaped materials cost characterised the short-run behaviour in 14 industries. A closer examination reveals that these industries are mostly the ones whose material cost to total cost revealed greater degree of yearly fluctuations. In contrast in ten
industries mostly belonging to Capital and Consumer goods sector an inverted ‘L’ shape captures the prevailing material cost to output relationship in the Indian corporate sector. Cost economies characterised materials cost to output relation in all industries when K/Q has been included as an additional variable. Better rates of capacity utilisation or increase in the rates of capital productivity has accounted in a majority of Indian corporate industries in reference to experience reductions in materials cost. These industries by and large consisted of Basic goods, Capital goods and Service sector industries. This result lights the significance of better capacity use crucial in achieving economies in material cost in the highly capital intensive industries.

An inverted ‘U’ shaped nature of wage cost theoretically captures how at higher levels of output growth, industries will ultimately tend to find greater volume of surplus resources in a competitive system. The proportion is found characterising almost all the industries in which we have observed larger capital base and higher rates of real capital accumulation. In contrast in all plantation industries where wage cost was relatively greater in total cost, the short-run nature implied an inverted ‘L’ shape implying wage cost to get stabilised after an initial spurt. The fit wage cost function with output and K/Q variable, empirically defined wage costs to decelerate as industries achieve better rates of capacity use. Such a tendency in our sample of 24 industries are observed in 15 industries which have larger capital base and higher rates of real capital growth.

Liquid cash holdings as a per cent of total liquidity i.e. cash and bank balances held by the 24 corporate industry categories in the present study during the reference period has been estimated at an average of 16.32 per cent. A closer examination of the individual categories revealed that this proportion of cash holdings to be at a higher average magnitudes at around one-fourth to one-sixth in all such industries where we have found the propensity to hold inventories to working capital was high. The yearly trend pattern marked a high degree of fluctuation in a majority of the above industries implying that no stability could be expected in the industries because demand for cash holdings will be dictated by the contingencies faced during the study period. Fixed deposits in banks as a proportion of total liquid assets for all the industry categories seem to settle uniformly around an average of 32.49 per cent during 1969-70 to 1988-89. The Trading industry which have a relatively higher turn over was found holding the minimum level of fixed deposits to total liquidity. The period had witnessed very low inter-industry variations outlining a converging tendency possibly due to banks insisting on certain minimum levels of fixed deposits so as to ensure short-run solvency in the transactions carried out by
industries. 'Other' bank balances which includes current account balances with banks was greater in volume in all the industries associated with inventory intensive, multi-stage process involved manufacturing industries.

The fit econometric models based on the neo-classical theoretical foundations, in our empirical estimates clearly brought the significance of transactions motive as the most crucial factor in explaining the demand for money in the Indian corporate industries. However, in the Silk and rayon textiles and the Cotton textiles the empirical significance was not statistically confirmed. The prevalence of high degree of seasonal variations in the supply of principal raw material for these industries possibly explains way demand for money could not be so strongly dependent upon the current year transactions carried out.

A certain degree of substitution became evident in our regression estimates, between wealth as a proportion of sales and demand for money. However in a majority of consumer goods a complementary relation was defined between wealth maximisation and growth of demand for cash and bank balances i.e. total liquidity. Fast growing market for the end product of the consumer goods industries provides the logical reason that they can simultaneously increase both wealth and short-run liquidity. We have also found a strong empirical evidence when industries avail more bank loans during the reference period, the preference to hold idle cash balances declining in majority of cases. Increase in general price level i.e. inflation has proved to be a significant factor inducing corporate sector industries to correspondingly increase their demand for short-run cash and balances. Hence, in our present investigation of corporate demand for money, we have strong empirical evidence to conclude, the neo-classical theoretical foundations to be highly relevant in the Indian conditions during 1969-70 to 1988-89.

Estimates of profitability in the Basic goods sector consisting of 'Other' non-ferrous metal products, Ferrous and non-ferrous metal products, Basic industrial chemicals and the Cement industry categories, during the reference period implied average profit after tax to net worth around 7.83 per cent, Gross profit to net worth around 27.22 per cent gross profit to capital employed around 14.34 per cent. The yearly trends revealed years of economic recession adversely affecting the profitability, more so in the net-profit after tax to net worth. In general gross profitability exhibited more stability.

The capital goods sector which included Transport equipments, Electrical machinery, the Non-electrical machinery and the Foundries and engineering workshop industries, as
whole revealed during the study period average magnitudes respectively in their net profit after tax to net worth, gross profit to net worth and gross profit to capital employed around 9.94, 36.74 and 15.98 per cent. Gross profitability was more stable during the reference period.

The profitability indices in the present study for the Intermediate goods sector consisting of Rubber and rubber products, 'Other' chemical products and the Pottery, china earthenware and structural clay products for the period 1969-70 to 1988-89 have defined average rates to be around 9.71 per cent in net profit after tax to net worth, 31.98 per cent in gross profit to net worth and 16.23 per cent in gross profit to capital resources employed. The impact of oil price hike and the recession in early 80's had a telling effect on the profit earning capacity of all these industry categories.

In the plantations industry, the Tea, the Coffee and the Rubber plantations categories for the reference period, the estimates of profitability indices characterised a mean rate of net profit after tax to net worth around 11.83 per cent. The gross profitability indices respectively from the point of view of net worth and capital resources employed were defining average rates around 34.40 per cent and 28.16 per cent. A sustained decline in net profit after tax to net worth was observed in the coffee plantations during the 70's. The impact of economic crises specifically affected the profits of this industry.

Estimates of profitability indices in the consumer goods sector, which consisted of the following industry categories viz. the Edible vegetable and hydrogenated oils, the Sugar, the Cotton textiles, the Silk and rayon textiles, the Medicine and pharmaceuticals, the Paper and paper products and the Motor vehicles, for the period have secured average net profit to net worth to around 7.97 per cent. Similar rates in gross profit to net worth and gross profit to capital employed were around the average magnitudes of 33.29 and 15.39 per cent. In the Indian corporate Service sector industries, Consisting the construction, the Trading and Hotels and restaurants in the present study were characterised mean profit after tax to net worth for the period to be around 9.37 per cent, gross profit to net worth around 36.27 per cent and gross profit to capital employed around 13.33 per cent.

The period's mean rates of profit for all the 24 industries taken as a whole revealed profit after tax to net worth a magnitude around 9.78 per cent. This rate of profit was in general greater than or equal to in the capital goods, Intermediate, Plantations, Consumer goods sector vis-a-vis the Basic and Service sector industries. Similarly the gross profit to
net worth in the 24 industries for the period averaged to 33.20 per cent with Capital goods, Plantations, Consumer goods and Service sector group of industries defining a greater rate of profitability. The mean of the period for the 24 industry categories as regards gross profit to capital employed yielded an average rate around 16.74 per cent. This rate was quite high in Plantations industries, owing to the reason that the capital base on plant and machinery was low.

On the whole net profit after tax to net worth in a majority of the corporate industrial categories suffered due to not only adversities in the economic system that prevailed consequent to world oil price hike and the recession of the early 80’s, but also due to the varying rates at which the government has imposed taxes on profits earned. Again the corporate sector industries’ individual disposition to accommodate taxes also offers the reason as to why this fluctuating characteristic has emerged in the present study.

The labour employed in the Basic goods sector industries for the period have accounted for an income share averaging to around 33.61 per cent. While the capital owner’s income share was at 20.94 per cent that of the income appropriated by the government from this sector has averaged to 45.36 per cent.

In the Capital goods sector, the wages and salaries have averaged around 39.87 per cent of the total income generated during 1969-70 to 1988-9. Those who owned the capital resources was found accounting for an income flow averaging to around 24.60 per cent. The government on its part has mobilised income from the Indian capital goods sector averaging to around 35.14 per cent.

The Intermediate sector involved Indian corporate industries during the study period for the labour employed have paid 33.07 per cent of the income generated on the average. The capitalist class have accounted for an income flow averaging to 16.3 per cent. The government by using its fiscal authority was found accounting for an income share averaging to 50.67 per cent.

The labour employed in the Indian medium and large public limited private sector Plantation industries were found receiving nearly 47.2 per cent of the income generated, while the capital owners in this category of plantations industries have accounted for about 14.66 per cent of the income. Nearly 37.45 per cent of the income generated by the plantations sector was on the average found to be the share of the government.
During 1969-70 to 1988-89, of the total income generated the labour employed in the Indian Consumer goods manufacturing industries have accounted for an average income flow of 37.26 per cent. This share of income appropriated by the capital owners of this sector was found averaging to 19.43 per cent. The government on the average has mobilised a share of 43.32 per cent of the income generated in India by the consumer goods sector industries.

In the service sector the labour employed by way of wages and salaries, during 1969-70 to 1988-89 have from the income generated received a share that has averaged to 38.89 per cent. While the capital owner's share of income averaged to 18.86 per cent, that of the government was found averaging to around 42.19 per cent.

We have from the empirical estimates of the present study conclusive proof that the labour employed in the 24 industry categories belonging to the medium and large and public limited private sector industries in India accounting for an average income flow around 38.10 per cent. Marginally higher income flow to labour became evident in the Capital goods, Plantations and Service sector industry categories. The capital owners while on the average received income averaging to 19.13 per cent, the flow income to the capital owners in the Basic goods and Consumer goods industries were marginally higher in magnitude. The government has mobilised income flows averaging to 42.67 per cent from the corporate sector industries in reference. Except for Capital goods sector and Service sector to some extent the flow of income from other industry groups was marginally greater in magnitude.

On the whole in our research we have found empirical support strengthening the argument that the share of income to the capital owners has been more stable during the study period. However, economic shocks are found more associated with the declining share of labour and an increasing share of the government. Hence, government intervention in augmenting higher share of resources are absorbed by the corporate industries by marginal reductions in the flow of income to the labour rather than the capital owners. In general, the pattern of income flow to the labour during the 80's was more stable than during the 70's.

The fit econometric models to study factors determining the growth of gross profit, operating profit and profit after interest and taxes during 1969-70 to 1988-89, provides strong empirical support that growth of capital or rate of capital accumulation to be a
necessary condition to achieve higher growth in profits. Equally significant influence has been empirically well established that better capacity utilisation will positively account for higher growth rates in corporate profit. In a number of industries irrespective of the sector in which they operate, increasing proportion of wages and salaries to sales was found to be a potential contributor for the profit rates to decelerate. In general current year profit have a historical continuity with the previous year profits in the medium and large public limited private sector industries during 1969-70 to 1988-89.

7.8. CONCLUDING OBSERVATIONS

The present research work was carried out mainly focusing on a comprehensive and comparative analysis of various economic aspects relating to the medium and large public limited private sector corporate enterprises in India. The study has attempted to examine the relevance of the neo-classical theoretical frame work to the Indian corporate sector industries with specific reference to growth of physical capital assets based on the Perpetual Inventory Method (PIM) and the factors determining the growth during the study period viz. 1969-70 to 1988-89. Other inter related aspects covered in the research work includes, the structural composition of inventories and inventory function models; the compositional structure of the costs of production and their short-run behavioural characteristics; compositional and structural dimensions of corporate liquidity and the corporate demand function money; trends in corporate profitability, its determinants and, the sharing of income generated during the reference period by the labour, the capital owners and the government. The study has not focused on specific policy variables and relate it with the empirical findings. However, emphasis has been given to relate the observed empirical characteristics with the general macroeconomic conditions that prevailed in India during 1969-70 to 1988-89.

The scope of the study is mainly directed to unravel the empirical behaviour of the various economic variables and examine how far the neo-classical theoretical doctrines when operationalised through appropriate econometric models will be useful to predict the growth of capital, inventories, costs of production, demand for money and profits in the Indian corporate environment. The findings of the study will be useful for devising appropriate policies, at both government and corporate management level depending upon the normative goals set by them. No general policy recommendations are attempted in the study since the select 24 industry categories belong to six different use based sectoral groups.