Efficiency Indexes in Resource Mobilization : A Study of Andhra Pradesh State Financial Corporation (APSFC)

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Abstract

Capital structure represents the mix of different sources of long-term funds in the total capitalization. Optimal capital structure is a financing-mix which maximizes the firms' value/the shareholders' wealth or minimizes its overall cost of capital. An appropriate capital structure acts as the basis for sound operations of a State Financial Corporation. The resource mix of APSFC mainly consists of equity share capital, reserves, bonds and debentures, refinancing from the IDBI and the RBI, and loans in lieu of share capital, and so forth. Linking the borrowing powers with equity as per the provisions of the SFCs Act helps in the potentiality of the Corporation in lending operations. The Corporation heavily depends on debt finance by issuing bonds and debentures. A high degree of debt component in capital structure increases the risk and may lead to financial distress in adverse times. A high cost of funds employed makes it very difficult to improve the profitability of the Corporation. Normally, the cost of bond financing of the Corporation is cheaper as compared to raising funds through equity because interest on debt is allowed as an expense for tax purposes. Therefore, a good and complete exercise on resource planning for short-term as well as long-term periods is a need of utmost importance for the Corporation in order to cater to the growing financial needs of industrial concerns. The present paper focuses on measuring the efficiency of the Corporation in terms of its resource mobilization. Some important aspects for measuring the efficiency of resource mobilization are examining the - trends in resources and sanctions by the Corporation, cost of various sources of funds, cost of debt funds, weighted average cost of capital (LME-Index), and equity multiplier. The paper also provides some viable and useful suggestions to fine tune the performance of the Corporation for efficient fund management by the APSFC.

Keywords: **cost of equity, cost of debt, refinance, efficiency index, equity multiplier, weighted average cost of capital, resource mobilization, capital structure, development financial institutes**

JEL Classification: G32, G33

The development financial institutions (DFIs) are expected to play a predominant role in resource mobilization where the savings are inadequate for the desired investment. They do not provide all the finance required for the development, but demand for mobilization of more funds so that the desired success in the industrial sector is obtained. They function as catalysts in mobilizing the required capital from other sources (Reddy & Himachalam, 2006). In an economy like India, with 'indicative planning' and with a fairly significant private sector, the development banks have a very crucial role to play in strengthening the industrial base. Therefore, it should be recognized that the basic objective of any DFI in India is to mobilize resources and to distribute them through various investment channels as per priorities laid down by the economic policymakers (Kaur, 1999).

The various DFIs in India, working at the national and regional levels, have not been functioning well because of financial constraints due to the ever-increasing demand for financial assistance from entrepreneurs and mounting overdues year after year. Unlike the commercial banks, which mainly rely upon demand deposits for their operations, the DFIs have to depend on permanent funds to meet their objective of providing long-term financial assistance to their clients (Jain, 1971). Therefore, it is quite essential that the DFIs pay greater attention to resource mobilization through effective resource planning.

The state financial corporations (SFCs) have been finding it very difficult to mobilize the required resources from time to time to meet their operating and long-term needs. Consequent upon the severity of the problem, the RBI had to set up a working group in April 1970 to study the problems of the SFCs in resource mobilization and also to make suitable recommendations to tackle the problem efficiently (Athma & Laxmi, 2012). A poor and inadequate resource base affects the operational efficiency and profitability of the SFCs in discharging their duties as developmental financial institutions at the regional level. Mobilization of resources by the SFCs has become a very complicated job because they function within the State regulated framework (Garg & Gupta, 2011). Even the APSFC is not exempt from this problem.

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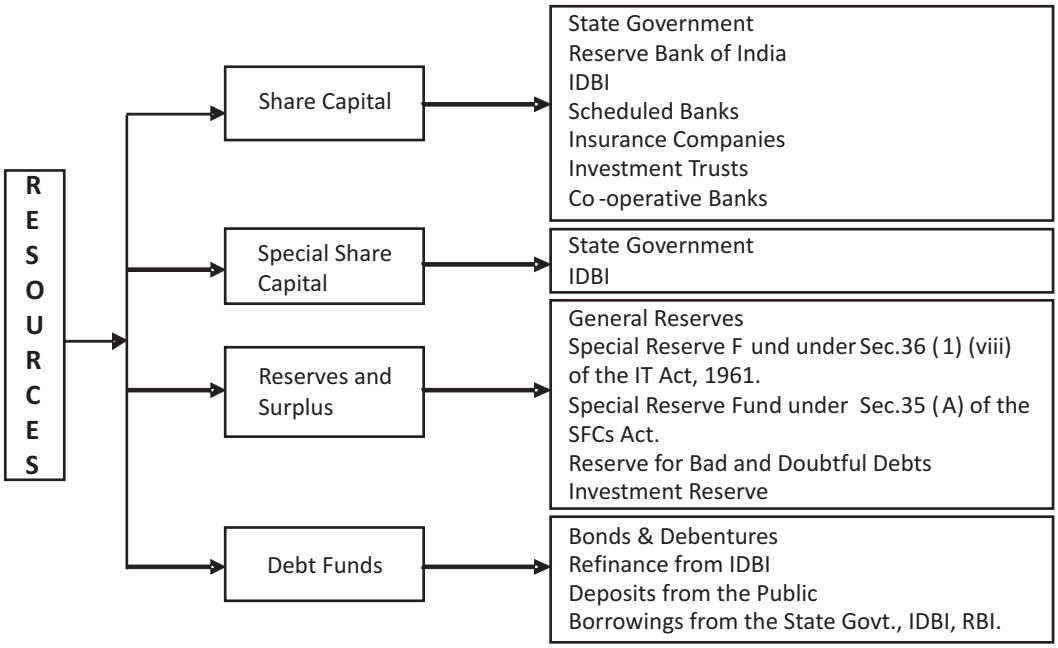
Different Sources of Funds

The sources of funds of the DFIs may be classified into either domestic or foreign, or partly foreign and may be derived in the form of equity as well as loans. The sources of funds of the APSFC can be broadly classified into two groups, viz., external and internal. The external sources are equity capital, bonds and debentures, borrowings and other public

Figure 1 : APSFC: Resource Structure



Source: Based on information furnished in various issues of Annual Reports of APSFC

Table 1 : APSFC - Trends in Resources and Sanctions (₹ in crores)

Year	Resources (X)	Annual Growth Rate (%)	Sanctions (Y)	Annual Growth Rate (%)	Sanctions as Percentage of Resources
2002-03	1160.95	--	419.86	--	36.16
2003-04	1121.16	-3.42	430.58	2.55	38.40
2004-05	1090.23	-2.75	464.69	7.92	42.62
2005-06	1177.69	8.02	585.96	26.09	49.75
2006-07	1256.14	6.66	704.75	20.27	56.10
2007-08	1656.99	31.91	1006.66	42.83	60.75
2008-09	1850.02	11.64	885.67	-12.01	47.87
2009-10	2080.66	12.46	1052.38	18.82	50.57
2010-11	2326.98	11.83	1386.38	31.73	59.57
2011-12	2647.31	13.76	1368.82	-1.26	51.70
Mean	**1636.81**	**9.00#**	**830.57**	**14.00#**	**49.35**
Variance	**320789.06**		**135565.42**		**69.83**
Range	**1557.08**		**966.52**		**24.59**
No. of Observations	**10**		**10**		**10**
Correlation Co-efficient			**0.96**		
t- Statistics			**3.769**		
Degrees of freedom			**18**		
t- Critical value (two-tail)			**2.106**		

Compound Annual Growth Rate (CAGR)

Note: Total resources consists of - Share Capital, Loan Pending Conversion to Share Capital, P&L Appropriation Account, Reserve Fund and other Reserves, and Term Borrowings.

Source: Compiled from the Annual Reports of APSFC (2002-03 to 2011-12)

deposits (Reddy, 2012) ; and the internal sources are general reserve, special reserve, reserve for bad and doubtful debts, investment reserve, and year-wise repayment of borrowers. Another important classification of sources of funds is equity and debt. Equity consists of share capital and reserves. Debt consists of bonds and debentures, borrowings from the state Government, the IDBI, and other institutions and public deposits. The various resources from which the APSFC can raise funds are briefly presented in the Figure 1.The position of the APSFC in case of lendable resources and sanctions can be seen from the data provided in the Table 1. The time series regression statistics over the study period relating to resource structure and sanctions are given separately as follows:

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	663.8807	133.4887	4.97331	0.00108	356.0552	971.7062
X Variable 1	176.8968	21.51365	8.22253	3.58E-05	127.2862	226.5074
Dependent Variable: Resources						
The time series regression equation is Resources (*Y*) = 663.8+176.89 Time Period (*X*)						
	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**
Intercept	184.884	69.60002	2.656379	0.028968	24.38606	345.3819
X Variable 1	117.3984	11.21706	10.46606	6.04E-06	91.53178	143.2649
Dependent Variable: Sanctions						
The time series regression equation is Sanctions(*Y*) = 184.8+117.39 Time Period (*X*)						

The amount of resources decreased from ₹1160.95 crores in 2002-03 to ₹ 1090.23 crores in 2004-05, and thereafter increased continuously to reach a value of ₹ 2647.31 crores in 2011-12. The mean resources over the study period were ₹ 1636.81 crores. The amount of sanctions increased from ₹ 419.86 crores in 2002-03 to ₹ 1368.82 crores in 2011-12. The mean sanctions over the study period were ₹ 830.57 crores. The compound annual growth rate (CAGR) of resources was 9.0% and that of sanctions was 14.0% . The mean percentage of sanctions in relation to total resources of the Corporation over the study period was 49.35%. The correlation co-efficient between resources of the APSFC and its sanctions over the study period is 0.96.

Based on the above data analysis, the following hypothesis was developed :

❖ **H_0: There is a close association between resources of the APSFC and its sanctions to the industrial sector during the study period.**

The calculated value of *t* for the observed correlation coefficient is 3.769, and the critical value of *t* at 5% level of significance for 18 degrees of freedom (for v =18, $t_{0.05}$) is 2.106. As the calculated value is greater than the critical value, thus, the null hypothesis (H_0) is rejected. Thus, it can be said that there is no close association between resources and gross sanctions provided by the Corporation.

Objectives of the Study

The present study has the following specific objectives :

1) To examine the correlation between the amount of resources and sanctions made by the APSFC.
2) To calculate the cost of various sources of funds mobilized by the Corporation.
3) To determine the cost of debt funds employed by the Corporation in its operations.
4) To measure the over cost of funds employed (WACC or LME-Index) by the Corporation.
5) To analyze the Corporation's equity multiplier (EM), i.e., ratio of operating assets to net worth.
6) To suggest feasible ways and means to improve the performance of the Corporation in its resource mobilization.

Review of Literature

Pandey (2010) made an attempt on understanding the process of capital structure management of DFIs using the Industrial Credit and Investment Corporation of India (ICICI) as a case study. The results indicate that the

development of the capital structure pattern of the ICICI has not been systematic. It was also shown that the capital structure of DFIs greatly influences the investment decisions. The recommendations were **(a)** to lift, at least partially, the restriction on lending rate of DFIs, **(b)** to convert the Government loans to DFIs into equity, and **(c)** DFIs should use the cost of capital concept to improve the quality of their appraisal.

Barth, Konchitchki, and Landsman (2013) highlighted the extent to which earnings and change in earnings co-vary contemporaneously with return. They found that earnings transparency is significantly negatively associated with the cost of capital by showing that their earnings transparency measure is negatively related to subsequent excess returns and difference in the portfolio.

Statement of the Problem

An appropriate capital structure acts as the basis for sound operations of a state financial corporation. The capital structure represents the mix of different sources of long-term funds in the total capitalization. The adequacy of resources depends on resourcefulness of the available resources (Heins & Sprenkle, 1969) Like the other SFCs in the country, the resource mix of APSFC mainly consists of equity share capital, reserves, bonds and debentures, refinancing from the IDBI and the RBI, and loans in lieu of share capital. Therefore, it was found that the equity base of the Corporation is not sound enough to diversify its assistance. Linking the borrowing powers with equity as per the provisions of the SFCs Act helps in the potentiality of the Corporation in lending operations. The Corporation heavily depends on debt finance by issuing bonds and debentures. A high degree of debt component in capital structure increases the risk and may lead to financial distress in adverse times. A high cost of funds employed makes it very difficult to improve the profitability of the Corporation. Normally, the cost of bond financing of the Corporation is cheaper as compared to raising funds through equity because interest on debt is allowed as an expense for tax purposes. Therefore, a good and complete exercise on resource planning for short-term as well as long-term periods is a need of utmost importance to the Corporation in order to cater to the growing financial needs of industrial concerns. The present paper is a modest attempt in this direction, and focuses attention on measuring the efficiency of the Corporation in its resource mobilization. In this paper, an attempt has been made to discuss some important aspects of resource mobilization, like trends in resources and sanctions provided by the Corporation, cost of various sources of funds, cost of debt funds, weighted average cost of capital (LME-Index), and equity multiplier.

Methodology

❖ **Research Design:** In view of the objectives of the study, an exploratory research design was adopted. Exploratory research is one which largely interprets the already available information, it lays particular emphasis on analysis and interpretation of the existing and available information, and it makes use of secondary data.

❖ **Sources of Data:** The study is based on secondary data. The secondary data consists of the annual reports of APSFC ranging for the last 10 years. Various other sources like journals, magazines, published books and websites in the field of development banking were also referred to.

❖ **Tools of Analysis:** The data collected for the study was analyzed logically and meaningfully to arrive at meaningful conclusions. The statistical tools applied for data analysis are percentages, simple growth rate, compound annual growth rate, mean-variance, standard deviation, correlation, and t-test.

❖ **Scope and Period of the Study:** The scope of the study is defined below in terms of the role of APSFC in providing necessary financial assistance for the industrial development in the State. *Firstly*, the binary concepts like resources, sanctions, sanctions as percentage of resources, trends in cost of various sources of funds, trends in after tax cost of bond financing, proportions of different sources of funds, liability management efficiency index, ratio of operating assets to net worth (equity multiplier) etc., were used for measuring the efficiency in resource mobilization by the Corporation to answer various objectives of the study. *Secondly*, the study is based on the annual reports of the Corporation for a period of 10 years from 2002-03 to 2011-12.

❖ **Limitations of the Study:** The information used is primarily from historical annual reports available to the public and the same doesn't indicate the current situation of APSFC. A detailed analysis could not be carried for the research work because of time constraints.

Data Analysis and Interpretation

❖ **Cost of Various Sources of Funds:** 'Cost of funds' is an important criterion of resource mobilization in order to bring a reasonable spread between cost and return. The methods of calculating the cost of funds applied by the SFCs usually differs from the methods followed by other corporate bodies. The cost of funds and kinds of funds available to the Corporation for its lending operations are closely linked with its resource structure. Institutional investors, through negotiations, usually subscribe most of the capital of the SFCs because they work under uncertain conditions of capital subscription (Reddy, 2013) . In case of equity of funds, the rates of dividend are declared by the State Government even before the issues are made. Further, the SFCs are not allowed to declare higher dividends than the rates prescribed by the State Government. However, for debt, the rates of interests are uniformly fixed by the IDBI and the quantum of debt to be raised can also be specified in the provisions of the SFCs Act (Reddy, C.V., & Reddy, C.N., 2003).

The cost of various sources of funds of the APSFC is discussed below to have a better insight into the cost efficiency in mobilizing resources. The year-wise trend in the cost of various sources of funds of the APSFC over the period of 10 years is depicted in the Table 2.

Table 2 : APSFC - Trends in Cost of Various Sources of Funds (Percentages)

Year	K_e	K_b	K_r	K_c	K_i	K_f	K_s	K_t
2002-03	7.5	11.56 (5.77)	10.67 (5.34)	20.00 (10.00)	5.33 (2.67)	3.63 (1.81)	--	--
2003-04	7.5	11.85 (5.92)	8.20 (4.10)	--	5.33 (2.67)	2.24 (1.12)	--	--
2004-05	7.5	18.62 (9.31)	8.69 (4.35)	--	1.12 (0.56)	5.41 (2.70)	--	--
2005-06	7.5	13.41 (6.70)	7.54 (3.77)	--	1.12 (0.56)	7.80 (3.90)	--	--
2006-07	7.5	10.30 (5.15)	7.65 (3.82)	--	6.48 (3.24)	10.91 (5.45)	--	2.79 (1.40)
2007-08	7.5	6.91 (3.46)	7.41 (3.70)	--	7.23 (3.62)	8.02 (4.01)	--	13.03 (6.51)
2008-09	7.5	7.46 (3.73)	7.44 (3.72)	--	17.01 (8.51)	11.73 (5.84)	--	19.91 (9.96)
2009-10	7.5	7.40 (3.70)	8.26 (4.13)	--	5.32 (2.66)	6.30 (3.15)	--	3.33 (1.66)
2010-11	7.5	8.83 (4.42)	6.64 (3.32)	--	5.32 (2.66)	10.20 (5.10)	--	6.84 (3.42)
2011-12	7.5	6.54 (3.27)	8.30 (4.15)	--	5.32 (2.66)	12.66 (6.33)	--	4.93 (2.46)

(Figures in parenthesis represent after tax cost of funds.)

Note: K_e =Cost of Equity Capital, K_b = Cost of Bond Financing, K_r =Cost of Refinancing from SIDBI, K_c = Cost of Refinancing from IDBI, K_i = Cost of Loan Pending Conversion to Share Capital, K_f = Cost of fixed Deposits, K_s = Cost of Loan from State Govt. in lieu of Capital, K_t = Cost of Term Loans from Banks.

Source: Compiled and calculated from the Annual Reports of APSFC (2002-03 to 2011-12)

The following observations were made from the details given in the Table 2 :

a) Cost of Equity (K_e): The equity of APSFC consists of share capital, reserves, and surpluses. The cost of equity share capital in the form of dividend, which is guaranteed by the State Government, remains fixed. The minimum rate of dividend guaranteed by the State Government is 7.5% per annum, which is denoted by 'K_e'. The cost of equity share capital can be computed according to the constant growth valuation model, which is also called the Gordon model (Khan & Jain, 2004). According to this model, the cost of common shares is measured by solving the following equation:

$$K_e = \frac{D_1}{P_0} + g$$

D_1 = Expected dividend per share at the end of the first year, which is equal to the guaranteed dividend,
P_0 = Net proceeds per share/current market price of the common share,
g = The constant annual growth expected in dividends which is equal to zero.

Therefore, using the cost of equity formula, 'K_e' would be as follows:

$$K_e = \frac{7.5}{100} + 0 = 7.5\%$$

As in the case of share capital, there will be no explicit cost in the case of reserves, but there will be an implicit cost, which is normally equal to the cost of equity capital. The cost of reserves and surpluses denoted by K_p is assumed to be equal to the cost of equity share capital. Symbolically, it can be denoted as $K_p = K_e$ (Godfrey & Espinosa, 1996).

b) Cost of Debt (K_d): Debt in the case of the APSFC mainly consists of **(a)** Bonds, **(b)** refinance from the SIDBI and IDBI, **(c)** loan pending conversion to capital, **(d)** borrowings from the RBI, and **(e)** fixed deposits (Modigliani & Miller, 1958).

1) Cost of Bonds : The Table 2 depicts the data regarding the cost of bond financing and shows the year-wise trend in after tax cost of bond financing, which is denoted by K_b. It depends on the rate of interest fixed by IDBI, the apex institution, and the amount incurred in floatation costs at the time of bond issued by the Corporation (Himachalam & Reddy, 2001). In order to measure the cost of bond financing , we can use the following equation:

$$K_b = \frac{(I + Fc)}{A} \text{ x } 100$$

where
I = Interest charges,
Fc = Floatation charges,
A = Sale proceeds of the bonds.

By using the above formula, the calculated value of before tax cost and after tax cost of the bonds is shown in the Table 3 (for the period of 10 years). The before tax cost shows an increasing trend, as it increased from 11.56% in 2002-03 to 18.62 % in 2004-05, and further declined to 6.54 % in 2011-12. There was a decline in the before tax cost because of the redemption of old bonds at a higher interest rate and the issuing of new bonds at a lower rate during the later part of the study period. The formula for calculation of after tax cost of bonds is as follows :

$$K_d = K_b(1 - t)$$

where
t = tax rate, which is equal to 50%.

It can also be observed from the Table 3 that the after tax cost ranged between a minimum of 3.27% in 2011-12 and a maximum of 9.31 % in 2004-05.

Table 3 : APSFC - Trends in after Tax Cost of Bond Financing (₹ in Lakhs)

Year	Interest Charges	Floatation Cost	Total Cost	Value of Bonds	Before Tax Cost of Bonds (%)	After Tax Cost of Bonds (%)
1	*2*	*3*	*4 = 2 + 3*	*5*	*6 = 4 ÷ 5*	*7 = 6 ÷ 2*
2002-03	6049.43	33.94	6083.37	52631.50	11.56	5.77
2003-04	5845.25	--	5845.25	49331.50	11.85	5.92
2004-05	5014.89	--	5014.89	26919.00	18.62	9.31
2005-06	2514.08	--	2514.18	18742.00	13.41	6.70
2006-07	1854.82	--	1854.82	18027.00	10.30	5.15
2007-08	2284.04	--	2284.04	33015.00	6.91	3.46
2008-09	3124.49	--	3124.49	41882.00	7.46	3.73
2009-10	3925.09	--	3925.09	53097.00	7.40	3.70
2010-11	4462.12	--	4462.12	50497.00	8.83	4.42
2011-12	4219.81	--	4219.81	64525.00	6.54	3.27

Source: Compiled and calculated from the Annual Reports of APSFC (2002-03 to 2011-12)

2) Cost of Refinance from SIDBI: The cost of refinance from SIDBI is denoted by 'K_r' based on the rate of interest charged by the SIDBI while extending the refinancing facility at concessional rates of interest to the units located in backward areas and on foreign currency loans. The Table 2 shows that the rate of interest charged by the SIDBI on refinance facility to the Corporation is not stable, and that it has changed from time to time. The rate of interest charged by the SIDBI varied between a maximum of 5.34 % in 2002-03 and a minimum of 3.32 % in 2010-11, and the average value of the maximum and minimum rates, i.e., 4.33% (after-tax basis), is taken as the present cost of refinancing from the SIDBI. The year-wise cost of refinance for the study period is tabulated in the Table 3.

3) Cost of Refinance from the IDBI: The cost of refinance from the IDBI is denoted by 'K_c' based on the rate of interest charged by the IDBI while extending the refinancing facility at concessional rates of interest to the units located in backward areas and on foreign currency loans. The Table 2 depicts the rate of interest charged by the IDBI on refinance facility to the Corporation. The IDBI discontinued its refinancing facility to APSFC from the financial year 2003-04. The rate of interest charged by the IDBI during 2002-03 was 10% (on an after tax basis).

4) Cost of Borrowings from the RBI and the State Govt. : The RBI also provides funds to the Corporation in the form of direct subscription to the ad-hoc bonds issued by the Corporation. The cost of such borrowings from the RBI depends on the rate of interest charged by the RBI. There were no such borrowings by the APSFC during the study period.

5) Cost of Loan Pending Conversion to Share Capital: The APSFC can also raise funds from the State Government and the IDBI in the form of loan pending conversion to share capital denoted by $'K_i'$ which carries a fixed rate of interest. The rate of interest on such mobilization is equivalent to the rate of interest fixed by the IDBI. However, such mobilization does not carry any interest charges. The rate of interest in loan pending conversion to share capital was 7.5 % during the period of the study as per the directives of the IDBI. But the actual cost of loan pending conversion to share capital showed a mixed trend during the study period and ranged in between a maximum of 8.51% and 0.56 % (after tax basis).

6) Cost of Fixed Deposits: It is the rate of interest offered by the Corporation while accepting deposits from the public and denoted by K_f . During the study period, APSFC accepted deposits from the public at varied rates of interest. Cost of fixed deposits (after-tax cost basis) increased from 1.81% in 2002-03 to 6.33% in 2011-12.

It may be seen from the Table 2 that after comparing the costs of raising funds from different sources by the Corporation, the cheapest source of funds is equity capital, which includes share capital, reserves and surpluses, and loans pending conversion to share capital. Next in order appear bond financing and borrowings from the RBI which were cheaper sources of funds as compared to fixed deposits and refinancing from the IDBI in the later years of the study period. On an after tax basis, next in order appear bond financing and refinancing from the IDBI as cheap sources of funds of the Corporation.

An important point to remember is that the cost of funds raised by the SFCs from almost all the sources is controlled and regulated. As a result, the cost of funds is least affected by the market forces. Therefore, it is very difficult to say that a particular source of funds will be the cheapest at all times. However, once the provision of minimum guaranteed dividend is dropped, debt becomes the cheapest source of funds and more so, on an after tax basis (Modigliani & Miller, 1963).

❖ **Efficiency Indexes in Resource Mobilization:** With a view to analyze the efficiency of the Corporation in resource mobilization, two indices were calculated and analyzed. They are :

1. Weighted average cost of capital (WACC) or liability management efficiency (LME) index;

2. Equity multiplier

❖ **Weighted average cost of capital (WACC) or LME – index:** The weighted average cost is synonymous with the liability management efficiency index of the funds raised by the Corporation. The LME - index indicates precisely the amount of cost incurred on an average for every ₹100 of funds raised by the Corporation in resource mobilization. The method of computing the LME - index is similar to that of weighted average cost of capital of the total funds raised by

the Corporation, and 'K_0' denotes it (Miles & Ezzell,1980). The index is calculated by solving the following equation :

$$K_0 = \sum_{S=1}^{n} K_s * W_s$$

where

K_s = the after tax cost of a source of funds,
W_s = the weighted, being the proportion of respective sources in total funds,
n = Number of sources,
K_0 = Weighted average cost of capital.

In the case of the APSFC, the weighted average cost of capital is calculated as follows:

$$K_0 = K_e*W_e + K_b*W_b + K_r*W_r + K_c*W_c + K_i*W_i + K_f*W_f + K_s*W_s + K_t*W_t$$

where

K_e = cost of equity financing,
K_b = cost of bond financing (after tax),
K_r = cost of refinancing from SIDBI,

Table 4 : APSFC - Proportions of Different Sources of Funds (Percentages)

Year	W_e	W_b	W_r	W_c	W_i	W_f	W_s	W_t
2002-03	0.08	0.46	0.42	0.02	0.01	0.01	--	--
2003-04	0.08	0.45	0.43	--	0.01	0.03	--	--
2004-05	0.09	0.25	0.58	--	0.01	0.07	--	--
2005-06	0.08	0.16	0.64	--	0.05	0.06	--	--
2006-07	0.07	0.15	0.62	--	0.05	0.04	--	0.07
2007-08	0.13	0.20	0.55	--	0.04	0.04	--	0.05
2008-09	0.12	0.24	0.61	--	0.01	0.02	--	0.02
2009-10	0.11	0.27	0.55		0.01	0.03	--	0.03
2010-11	0.10	0.24	0.55	--	0.01	0.03	--	0.08
2011-12	0.08	0.26	0.49	--	0.01	0.02	--	0.14
Mean Percentage	**0.09**	**0.27**	**0.54**	**0.02**	**0.02**	**0.03**		**0.06**

Source: Compiled and calculated from the Annual Reports of APSFC (2002-03 to 2011-12)

Table 5 : APSFC - Measurement of Liability Management Efficiency Index (LME -Index) (Percentages)

Year	K_e*W_e	K_b*W_b	K_r*W_r	K_c*W_c	K_i*W_i	K_f*W_f	K_s*W_s	K_t*W_t	K_0
2002-03	0.60	2.65	2.24	0.20	0.03	0.02	--	--	5.74
2003-04	0.60	2.66	1.76	--	0.03	0.03	--	--	5.08
2004-05	0.68	2.33	2.52	--	0.01	0.19	--	--	5.73
2005-06	0.60	1.07	2.41	--	0.03	0.23	--	--	4.34
2006-07	0.53	0.77	2.37	--	0.16	0.22	--	0.10	4.15
2007-08	0.98	0.69	2.04	--	0.14	0.16	--	0.33	4.34
2008-09	0.90	0.90	2.27	--	0.09	0.12	--	0.20	4.48
2009-10	0.83	1.00	2.27	--	0.03	0.09	--	0.05	4.27
2010-11	0.75	1.06	1.83	--	0.03	0.15	--	0.27	4.09
2011-12	0.60	0.85	2.03	--	0.03	0.13	--	0.34	3.98

Source: Table No.2 & Table No.4.

K_c = cost of refinance from IDBI,
K_i = cost of loans pending conversion to share capital,
K_f = cost of fixed deposits,
K_s = cost of loan from the State Government,
K_t = cost of term loans from banks,
W_e = The proportion of equity in total funds,
W_b = The proportion of bonds in total funds,
W_r = The proportion of refinance from the SIDBI in total funds,
W_c = The proportion of refinance from the IDBI in total funds,
W_i = The proportion of loans pending conversion to share capital in total funds,
W_f = The proportion of fixed deposits in total funds,
W_s = The proportion of loan from the State Government in total funds.
W_t = The proportion of term loans from banks.

Table 6 : APSFC - Ratio of Operating Assets to Net worth (Equity Multiplier) (₹ in crores)

Year	Total Operating Assets	Share Capital	Loan in lieu of Share Capital	Reserves & Surpluses	Total equity	Ratio (EM)
	1	*2*	*3*	*4*	*5=(2+3+4)*	*1÷ 5*
2002-03	1253.28	87.71	--	20.14	107.85	11.62
2003-04	1200.73	89.71	--	20.14	109.85	10.93
2004-05	1192.81	92.21	--	20.14	112.35	10.61
2005-06	1284.45	92.21	--	20.14	112.35	11.43
2006-07	1419.44	92.21	--	21.57	113.78	12.47
2007-08	1840.18	206.00	--	26.76	232.76	7.90
2008-09	2034.70	206.00	--	69.61	275.61	7.38
2009-10	2368.23	206.00	--	137.29	343.29	6.89
2010-11	2560.66	206.00	--	183.17	389.17	6.57
2011-12	2926.55	206.00	--	211.40	417.40	7.01

Source: Compiled from the Annual Reports of APSFC (2002-03 to 2011-12)

In the calculation of weighted average cost of capital, the after tax cost of various sources of funds (shown in the Table 2) was taken into consideration. The weights being assigned their proportion in total funds (furnished in the Table 4) were taken into account, and it was assumed that the sum of weights is equal to 100%. The computed values of weighted average cost of capital for the 10 years period are presented in the Table 5. The higher the value of weighted cost of funds, the lower is the efficiency in management of liabilities or vice-versa.

It can be noted from the Table 6 that during the study period, the weighted average cost of capital declined from 5.74 % in 2002-03 to 3.98 % in 2011-12. This was due to the redemption of old bonds at a higher interest rate and the issue of new bonds at a lower rate during the later part of the study period.

❖ **Ratio of Operating Assets to Net Worth (Equity Multiplier):** The ratio of operating assets to net worth, also called equity multiplier (EM) , examines the efficiency of the Corporation in resource management from the point of view of size, while the LME - index examines the efficiency from the point of view of cost (Waterman,1953). It can be calculated by dividing the total operating assets with total equity. Symbolically :

$$Equity\ Multiplier = \frac{Total\ Operating\ Assets}{Total\ Equity}$$

For the purpose of calculation of equity multiplier, the net value of total assets is considered as operating assets and is divided by the quantum of total equity. The ratio indicates the efficiency of the Corporation in converting the equity

into operating assets. The higher the value of EM, the higher is the efficiency; the lower is the value, the lower is the efficiency in the utilization of funds (Heaton, 1998). The data relating to equity multiplier is depicted in the Table 6. From the Table 6, it can be inferred that the value of equity multiplier slowly declined during the study period, i.e., from a figure of 11.62 in 2002-03, it declined to attain a value of 7.01 in 2011-12, indicating the inefficiency of the Corporation in the usage of equity funds.

Findings

1) The amount of resources decreased from ₹1160.95 crores in 2002-03 to ₹1090.23 crores in 2004-05, and thereafter increased continuously to ₹ 2647.31 crores in 2011-12. The mean resources over the study period were ₹ 1636.81 crores.

2) The amount of sanctions increased from ₹ 419.86 crores in 2002-03 to ₹ 1368.82 crores in 2011-12. The mean sanctions over the study period were ₹ 830.57 crores.

3) The compound annual growth rate (CAGR) of resources was 9.0%, and that of sanctions was14.0 %.

4) The mean percentage of sanctions in relation to total resources of the Corporation over the study period was 49.35 %.

5) The cost of equity share capital in the form of dividend, which is guaranteed by the State Government, remains fixed. The minimum rate of dividend guaranteed by the State Government is 7.5 % per annum.

6) The before tax cost increased from 11.56 % in 2002-03 to 18.62 % in 2004-05 and further declined to 6.54 % in 2011-12. This was due to the redemption of old bonds at a higher interest rate and the issue of new bonds at a lower rate during the later part of the study period.

7) The after tax cost of debt of the Corporation ranged between a minimum of 3.27% in 2011-12 and a maximum of 9.31 % in 2004-05.

8) It was found that the rate of interest charged by the SIDBI on refinance facility to the Corporation was not stable, and that the rate of interest changed from time to time. The rate of interest charged by the SIDBI varied between a maximum of 5.34 % in 2002-03, and a minimum of 3.32% in 2010-11. The average value of the maximum and minimum rates, i.e., 4.33% (after-tax basis) was taken as the present cost of refinancing from the SIDBI.

9) The IDBI discontinued its refinancing facility to the APSFC from the financial year 2003-04. The rate of interest charged by the IDBI during 2002-03 was 10 % (on an after tax basis).

10) The cost of borrowings from the RBI depends on the rate of interest charged by the RBI. There were no such borrowings by the APSFC during the study period.

11) The rate of interest on loan pending conversion to share capital was 7.5% during the period of the study as per the directives of the IDBI. But the actual cost of loan pending conversion to the share capital showed a mixed trend during the study period and ranged in between a maximum of 8.51% and 0.56% (on an after tax basis).

12) The cost of fixed deposits of the APSFC (after-tax cost basis) increased from 1.81% in 2002-03 to 6.33 % in 2011-12.

13) The weighted average cost of capital of the Corporation declined from 5.74% in 2002-03 to 3.98 % in 2011-12. It is due to the redemption of old bonds at a higher interest rate and the issue of new bonds at a lower rate during the later part of the study period.

14) The value of equity multiplier declined slowly during the study period, i.e., from 11.62 in 2002-03 to 7.01 in 2011-12, indicating the inefficiency of the Corporation in the usage of equity funds.

Suggestions

In the light of the above findings, I have offered the following suggestions:

1) The dividend on equity shares of the Corporation, which is guaranteed by the State Government, remains fixed at

7.5 % per annum. This minimum rate of dividend guaranteed by the State Government must be increased at least by 1 %. An increased dividend on equity shares, when other things remain constant, increases the intrinsic value of the shares.

2) The after tax cost of debt financing showed a declining trend during the study period. It is because of the redemption of old bonds at a higher interest rate and the issue of new bonds at a lower rate. The APSFC is suggested to maintain the same philosophy, which will reduce the weighted average cost of capital.

3) The value of equity multiplier declined during the study period, indicating the inefficiency of the Corporation in the usage of equity funds. The APSFC is suggested to consider the leverage impact on its profitability.

4) The APSFC has been heavily dependent upon external sources of funds without strengthening its internal financial base. Therefore, it is suggested that it should make efforts to appropriate maximum of its profits every year to reserves, so as to strengthen the internal financing of its requirements. For this, the present ceiling limit of 40 % on the amount that can be transferred to special reserve under section 36 (1) (viii) of the Income Tax Act should be revised to 50 %.

5) The Corporation mainly depends upon its debt capital without having a sound equity base. In this context, the Corporation has to give weightage to the leverage impact on its profitability. If the leverage gives a positive impact, the Corporation has to go in for any amount of debt and vice-versa.

6) If the rate of return is in excess of the cost of capital, the Corporation can make use of debt funds to maximize benefits. It is also suggested that the Corporation can find alternatives to debt, which are less costly.

Conclusion

The basic purpose of this research is to highlight the relationship between the amount of resources available with the APSFC and sanctions made by it, the calculation of the cost of various sources of funds (specific cost and weighted average cost of all sources) mobilized, and to analyze the Corporation's equity multiplier (EM), i.e., the ratio of operating assets to net worth. In this paper, I have also made an attempt to suggest feasible ways and means to improve the performance of the Corporation in its resource mobilization. The highlights of this paper are as follows :

(i) The mean percentage of sanctions in relation to total resources of the Corporation over the study period were 49.35 %, and it can be said that there is no close association between resources and gross sanctions made by the Corporation. So, it can be understood that the sanctions made by the Corporation were not dependent upon its resource structure, **(ii)** the minimum rate of dividend on equity shares of the Corporation guaranteed by the State Government is 7.5 % per annum. This minimum rate of dividend guaranteed by the State Government will be helpful in estimating the intrinsic value of the shares, **(iii)** the weighted average cost of capital of the Corporation declined over the study period due to the redemption of old bonds at a higher interest rate and the issue of new bonds at a lower rate during the later part of the study period, **(iv)** the Corporation is mainly dependent upon its debt capital without having a sound equity base. If the leverage gives a positive impact, the Corporation has to go in for any amount of debt and vice-versa. Therefore, the Corporation needs to assess the impact of leverage on shareholders' profitability.

It can be concluded that the findings of the study are quite useful for APSFC in deciding its future course of action for the reduction of cost of specific sources of capital, overall cost of capital, designing optimum capital structure, and magnifying the shareholders' profitability with optimum usage of levered (debt) capital, etc.

Scope for Future Research

The APSFC, as a state level developmental financial institution, is playing its role in the achievement of rapid and high-quality industrial growth in Andhra Pradesh. Since its inception, the APSFC has launched many entrepreneur-friendly schemes to provide term loans to suit the needs of tiny, small, and medium-scale entrepreneurs, and is contributing towards the balanced regional development of the State.

In this paper, I have made an attempt to measure the soundness of the Corporation in resource mobilization by calculating the efficiency indexes in resource mobilization. A sound capital base of the Corporation helps it in performing operations in terms of granting loans and advances to industrial units in the state. A poor and inadequate resource base affects the operational efficiency and profitability of the Corporation in discharging its duties. So, there

is a need for continuous evaluation of operational and financial performance of the Corporation. Hence, there is a vast scope for further research into various aspects, for example, the role of APSFC in promoting SMEs in Andhra Pradesh, recovery performance of the Corporation, impact of leverage on shareholders' profitability , and clients' perception on financial services provided by APSFC, and so forth.

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