Chapter-5

An analysis of the Expenditures of the M.S. University of Baroda

Section I

5.01 Introduction

"Higher Education in India has received enormous financial support from both the Central and the State Governments. At the start of the Planning process in 1950, the total allocation for higher education was only Rs.170 million which has now gone beyond Rs.90,000 million. This impressive increase is offset to some extent by the rise in prices and rise in the number of students entering higher education. An analysis of government expenditure on higher education shows a real annual growth rate of 7.5% in the 1950s, 11%in the 1960s, 3.4%, in the 1970s, and 7.3% in the 1980s" (NIEPA, 2005). While it is important to examine and address the problems related to sourcing of external finances, and of income generated within the faculties, the more important aspect concerns how efficiently the finances are utilized, and what magnitudes of expenditure are incurred. (Panchamukhi, 1977)

"Since budget resources are limited, and such resources as are available, need to be allocated to expanding primary education, it is important to recognise that the universities must make greater efforts to supplement resources from the government" (Government of India, 2001, 2002-2007). Yet another fact is that the government and UGC are finding it increasingly difficult to even sustain the current level of funding to the institutions of higher education. Managing the present financial liabilities of the universities, especially the state universities, is in utter chaos. In the eighth plan itself financially self-supporting higher education has been advocated for the "expansion of higher education in an equitable and cost-effective manner, in the process, making the higher education system financially self-supporting" (Government of India, 1992)

The approach paper to the Ninth Five-year Plan says, "emphasis will be placed on consolidation and optimal utilization of the existing infrastructure through institutional networking and through Open University system. Grants-in-

aid will be linked to performance criteria to improve quality and inject accountability. Fees will be restructured on unit cost criteria and paying capacity of the beneficiaries. Additional resources will be generated by involving industry and commerce and through contribution from community" (Government of India, 1997). In the 11^{th} plan, the centre envisages an outlay of about 30 percent for higher education (including Technical Education). Even at such investment levels UNESCO puts India among the lowest spender on education per student in the world. (Vaidya, S. 2009)

The detailed analysis of the University revenues in chapter four provides the background against which expenditures should be examined. The pattern of expenditure is more revealing of an institution's scheme of priorities, and efficiency in resource management than the pattern of revenue. This chapter presents an analysis of the growth of expenditure under various heads. The chapter has six sections. Section one deals with general aspects related to expenditure, section two deals with trends in the plan and non-plan expenditure. section three deals with on capital and revenue account expenditure. Section four examines recurring an non-recurring heads of expenditure. Section five attempts at examining the cost of education in terms of private cost and social cost Section six deals with the forecasting of Non-plan revenue expenditures for a period of eight years and conclusions. The forecasting of expenditure might perhaps facilitate understanding of the relationship between heads of revenue and expenditure for management of university's revenue. It will also help clarify the burden of over-expenditures so that it is effectively reduced by using the University's limited finances.

Section II

University is a spending and not an earning institution and such a magnitude and structure of the total expenditure of the University over a period of time gives an indication of its growth and dynamism. However, the rise in expenditure due to inflation may erode the real growth of the University and may not depict any dynamism (Gupta Arti, 2005).

Total Expenditures of The M.S. University increased more than 11 fold during the study period. It increased from Rs.420.90 lakhs in 1980-81 to Rs.1730.94 lakhs in 1990-91; it further increased to Rs. 7418.67 lakhs in 2006-07. The rate of growth during the period 1980-81-1990-91 has been 15% per annum. Though in absolute terms, the expenditure has increased but when one looks at the growth, the trend has been towards decline and during the period 1990-91 to 2006-07, the rate of growth declined to 10% per annum. The scenario changes significantly when one looks at these figures at constant price. The compound annual rate of growth at constant price which was 8.27% per annum during the pre reform period declined to 2.86% per annum. This means that the growth of expenditure of the university have declined to almost one third, a significant decrease.

5.02 Plan and Non-plan Expenditure

The financial support to the university can be understood in terms of trends in the plan and non-plan components. This can be useful in setting up the directions for further development. Plan expenditure is incurred on the development whereas non-plan expenditure on the maintenance. As the table shows that plan expenditure as proportion of total expenditure has been low and also declining over the years whereas the non-plan expenditure has been increasing over the years. This large share of non-plan expenditure indicates that much of the expenditure is incurred on maintenance and salaries and the low and steadily declining trend in the plan expenditure is an indication that the universities have still to receive support for expansion and improvement.

Table 5.01
Plan and Non-plan Expenditure as % of total Expenditure

years	Plan	Non-plan	Growth index of non-plan exp.
1980-81	16.44	83.56	100
1981-92	14.39	85.61	117.04
1982-83	18.82	81.18	129.40
1983-84	16.31	83.69	152.88
1987-88	23.65	76.35	237.83
1988-89	20.00	80.00	282.63
1989-90	13.58	86.42	368.19
1990-91	12.02	87.98	411.24
1991-92	10.30	89.70	434.70
1992-93	11.79	88.21	468.24
1993-94	12.49	87.51	534.24
1994-95	12.24	87.76	584.24
1995-96	9.27	90.73	661.00
1996-97	13.20	86.80	733.68
1997-98	9.03	90.97	736.80
1998-99	10.93	89.07	939.59
1999-00	12.01	87.99	1073.38
2000-01	10.96	89.04	1493.44
2001-02	13.58	86.42	1255.50
2002-03	13.92	86.08	1253.64
2003-04	13.25	86.75	1314.88
2004-05	13.43	86.57	1159.44
2005-06	18.27	81.73	1401.53
2006-07	15.72	84.28	1762.53

Note: The Growth Index has been calculated with given below formula.
Growth Index = Present Year/Base Year*100
Base year: 1980-81=100

The plan expenditure was as low as 9.2% during 1995-96 whereas the share of non-plan expenditure was around 90%. This also means and the flow of funds for development purposes is gradually declining .A decline in the plan expenditure retards growth of the university which may affect the overall growth of the university in the long run. A sharp increase in the non-plan expenditure is

also reflected in the growth index which has increased to 1762.53 during 2006-07 compared to 411 during the early 1990s and 100 during 1980-81.

An attempt is now made here to understand the non-plan expenditure by sub heads. This is shown in the following table.

Table 5.02
Heads of expenditure (non- plan revenue account %) (1980-81 to 2006-07)

Years	University General Administration	Faculties, Institute & other Facilities	Examination Charges	Maintenance of Fixed Assets	Students' Welfare Activities	University Auxiliary Services
1980-81	3.81	76.80	2.61	1.81	11.39	3.59
1981-82	3.54	75.32	2.97	1.86	12.47	3.84
1982-83	3.64	74.73	2.43	4.05	11.28	3.88
1983-84	3.86	73.76	2.89	5.85	9.68	3.96
1984-85	3.90	75.01	1.93	5.12	9.99	4.05
1985-86	3.75	76.70	1.88	5.01	8.97	3.70
1986-87	3.89	74.84	1.57	5.94	10.08	3.68
1987-88	4.62	72.60	1.86	6.58	10.82	3.52
1988-89	4.28	74.64	2.28	5.30	10.26	3.24
1989-90(RE)	3.79	76.77	1.80	4.84	9.27	3.53
1990-91(RE)	4.72	74.06	2.87	5.07	9.97	3.30
1991-92	4.57	74.58	1.62	5.43	9.98	3.82
1992-93	4.33	72.77	2.60	5.85	10.91	3.53
1993-94	4.04	71.87	3.40	7.04	10.20	3.44
1994-95	4.11	73.67	3.04	5.79	10.17	3.22
1995-96	4.22	73.99	2.46	5.65	10.45	3.23
1996-97	4.08	73.81	2.28	6.25	10.46	3.11
1997-98	4.10	74.60	2.50	4.84	10.83	3.14
1998-99	5.82	71.98	1.88	5.76	11.31	3.24
1999-00	4.49	76.80	1.87	4.84	9.60	2.40
2000-01	3.34	83.87	1.02	3.04	6.98	1.75
2001-02	3.89	79.47	1.53	3.84	9.04	2.24
2002-03	3.91	77.09	3.73	3.71	9.34	2.22
2003-04	3.89	77.56	3.51	3.95	9.13	1.96
2004-05	3.89	76.32	3.88	5.02	9.03	1.86
2005-06	4.03	76.61	3.84	4.24	9.36	1.92
2006-07(RE)	3.82	79.92	2.12	3.75	8.32	2.06

Notes: Others heads included sub heads like dead stock and equipments, pension, visiting professors, and computer centre etc., which are inconsistent during entire two decades.
RE: Revised Budgeted Estimates

5.03 Expenditure on Faculties/Institutions and Students' Welfare activities

Table 5.02 shows trends of expenditure under non plan revenue account during 1980-81 to 2006-07 by sub-heads. As is shown in the table under the non-plan revenue account, expenditure on faculties and institutions constitutes one of the leading head of expenditure. This includes full provision for vacant posts, normal provision for higher grade, scale to the teachers and non-teaching employees of the University, annual increments on salary to the staff, revision of dearness allowances, as well as revision of pay-scale to the employees, and provision for expenditure on contingencies, printing, stationary, etc. This head constitutes the highest share in the total expenditure.

Nearly two-third of the expenditure is incurred under this head. The other important head is the students' welfare activities. This includes,

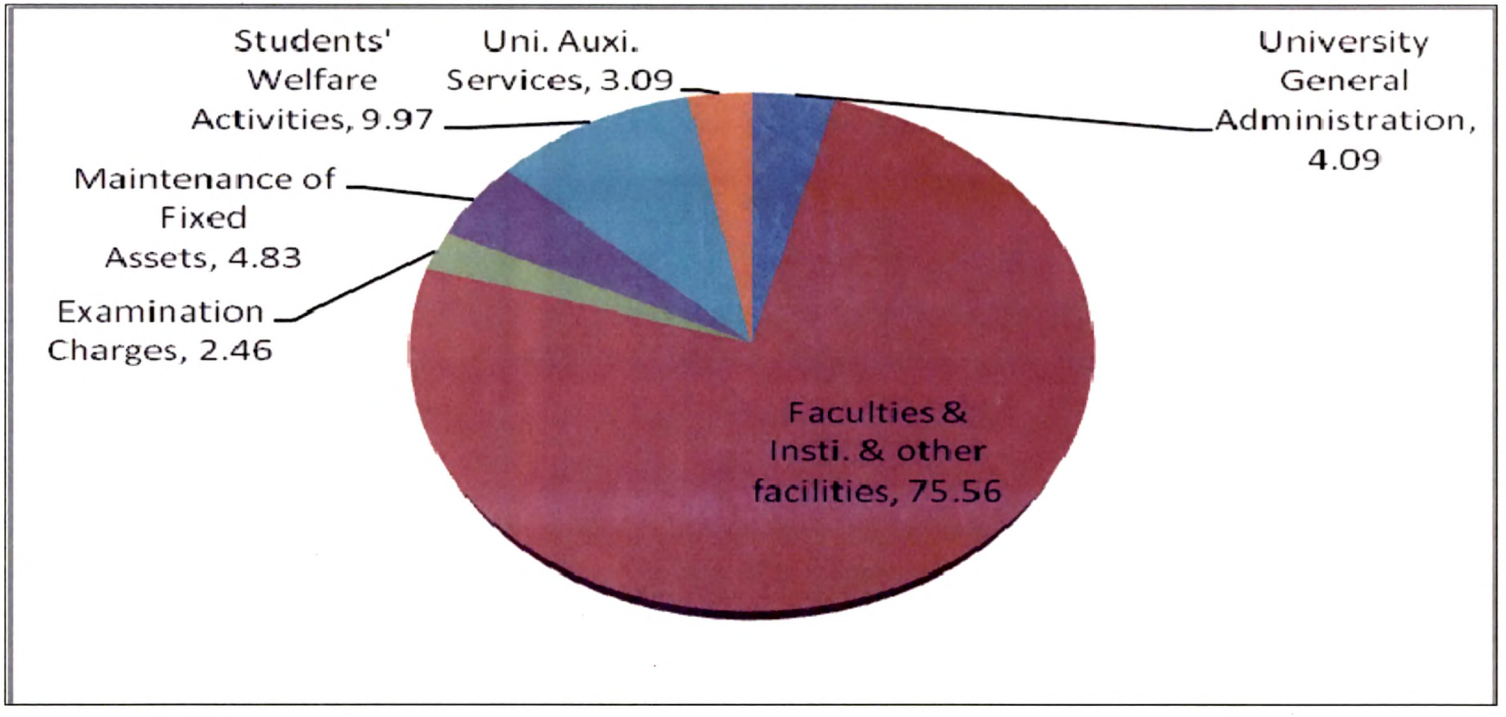
(1) Games and sports,

(2) Hansa Mehta Library and Sir Sayajirao Memorial Library, and

(3) Halls of Residence.

On an average university spends around 78% on these two heads. Hence, one can say that the major expenditure by the university is incurred on the faculties and students' welfare activities. However, there have been fluctuations; and expenditure on faculties has ranged between nearly 84% and 71% over the period of 27 years (1980-81-2006-07). Similarly, expenditure on Students' welfare activities also shows fluctuations and has been lowest at 6.98% and highest at 12.47% being on an average 9.97 % during the entire study period.

Chart 5.01
Average expenditures by Heads (to total expenditures) 1980-81 to 2006-07



Expenditure on Faculties and Institutes increased more than eighteen fold during the study period. It increased from Rs. 310.95 lakhs in 1980-81 to Rs.1241.62 lakhs in 1990-91. It further increased to Rs. 5759.30 lakhs in 2006-07. OThe Compound Annual Growth Rate on expenditure on Faculties and Institutes and other Faculties has been 15% per annum during pre-reform period.

Similarly, expenditure on Students' Welfare Activities increased more than 13 folds during the entire study period. It increased from Rs.46.12 lakhs in 1980-81 to Rs.167.17 lakhs in 1990-91; it further increased to Rs. 599.61 lakhs in 2006-07. The Compound annual growth rate of Expenditures on Students' Welfare Activities has been 14 % per annum during pre reform period.

However, the growth of expenditure under both these heads saw a declining trend during the post reform period to 10% per annum on faculties and other institutions and to 9% per annum on students' welfare activities during the period from 1990-91 to 2006-07.

When one looks at these figures at constant price, it is clear that growth of expenditure on faculties and institutions declined sharply and the compound annual rate of growth was almost half from 7.9% to 3.5% during the period 1980-81/1990-91 and 1990-91/2006-07 respectively. A much more significant decline has been observed in the expenditure (constant price) on students' welfare activities declining to 1.7% per annum during the 1990-91 to 2006-07 from 11.03% per annum during the 1980s. This means that both the faculties and the students' welfare activities are badly affected due to resource crunch. Further, these are not just two heads that are hit.

Table 5.03
Compound Annual Growth Rate of Major Heads of Expenditures (in %)

Years	University General Administration	Faculties & Institute & other facilities	Examination Charges	Maintenance of fixed assets	Students' Welfare Activities	University Auxiliary Services	Total expenditure
1980-81 to 1990-91 (current Price)	18	15	16	28	14	14	15
1990-91 to 2006-07 (current Price)	9	10	12	7	9	6	10
1980-81 to 1990-91 (Constant Price)	13.846	7.937	5.761	8.951	11.023	6.243	6.243
1990-91 to 2006-07 (Constant Price)	1.692	3.518	4.927	0.539	1.798	-1.094	-1.094

5.04 University General Administration

University General Administration includes Expenditures such as salaries of Vice-Chancellor, Pro-Vice-Chancellor, Officers, Clerks and Technicians, Temporary Staff, Encashment of Leave, L.T.C etc. The trends in the University's pattern of expenditure during the years 1980-81 to 2006-07 show that the expenditure under this head increased considerably during the past 27 years. The expenditure increased from Rs. 15.43 lakhs in 1980-81 to Rs.79.19 lakhs in 1990-91 and further to Rs. 275.02 lakhs in 2006-07. On An average, general Administration constituted 4.09% as proportion of total expenditure during the entire period of 1980-81 to 2006-07. The Compound Annual Growth Rate of expenditure on University General Administration has been 18% per annum in pre reform period of 1980-81 to 1990-91. However, there has been a decline in the growth of expenditure under this head being as well to 9% per annum during the period of 1990-91 to 2006-07. In fact at constant price this decline has been tremendous when the growth rate has declined from 13.4% per annum during the 1980s to 1. 79% during the entire period 1990-91 to 2006-07. In fact, at constant price there has been a decline in the expenditure on general administration even in absolute terms during the early and late 1990s.

5.05 Examination Charges

Expenditure on examination includes payment of remuneration to the examiners, factotums, peons and proof readers, as well as payment for reassessment work, press bills, stationary, and travelling allowance to the examiners. On an average Examination charges constituted 2.46% shares in the total expenditures.

Among the major factors contributing to the increasing growth of expenditure on examination costs are growth in student enrolment, increase in students taking examinations, expansion of new departments, new professional courses, changes in the examination system, higher cost of stationary and printing, increase in exam-allowance to non-teaching staff, and travelling allowance to examiners. Examination charges increased fifteen folds during the entire study

period. It increased from Rs. 10.55 lakhs to Rs. 48.06 lakhs in 1990-91; it further increased to Rs. 152.75 lakhs in 2006-07. It may also be noted that examination charges have suddenly increased from 2002-03. This may be due to revision of the examination remuneration. The compound annual growth rate of expenditure of examination charges has been 16% per annum during the period of 1980-81 to 1990-91 while this growth rate decreased to 12 % per annum during the period

1990-91 and onwards till 2006-07. A look at these figures at constant price also shows a similar pattern as in case of general administration whereby the expenditure on exams at constant price declined even in absolute terms during some of the years and the rate of growth has slightly declined from around 6% during the 1980s to 5% per annum during the period 1990-91 to 2006-07.

Table 5.04

Heads of expenditure (non- plan revenue account %) (1980-81 to 2006-07)

Constant Price (1984-85=100)

Years	University General Administration	Faculties & Institution & other facilities	Examination Charges	Maintenance of Fixed Assets	Students' Welfare Activities	Uni. Auxi. Services
1985-86	2572149	2572149	1288494	3439088	6155456	2539417
1986-87	2763782	2763782	1118599	4223715	7168826	2617339
1987-88	3485372	3485372	1400777	4958051	8158467	2651124
1988-89	3485571	3485571	1855533	4314024	8344909	2634335
1989-90(RE)	3915292	3915292	1863793	5000198	9585300	3649600
1990-91(RE)	4919149	4919149	2985322	5279483	10383258	3437413
1991-92	4326855	4326855	1527665	5133550	9443994	3610280
1992-93	4049319	4049319	2432929	5463676	10194300	3299619
1993-94	3978618	3978618	3346343	6927739	10031325	3388271
1994-95	3910621	3910621	2895363	5503189	9673779	3060297
1995-96	4295527	4295527	2509890	5759334	10641377	3292925
1996-97	4282461	4282461	2394071	6555779	10970138	3257696
1997-98	4051841	4051841	2472211	4791797	10708199	3101531
1998-99	6406332	6406332	2069881	6338707	12448524	3568811
1999-00	5599961	5599961	2336451	6037578	11963189	2990836
2000-01	5552146	5552146	1701051	5062039	11608390	2916512
2001-02	5143983	5143983	2019087	5088030	11966843	2960266
2002-03	4972588	4972588	4741976	4728127	11887628	2831006
2003-04	4990912	4990912	4501488	5066621	11716719	2510565
2004-05	4881016	4881016	4869266	6305091	11334447	2337808
2005-06	5092214	5092214	4853415	5358549	11824783	2433121
2006-07 RE	5658955	5658955	3143004	5564300	12337757	3061132

5.06 Maintenance of Fixed Assets

Under the head of expenditure on Maintenance of fixed assets, there are four sub-heads:

1. Maintenance of buildings and Roads
2. Maintenance of gardens
3. University guesthouse
4. C.C. Mehta General Education Centre

The maintenance of the buildings, roads, gardens and other buildings has priority in view of the fact that the University has acquired a constellation of old buildings from the former Baroda State, which constitute a huge capital base and require UGC assistance for the considerable maintenance that is needed to keep them in good condition. (Jena, S.L.1983)

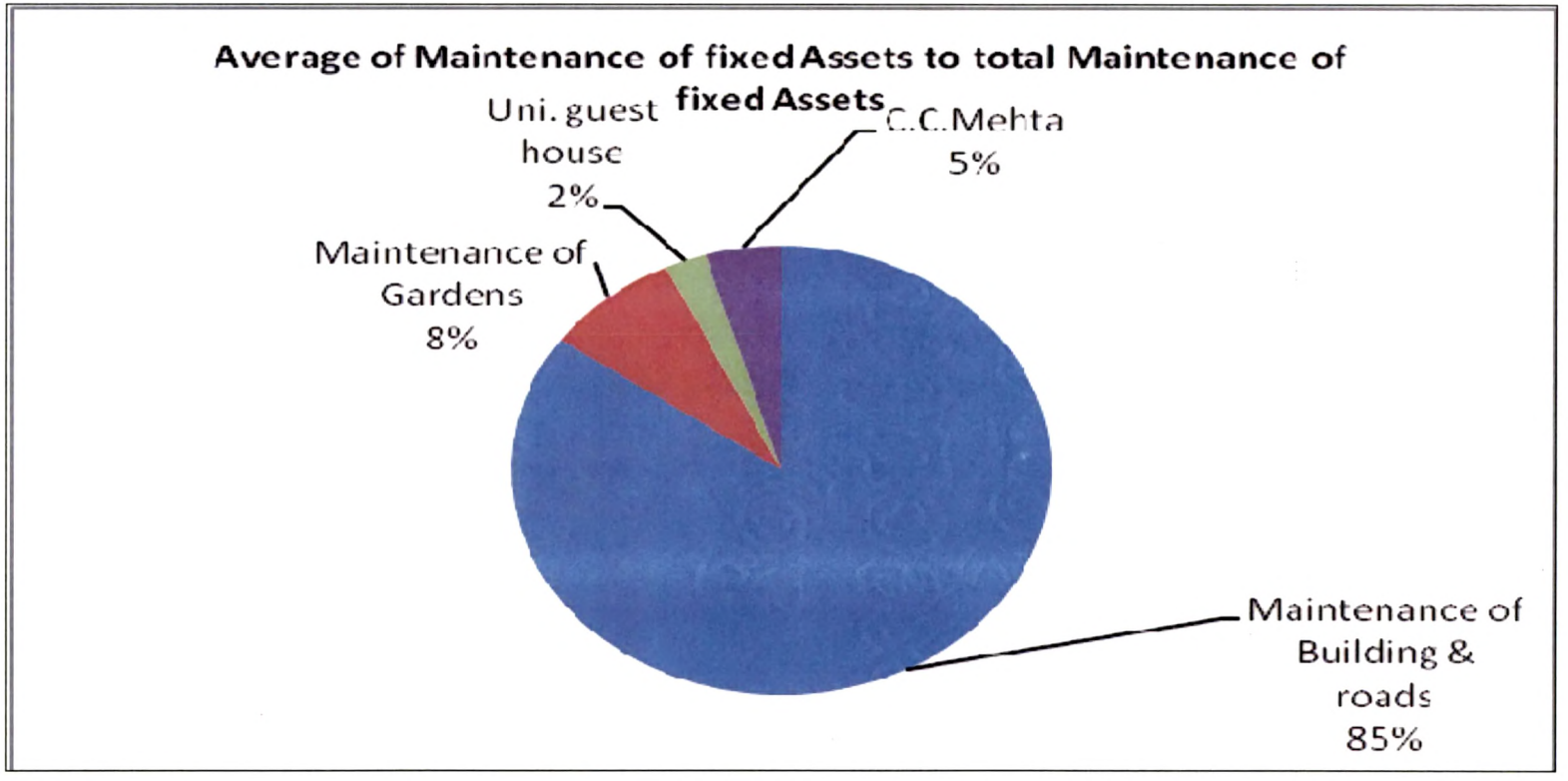
Expenditures on Maintenance of Fixed Assets increased from Rs.7.3 lakhs in 1980-81 to Rs.84.99 lakhs in 1990-91, it has further increased to Rs. 270.42 lakhs in 2006-07. On an average, expenditure on Maintenance of Fixed Assets has been 4.83% in the total expenditures. The Compound Annual Growth Rate of expenditure on Maintenance of Fixed Assets has been 28% during the 1980s whereas this has declined to 7% during the 1990s and 2001 onwards.

Table 5.05
Heads of Maintenance of fixed assets
(as % of total Maintenance of fixed assets during 1980-81 to 2006-07)

Years	Maintenance of Building & Roads	Maintenance of Gardens	Uni. Guest House	C. C. Mehta
1980-81	79.28	14.48	6.24	-
1981-82	81.33	12.49	6.18	-
1982-83	83.49	13.79	2.72	-
1983-84	88.35	9.60	2.05	-
1984-85	87.53	10.30	2.16	-
1985-86	88.01	9.93	2.06	-
1986-87	89.95	8.18	1.87	-
1987-88	89.52	8.49	1.99	-
1988-89	88.73	9.09	2.18	-
1989-90(RE)	88.37	9.60	2.03	-
1990-91(RE)	89.09	9.02	1.89	-
1991-92	84.81	7.81	1.92	5.46
1992-93	86.52	6.47	1.96	5.05
1993-94	89.37	4.98	1.61	4.04
1994-95	87.16	5.98	1.82	5.04
1995-96	85.93	6.51	2.03	5.54
1996-97	88.63	4.95	1.87	4.55
1997-98	84.10	6.38	2.70	6.82
1998-99	84.14	6.36	2.47	7.03
1999-00	82.43	6.47	2.09	9.00
2000-01	79.87	7.80	2.24	10.09
2001-02	79.87	7.32	2.50	10.32
2002-03	79.20	7.35	2.86	10.60
2003-04	78.62	7.21	2.53	11.63
2004-05	84.79	5.47	2.20	7.54
2005-06	82.37	6.60	1.56	9.46
2006-07 RE	79.32	7.14	2.91	10.62

Note: - Not started
RE: Revised Budgeted Estimates

Chart 5.02


Average of Maintenance of fixed Assets to total Maintenance of fixed Assets
Uni. guest house 2%
C.C.Mehta 5%
Maintenance of Gardens 8%
Maintenance of Building & roads 85%

Share of Maintenance of Buildings and Roads Expenditure to total Maintenance of Fixed Assets expenditures has been fluctuating during the entire period of 27 years. On an average expenditure of Maintenance of Buildings and Roads as proportion of total expenditure on maintenance of Fixed Assets has been 84.84 % during the period of study where as that on maintenance of being 8.14%.

5.07 University Auxiliary Service

The University works on long-term publication program, for producing a series of standard works in the different disciplines. These expenses are covered under auxiliary services and relate to expenses on:

1. University press
2. University stationary unit
3. Publication-sales unit

Expenditures on Auxiliary Services increased more than 10 times during the study period. The Compound Annual Growth on expenditure of Auxiliary Services has been 14 % per annum during pre reforms and 6 % per annum during. % share of Auxiliary services to total expenditures ranged from 1.75 to 4.05. On average the share of auxiliary services has been 3.09% in total expenditures. At constant price the expenditure under this had grew at a rate of nearly 6% per annum during the 1980s which declined to nearly -1% during the period 1990-91 to 2006-07. This is also shown in the table 5.05 whereby during some of the years, the expenditure under this head has declined in absolute terms also.

As is clear from the above table that the non-plan expenditure of the university under various sub heads has grown considerably over the years. However, this growth has not been consistent being high during the pre reform period and low since the 1990s. This general slow down in the growth of expenditure is general in nature and wide spread right from expenditure on faculties/institutions, general administration, student welfare activities, to even auxiliary services. The decline in the growth of expenditure on faculties is bound

to impact the quality of education and research, the two important functions of the universities.

Section III

5.08 Capital and Revenue account

Table 5.06
Non-plan Capital and Revenue Expenditure at current and constant prices (as % of total non-plan expenditure)

Years	Capital	Revenue
1980-81	34.29	65.71
1981-92	32.99	67.01
1982-83	27.53	72.47
1983-84	32.26	67.74
1984-85	31.66	68.34
1985-86	35.02	64.98
1986-87	34.98	65.02
1987-88	33.59	66.41
1988-89	26.94	73.06
1989-90	27.71	72.29
1990-91	26.13	73.87
1991-92	25.44	74.56
1992-93	24.36	75.64
1993-94	0.00	100.00
1994-95	9.52	90.48
1995-96	6.83	93.17
1996-97	5.39	94.61
1997-98	6.39	93.61
1998-99	3.92	96.08
1999-00	13.31	86.69
2000-01	2.96	97.04
2001-02	1.58	98.42
2002-03	4.94	95.06
2003-04	4.69	95.31
2004-05	4.58	95.42
2005-06	4.44	95.56
2006-07	3.57	96.43

In the budget framework, resources flow from government in two forms – in the revenue account of the budget and the capital account. While in the revenue account budget the share of education sector is reasonably large, in the capital budget the share of education is infinitesimally small, the net result being pushing down the share of education in the total budget. But most researchers, planners, and general official documents confine to revenue budget only and give the impression that larger allocations are being made for education in the budgets. In both central and states budgets revenue expenditure on education is substantial, and the capital expenditure forms a very small magnitude (Tilak J.B.G.2003). However, in terms of growth of the infrastructure development of the university system, such an analysis becomes imperative.

Above table summarizes the Non-plan Revenue and Capital expenditure during the period of 27 years from 1980-81 to 2006-07. It has already been seen in the previous chapter that the financial resources from the government are declining.

So far as the revenue account of the university is concerned, it has increased by more than fourteen folds during the period of study in absolute terms. It increased from Rs. 392.69 lakhs during 1980-81 to 1487.30 lakhs during 1990-91, further it increased to 5677.46 lakhs in 2006-07.however,

The Capital receipts have increased 23 folds during the period of study, capital account increased during 1980-81 to 1990-91, it increased from Rs. 238.29 lakhs in 1980-81 to 612.29 lakhs in 1990-91. Then capital account decreased to 70% and reached to Rs. 184.50 lakhs during 2006-07. In post reform period capital revenue decreased drastically. Share of capital and revenue receipts as percentage of total non-plan during 1980-81 has been 38% and 62% respectively, while after post reform period scenario has changed and remained only 3%and 97% respectively during 2006-07. It shows after a decline in the share of capital receipts by source of finance.

Expenditure on capital account and revenue account had been 38% and 62% respectively during 1980-81. Over the years the scenario has changed and the share of capital and revenue account changed to 3% and 97% respectively during the 1990s to 2006-07. This is also a reflection on the restrain in building of infrastructure necessary for the growth of a higher education system.

Section IV

5.12 Recurring and Non-recurring Expenditure

In case of education, including higher education, plan expenditure are relatively of small size and there has been an increase in the non-plan expenditures for the maintenance of gigantic system recognized as the world"(Joshi M. 1998)

Plan expenditure is for the development scheme financed by the University Grant Commission and/or State Government and Research and other schemes financed by central government The financial estimates of the plan development schemes and research and other schemes is divided into two parts

(a) Development schemes-recurring expenditure

(b) Development schemes-non recurring expenditure

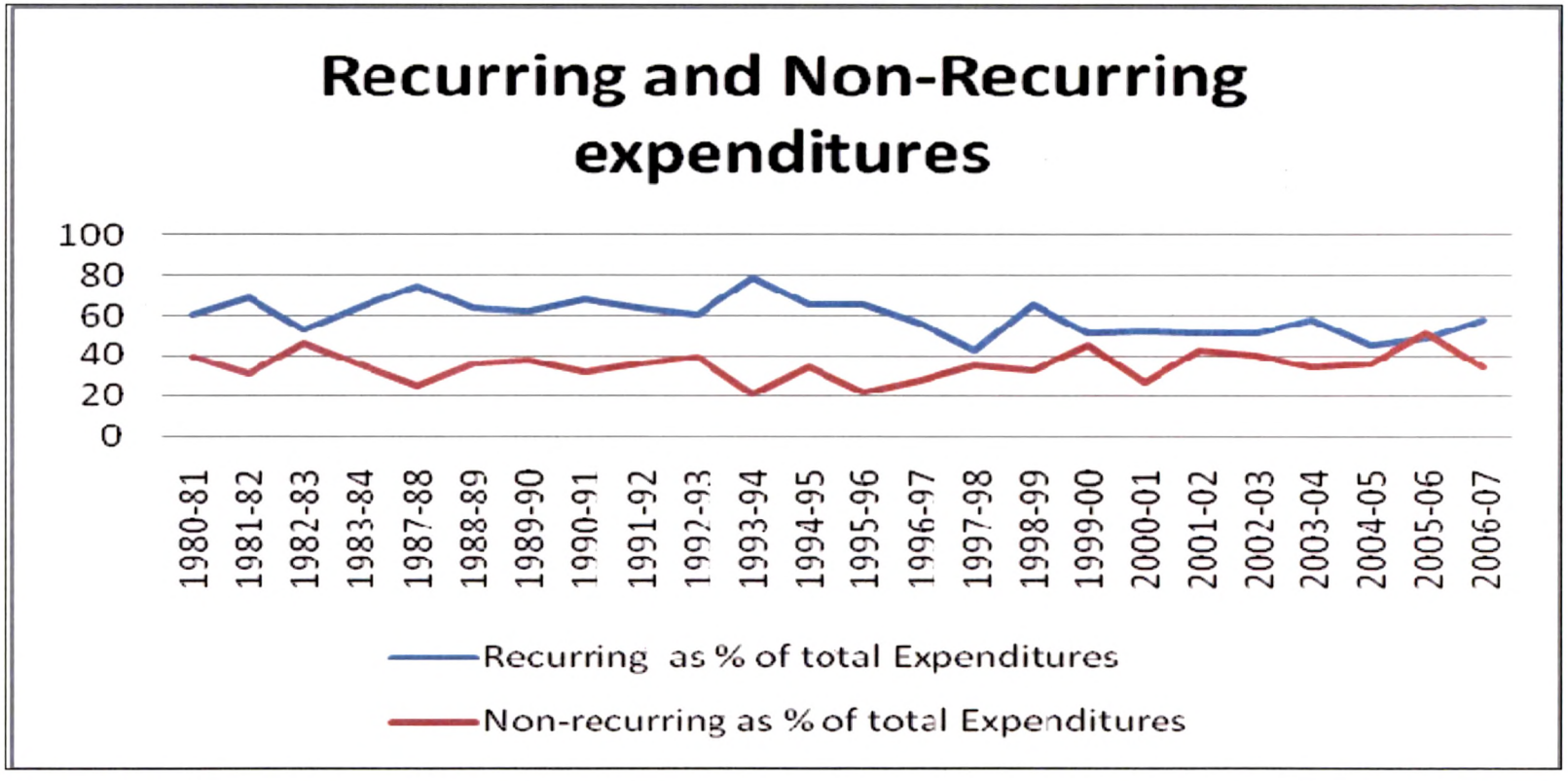
The recurring expenditure increased more than 6 times from Rs.45.76 lakhs during 1980-81 to Rs. 788.60 lakhs during 1990-91 further increased to Rs.306.47 lakhs during 2006-07.

Table 5.07
Recurring and Non-Recurring expenditures (as % of total expenditure)
(1980-81 to 2006-07)

Years	Recurring expenditure		Non-recurring expenditures	
	Current Price	Constant Price	Current Price	Constant Price
1980-81	60.10	....	39.90	.....
1981-82	68.91	....	31.09	.....
1982-83	53.39	.....	46.61	.....
1983-84	64.72	.....	35.28	.....
1987-88	74.55	.....	25.45	.....
1988-89	63.82	63.82	36.18	36.18
1989-90	61.88	61.88	38.12	38.12
1990-91	68.15	68.15	31.85	31.85
1991-92	64.02	64.02	35.98	35.98
1992-93	60.13	60.13	39.87	39.87
1993-94	78.63	78.63	21.37	21.37
1994-95	65.75	65.75	34.51	34.25
1995-96	65.71	74.84	22.09	25.16
1996-97	56.15	66.64	28.11	33.36
1997-98	43.21	54.72	35.76	45.28
1998-99	65.86	66.68	32.91	33.32
1999-00	51.55	53.17	45.41	46.83
2000-01	52.54	65.71	27.41	34.29
2001-02	51.42	54.46	42.99	45.54
2002-03	51.75	56.01	40.64	43.99
2003-04	58.24	62.78	34.53	37.22
2004-05	45.78	55.64	36.52	44.36
2005-06	48.80	47.54	51.20	52.46
2006-07	57.82	62.37	34.89	37.63

Note : .... Not Applicable

Chart 5.03


Recurring and Non-Recurring expenditures
100
80
60
40
20
0
1980-81
1981-82
1982-83
1983-84
1987-88
1988-89
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
Recurring as % of total Expenditures
Non-recurring as % of total Expenditures

As is shown in the table and the chart, the recurring expenditure has been higher than the non-recurring expenditure through the whole period though there are fluctuations in the share of both the recurring and the non-recurring expenditure, at current price and also at constant price. The share of recurring expenditure declined sharply during the late 1990s. This might have been due to a freeze on new appointments and therefore impacting the salary of the staff.

Table 5.08
Non-Recurring expenditure by Heads
(as % of total non-recurring expenditure) 1980-81 to 2006-07

Years	Books & Journals	Purchase of Equipments	Buildings
1980-81	6.57	32.6	60.85
1981-82	7.58	26.8	65.60
1982-83	7.59	74.2	18.24
1983-84	11.63	59.9	28.43
1987-88	6.20	54.7	39.09
1988-89	16.40	43.6	40.05
1989-90	18.81	60.9	20.33
1990-91	6.38	67.9	25.70
1991-92	24.72	50.6	24.72
1992-93	18.36	47.0	34.66
1993-94	14.94	27.8	57.22
1994-95	20.59	39.4	40.82
1995-96	22.82	34.8	42.34
1996-97	27.42	31.0	41.60
1997-98	6.66	66.7	26.67
1998-99	26.78	45.3	27.92
1999-00	9.39	48.0	42.62
2000-01	14.82	56.3	28.86
2001-02	8.72	53.0	38.29
2002-03	1.01	80.0	18.99
2003-04	2.76	74.5	22.70
2004-05	8.98	55.6	35.53
2005-06	4.92	31.8	63.25
2006-07	5.82	71.0	23.22

Non recurring expenditures are incurred at regular interval. The various sub heads of the non recurring expenditure are books and journals, purchase of equipments etc. and maintenance of buildings.

The table shows that in The M.S. University of Baroda the expenditure on books and journals increased more than 9 folds during the period of study. It increased from Rs.3.3 lakhs during 1980-81 to Rs. 6.5 lakhs in 1990-91. It further increased to 31.41 lakhs during 2006-07. The expenditure under the head purchase of equipment increased by more than 23times. It increased from Rs. 16.38 lakhs during 1980-81 to Rs.69.25 lakhs during 1990-91. It further increased to Rs. 383.27 lakhs during 2006-07. The share of expenditure under this head has increased considerably over the years whereas the share of expenditure on books has significantly declined, in fact, reaching as low as nearly 1% during 2002-03. Though this has been increasing of late, still has not been able to reach even up to the level of expenditure on books during the 1990s. This is bound to affect the quality of education particularly in the general streams. The fact that the share of expenditure on purchase of equipments has increased in the non-recurring expenditure reflects growing emphasis on the science streams rather than general streams like Arts and commerce.

Section V

5.13 Cost of Higher Education

When higher education is an investment and there are higher private returns, it is imperative to understand the contribution of the individuals and households to the total cost of higher education. This issue becomes all the more important in the wake of financial stringency on the part of government. Such an exercise becomes important in the policy making as well. An attempt is made here in this section to calculate the total cost per student in the university. An attempt is also made to examine the private and social cost per student. This however, is only a very broad exercise.

Table 5.09
Per student Private, Total and Social cost of Student during 1980-81 to 2005-06

Years	Private Cost / Student	Total Cost / Student	Social Cost/Student -=(Private Cost - Total Cost)	Pvt. Cost as % of Total Cost	Social Cost as % of Total
1980-81	589.30	1607.19	1017.90	36.67	63.33
1981-82 RE	515.41	1425.93	910.52	36.15	63.85
1982-83	572.17	1797.14	1224.97	31.84	68.16
1983-84(RE)	814.66	2269.55	1454.89	35.90	64.10
1984-85	604.67	2531.92	1927.25	23.88	76.12
1985-86	304.51	2339.2	2034.69	13.02	86.98
1986-87	385.86	2588.54	2202.67	14.91	85.09
1987-88	466.60	3056.79	2590.19	15.26	84.74
1988-89	429.37	3512.10	3082.73	12.23	87.77
1989-90	424.64	4429.96	4005.32	9.59	90.41
1990-91	441.39	3449.01	3007.62	12.80	87.20
1991-92	362.43	3112.34	2749.91	11.64	88.36
1992-93	441.13	3268.29	2827.16	13.50	86.50
1993-94	436.43	3987.49	3551.07	10.94	89.06
1994-95	398.07	3990.88	3592.81	9.97	90.03
1995-96	559.06	4779.68	4220.61	11.70	88.30
1996-97	548.15	5144.17	4596.02	10.66	89.34
1997-98	674.00	5352.08	4678.08	12.59	87.41
1998-99	670.55	6506.48	5835.94	10.31	89.69
1999-00	638.30	8006.58	7368.27	7.97	92.03
2000-01	601.14	10657.48	10056.33	5.64	94.36
2001-02	853.30	8941.76	8088.46	9.54	90.46
2002-03	819.58	8198.2	7378.63	10.00	90.00
2003-04	1012.33	9360.8	8348.47	10.81	89.19
2004-05	1205.58	9626.5	8420.92	12.52	87.48
2005-06	1274.27	9207.74	7933.47	13.84	86.16

Note: Private cost= Total Receipts from fee/ Number of students, Total cost=Total Expenditure of faculties/Number of students, Social cost = Total cost – Number of students

The private cost per students in the year 1980-81 was Rs.589 which declined to Rs.515 in the year 1981-82. This initially increased during the mid-eighties but then started declining. By the mid eighties it was as low as Rs. 304 per student. The year 2002-03 saw a surge and the private cost per student increased to Rs.819. this has increased up to Rs. 1274 in the year 2005-06.

During the same time period the total cost per student increased from Rs. 1607 in 1980-81 to 10657 in the year 2000-01. There after it showed a fluctuating trend and in the year 2005-06 it was 9207. The social cost per students increased during the same time span. It was Rs. 1017 in the year 1980-81. It increased up to Rs. 10000 in the year 2000-01. It was Rs. 7933 in 2005-06.

Here it is noteworthy that the private cost of education per student has not only been low but it is declining over the years. The private cost per student which was around 37% during the early 1980s declined to around 7% by 1999-2000. This has slightly improved since then but has still been around only 13-14% presently. On the other hand, the social cost has reached a level of around 86% from nearly 63%. Hence, the contribution of households and individuals to higher education has declined considerably.

The figures for cost per student at constant price are much more revealing. In fact, during the entire period from 1985-86 to 2005-06, the private cost declined at a compound annul rate of growth of 9% and social cost at a rate of 4% per annum. This means that the decline in the private cost per student is much sharper than the decline in the social cost.

Table 5.10
Cost per student at constant price (1984-85=100)

Years	Constant Price Private Cost/Student	Constant Price Social Cost/Student	Constant Price Total Cost/Student
1986-87	335.53	1915.37	2250.90
1987-88	370.32	2055.71	2426.02
1988-89	315.71	2266.71	2582.43
1989-90	292.86	2762.29	3055.15
1990-91	274.16	1868.09	2142.24
1991-92	198.05	1502.68	1700.73
1992-93	218.38	1399.58	1617.96
1993-94	202.05	1644.01	1846.06
1994-95	167.96	1515.95	1683.92
1995-96	215.85	1629.58	1845.43
1996-97	193.69	1624.03	1817.73
1997-98	223.18	1549.03	1772.21
1998-99	198.98	1731.73	1930.71
1999-00	181.34	2093.26	2274.60
2000-01	162.03	2710.60	2872.63
2001-02	218.79	2073.96	2292.76
2002-03	202.36	1821.88	2024.25
2003-04	241.03	1987.73	2228.76
2004-05	276.51	1931.40	2207.91
2005-06	279.45	1739.80	2019.24

Given the fact, that the resource flow from the government is on decline on the one hand, and the contribution of the private households to the cost of education is declining; it is the quality of education that seems to have suffered in the process. The impact of this declining funds whether private or public and its impact on education is a further area of research.

Section VI

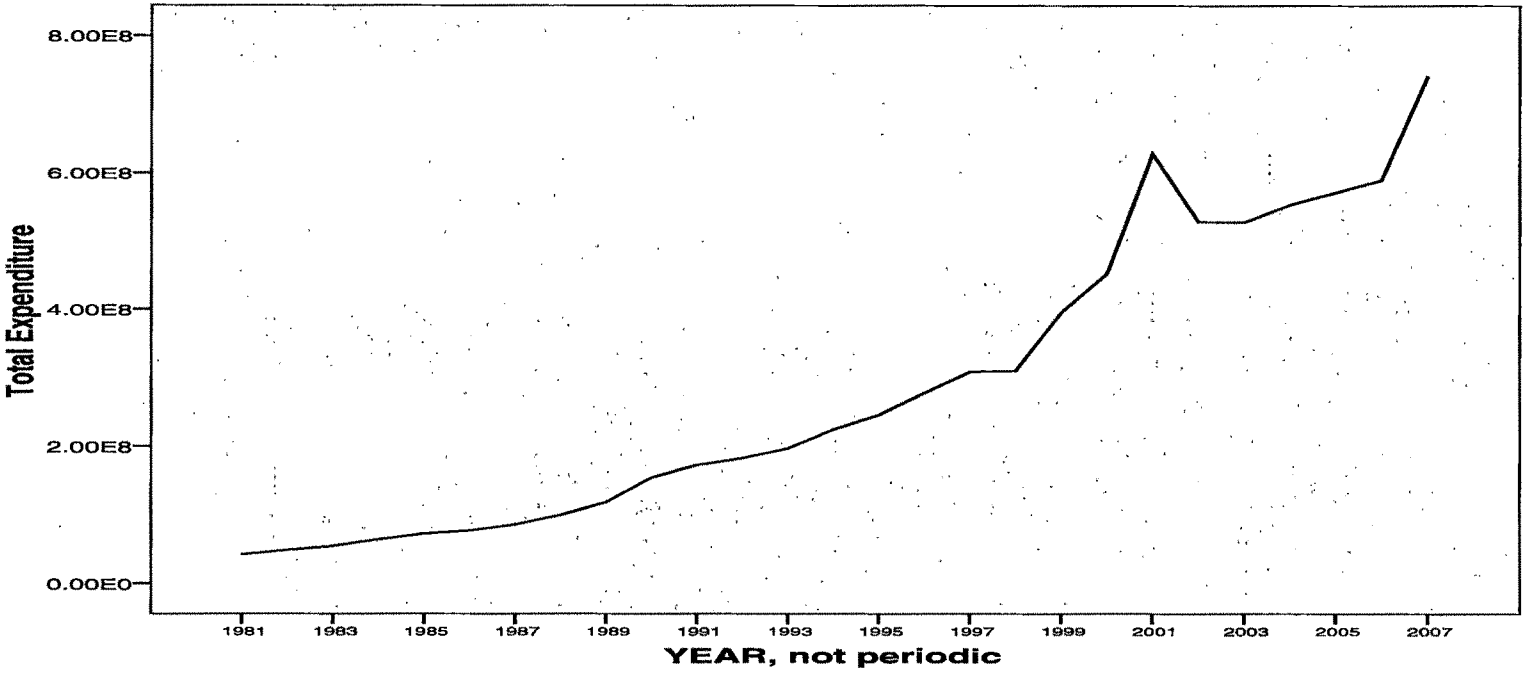
5.14 Forecasting of total expenditure

As mentioned earlier, the forecasting of the expenditure aspect will be useful in the management of the receipts and expenditures. The data source is the

budget estimates of the university and data pertains to the period 1980-81 to 2006-07. To forecast the total expenditure up to 2015, a different combination of forecasting models viz. linear model, Cochrane-Orcutt model, ARMA [Autoregressive Moving Average Model], ARIMA [Autoregressive Integrated Moving Average Model] has been used to find out the best suitable model which has capacity to forecast with minimum margin of error. Out of all those combination it has been found that ARIMA[1] (0,1,0) fits best in explaining past moment in total expenditure and has potential to forecast total expenditure up to 2015. The result presented has been that of the best model only. SPSS 15 [Time series: Expert modeler] has been used for forecasting.

Chart 5.04

The sequential chart of total expenditure is as follows:



[1]**Note:** For further details on ARIMA model, **Gujarati Damodar** (2003), *'Basic Econometrics'*, 4th International Edition, McGraw Hill Companies, Inc., New York. pp. 838-847

The above chart indicates that total expenditure has an increasing trend up to 2001. Then after, it declines and again has an increasing trend. To capture this trend of ups and down in the total expenditure as mentioned above ARIMA (0,1,0) model has the capacity to explain past variations in total expenditure and make proper forecast for total expenditure up to 2015.

Following is the model fit summary statistics.

Table 5.11
Model Statistics

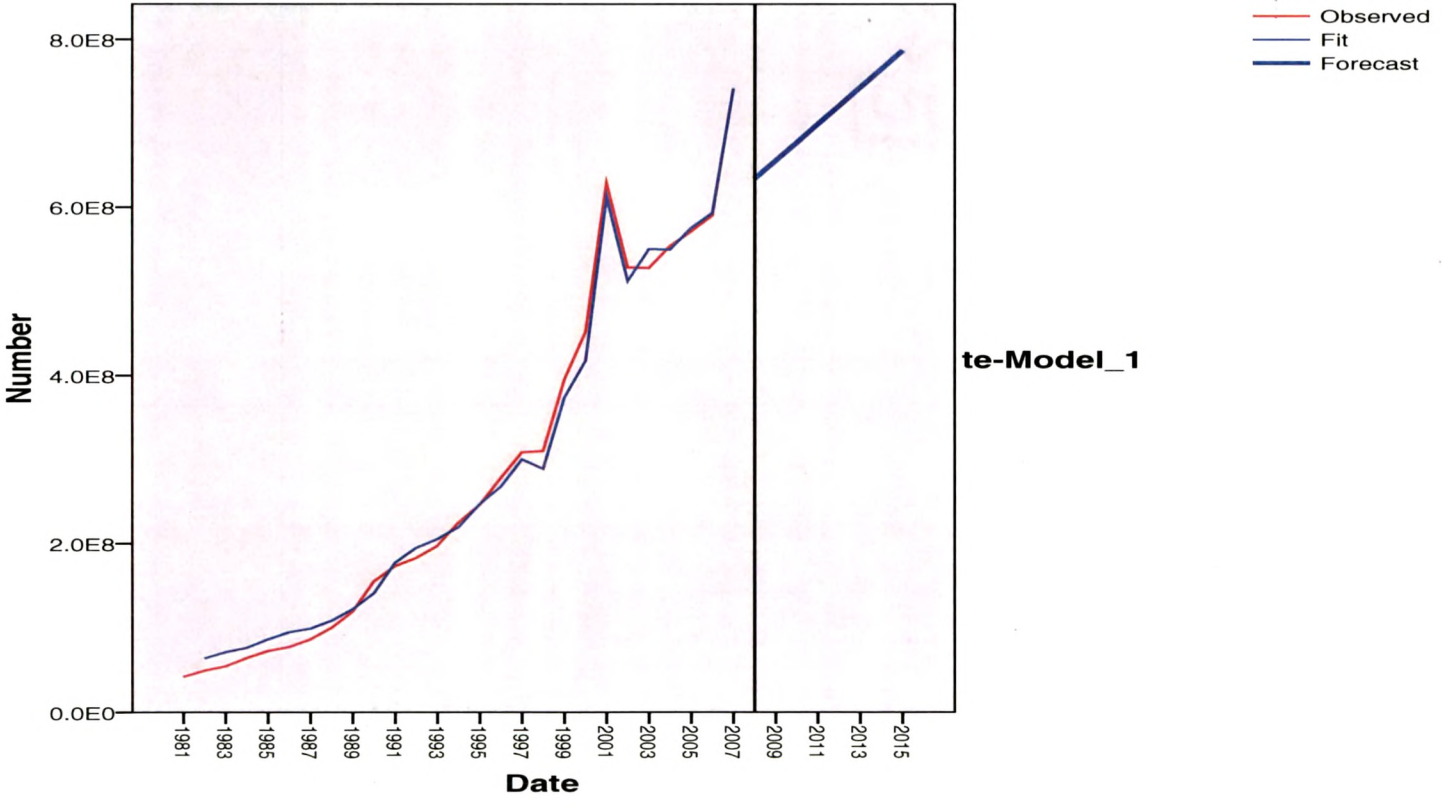
Model Statistics

Model	Number of Predictors	Model Fit statistics			Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	MAPE	MaxAPE	Statistics	DF	Sig.	
Total Expenditure-Model_1	1	.918	8.044	30.680	50.494	18	.000	3

As the above table shows, MAPE [Mean Absolute Percentage Error] is 8.044, indicating that if ARIMA (0,1,0) model is used for forecasting, the Mean Absolute Percentage Error is about 8 percent. So, on an average this model has capacity to forecast correctly up to 92 percent. Value of Stationary R^2 is .918 indicating that this model has very high (about 91%) explanatory power and model is good fit. Ljung-Box Q (18) has significance value and is .000, indicating that the residuals are white noise or having a random walk. Moreover, the data on total expenditure exhibits 3 outliers during 1980-81 to 2006-07. ARIMA (0,1,0) has capacity to incorporate all these 3 outliers at the time of forecasting.

5.15 Forecasting of total non-plan revenue expenditure

Chart 5.05



In the above graph one can see how best this model explains the past moment (Red line is observed value, thin blue line is fit value and thick blue line is forecast value). Graphically also we can see that the model is good fit.

Table 5.12
Forecasting of total expenditure (in Rs.) with the help of ARIMA (0,1,0)

Year	Total expenditure (in Rs.)
2008	633741884.2
2009	655654973.3
2010	677568062.4
2011	699481151.6
2012	721394240.7
2013	743307329.8
2014	765220418.9
2015	787133508.0

On an average, the total expenditure of the university is likely to grow at the compounded annual rate of 2.75% per annum. This means that over the coming years the expenditures of the university are likely to grow at a much lower rate compared to even the 1990s. Whereas decline in expenditure is a positive sign, it is important at the same time that the quality of education does not suffer in the process to meet the challenges of globalisation and increasing competition.

5.16 Conclusion

In India, higher education is in deep financial strain with escalating costs and increasing needs on the one hand, and shrinking budgetary resources, on the other. "During the recent times, it has been recommended that while the government should make a firm commitment to higher education, institutions of higher education ought to make efforts to raise their own resources by raising the fees level, encouraging private donations and by generating revenue through consultancy and other activities."

References:

Government of India, (1992) *'Programme of Action on the National Education Policy'*, Ministry of human Resource Development, New Delhi

Government of India, (1997) *"Report of the Ninth Five Year planning Commission"*, Government of India

Government of India, (2001, 2002-2007) *"Draft Report of Working Group on Higher Education 11th Five Year Plan"*, Government of India, Planning Commission, New Delhi

Gupta Arti (2005) ' *Management of Higher education'* Anmol Publication, New Delhi

Jena S.L, (1983)' *University finances: A case study of M. S. University of Baroda'*, Unpublished Thesis, The M.S. University, Baroda

Joshi M (1998) '*Higher Education in India vision and Action' UNESCO world conference on Higher Education in the Twenty First century,* Paris 5-9 Oct, 1998

Mahadevan, G (2009) '*Running on Shoe string budget',* The Hindu Business Line

NIEPA (2005) *'Report of the CABE Committee on Financing of Higher Education and Technical Education'.,* Central Advisory Board of Edcucation, MHRD, Government of India, New Delhi. http://www.education.nic.in

Panchamukhi, P.R. (1977) *"Economics of University Finances"*, Mittal publication, New Delhi

Tilak J.B.G (2004) '*University Finances in India'*, Journal of Higher Education, Volume. 17, No.6

Tilak J.B.G,(2003) *'Financing Education in India'* National Institute of Educational Planning and Administration, New Delhi

UFRC, Report, (2009) *"University Finances Review Committee"*, Requote from " Running a Shoe String Budget", The Business line

Vaidya, S, (2009) *'Funding Higher education'*, Hindu Bulletin line , Sept – 30-2009