USING THE SUSTAINABLE GROWTH MODEL FOR DECISION MAKING: THE CASE OF ETHIOPIAN AIRLINES - PRE AND POST PUBLIC ENTERPRISE REFORM

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Abstract

This paper casts light on the financial aspect of managing growth in Ethiopian Airlines. It addresses an important issue in financial management - attaining sustainable growth especially in public enterprises. The study reveals that the actual growth of the enterprise studied is not in harmony with the sustainable growth rate that should have been achieved, for the period 1986-1999. However, there is some improvement in the enterprise in management of growth after the Public Enterprise (Reform) Proclamation No. 25/1992.

The option of reducing dividend payout (i.e. increasing the retention ratio) is beyond the firm's domain of decision-making, and the researcher recommends that this aspect be considered in policy decisions by the government so as to enable the firm to increase or decrease dividend payout ratio depending on its fund requirement. In addition, the researcher suggests that improvement in asset turnover and profitability be considered to prevent problems of growth that may arise. Increasing payload factor and reducing costs are suggested to achieve this objective.

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CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND

After seventeen years of following the command economy[1], Ethiopia has started instituting a liberal market economy in 1991. As part of this endeavor, the new government issued the Public Enterprise (Reform) Proclamation No. 25/1992[2]. The proclamation lays down provisions for formation and operation of the enterprises so as to enable them operate profitably. As the title makes it clear, this paper examines the financial aspect of managing growth in Ethiopian Airlines in the context of sustainable growth modelling and compares the pre and post reform periods with the same perspective.

1.2 COMPANY HISTORY

This research is a case study on Ethiopian Airlines, a public enterprise, which started its operation in 1946 with the objective of providing commercial aviation services. As of June 2001, the airline flies to 47 international flight destinations with 24 commercial aircraft, and has a modern maintenance facility, which generates revenues in addition to satisfying the company's needs. The airline has a training center recognized by the International Air Transport Association (IATA) where it provides training to pilots, aviation technicians and flight attendants of its own and other airlines' employees (Ethiopian Airlines, 2001).

Ethiopian Airlines is operating in the face of fierce competition in the international aviation market. It is sharing the market with the giant international airlines of Europe, America and Asia. This puts a pressure on the airline to seek subtle corporate strategies to withstand the stiff competition. The financial dimension is one of the areas where the enterprise could fine-tune its decisions - a part of which this research considers.

1.3 OPERATIONAL DEFINITION OF TERMS

The researcher recognizes that the term growth and other terms related to it might have varied meanings. Accordingly, the definitions of terms as used in this study are the following:

Growth: is the rate at which company sales increases on a yearly basis

Actual Growth: is the rate at which a company's actual sales increases on a yearly basis

Sustainable Growth: is the maximum growth in sales that can occur consistent with the firm's operating, debt, and dividend payout ratios.

Sustainable Growth Rate: is the maximum annual percentage growth in sales that can occur consistent with the firm's operating, debt, and dividend payout ratios.

Sustainable Growth Modelling: financial modelling to see whether the sales growth of the firm is consistent with its operating characteristics and its financial objectives. Using the sustainable growth model will show when the sales, operations, and financial objectives are not mutually consistent.

Unbalanced Growth: is a situation where there is significant discrepancy between the actual growth rate and the sustainable growth rate of a firm.

1.4 STATEMENT OF THE PROBLEM

The research describes the practice of managing growth in Ethiopian Airlines with a focus on financial decisions. In carrying out the study, the researcher addressed and sought answers to the following questions:

- Is the financial dimension of growth properly managed in Ethiopian Airlines?

- Is there improvement in management of growth in Ethiopian Airlines after the Public Enterprise (Reform) Proclamation No. 25/1992?

The following are the null and alternative hypotheses for the research:

Hypothesis 1

Ho_1: The actual growth of Ethiopian Airlines is consistent with its sustainable growth

$H1_1$: The actual growth of Ethiopian Airlines is not consistent with it sustainable growth rate.

Hypothesis 2

Ho_2: Ethiopian Airlines has improved management of its growth after the Public Enterprise (Reform) Proclamation No. 25/1992.

$H1_2$: Ethiopian Airlines did not improve management of its growth after the Public Enterprise (Reform) Proclamation No. 25/1992.

1.5 OBJECTIVES OF THE STUDY

The study is designed in such a way that it enables the researcher to do the following:

- Compare the actual growth rate with the sustainable growth rates in order to see whether there is a significant difference between the two rates for the period under study, 1986-1999.

- Observe the changes in the variables for the sustainable growth model to understand decisions made by the airline to align the two rates.

- Compare the differences between the two rates in the pre and post reform periods to see whether there is improvement in the practice of managing growth after the Public Enterprise (Reform) Proclamation No. 25/1992

1.6 METHODOLOGY

The basic research design is the case study approach. The financial decisions, when there is a significant disparity between actual and sustainable growth rates, will be observed to reach at a conclusion regarding soundness of the management of growth.

The data set used in the research are the income statement and balance sheet of Ethiopian Airlines for the period 1986 - 1999. The period 1986 to 1992 is considered as the pre-reform period and the rest (i.e. 1993 to 1999) is regarded as the post-reform period. The statements are used for computation of actual and sustainable growth rates of the business for the referred periods. Additional sources of necessary information include government proclamations, journals, books, and other published materials.

The sustainable growth rates for the airline are computed for each period and these rates are compared with the actual growth rates achieved in the year. The data are analysed by presenting them in tables and graphs as appropriate. The financing decisions undertaken for the different periods are also drawn from the financial statements via inter-period comparison of the relevant ratios. Depending upon the results of the comparison, the soundness, or otherwise, of the decisions are inferred. This is judged by the extent to which the actual and sustainable growth rates of the business reasonably correspond.

Financial ratios for sustainable growth modelling and the t-test for hypothesis testing are used as tools in the research. The t-test is chosen because the sample size, i.e., the number of accounting periods considered is less than 30 (i.e. 14 years) - not large enough to assume normal distribution and use the Z- test.

The difference between two means (the first hypothesis) is tested using the t-test at 10 percent level of significance. The t-value for hypothesis testing is computed using the following formula:

$$t = \frac{\bar{d}}{s_d / \sqrt{n}}$$

Where: $\bar{d}$ = Average difference between the paired observations (the actual and sustainable growth rates for each year)

n = Number of years

s_d = Standard deviation of the differences, computed as:

$$s_d = \sqrt{\frac{\sum d^2 - \frac{(\sum d)^2}{n}}{n-1}}$$

The t-test is performed assuming that the two sets of rates are not perfectly independent. This is because the sales figure is used for computation of both actual and sustainable growth rates.

1.7 THE SCOPE AND DELIMITATIONS OF THE STUDY

The scope of this study is limited to describing the practice of managing growth from the financial standpoint. The study is limited to the description and evaluation of the business's ability to align actual growth with sustainable growth, i.e. its ability to acquire and dispose funds properly depending on the level of actual growth of the firm as compared to the sustainable growth rate. The study does not attempt to evaluate the overall financial performance of the airline and nor does it evaluate aspects of growth management other than the financial dimension.

1.8 IMPORTANCE OF THE STUDY

The recommendations that follow the study are deemed important to the management of Ethiopian Airlines to implement some improvements in its financial and operating decisions. Further, the practical aspect of the concepts and techniques used in the research will have academic importance as a springboard for further research in related areas as well as providing a practical case study for further analysis from different perspectives.

1.9 ORGANIZATION OF THE REPORT

The remainder of this paper is organized as follows. Chapter two presents review of the related literature. In chapter three, analysis of the research data along with the interpretations and tests of the hypotheses are shown. Chapter three winds up by presenting conclusion and the recommendations.

CHAPTER TWO

LITERATURE REVIEW

The management of growth requires careful balancing of the sales objectives of the firm with its operating efficiency and financial resources. At times companies overreach financially at the altar of growth and go bankrupt. This is due to the trick of determining the sales growth rate that is consistent with the realities of the company and of the financial market place; and the inability of management to make the necessary decisions that are consistent with the level of growth of the firm. In this regard, the sustainable growth model is a powerful planning tool, which has found enthusiastic use in most successful companies (Van Horne, 1998).

2.1 SUSTAINABLE GROWTH

According to Higgins (1998), growth and its management present special problems in financial planning of businesses because many executives see growth as something to be maximized. They reason simply that as growth increases the firm's market share and profit should rise as well.

At the other end of the spectrum, companies growing too slowly have a different but no less pressing set of financial concerns. If companies fail to appreciate financial implications of both fast and slow growth, they will become potential candidates for bankruptcy. From the financial viewpoint, growth is not always a blessing because rapid growth can put considerable strain on a

company's resources. Unless management is aware of this effect and takes active steps to control it, rapid growth can lead to bankruptcy (Higgins, 1998).

As per the Public Enterprises Proclamation No. 25/1992 article 14 (4), (5), (6) and (9), the board of directors of public enterprises (i.e., including Ethiopian Airlines) have the authority to plan their financial affairs and make financial decisions as deemed appropriate. Among such decisions is the acquisition and utilisation of funds to run their operations. Sustainable growth modelling offers an important set of alternative decisions a business can make to attune the firm's financial position to the desired direction.

Companies generally try to avoid additional financing from owners because information asymmetries lead investors to view issuance of new equity securities as bad news, and prices decline when a new security issue is announced. On top of that, the option may be unavailable or very limited for some businesses like public enterprises. Due to these reasons, issuance of equity securities is more costly than equity retained from earnings.

The sustainable growth rate of a company is the rate at which company sales can increase without depleting financial resources. It is the rate at which the firm can grow without having to change the firm's financial structure and operating performance.

According to Brigham (1993), the sustainable growth rate is computed using the following model:

$$g^* = \frac{M(b)(1 + D/E)}{A/S - M(b)(1 + D/E)}$$

Where:

g*= sustainable growth rate

M = Projected net profit margin

b = retention rate = 1 - Dividend payout ratio

D/E = debt-to-equity ratio

A/S = ratio of total assets to sales, the reciprocal of total asset turnover ratio

Actual growth in sales that differs from the sustainable rate has important implications to the firm. If the sales growth rate is less than the sustainable growth rate, then the firm will generate more than enough retained earnings to meet its investment needs and its financial plans must call for:

- an increase in cash and short term investment; and
- an increase in dividends.

Conversely, if the actual growth rate is greater than the sustainable growth rate:

- financial leverage must be increased by increasing borrowing;
- improve efficiency of operations to increase revenues and profit;
- the payout ratio should be reduced; or
- the growth rate itself should be scaled back.

Therefore, the decision variables for effective management of growth of a firm are: asset turnover, profit margin, dividend payout ratio, and leverage ratio. While the first two relate to operating performance, the other two summarize the firm's principal financial policies. Therefore, the sustainable growth rate is the rate that does not require changes in one of the four variables i.e., if the company increases sales at any rate other than the sustainable growth rate, one or more of those ratios must change.

2.2 DECISION VARIABLES FOR THE MODEL

As mentioned earlier, the sustainable growth model requires balancing of sales, operation, and financial objectives. In order to achieve this requirement for consistency of objectives, the decision areas discussed in the following paragraphs should be considered.

2.1.1 PROFIT MARGIN

The term 'profit' may have varying meanings and it could be useful to examine the connotations of the term. It includes the spectrum of the positions such as gross margin- the total value of sales realizations less actual costs other than depreciation and interest; net profit before tax - profits after payment of interest on borrowings; and net profit (profit after tax) - net profits after meeting tax liabilities. In the context of this paper, net profit is assumed because the enterprise should be in a position to generate surpluses after ensuring that it has settled all its obligations.

Increasing the profitability of operations is one of the decision alternatives that may be considered by the management of an enterprise faced with the problem of actual growth exceeding its sustainable growth. The increased profitability will generate funds to back up the increased resource requirement.

2.1.2 Asset Turnover

An enterprise has to use its assets in a manner that generates maximum revenues. So long as the firm maintains the level of its return on assets the additional sales generated via more efficient utilization of its assets will contribute to the generation of funds to achieve the required investment in assets that are necessary to support growth. The model takes the reciprocal of the asset turnover ratio as an input, which is considered in the denominator. The lower this figure, the higher will be the asset turnover - the revenue generating potential of the assets used. The result of dividing the total assets by the total operating revenues is used in this study with the assumption that the operating revenues are subject to advance planning with a reasonable accuracy than the total revenues, and that increase in non-operating assets may not necessarily require increment in assets.

2.1.3 Retention ratio

Generating surplus funds from operational activities of the enterprise is a function, not only of the profit margin of the firm but also the extent to which the generated net profit is retained in the business for future use. The higher the ratio of the profits retained in the business to the total net profit generated, the higher will be the resource generating potential of the profits to the business. Increasing the retention ratio is one of the decisions that could be considered when the actual growth of a firm exceeds the sustainable growth rate and the opposite, i.e. increasing the payout will be the appropriate decision if sustainable growth exceeds actual growth.

2.1.4 Leverage Ratio

To the extent that businesses at times prefer issuance of debt instruments in lieu of equity securities and in the light of the fact that additional debt means additional obligatory interest payments, the leverage ratio of the firm has some importance to the firms management of growth. When the firm is in need of additional funds to support its increased sales, borrowing is one way of generating these funds. Increased borrowing is not, however without drawbacks. Firstly, the ability of the business to generate funds via further borrowing will be hindered. Secondly, the payment of interest on borrowed funds is inevitable whether or not the firm makes profit.

The higher the equity (i.e., the lower the leverage) in a firm's capital structure, the stronger the fall-back for the lenders in case of financial hardship; and the greater the prospect of the enterprise raising loan funds for its growth and expansion. According to Ramanadham (1987, p 116) the equity component of the capital structure in public enterprises is low. He states that this minimal paramountcy of the equity stems from the fact that its practical significance is limited in case of public enterprises in many countries for three reasons:

> First, most of the loans are derived from the government itself; and it would be meaningless for the government as lender to look, for confidence, at the equity provided by itself. What ought to be fundamental as a determinant of governmental injection of funds into a public enterprise is, not the structure of its capitalization, but the substantive feasibility of the investment project. Second, many of the loans derived from non-government sources (domestic or foreign) carry a government guarantee. There are such experiences in Pakistan, Kenya and the UK. Third, it is rare that a public enterprise is allowed to go bankrupt. Correspondingly, the risk the lenders face is minimal.

However, Ramanadham's explanation is not likely to prevail in Ethiopia and this is not assumed for the purpose of this research. This is because there is no financial institution organized with the major objective of providing loans to public enterprises and there is no practice of providing government guarantee to support borrowing by public enterprises.

Therefore, in the absence of special government favours to support borrowing by public enterprises, a sound financial plan is necessary in order to guarantee achieving sustainable growth - and hence minimise problems of managing growth.

In light of this theoretical background, the analysis and interpretation of actual data will be undertaken in the following chapter.

CHAPTER THREE

DATA ANALYSIS AND INTERPRETATION

This chapter provides an in-depth analysis and interpretation of the Airline's financial data for the period 1986 - 1999, to be used as input for the analysis to judge whether the financial aspect of growth in Ethiopian Airlines is properly managed. The sustainable growth rates will be computed using some accounting ratios and these rates will be compared with the actual sales growth rates achieved. The financial ratios used are profit margin, retention ratio, asset turnover, and leverage ratio.

3.1 APPLYING THE MODEL

Incorporating all the variables mentioned in the earlier chapter, the following model represents sustainable growth:

$$g^* = \frac{M(b)(1 + D/E)}{A/S - M(b)(1 + D/E)}$$

Where:

g*= sustainable growth rate;

M = Projected net profit margin;

B = retention rate (i.e. 1 - Dividend payout ratio);

A = Total Assets;

E = Equity;

D = Total Debt; and

D/E = debt-to equity ratio

(1+ D/E) in the model can be replaced by A/E for computational convenience, since (E+D)/E=(E/E+D/E). Hence, the model could be restated as:

$g^* = \frac{MBL}{A/S - MBL}$, Where L stands for the ratio of assets to equity (leverage) and all the other variables are as defined above

The actual and sustainable growth rates of Ethiopian Airlines are presented in table 1 below:

Table 1. Summary of Important Ratios and the Growth Rates

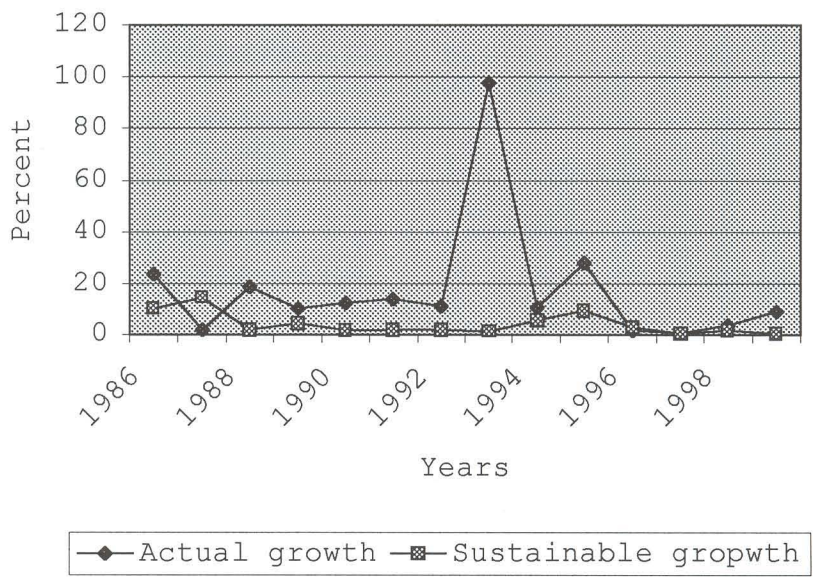
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Net Margin (percent)	6	6	1	3	2	1	2	1	2	6	2	1	2	1
Asset/Revenue (times)	1.50	1.45	1.67	1.62	1.51	1.75	2.26	2.37	2.34	2.00	1.90	1.33	1.15	1.11
Retention Ratio (percent)	53	65	50	68	29	53	53	53	53	53	53	53	53	53
Asset / Equity (times)	4.36	4.43	6.73	4.29	3.96	4.36	4.95	10.20	10.26	5.70	4.11	0.90	2.37	2.34
Actual growth (g) (percent)	24	2	19	10	12	14	11	98	11	28	2	1	4	9
Sustainable growth (g*) (percent)	10	15	2	5	2	2	2	1	6	10	3	0	2	1

Note: *The profit margin and growth percentages are rounded to the nearest whole number.*

The actual and sustainable growth rates are also presented on figure 1 below. There is a persistent disparity between the actual and the sustainable growth rates. This could be a result of not taking the appropriate financial decisions consistent with the level of actual growth. It could be due to failure to align the profitability of operations to the level of additional

funds required to support growth; or it may be due to inability of the firm to acquire and dispose funds as appropriate depending on the level of actual growth achieved. All these factors are identifiable, analyzable, and certainly the problems are curable if the business takes sound financial strategies as recommended at the end of this paper.

Figure 1: Grahpical Representation of Actual and Sustainable growth



Based on the observation of the information of Table 1 and Figure 1 above interpretations are presented in the following section.

3.2 INTERPRETATION OF THE RESULTS

The information in Table 1 is summarized in Table 2 below in the form of frequency table. The table indicates the

years in which actual growth exceeds, is less than, or is equal to the sustainable growth of the business.

Table 2: Frequency Table

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Fr.	%
G > g*	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	13	93
G = g*															0	0
G < g*		✔													1	7
														Total	14	100

Fr.= frequency, and % = percent

As it is apparent on table 2, actual growth of the airline is greater than the sustainable growth in 13 (i.e., approximately 93 percent) of the 14 years considered in the study. This makes the business a cash absorber in the sense that adequate funding is needed to finance operations. What the business can generate in the form of additional resources from retained profit has not been growing concomitantly to that of the extra cash required to back up increased sales. As common sense could tell, the business strained by shortage of funds to support its increased sales should raise funds internally or from external sources.

The actual and the sustainable growth rates came into harmony in none of the fourteen years. In one (i.e., approximately 7 percent) of the fourteen years, sustainable growth rate has been greater that the actual growth rate.

The following noteworthy points can be drawn from the observations in table 1 and 2:

- The sustainable growth rate of Ethiopian Airlines is lower than the actual growth rates in most of the years. The sustainable growth rates had been lower than the actual growth rates in all the years except 1987 where the reverse held.

- There is much variability in actual growth than sustainable growth rates. Actual growth during the period ranged between 1 percent and 98 percent, while sustainable growth rate had ranged between 0 percent (in 1997) and 15 percent (in 1987).

A comparison of the two periods is given in Table 3 below. The elements of the sustainable growth model, with their overall average and the averages for the two periods are presented in the table.

Table 3: Comparison of the two Periods.

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Net Margin	6	6	1	3	2	1	2	1	2	6	2	1	2	1
Revenue/Asset (%)	67	69	60	62	66	57	44	42	43	50	53	75	86	90
Equity/Asset (%)	22	20	25	27	31	23	21	11	19	23	78	86	60	42
Retention ratio[3]	53	65	50	68	29	53	53	53	53	53	53	53	53	53
Debt/Asset (%)	78	80	75	73	69	77	79	89	81	77	22	14	40	42
Actual growth (g)(%)	24	2	19	10	12	14	11	98	11	28	2	1	4	9
Sustainable growth (g*) (%)	10	15	2	5	2	2	2	1	6	10	3	0	2	1

	Average 1986-1992	Average 1994-1999	Overall Average 1986-1999
Net Margin (percent)	3	2.14	2.57
Revenue/Asset (%)	60.71	62.71	61.71
Retention Ratio (percent)	53	53	53
Debt/Asset (percent)	75.86	52.14	64
Actual growth (g)(percent)	**13.14**	**9.17**	**11.31**
Sustainable growth (g*) (percent)	**5.43**	**3.29**	**4.36**

Actual growth has, on average, decreased during the post-reform period, which is witnessed by a decline in the average growth rate from 13.14 percent in the pre reform period to 9.17 percent in the post-reform period. Though there is a 98 percent increase in total operating revenue in 1993, this is due to devaluation of Ethiopian Birr and is not a real increase in sales. Hence, the 9.17 average is for the remaining six years in the post reform period.

The sustainable growth rate has also increased. The average sustainable growth rate has declined from an average of 5.43 percent to 3.29 percent, while the overall average (1986-1999) was 4.36 percent. There is a decrease in net profit margin. As it is apparent on the table, the average net profit margin for the pre reform period has been 3 percent while the corresponding figure for the post reform period is 2.14, which is lower than the overall average of 2.57 percent.

Referring back to Table 3, the asset turnover has improved i.e., it increased from 60.71 percent to 62.71 percent. However, the net profit margin ratio has deteriorated and hence the increase in profit did not generate funds commensurate with the increase in revenues. In both periods, the dividend payout ratio is high and on average the same for the two periods (i.e., 53 percent).

3.3 DECISION ALTERNATIVES

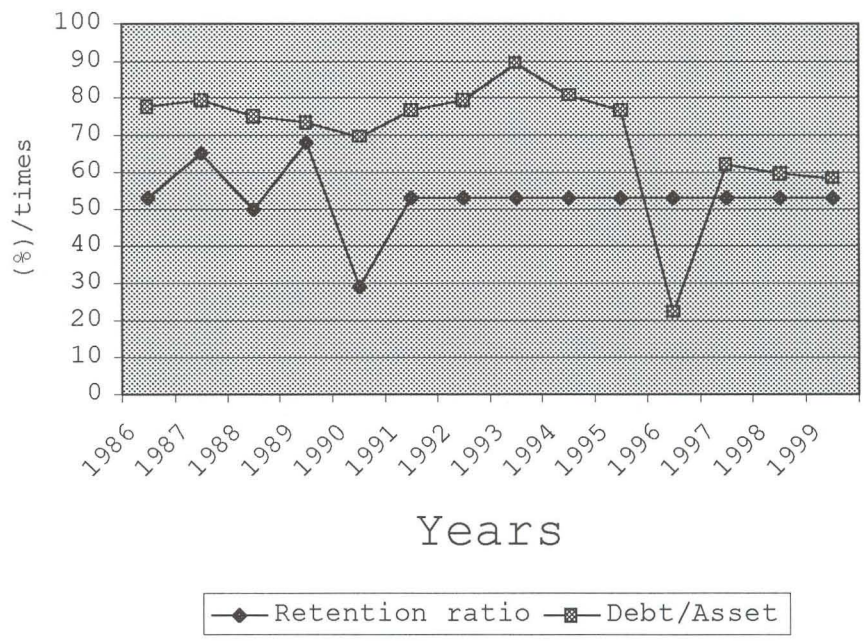
If sufficient financial resources are not available, a growing business would experience liquidity crises and it will fall under threat of failure. This financial problem is usually described as overtrading - the phenomenon of being unable to pay liabilities as they fall due because of shortage of funds, which emanates from unbalanced growth.

Increase in sales, exerts considerable pressures on the business in the form of external financing needs. As is quite obvious for the public enterprises in Ethiopia and for the public enterprises worldwide, there is a very limited possibility, if any, of generating external funds in the form of equity. Since there is no option of raising equity finance via issuance of shares, Ethiopian Airlines has little chance of obtaining funds from the owner - the government. In view of such an enduring divergence between the actual and sustainable growth rates of the airline, some of the following options either separately or in combination could be used as remedial alternatives.

1. **Raising Equity Capital.** Increasing equity will increase funds available to the business. However, this option has a limited significance for Ethiopian Airlines since the government is unlikely to supply new funds every year the firm plans to growth.

2. **Increase Borrowing.** It is quite obvious that by increasing its leverage, the airline can obtain funds for financing growth. In such a situation where actual growth is higher that sustainable growth, it is worthwhile to increase debt. In case of Ethiopian Airlines, leverage has been, in general at a higher level i.e., the average for the fourteen years period is 64 percent. This fact is also presented on Figure 2 below. Such a high leverage ratio will reduce the significance of this alternative for generating funds in the future.

Figure 2: Graphical representation of the financial policy ratios



If dividend had been at the discretion of the enterprise's management, it would be advantageous to go for a loan when the enterprise is hopeful of making high profit. This will have the opportunity of declaring large dividends after meeting the smaller fixed commitment of interest on loans. However, for Ethiopian Airlines the

amount of the dividend is not the function of equity. When the enterprise makes a high profit, the government receives a large part of it, regardless of the leverage ratio.

Though Ramanadham's explanation (See chapter two) for the minimal level of capital in public enterprises may not apply to Ethiopian Airlines, the phenomenon itself is apparent, i.e., the airline is highly leveraged - shown by the significant proportion of debt to total assets. This has an important implication in managing growth in that the firm's ability to generate funds through borrowing in the future will be hindered.

3. Reduce the Payout Ratio. Reduced payout ratio, no wonder, provides funds to the business because it could help generate additional fund from its earnings. As a matter of fact, however, this financial decision option is not feasible alternative since it is not under the full authority of the airline. The general understanding is that equity is that part of capital, which does not carry a guaranteed dividend (or dividend could even be zero); and dividend is due for payment only when the board of directors recommends in its favour. However, this does not apply Ethiopian Public Enterprises in general and Ethiopian Airlines in particular.

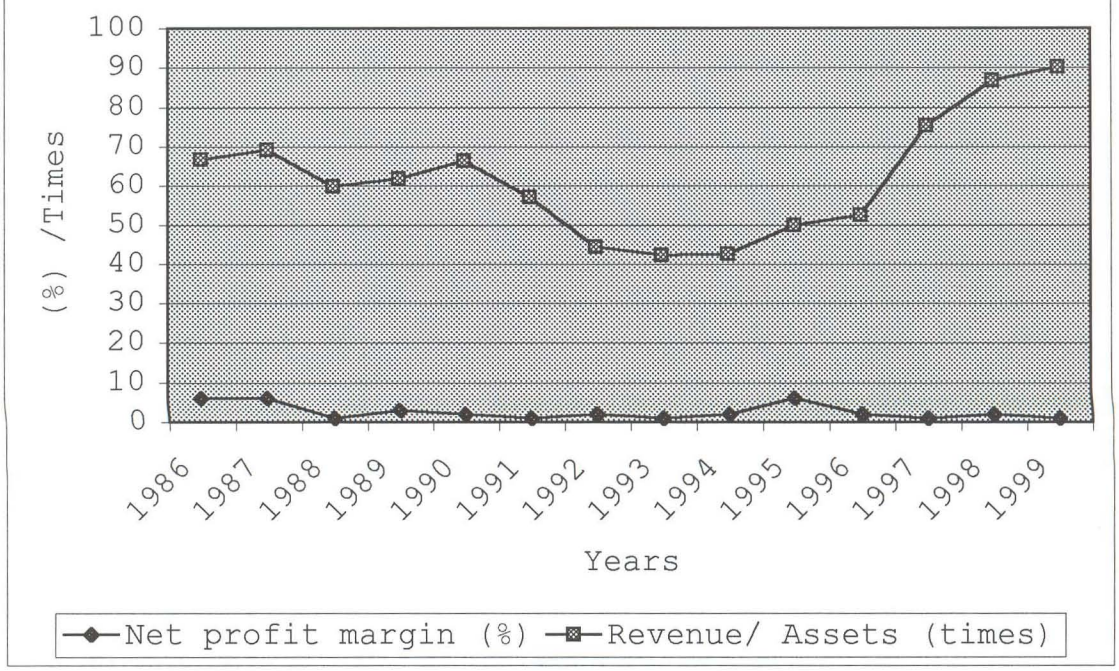
It is obvious that the business has a dual character. It has a public dimension expressed in public ownership, control, and the furtherance of public interest; and an enterprise dimension, which reflects the business character of the operations. With this understanding it

is not debatable that it has to contribute funds to the government in the form of state dividend. Therefore, much reduction in dividends is not desirable.

Not withstanding the above fact, it would be sound if the airline has some way of positively correlating the amount of dividend to the size of equity capital. Figure 2 shows that on average the dividend payout ratio is constant in the post reform period and is used to fluctuate in the pre reform period. However, the payout ratio is on average the same for the two periods.

4. Improving Asset Utilization and Profitability. Improving the revenue generated by using the available resources would be one way of generating funds to the business. In addition, improving profitability generates additional resources to the firm. Improving capacity utilization i.e. increasing the payload factor[4], which has been low throughout the fourteen years could help generate additional sales out of the already existing assets (See Annex). In addition, instituting cost reduction strategies could enable the enterprise to improve profitability.

Figure 3: Graphical Representation of Profitability and Turnover ratios



As shown in Figure 3, there is an increase in asset turnover and profitability has hardly improved.

5. Other Decisions. In conditions where actual growth is assumed to be too much, reducing the growth itself may be taken as an alternative that can make the firm out of the strain for financial needs. Increasing prices could help the business achieve a certain level of sales with reduced resources. So long as the increase in price is so high as to lose customers, this alternative should be avoided as much as possible. Nonetheless, this option is used only if all else fails. In addition, a merger program with a business with a better financial resource will be an answer; though this is not likely to be feasible since Ethiopian Airlines is a state owned

business with societal mission than business objectives alone.

3.4 HYPOTHESIS TESTING

As indicated in the previous chapter, the hypotheses are tested with 90 percent confidence level (i.e., 10 percent level of significance) and thirteen degrees of freedom. The two-tail test for the difference between two means is applied. The decision rule is therefore: *reject the null hypothesis (i.e., accept the alternative hypothesis) if t > 1.771.* The first null hypothesis i.e. 'the actual growth of Ethiopian Airlines is consistent with its sustainable growth' is tested by computing the t-value and the necessary information is summarized in table 4 below:

Table 4: Data for Hypotheses Testing

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
g	24	2	19	10	12	14	11	98	11	28	2	1	4	9
g*	10	15	2	5	2	2	2	1	6	10	3	0	2	1
d	14	-13	17	5	10	12	9	97	5	18	-1	1	2	8
d^2	196	169	289	25	100	144	81	9409	25	324	1	1	4	64

1986-1999	**1986-1992**	**1994-1999**
$\sum d$ = 87	$\sum d$ = 54	$\sum d$ = 33
$\bar{d}$ = 6.69	$\bar{d}$ = 7.7	$\bar{d}$ = 5.5
$\sum d^2$ = 1423	$\sum d^2$ = 1004	$\sum d^2$ = 419
$(\sum d)^2/14$ = 582.23	$(\sum d)^2/7$ = 416.57	$(\sum d)^2/6$ = 181.5
S_d = 8.37	S_d = 9.89	S_d = 6.89
t = 2.322	**t = 2.063**	**t = 1.957**

The calculated t-value (i.e., 2.322) is greater than the t-value in the decision rule (i.e., 1.771). Therefore, the null hypothesis that 'the actual growth of Ethiopian

Airlines is consistent with its sustainable growth' is rejected and as a result the alternative hypothesis that 'the actual growth of the Airline is significantly different from its sustainable growth' is accepted. This shows that the difference between the actual and sustainable growth rates for the period under consideration is statistically significant, which leads to the conclusion that the actual growth and sustainable growth are not in harmony with 90 per cent level of confidence.

Taking the two periods separately, the calculated t-value for the period 1986-1992 (i.e., 2.063) is greater that the critical t-value of 1.771, which shows that the actual and sustainable growth rates for the pre-reform period are different with 90 percent level of confidence. In the post reform period, the t-value (i.e., 1.957) is greater than the t-value in the decision rule (i.e., 1.771) - it can be inferred that the difference between the actual and sustainable growth rates is significant in the post reform period considered separately[5].

The second hypothesis, i.e. 'Ethiopian Airlines has improved management of its growth after the Public Enterprise Proclamation No. 25/1992.' is tested by comparing the standard error of the differences (i.e., the t-values) for the two periods. The standard error of the differences for the post reform period (i.e., 1.957) is less than that for the pre-reform period (i.e., 2.063). Hence, this shows an improvement in aligning the two rates after the Public Enterprise (Reform) Proclamation No. 25/1992.

To summarise, growth is exciting but it exerts the most management challenges as well. Certain key management factors become critical during rapid growth. There is a need for sufficient financial resources necessary to ensure that the business is able to finance the growth in current and fixed assets. The next chapter provides the conclusion and recommendation ensuing from the data analysis and interpretation undertaken in this chapter.

CHAPTER FOUR

CONCLUSION AND RECOMMENDATION

4.1 CONCLUSION

This paper has illuminated on a very challenging and perhaps forgotten issue of attaining sustainable growth especially for public enterprises in Ethiopia. The sustainable growth model is examined from theoretical and pragmatic angles and the issues that require consideration in light of the realities existing in Ethiopian Airlines are presented in this chapter.

Taking the cue from the findings of the study, and with a critical observation of the operational and financial realities of the enterprise under consideration, the following conclusions are drawn:

- There is a prevalent discrepancy between the actual and sustainable growth rates of Ethiopian Airlines in the period studied (1986-1999), suggesting that there exists some weakness in managing the financial dimension of growth.

- Sustainable growth has been significantly different from actual growth for both the pre-reform and post-reform periods considered separately - growth is not properly managed from the financial standpoint in both periods taken separately.

- The firm's payout ratio does not vary in response to its growth and the resulting additional fund requirement. At present, the option of reducing dividend payout (i.e. increasing the retention ratio) is beyond the firm's domain of decision-making.

- Ethiopian Airlines is highly debt-dependent in its financing. This has a negative impact on its profitability due to the mandatory interest payments.

- The enterprise unutilised capacity signified by the low payload factor throughout the period considered for the study. The airline can improve its capacity utilization and hence its profitability.

4.2 RECOMMENDATIONS

As a result of the substance of managing growth in Ethiopian Airlines that came to light in this research, the following recommendations may ensue:

- It would be advisable for the management of the airline to closely monitor its growth plans vis-à-vis the sustainable growth that could be achieved under a given set of operational and financial realities of the firm, so as to be able to formulate strategies to align the actual and sustainable growth objectives.

- A policy decision is necessary to enable the airline to determine its dividend payout and hence retention ratio based on its growth plan. This would relieve the

enterprise from relying on debt financing of its operations.

- The airline has to improve efficiency of its asset utilisation by improving the low payload factor that it has.

- It is suggested that the airline improve profitability of its operations and hence resource generating ability of its revenues via cost reduction.

These recommendations could be instruments of direct utility to the concerned bodies for fine-tuning their decisions to put the enterprise on a strong financial footing. Therefore, the researcher suggests that the enterprise's management and the government consider the aforementioned recommendation in their future decisions.

NOTES

1 The country had been following socialist (centrally planned) economy for the period 1974-1991.

2 The proclamation lays down specific provisions and procedures for the establishment of enterprises, their organization and management, the powers and duties of the management board, the maintenance and audit of books and accounts, amalgamation and division, and the dissolution and winding up of public enterprises.

3. The retention ratios for the years 1986 and 1991 are computed by averaging the state dividend percentages for the other years in the pre-reform period.

4. Payload factor is the measure of aircraft capacity utilization. It is stated in percentage terms and shows the percentage of capacity used in generating revenue to the available capacity.

5. In calculating the t-value for the post reform period, the year 1993 is excluded because the actual growth in total revenues has been unusually high due to devaluation of the local currency in that year.

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ANNEX 1- Data used for Computing Actual and Sustainable Growth Rates

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Operating Revenue	376	383	454790	501321	563372	643327	577752	1142071	1263995	1616970	1642844	1657019	1716607	1688306
Profit Before Tax	46	49	9340	25275	22176	18809	18669	11860	46213	146280	58317	23240	43800	13863
Tax[1]	23	24.5	4670	12638	11088	9404.5	9334.5	5930	16174.6	51198	20411	8134	15330	4852.05
EAT	23	24.5	4670	12638	11088	9404.5	9334.5	5930	30038.5	95082	37906.1	15106	28470	9010.95
Payload factor (%)	58	56	56	56	49	49	44	48	45	49	45	46	50	54
Capital	**125**	**113**	**188701**	**214441**	**258691**	**263474**	**265389**	**288722**	**568937**	**761160**	**2432999**	**835026**	**799358**	**782201**
Total Assets	563	554	760021	809972	848269	1127895	1303078	2705875	2963559	3241990	3125641	2200105	1979696	1870496
Capital	12.5	11.3	188701	214441	258691	263474	265389	288722	568937	761160	2432999	835026	799358	782201

Source: Annual Report of Ethiopian Airlines for years 1986 - 1999

Notes:

1. Under Article 12 (b) of Proclamation No. 173/1961, the airline has been liable to a 50% income tax and since 1994; the Income Tax (Amendment) Proclamation No. 107/1994 requires the airline to pay income tax of 35%.

2. The actual growth rate for the year 1986 is computed using operating revenue for the year 1985, which is Birr 304 (rounded to the nearest million).

3. The amounts for the years 1986 and 1987 are approximated to the nearest million and the rest are approximated to the nearest thousand.

4. Total passenger and freight revenue has been Birr 429032 to 457447 in years 1991 and 1992 respectively. This shows 11 percent increase and the decrease in total operating revenue is due to an unusually large amount of charter revenue in 1991 (i.e., Birr 147863). This rate is used as actual growth achieved in 1993.

5. Beginning capital balance for the 1986 used for computing sustainable growth is Birr 129 million.