“Financial sustainability of private higher education institutions: the case of publicly traded educational institutions”

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FINANCIAL SUSTAINABILITY OF PRIVATE HIGHER EDUCATION INSTITUTIONS: THE CASE OF PUBLICLY TRADED EDUCATIONAL INSTITUTIONS

Abstract

Public and private education can unlock different doors and help to flood the country with a rising power, sunlight and sustainable development. Hence, this paper argued that there is a need to sustain both public and private higher education. Financial difficulties restrict private higher education from balancing their budget and maintain a balance between a quality education and maximization of shareholders wealth. This paper outlines and analyzes a critical business model for higher education institutions, Dhofar University and Majan College, both of which are publicly traded in Muscat Securities Market. Both the educational institutions are critically examined from profitability, liquidity, long term solvency and asset management perspective using appropriate financial ratios. Five year forecasts of financial statements up to 2021 are estimated to evaluate the financial stability of the two educational institutions. The paper uses Monte Carlo simulation technique to examine the issue of financial sustainability. Overall the finding shows positive financial results for Majan College compared to Dhofar University. The key take away from the analysis is that educational institutions should be funded primarily by equity and not by debt to survive, sustain and provide high quality education.

Keywords financial sustainability, higher education institutions, financial ratio system, publicly traded, simulation

JEL Classification G17, I22, N25

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INTRODUCTION

In recent years, higher education institutions are considered as major contributors to the development of the nation. Their roles are beyond being knowledge institutions, they also play a role in the economic, social and cultural development of the society. The sustainability of higher education institutions is the ability to continue their operation that includes the ability to accomplish their goals and add value to stakeholders. The continuity is a major part for the sustainability but it should be linked with the ability to fulfill and achieve the desired goals for higher education institutions. Hence, the search is centered toward the best business model for private higher education institutions to sustain over a long period of time. Currently Oman is providing different kinds of support to higher education institutions. This support includes the ability to receive free land, nonrefundable capital support, scholarship students where tuitions are paid by the government. However, within the current climate, with declining oil revenue, the government is considering to reduce or cut all kind of support to the private higher education institutions. This will be critical decision to the national higher education system in Oman. One solution is to

fully open the higher education system to the private sector. In developing countries with limited resources privatization, this is considered a critical element for solving the issue (Syed & Rose, 2002; Altbach, 1999). In contrast, the quality assurance is one important negative impact of privatization on higher education institutions. The lack of comprehensive mechanism to monitor and ensure the quality assurance will impact the quality and skills of graduates.

At present, there are no single tools or methodologies for assessing the financial sustainability of higher education institutions in Oman. The primary objective of this paper is to identify and provide financial analysis and forecast for two publically traded higher education institutions in Oman, Dhofar University and Majan College, through financial ratio analysis and Monte Carlo simulation. Hence, the results can be used to determine the success of publically traded higher education institutions. However, a further study is needed to ensure the quality outcome of Dhofar University and Majan College in comparison with other private and public higher education institutions.

The reminder of this paper is organized as follows. Section 1 comments on the financial sustainability of higher education institutions and the private vs. public higher education literature review. Section 2 describes detailed financial analysis for both Dhofar University and Majan College that includes profitability analysis, liquidity analysis, asset management analysis and long-term solvency analysis. Section 3 briefly presents the implications and final section concludes.

1. LITERATURE REVIEW

The financial sustainability under the finance theory means the financial independence. G. Savitskaya defines the financial sustainability as "ability to function and develop and maintain the balance of its assets and liabilities in the changing internal and external environment ensuring its solvency and long-term investment attractiveness within the boundaries of the acceptable level of risk" (G. Savitskaya, 2003, p. 536). At present time, higher education institutions at all different levels are facing extraordinary challenges including limited resources and rising cost of providing higher education (L. Lapovsky, 2014). Hence, financial sustainability is becoming central concern to the national higher education system. Sazonov et al. (2015) concluded that the only higher education institutions with stable income and sound financial structure are able to sustain and fulfill their multiple missions from providing quality education to maximizing shareholders wealth.

For-profit higher education institutions are similar to traditional public and private nonprofit institutions as they are all considered as providers of education after the secondary school. However, for-profit higher education institutions are profit maximizing firms with some of them are publicly traded and stockholders seeking for maximizing the share price of their firm. This is relatively very recent phenomenon where higher education provider is seeking to maximize profit as one of the goals of the institutions (Geiger, 1986). Traditional public higher education institutions are organized in a way to provide public goods to the community. They rely heavily on government support and less support from the private sector. In addition, they focus strongly on students and provide all kind of services to facilitate their success in future. In contrast, for-profit institutions and publicly traded universities and colleges must be self-funded with less or no support from the government. Critics argue that publicly traded educational institutions are more concerned to make wealth to their shareholders than providing quality education to students. Moreover, they are more concern about raising money, cost, expenditure taxes, etc. For example, G. M. Alam (2009) found that private higher education institutions in Bangladesh consider education as business goods rather than public goods. Hence, investors in the private education are expected to seek profit regardless of student's quality. However, having many private higher education institutions with a large number of students privileged and educated might not necessarily help the country to achieve a higher standard of social and economic development. The students with

a college and university degree are expecting to demand specific jobs that might not match with their quality of education they received due to poor private higher education system available. This means that education is becoming as certificate provider to be entitled for a job rather than learning and innovating to do and create a job (Bargh et al., 2000).

Smith et al. (2002) illustrated that the objective of higher education is to provide students with diverse course content (knowledge), skills and training to equip them with required tools to find and compete in the marketplace, provide them with a wide range of courses at different levels of their life and enhance their multidisciplinary training and education. However, the new trend in higher education is the ability of graduates to innovate and start-up their own business idea. Higher education institutions are not any more considered as a factory that produce workers rather it is the place where innovation is the product of these higher education institutions. These innovative ideas and innovators should help to diversify the sources of revenue for the country and make them able to compete in the international market.

In the United States, University of Phoenix is an example of for-profit higher education institution. In 2004, the university had more than 150,000 students enrolled. However, in the same year, Phoenix University was accused of providing recruiters with incentives to unqualified students to enroll in the university. The case settled for $9.8 million by Phoenix University (Al-Atiqi & El-Azma, 2007) Maximizing shareholders wealth should be controlled and in line with other stakeholders interest maximizes the financial well-being and quality of higher education institutions. The stakeholders include: government, parents, faculty and administrators, students, donors, equity owners, accreditation and the general public. Another issue with private for-profit higher education institutions that are publically traded is taxation. They are required to pay corporate tax like any other companies listed in the stock market. For example, Grand Canyon Education in the United States tax bill hit $100 million within two years. Hence, they decided to go for non-profit model and buy-out shareholders and remove itself from publicly traded market (Detour, 2014).

2. FINANCIAL ANALYSIS

Engstrom (1988) illustrated that financial reporting is considered an essential means of providing both stockholders and stakeholders with all required information about higher education institutions financial activities. Hence, the financial statements are used as a basis for informed judgement and decision making for the analysis of this paper (Sree, 2004). Tables 1 to 5 reported below show the financial ratios of the two publicly traded higher education institutions operating in the Sultanate of Oman – Dhofar University (DU) and Majan College (MC) – for the period 2011 to 2015. Both the institutions are listed in the stock market in Oman, that is, the Muscat Securities Market (MSM). MSM which was established in 1988 is the sole trading platform for the 120 plus listed companies in Oman and is regulated by the Capital Market Authority. Majan College scrip is listed in MSM since 1994 and Dhofar University is listed from 2004, indicating that the institutions have been available for public trading for over a decade (Table 1).

Table 1. Year of establishment

Higher education institution	Year of establishment
Dhofar University	2004
Majan College	1994

There are substantial differences in size and ownership structure of Dhofar University and Majan College (Tables 2, 3). Almost 70 percent of Majan College shares are held by investors from other GCC countries, while Dhofar University shareholders are predominantly Omani. Dhofar University is a much bigger entity with a paid up capital of 14 million Omani Rial compared to Majan College which has a paid up capital of 3 million OMR.

One approach to arrive at an answer to the question of financial sustainability of an educational institution which operates with a profit motive is to look at it as a normal listed company, in which case all standard financial ratios apply (Davies, 2002). This is the approach followed in this paper. Financial sustainability is examined by looking at

Table 2. Authorized and paid up capital

Higher education institution	Authorized capital	Paid-up capital
Dhofar University	OMR 25,000,000	OMR 14,000,000
Majan College	OMR 6,000,000	OMR 3,000,000

Table 3. Ownership structure

Higher education institution	Omani	Non-Omani		
Dhofar University	99.83%	0.17%		
		GCC	Arab	Foreigner
		0.17%	0.00%	0.00%
Higher education institution	Omani	Non-Omani		
Majan College	30.02%	69.98%		
		GCC	Arab	Foreigner
		68.94%	0.07%	0.97%

key financial ratios. The ratios are grouped into four facets: (1) profitability analysis (Martinez et al., 2006) which measures overall performance of the higher education institutions and its efficiency of managing their assets, liabilities and equity; (2) liquidity analysis (Sree, 2015) which measures the ability to meet cash needs as they arise; (3) long-term solvency analysis (Davies, 2002) which measures the level of debt and the ability of the firm to service the debt; and (4) asset management analysis (Maness & Zietlow, 2005) which measures the efficiency on how the firm is managing their assets. The ratios reported in Tables 4 and 5 show the four facets of financial performance analysis for both Dhofar University and Majan College.

Table 4. Five years financial ratios analysis for Dhofar University

Institution		Dhofar University				
Years		2015	2014	2013	2012	2011
Profitability analysis	Net Profit Margin	17.07%	26.45%	23.17%	12.13%	–11.19%
	Return of Total Assets	4.05%	5.92%	4.10%	1.65%	–1.12%
	Return on Total Equity	10.81%	17.12%	14.27%	6.75%	–4.76%
Liquidity analysis	Current Ratio	0.18	0.10	1.31	1.11	0.61
	Cash Ratio	0.03	0.02	0.02	0.01	0.01
	Net Working Capital to Total Assets	–18.86%	–21.53%	9.12%	3.58%	–12.55%
Long-term solvency analysis	Total Debt Ratio	62.49%	65.43%	71.26%	75.53%	76.58%
	Debt Equity Ratio	1.67	1.89	2.48	3.09	3.27
	Equity Multiplier	2.67	2.89	3.48	4.09	4.27
	Time Interest Earned Ratio	8.07	9.11	5.43	2.00	–2.86
	Debt Service Coverage Ratio	0.32	0.35	0.20	0.10	–0.04
Asset management analysis	Net Working Capital Turnover	–1.26	–1.04	1.94	3.81	–0.79
	Fixed Assets Turnover	0.25	0.23	0.29	0.21	0.12
	Total Assets Turnover	0.24	0.22	0.18	0.14	0.10

Table 5. Five years financial ratios analysis for Majan College

Institution		Majan College				
Years		2015	2014	2013	2012	2011
Profitability analysis	Net Profit Margin	33.43%	28.60%	26.87%	24.74%	25.73%
	Return of Total Assets	18.44%	18.03%	17.16%	13.77%	13.07%
	Return on Total Equity	25.42%	22.56%	21.24%	16.61%	15.07%
Liquidity analysis	Current Ratio	3.63	5.40	4.19	4.61	5.73
	Cash Ratio	2.86	4.78	3.90	4.29	5.43
	Net Working Capital to Total Assets	54.50%	56.24%	49.86%	49.50%	49.99%
Long-term solvency analysis	Total Debt Ratio	27.43%	20.06%	19.20%	17.08%	13.32%
	Debt Equity Ratio	0.38	0.25	0.24	0.21	0.15
	Equity Multiplier	1.38	1.25	1.24	1.21	1.15
	Time Interest Earned Ratio	Not applicable: no short-term or long-term bank borrowing. Liabilities are in the form of trade and other payables				
	Debt Service Coverage Ratio					
Asset management analysis	Net Working Capital Turnover	1.01	1.12	1.28	1.12	1.02
	Fixed Assets Turnover	2.23	2.03	1.85	1.51	1.29
	Total Assets Turnover	0.55	0.63	0.64	0.56	0.51

2.1. Profitability analysis

Three measures of profitability are reported below: net profit margin (NPM), return on total assets (ROA), and return on total equity (ROE). Net profit margin is ratio of net profit to revenue and it shows how much profit the educational institution is able to generate for every Rial of revenue. The main source of revenue for both Majan College and Dhofar University is fees income from students. It is important to note here that revenue from research and consultancy accounts for a very small portion of the revenue generated by these two educational institutions. Dhofar University's net profit margin has been averaging around 17 percent over the years implying that for every hundred Rials of revenue generated the institution makes a profit of 17 Rials. Comparatively Majan College has been generating higher net profit margins of around 26 percent.

Return on total assets indicates the profit generated as a percentage of total assets invested in the business. Land, buildings and class room equipment are the most important constituents of the total assets in an educational institution. Dhofar University has averaged around 4 percent and is comparatively much lower than the return on total assets figure reported by Majan College which is around 18%. Return on equity is a key profitability ratio which indicates whether shareholders are getting an acceptable return on the capital they invested. It is calculated as the ratio of net profit to total equity. Majan College's return on equity averaged around 20% compared the much lower figure reported by Dhofar University of 14%.

In terms of profitability, Majan College has done much better than Dhofar University on all the three ratios over the years. However, since the question being examined in this paper is sustainability and not comparative performance, on the basis of ratios reported by both the institutions, we may conclude that profit ratios of both institutions are satisfactory and will not be an impediment for sustainability if the institutions are able to continue maintaining NPM, ROA and ROE at these levels in future.

2.2. Liquidity analysis

Liquidity ratios indicate whether a firm has the ability to meet its short-term financial obligations. A firm's ability to meet short-term financial obligations depends on existing cash resources and cash likely to become available over the next twelve months. Three ratios – current ratio, cash ratio and ratio of net working capital to total assets – are used to judge the liquidity position of Majan College and Dhofar University. Current ratio is the ratio of current assets to current liabilities and is expected to be more than one for a firm with sufficient liquidity. Current ratio reported

by Majan College averaged around 4, but Dhofar University reported very low current ratios in the last two years. Quick ratio is not presented as it carries little meaning for an educational institution. Cash ratio is calculated as the ratio of cash and near cash assets to current liabilities. This ratio indicates the amount of cash currently available to meet payments arising as and when current liabilities mature over the next twelve months. As a measure of liquidity, cash ratio is much stricter than current ratio. Majan College reported good cash ratios over the period 2011 to 2015, while Dhofar University has extremely low cash ratios.

Net working capital (NWC) is defined as current assets minus current liabilities. When current assets are more than current liabilities, that is when NWC is positive, a firm will be able to meet its payment obligations because current assets get converted into cash which in turn becomes available to meet payments arising from maturing current liabilities. Over the period 2011 to 2015, the average ratio NWC to total assets for Majan College is around 50 per cent implying good liquidity levels. However, the ratio of NWC to total assets for Dhofar University is negative in years 2014 and 2015, indicating a severe strain on its liquidity and the likelihood of becoming bankrupt if Dhofar University is unable to raise short term borrowing from the banks if it runs out of cash to meet its payment obligations.

All three liquidity measures indicate that while Majan College has no liquidity issues, while Dhofar University may face liquidity problems. Indeed, short-term solvency is a big question mark for Dhofar University unless the institution's management can ensure that there is adequate, regular and timely inflow of cash.

2.3. Asset management analysis

Asset management analysis looks at the efficiency with which the institution is managing its assets. Three ratios are used for this purpose: net working capital turnover, fixed assets turnover and total assets turnover. Net working capital turnover is calculated as ratio of total revenue to net working capital, where net working capital is in turn defined as current assets minus current liabilities. If the institution is able to generate revenue with less amount of new working capital, then it is considered efficient in managing it working capital assets. Fixed assets turnover is defined as the ratio of total revenue to fixed assets. Efficient management of fixed assets, which is very critical for educational institutions, is possible if the fixed turnover is high. Total asset turnover is calculated as total revenue divided by total assets and the interpretation is similar to the above two ratios. High turnover implies better asset management efficiency. It is important to note that improved levels if asset management efficiency can lead to better profitability as well.

Dhofar University has a negative net working capital turnover because current assets are less than current liabilities and by definition net working capital is current assets minus current liabilities. While from a liquidity perspective negative net working capital can be problematic from asset management efficiency this is good, because the entity is able to manage without investing any funds in working capital. Fixed asset turnover is 0.25 and total asset turnover is 0.24 in year 2015 and the ratios have been improving over the years.

Majan College reported a net working capital turnover of 1.01 in year 2015 implying that every Rial of revenue generation requires the institution to arrange for an equivalent amount of working capital. Fixed asset turnover of Majan College is an impressive 2.23 in year 2015 and the turnover levels have been improving over the years. Total asset turnover is also high at 0.55 in year 2015. Compared to Dhofar University asset turnover efficiency of Majan College is much higher and is probably one of the factors which can explain its higher profitability ratios.

From a financial sustainability point of view, higher turnover ratios are certainly important and Dhofar University should explore the possibility of improving turnover ratios to ensure its continued growth.

2.4. Long-term solvency analysis

Apart from short-term solvency which can be measured by liquidity ratios, a key question for financial sustainability of an educational institution is long term solvency. Long-term solvency de-

pends on the level of debt and the ability to service debt. Ability to service debt in turn depends on profitability and the amount of debt burden.

Two ratios are used to measure the size of the debt burden: total debt ratio and debt equity ratio. Total debt ratio is calculated as total liabilities divided by total assets, and debt equity ratio is defined as total liabilities divided by total equity. Total debt ratio for Dhofar University is around 70 percent and debt equity ratio is averaging at around 2.2 compared to Majan College's figures of 20% and 0.2, respectively. Dhofar University's debt levels seem to be very high. On the other hand, Majan College has no bank borrowings as such, and whatever debt it has is in the form of trade and other payables. Financial statement figures indicate that Majan College is following an all equity financing policy and has so far not raised interest paying debt for financing its double digit growth (Majan College has tripled its student's strength and fee income over the last five years).

Times Interest Earned (TIE) ratio and debt service coverage ratios are extremely important long-term solvency indicators for any institution. In case of Majan College, both these ratios are not applicable as it has no borrowings, neither short-term nor long-term borrowing of any sort. For Majan College, therefore, long-term sustainability is not an issue, and given its present capital structure and profitability, the institution can continue to grow at a very fast pace.

Times Interest Earned is defined as EBIT (earnings before interest and taxes) divided by interest costs. For Dhofar University, TIE is well above the benchmark level of 4 in the last three years indicating that earning are sufficient to take care of annual interest costs. Debt service coverage ratio (DSCR) is a popular benchmark to assess an entity's ability to generate enough cash to take cover debt payments (interest, as well as principle repayments). Debt service coverage ratio is defined as EBITDA divided by annual debt service, where annual debt service is calculated as interest payments plus principle repayments plus lease repayments (EBITDA is earnings before interest, taxes, depreciation and amortization). Typically, the ratio of should be in the range of 1.15 to 1.35 times to ensure that cash flow is sufficient to cover loan payments on an ongoing basis. Table 4 shows that in case of Dhofar University, the DSCR is below one and at a very low level of around 0.32. Dhofar University is not generating enough profit and enough cash to take care of its annual debt payments. Most of the Dhofar University's debt is short-term in the form of bank overdraft which can be rolled over month after month as long as it is able to provide adequate collateral to the bank. However, with such high levels of debt and poor debt service coverage ratios, the institution will find it difficult to sustain. Even if it is able to sustain, expansion is likely to be difficult for several years.

From a sustainability perspective, the long-term solvency analysis discussed above implies that capital structure is a very critical issue for survival, sustenance and growth of an educational institution. Heavy burden of debt can severely impair an education institution's growth. Majan College has been following a policy of all equity financing and has managed to show impressive growth combined with good profitability. However, Dhofar University's debt is too high in comparison to its equity and debt service coverage ratios at less than one are unacceptable. Dhofar University is able to borrow because of the collateral it provides to the banks in terms of fixed deposits, but the real question is how will it obtain further funding for expansion and how long will it take to pay off the debt. From a sustainability perspective, an in-depth analysis of the two institutions indicates that the way forward is for educational institutions to ensure that total debt is less than half the total assets figure and to further ensure that debt service coverage ratio is more than one.

2.5. Five year forecasts for Dhofar University and Majan College

Five year forecasts of income statement, balance sheet and financial performance ratios for Dhofar University are reported in Appendix 1 and 2. Methodology used in this section is based on the financial planning model suggested by Beninga (2011). Based on past trends, we assumed an annual growth in educational income of 9.9% due to increased student intake. This in turn implies growth in assets in line with increase in student

strength. Asset growth has to be financed by additional equity or additional debt (Lewellen, 2002). Assuming that equity growth will be primarily due to retained earnings, remaining shortfall has to be met by additional debt. Dhofar University depends on short-term overdraft loans to finance shortfalls and this was also the assumption used in the forecasts.

Over the next five years estimates given in Appendix 1 show that Dhofar University's bank overdraft loans will increase by whopping 12 million Rials from the current level of 9.5 million Rials to 21.8 million Rials. As a result, debt service cover ratio (DSCR) does not improve in spite of good profit performance. In fact, as shown in Appendix 2, DSCR will become worse dropping from the current 0.32 to 0.25 by year 2021. As noted earlier, a DSCR less than 1 is worrisome. Forecasts show that current ratio will continue to be poor and that times interest earned ratio will decline. Sustainability of Dhofar University in the next five years depends on the assumption that commercial banks are willing to lend as much as required.

On the other hand, five year forecasts of income statement, balance sheet and financial performance ratios for Majan College (reported in Appendix 3 and 4) indicate that Majan college will continue to be financially sustainable in the near future. Revenue growth is assumed to be 14% per year in the next five years because of increase student intake and both current assets and fixed assets have to grow to support the higher levels of student intake. The forecasted figures show that Majan College will continue to primarily depend on equity to finance future growth. Further increase in equity is expected to be through the retained earnings route and not through seasoned offerings. Profit margins are forecasted to improve and liquidity and asset turnover ratios are expected to be good.

2.6. Monte Carlo simulation results

The five year forecasts reported in the above section are based assumptions related to revenue growth and other financial parameters. However, in reality, assumptions may go wrong and the forecasted results may not come true. Monte Carlo simulation (Ingalls, 2008) is necessary to examine how critical financial ratios will behave if the assumptions go wrong. In the simulation exercise conducted in this study, it was assumed that revenue growth can vary randomly anywhere between twenty percent higher or lower than the previous year. Similar assumptions where made regarding various balance sheet parameters. Results of one hundred trials are reported in Figures 1 to 7. Figures 1 to 4 relate to Dhofar University and Figures 5 to 7 show the simulation results of Majan College.

Debt service cover ratio of Dhofar University is very low (much below 1) in all the simulation trials indicating that even when revenue growth is high and other balance sheet parameters are favorable, the institution will not be able service the debt. As mentioned earlier, a debt service cover ratio of 1.3 to 1.7 is acceptable for any profit-making entity. Further, in case of Dhofar University, the ROE (return on equity) is negative in some simulation trials indicating that chances of bankruptcy exist.

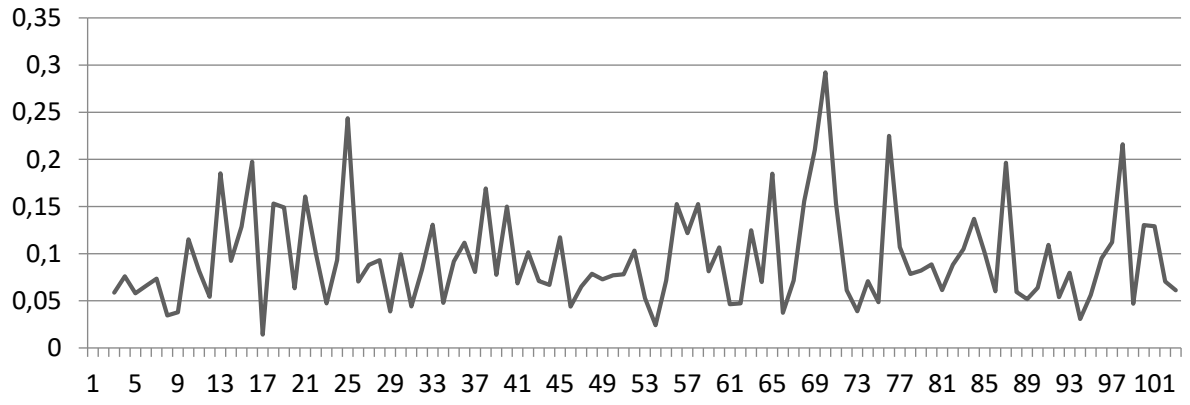


Figure 1. Dhofar University DSCR: debt service cover ratio – Monte Carlo simulation results

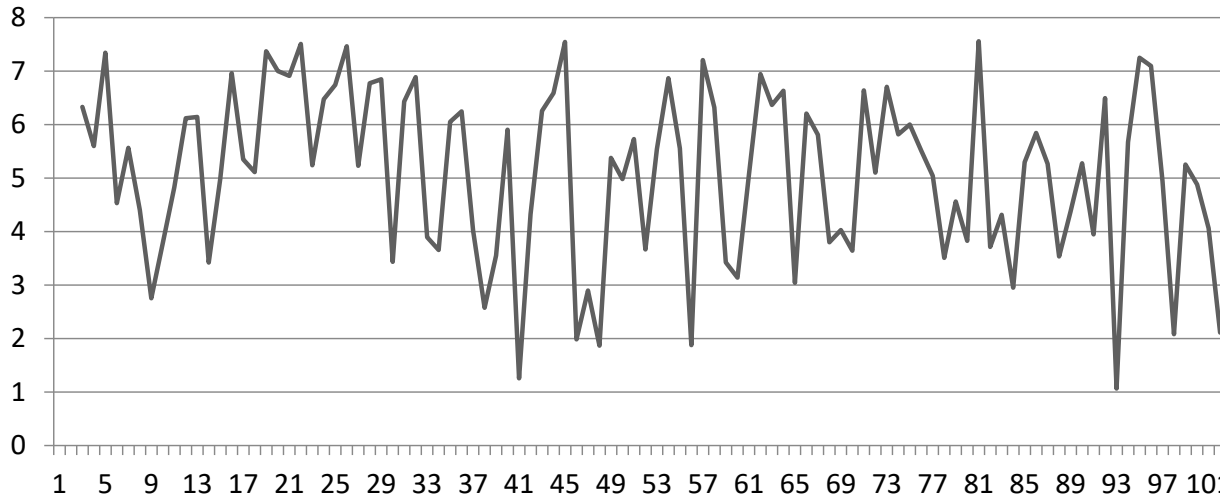


Figure 2. Dhofar University current ratio – Monte Carlo simulation results

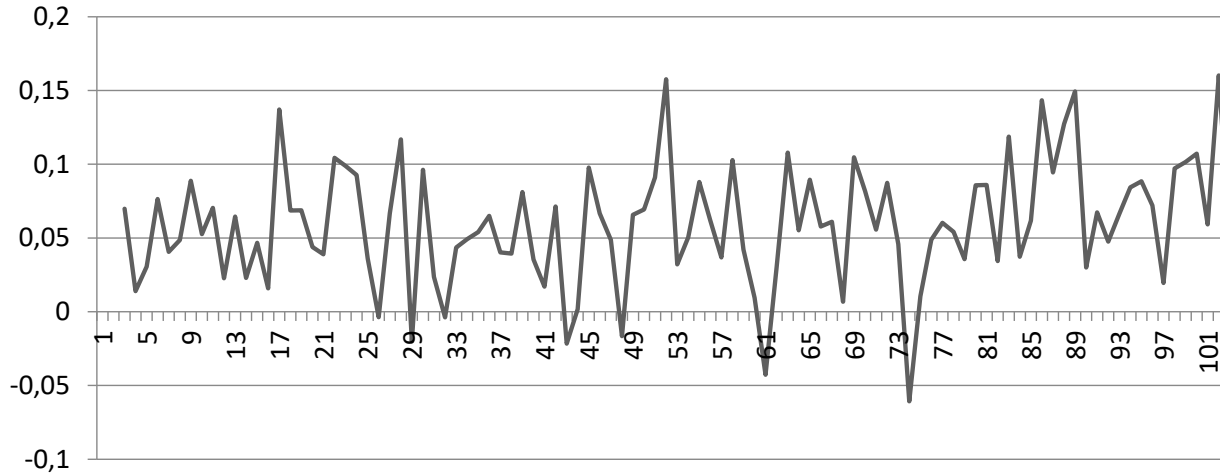


Figure 3. Dhofar University return on equity – Monte Carlo simulation results

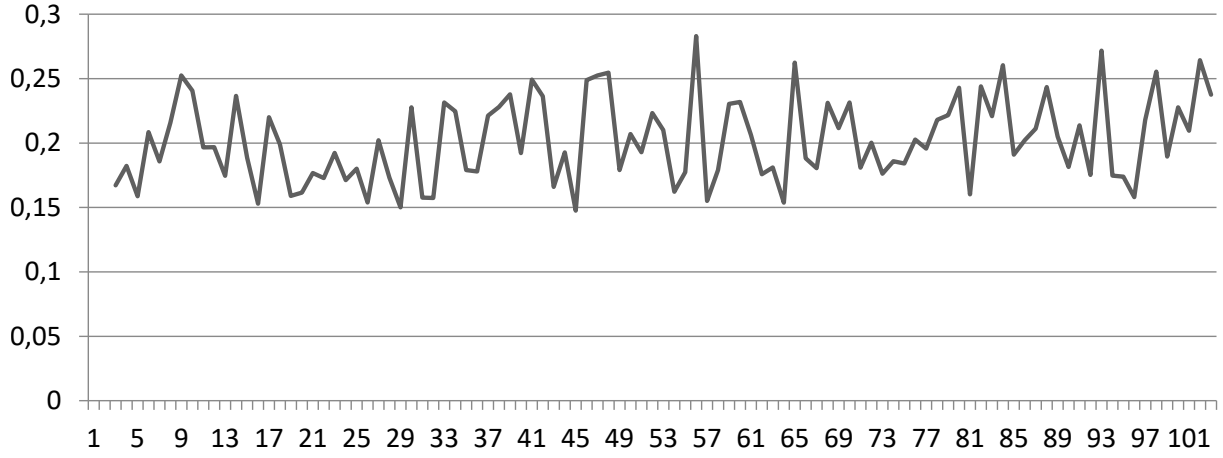


Figure 4. Dhofar University asset turnover ratio – Monte Carlo simulation results

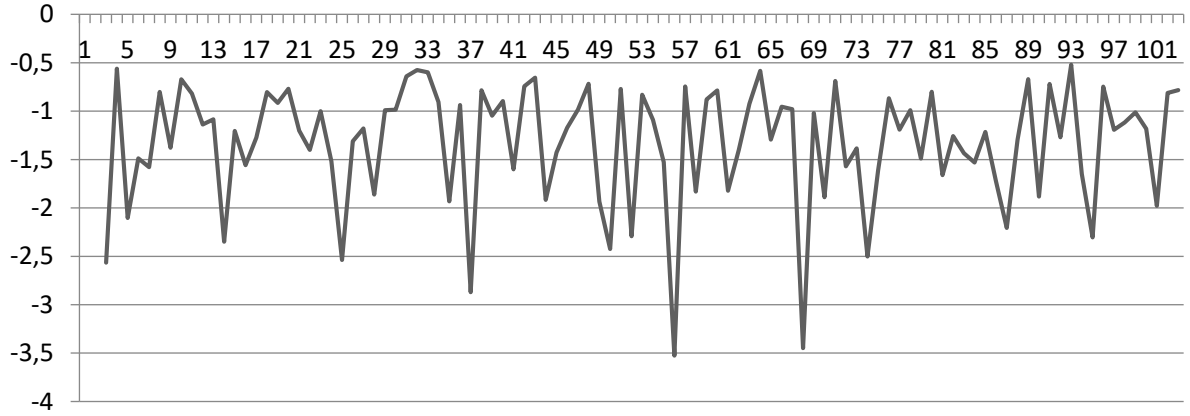


Figure 5. Majan College current ratio – Monte Carlo simulation results

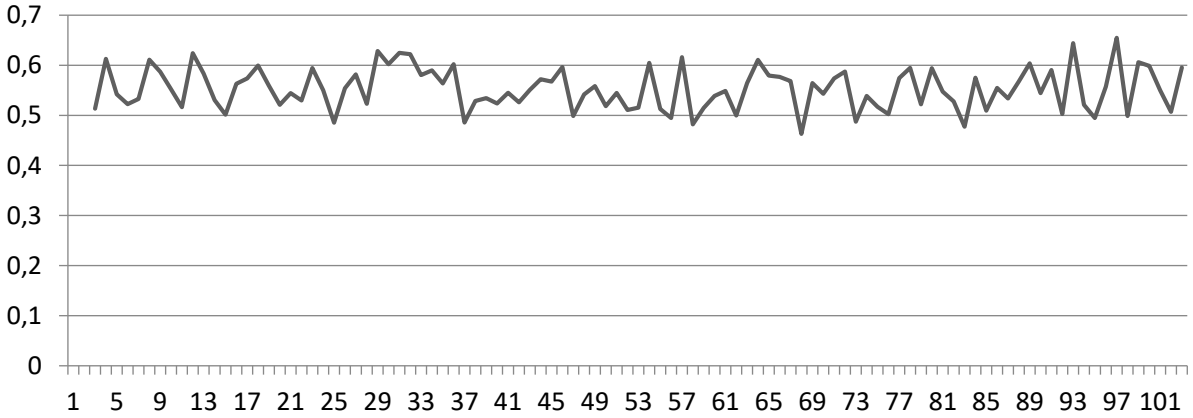


Figure 6. Majan College asset turnover ratio – Monte Carlo simulation results

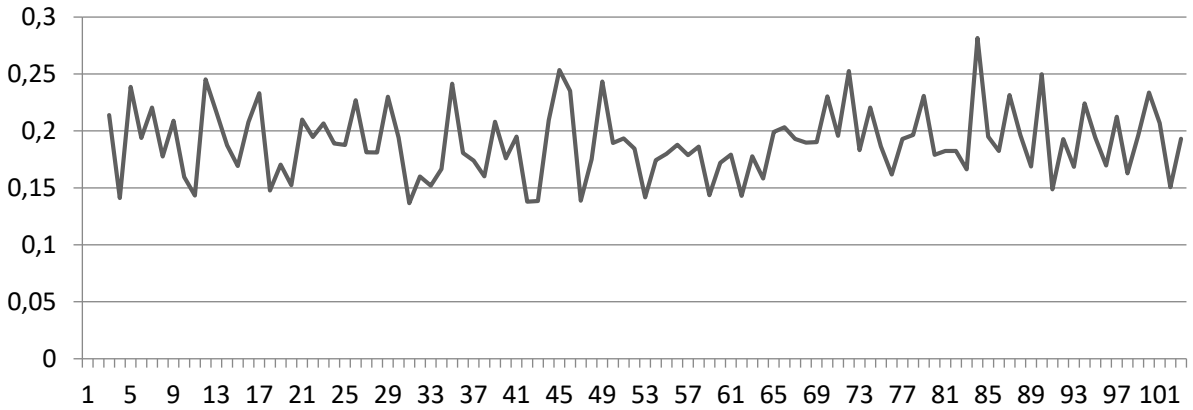


Figure 7. Majan College return on equity – Monte Carlo simulation results

Comparatively, Majan College simulation results indicate likelihood of good financial performance even in bad times. As shown in Figure 7, ROE never falls below 15 percent even under pessimistic circumstances, and current ratio and asset turnover ratio remain favorable in all the simulation trials. The key lesson learned from the simulation analysis is that Dhofar University has financial sustainability issues because of the high levels of debt and high debt equity ratio.

3. IMPLICATIONS

The paper throws up a variety of lessons for private higher education institutions. Both public and private higher education institutions should share the benefits and cost and should collaborate with each other for the benefit of the nation. Higher education is very critical to the development of the nation and their future competitive advantage. Hence, the government should continue support and monitor the national higher education system, both public and private. Further, interest of the students and the quality of education should be protected when the government opens the higher education system to the private sector. Public and private higher education should be only available to those qualified students with the interest and ability to sustain their education. Hence, they should not be a burden to the higher education system.

If the government would like to ensure that private education institutions continue to be financially sustainable and should continue to provide quality education, then they should be tax exempted. Exemptions could be in the form of tax deductions for specific items of expenditure such as research, capital expenditure etc. Advantage of tax deductions is that the educational institution will willingly spend on tax deductible items, and this will go a long way in improving the quality of education and student facilities.

Conflict between shareholders interest and educational objectives is a major issue in private education institutions. While, on the one hand, shareholders would like increased dividend payouts, on the other hand, to meet the objectives of quality education and development, the institution should retain profit generated. Further, the Dhofar University case analyzed above indicates that the institution is paying out dividends in spite of the fact that it has a huge debt burden and long-term sustainability is a big question mark, clearly indicating the conflict of interest between shareholders interest and educational objectives.

CONCLUSION

The main conclusion of this paper is that financial difficulties restrict private higher education from balancing their budget and maintain a balance between quality education and maximization of shareholders wealth. The paper outlines and analyzes a critical business model for higher education institutions, Dhofar University and Majan College, both of which are publicly traded in Muscat Securities Market. The paper uses Monte Carlo simulation technique to examine the issue of financial sustainability. Overall the findings show that while Majan College is financially sustainable in the long run, Dhofar University has long-term sustainability issues. The key take away from the analysis is that education institutions should be funded primarily by equity and not by debt to survive, sustain and provide high quality education.

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APPENDIX 1.

Dhofar University five year forecast

Dhofar University five year forecast (in millions)	Forecast				
	2021	2020	2019	2018	2017
Summarized income statement					
Educational income	20.3	18.5	16.8	15.3	13.9
Total income	20.8	18.9	17.2	15.7	14.3
Salaries and other related costs	12.5	11.4	10.4	9.4	8.6
Administrative and general expenses	2.7	2.5	2.3	2.1	1.9
Depreciation & amortization to property	1.5	1.3	1.2	1.1	1.0
Interest costs	0.7	0.6	0.5	0.4	0.4
Net finance costs	0.2	0.1	0.0	0.0	–0.1
Taxes	0.9	0.8	0.8	0.7	0.7
Net income after tax (NIAT)	3.0	2.8	2.6	2.4	2.2
Dividends	1.1	1.1	1.0	0.9	0.8
Retained earnings	1.9	1.7	1.6	1.5	1.4
Summarized balance sheet					
Property and equipment	51.2	46.6	42.4	38.6	35.2
Term deposits	18.7	18.7	18.7	18.7	18.7
Total noncurrent assets	69.9	65.3	61.1	57.3	53.9
Tuition fee receivable and other receivables	2.9	2.6	2.4	2.2	2.0
Cash and bank balances	0.7	0.6	0.5	0.5	0.5
Total current assets	3.6	3.3	3.0	2.7	2.5
Total assets	73.5	68.6	64.1	60.0	56.3
Equity and liabilities					
Total equity	28.0	26.1	24.4	22.8	21.4
Non-current liabilities					
Total non-current liabilities (incl. grants)	20.4	20.2	20.1	20.0	19.9
Trade and other payables	3.3	3.0	2.7	2.5	2.2
OCL, advance fees & bank overdraft	21.8	19.2	16.8	14.7	12.8
Total current liabilities	25.1	22.2	19.6	17.2	15.1
Total liabilities	45.5	42.4	39.7	37.2	35.0
Total equity and liabilities	73.5	68.6	64.1	60.0	56.3

APPENDIX 2.

Dhofar University ratios – forecasts

Dhofar University ratios and other measures of financial performance	Forecasts for 5 years				
	2021	2020	2019	2018	2017
Profitability measures					
Net profit margin (NPM)	14.37%	14.62%	14.89%	15.19%	15.51%
Return on assets (ROA)	4.07%	4.04%	4.01%	3.97%	3.93%
Return on equity (ROE)	10.68%	10.59%	10.51%	10.44%	10.37%
Liquidity measures					
Current ratio	0.14	0.15	0.15	0.16	0.16
Cash ratio	0.03	0.03	0.03	0.03	0.03
NWC to TA	–29.3%	–27.6%	–25.9%	–24.1%	–22.4%
Long-term solvency measures					
Total debt ratio	61.9%	61.9%	61.9%	62.0%	62.1%
Debt-equity ratio	1.63	1.62	1.62	1.63	1.64
Equity multiplier	2.63	2.62	2.62	2.63	2.64
Times interest earned ratio	6.21	6.43	6.68	6.96	7.28
Debt service cover ratio	0.25	0.26	0.27	0.28	0.29
Asset management ratios					
NWC turnover	–0.97	–1.00	–1.04	–1.08	–1.13
Fixed asset turnover	0.30	0.29	0.28	0.27	0.27
Total asset turnover	0.28	0.28	0.27	0.26	0.25

APPENDIX 3.

Majan College five year forecast

Majan College five year forecasts (in millions)	Forecast				
	2021	2020	2019	2018	2017
Summarized income statement					
Educational income	13.37	11.70	10.24	8.95	7.83
Total income	13.94	12.20	10.67	9.34	8.17
Salaries and other related costs	4.78	4.18	3.66	3.20	2.80
Administrative and general expenses	4.30	3.39	3.07	2.78	2.29
Depreciation & amortization to property	0.59	0.51	0.45	0.39	0.34
Net finance costs	0.00	0.00	0.00	0.00	0.00
Taxes	0.21	0.20	0.17	0.15	0.14
Net income after tax (NIAT)	4.01	3.86	3.28	2.78	2.57
Dividends	4.22	4.06	3.45	2.93	2.70
Retained earnings	2.21	2.12	1.80	1.53	1.41
Summarized balance sheet					
Property and equipment	6.15	5.38	4.71	4.12	3.60
Other noncurrent, fixed assets & term deposits	0.05	0.05	0.05	0.05	0.05
Total noncurrent assets	6.20	5.43	4.75	4.17	3.65
Tuition fee receivable and other receivables	4.04	3.53	3.09	2.70	2.36
Cash and bank balances	14.97	13.10	11.46	10.03	8.77
Total current assets	19.01	16.63	14.55	12.73	11.13
Total assets	25.21	22.06	19.30	16.89	14.79
Equity and liabilities					
Total equity	18.43	16.22	14.10	12.29	10.76
Non-current liabilities					
Total non-current liabilities (incl. grants)	1.24	1.13	1.03	0.95	0.88
Current liabilities					
Trade and other payables	5.11	4.47	3.91	3.42	2.99
OCL, advance fees & bank overdraft	0.44	0.24	0.26	0.23	0.15
Total current liabilities	5.54	4.71	4.17	3.65	3.14
Total liabilities	6.78	5.84	5.21	4.60	4.02
Total equity and liabilities	25.21	22.06	19.30	16.89	14.79

APPENDIX 4.

Majan College ratios – forecasts

Majan College: ratios and other measures of financial performance	Forecasts for 5 years				
	2021	2020	2019	2018	2017
Profitability measures					
Net Profit margin (NPM)	28.78%	31.64%	30.73%	29.81%	31.46%
Return on assets (ROA)	15.92%	17.49%	16.98%	16.48%	17.37%
Return on equity (ROE)	21.77%	23.79%	23.26%	22.64%	23.87%
Liquidity measures					
Current ratio	3.43	3.53	3.49	3.49	3.54
Cash ratio	2.70	2.78	2.75	2.75	2.79
NWC to TA	53.42%	54.04%	53.75%	53.74%	54.05%
Long-term solvency measures					
Total debt ratio	26.90%	26.47%	26.97%	27.23%	27.20%
Debt-equity ratio	0.37	0.36	0.37	0.37	0.37
Equity multiplier	1.37	1.36	1.37	1.37	1.37
Times interest earned ratio	n/a	n/a	n/a	n/a	n/a
Debt service coverage ratio	n/a	n/a	n/a	n/a	n/a
Asset management ratios					
NWC turnover	1.04	1.02	1.03	1.03	1.02
Fixed asset turnover	2.25	2.25	2.24	2.24	2.24
Total asset turnover	0.55	0.55	0.55	0.55	0.55