THE CAPITALIZATION OF LEASES

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As reported in the June issue of JASSA, the Financial Analysts Journal, March/April 1974 contained an article of importance to all members of the Securities Industry by Mr. R.D. Gritta on "The Impact of the Capitalization of Leases on Financial Analysis".

2. In this article Mr. Gritta concentrated on the effect of leasing on the capital structure of two or more companies subject to inter- and/or intra-industry analyses by financial analysts. No consideration was, however, given to the effect of capitalization on a company's liquidity position and the measure of its profit.

3. One means of determining the effects of capitalization on these three factors and whether these effects are of significance to an analyst is to consider the extent to which the various ratios employed by analysts are affected by the reflection of leases in a company's financial statement through capitalization.

4. To achieve this end it would be necessary for us to reconstruct a series of financial statements with capitalized amounts included therein. That information necessary for this course of action is not, however, disclosed in Australian company reports. Thus in the discussion that follows we have been forced to rely heavily on a similar study undertaken by A.T. Nelson in 1963 (A.T. Nelson, "Capitalizing Leases - The Effects on Financial Ratios", Journal of Accountancy, July 1963, pp. 49-58).

5. Beginning with the published financial statements of forty-four actual companies, Nelson was able to obtain sufficient information in eleven instances that enabled him to estimate the capitalized value of these lease rentals. The balance sheets of these companies were then adjusted by him in the following manner: (a) the present value of the lease rentals was included among each firm's fixed assets; (b) the discounted values of these rentals (less amounts due within one year) were included among the firm's long-term liabilities; (c) the rentals due within one year of the balance sheet date were included among the firm's current liabilities; and (d) the income statement was adjusted for the implicit interest which was computed by multiplying the implied interest rate by the total lease liability and this amount was merely shifted from the operations section of the income statement to the nonoperating section.

6. Looking at these adjustments, we can see that the measure of a company's fixed assets, long-term liabilities, current liabilities, and interest charge would be increased following the capitalization of its long-term leases, while the level of operating expenses would be decreased. Thus all ratios employed by an analyst that are affected, either directly or indirectly, by these factors would be subject to change if capitalization occurred. Of these, the following were selected by Nelson for study purposes:

Current Ratio;
Debt to Equity;
Debt to Total Capital;
Return on Total Capital;

Times interest charges earned;
Net profits on net working capital;
Net sales to net working capital (working capital turnover);
Fixed assets to tangible net worth;
Current debt to tangible net worth;
Inventory to net working capital;
Current debt to inventory;
Funded debt to net working capital;
Funded debt to net plant;
Net working capital to net plant;
Net plant to sales (plant turnover).

7. In order to isolate the effect of capitalization on these ratios, separate computations were made by Nelson from the original figures and his adjusted amounts. The results of this section of his study are reproduced in Table I below, while the results of this study in relation to the effect of capitalization on these ratios - whether capitalization "improved" the financial position of the particular firm and whether capitalization does, in fact, help these ratios meet their objectives - are presented in Table II and the notes accompanying that table.

8. A question raised by Nelson that is of major importance to this paper is: "Do the changes have a significant effect on financial analysis? i.e., would the decisions which the financial analyst would make based upon the analysis of these ratios be any different if leases were capitalized than if they were not". The answer to this question is provided in part by Tables III and IV below.

9. Let us now, at this point in our discussion, define the term "material" as a percentage change in the measure of these ratios of 10 percent. Should we accept this definition, it can be seen from Table III that material variances resulting from the recognition of leases in these companies' financial statements occurred in respect of 123 of the 165 ratios computed by Nelson. Moreover, it can be seen from Table IV that in all but one of the cases (the return on total capital) their ranking changed after capitalization. Also of significance is the number of firms which were given a different ranking as a result of capitalization - this data is presented below in Table V - and that of the 165 separate ratios considered by Nelson, 92 (or 56 percent) showed a spread of two or more places between the firms' position before and after capitalization, while of these 11 (or 7 percent) showed a spread of six or more places.

10. Thus we must concur with the conclusion reached by Nelson that, "other things remaining equal, the financial analyst could easily have made faulty decisions if he had based his analysis on ratios which were computed from conventional financial statements" and we can see that where a company enters into a long-term financial lease agreement but does not capitalize this lease in its financial statements, the effect of these actions are not only to add to the obstacles already facing an analyst in his attempt to undertake inter- and/or intra-industry analyses, but may also result in his conclusions regarding the three most important factors in his study - the level of a company's earnings, the rate of return on its operating assets, and the risks associated with this company's short- and long-term debt structure - being invalid.

TABLE I: Ratios Affected by Capitalization for Eleven Selected Companies

	Favorable Direction	Ratio Expressed as	Company A		Company B		Company C		Company D	
			BC	AC	BC	AC	BC	AC	BC	AC
Major Ratios:										
Current ratio	H	times	2.78	1.85	1.77	1.37	3.42	2.80	3.43	2.13
Debt to Equity	L	%	55.0	219.7	70.8	239.9	51.9	152.6	41.4	28.2
Debt to total capital	L	%	35.5	68.7	41.5	70.6	34.2	60.4	29.3	56.2
Return on total capital	H	%	4.8	5.4	8.3	7.1	4.1	4.6	7.7	7.0
Times interest charges earned	H	times	6.3	1.6	20.1	2.2	12.5	2.0	8.4	2.5
Fixed assets to tangible net worth	L	%	59.8	224.5	73.7	242.7	32.9	144.7	67.6	54.4
Funded debt to net plant	L	%	37.2	76.9	18.3	68.6	63.2	79.5	39.4	67.6
Minor Ratios:										
Net profits on net working capital	H	%	12.2	17.1	32.3	52.3	7.6	8.5	26.7	35.7
Net sales to net working capital	H	times	14.3	20.0	22.9	37.1	4.8	5.2	5.9	7.9
Current debt to tangible net worth	L	%	28.7	43.1	54.1	70.1	31.1	37.7	14.8	23.8
Inventory to net working capital	L	%	107.6	149.9	158.3	256.8	66.9	73.5	99.6	32.2
Current debt to inventory	L	%	52.4	78.6	82.0	106.2	61.3	75.6	41.3	66.5
Funded debt to net working capital	L	%	43.7	472.4	32.4	648.3	27.5	169.5	74.3	88.7
Net working capital to net plant	H	%	85.2	16.3	56.6	10.6	230.2	46.9	53.1	17.4
Net plant to sales	L	%	8.2	30.8	7.7	25.4	9.1	40.8	32.0	73.1
Other Ratios:										
Leased assets to total assets		%		51.5		49.7		44.5		38.0
Leased assets to net plant		%		73.2		69.7		77.6		56.2

TABLE I: Continued

Company E		Company F		Company G		Company H		Company I		Company J		Company K	
BC	AC	BC	AC	BC	AC	BC	AC	BC	AC	BC	AC	BC	AC
Major Ratios:													
2.56	1.95	7.50	6.16	2.25	2.01	3.40	3.35	2.04	1.99	1.15	1.14	3.40	3.35
34.5	111.9	15.8	65.8	71.6	111.2	128.1	153.0	73.0	90.1	417.1	441.8	75.7	82.0
25.6	52.8	13.7	39.7	41.7	52.6	56.2	60.5	42.2	47.4	80.7	81.5	43.1	45.0
4.3	4.9	4.0	4.6	7.0	6.8	7.1	6.9	11.5	11.0	(6.8)	(6.2)	8.5	8.4
27.2	2.1	320.6	2.5	6.1	3.3	3.8	3.1	7.7	5.8	(5.5)	(4.3)	7.7	6.6
47.6	125.0	23.1	73.0	52.9	92.4	68.1	93.0	53.4	70.6	71.5	96.1	45.0	51.3
-	53.6	17.1	66.4	47.9	64.2	106.8	100.8	33.4	47.5	54.0	62.1	85.3	86.0
Minor Ratios:													
10.5	13.2	6.0	6.5	17.2	19.0	15.0	15.8	30.2	31.0	(74.5)	(79.6)	14.5	14.6
7.5	9.4	2.0	2.2	10.8	12.0	4.1	4.3	5.3	5.5	23.1	24.7	3.7	3.7
33.6	44.0	11.9	17.3	46.3	51.8	54.6	58.4	55.1	56.5	375.5	379.1	37.3	37.9
109.8	137.2	49.5	53.2	117.0	129.2	88.1	92.6	111.3	114.2	305.6	326.6	76.7	77.2
58.5	76.7	31.1	45.2	68.5	76.6	78.2	83.8	86.3	88.6	220.2	222.3	54.4	55.2
-	106.4	5.1	67.5	43.8	113.4	91.9	124.5	31.1	60.0	69.2	114.3	43.0	49.6
109.8	33.4	334.6	98.4	109.3	56.6	116.2	81.0	107.3	79.2	78.0	54.3	198.5	173.2
12.2	32.0	14.9	47.2	8.4	14.7	21.2	28.9	17.5	23.1	5.5	7.5	13.7	15.6
Other Ratios:													
	36.6		30.2	18.7	18.7		9.9		9.0		4.6		3.4
	62.1		68.4		42.7		26.8		24.3		25.7		12.1

BC = Before Capitalization
AC = After Capitalization

H = High Ratio Generally Desirable
L = Low Ratio Generally Desirable

Source: A.T. Nelson, "Capitalizing Leases - TheEffect on Financial Ratios", _The Journal of Accountancy_, July 1963, pp. 53-4.

TABLE II: The Impact of Capitalization on Selected Financial Ratios

	Effect on		Does capitalization improve the firm's financial position?	Does capitalization help the ratio meet its objectives?	Notes
	Numerator	Denominator			
Current ratio	NC	+	No	Yes	(1)
Debt to equity	+	NC	No	Yes	(2)
Debt to total capital	+	+	No	Yes	(3)
Return on total capital	+	+	*	Yes	(4)
Times interest charges earned	+	+	No	Yes	(5)
Net profits on net working capital	NC	-	Yes	N.A.	(6)
Net sales to net working capital	NC	-	Yes	N.A.	(7)
Fixed assets to tangible net worth	+	NC	No	Yes	(8)
Current debt to tangible net worth	+	NC	No	Yes	(9)
Inventory to net working capital	NC	-	No	Yes	(10)
Current debt to inventory	+	NC	No	Yes	(11)
Funded debt to net working capital	+	-	No	Yes	(12)
Funded debt to net plant	+	+	No	Yes	(13)
Net working capital to net plant	-	+	No	Yes	(14)
Net plant to sales	+	NC	No	Yes	(15)

* Return on total capital may or may not improve depending on the lease terms. In five of the eleven companies studied, capitalization improved the return on investment.

NC = No Change NA = Not Applicable. See Notes indicated.

Notes to Table II

1. The inclusion of current lease rentals makes the ratio a better measure of the current debt payment ability.
2. By including all assets used in the business the ratio reflects more completely the relative proportion of the assets that have been furnished by owners and by creditors (outsiders).

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4. The ratio is improved because the "return" reflects income before implied interest and "capital" includes assets furnished from all sources.
5. The ratio better meets its objectives because all interest charges are reflected, including "hidden" interest on financial leases.
6. The ratio of net profits on net working capital has been subject to wide misuse. It implies that profits are earned on working capital only and that all other assets are nonproductive parasites. While the importance of working capital cannot be denied, it is nevertheless only one of the factors which contribute to profit. All of the resources of a firm, from whatever source supplied, jointly generate profits; and a relationship which implies otherwise is faulty and actually may be misleading. Because of the limitations of this ratio, it was not possible to determine whether or not capitalization would help it to meet its objectives.
7. The ratio of net sales to net working capital has similar limitations to those of the ratio of net profits on net working capital. Because of these limitations, it was not possible to determine whether or not capitalization would help the ratio meet its objectives.
8. All fixed assets used in the business from whatever source obtained are included in the computation of the ratio only after capitalization.
9. Current lease rentals are included as an obligation that must be paid during the year only after capitalization.
10. Current lease rentals are included as obligations that must be met out of net working capital only if leases are capitalized.
11. Current lease rentals are included as an obligation that must be paid during the year only after capitalization.
12. All current liabilities and all long-term liabilities are considered in the computation including those arising from leases.
13. All assets used in the business are included as well as all "funds" supplied by outsiders.
14. Since all assets are included in the computation when leases are capitalized, the ratio better reflects the proportion of capital tied-up in fixed assets.
15. When leases are capitalized, this ratio reflects the fact that management should be held accountable for all assets which are used in the business.

TABLE III: Absolute Percentage Variation between Ratios from Adjusted Figures and Ratios from Original Data

COMPANY -	A	B	C	D	E	F	G	H	I	J	K
Current ratio	33.5	22.6	18.1	38.2	23.8	17.9	10.7	1.5	2.5	0.9	1.5
Debt to equity	281.2	238.8	194.0	209.6	224.3	316.4	55.3	19.4	23.4	5.9	8.3
Debt to total capital	93.5	70.1	76.6	91.7	106.2	189.8	26.1	7.6	12.3	1.0	4.4
Return on total capital	12.5	14.4	12.2	9.1	13.9	15.0	2.9	2.8	4.3	8.8	1.2
Times interest charges earned	74.6	89.1	84.0	70.2	92.3	99.2	45.9	18.4	24.7	21.8	14.3
Net profits on net working capital	275.4	229.3	339.8	128.4	162.6	216.0	74.7	36.5	32.2	34.4	14.0
Net sales to net working capital	106.7	274.9	25.8	71.6	-	288.3	34.0	5.6	42.2	15.0	0.8
Fixed assets to tangible net worth	40.2	61.9	11.9	33.7	25.7	8.3	10.5	5.3	2.6	6.9	0.7
Current debt to tangible net worth	39.8	62.0	8.4	33.9	25.3	10.0	11.1	4.9	3.8	6.9	0
Inventory to net working capital	50.2	29.6	21.2	60.8	30.9	42.0	11.8	7.0	2.5	0.9	1.6
Current debt to inventory	39.3	62.2	5.4	33.7	24.9	7.5	10.4	5.1	2.6	6.9	0.7
Funded debt to net working capital	50.0	29.6	23.3	61.0	31.1	45.3	11.9	7.2	2.7	1.0	1.5
Funded debt to net plant	981.0	1,900.9	51.6	423.1	-	1,223.5	158.9	35.5	92.9	65.2	15.4
Net working capital to net plant	80.9	83.0	79.6	67.2	69.6	70.6	48.1	30.3	26.2	30.4	12.7
Net plant to sales	275.6	242.9	348.3	128.4	162.3	216.8	75.0	36.3	32.0	36.4	13.8

Based on data presented by Nelson, ibid.

TABLE IV: Ranking of Lessee Companies by Ratio Before and After Capitalization

Company –		A	B	C	D	E	F	G	H	I	J	K
Leased assets to total assets	BC											
	AC	11	10	9	8	7	6	5	4	3	2	1
Leased assets to net plant	BC											
	AC	11	9	10	8	7	6	5	4	3	2	1
Current ratio	BC	5	10	3	2	6	1	8	7	9	11	3
	AC	9	10	3	5	8	1	6	4	7	11	2
Debt to equity	BC	5	6	4	3	2	1	7	10	8	11	9
	AC	9	10	7	6	5	1	4	8	2	11	3
Debt to total capital	BC	5	6	4	3	2	1	7	10	8	11	9
	AC	9	10	7	6	5	1	4	8	2	11	9
Return on total capital	BC	7	3	9	4	8	10	6	5	1	11	2
	AC	7	3	9	4	8	10	6	5	1	11	2
Times interest charges earned	BC	8	3	4	5	2	1	9	10	6	11	7
	AC	10	7	9	6	8	5	3	4	2	11	1
Fixed assets to tangible net worth	BC	7	11	2	8	4	1	5	9	6	10	3
	AC	10	11	8	9	7	3	4	5	2	6	1
Funded debt to net plant	BC	5	3	9	6	1	2	7	11	4	8	10
	AC	8	7	9	6	2	5	4	11	1	3	10
Net profits on net working capital	BC	7	1	9	3	8	10	4	5	2	11	6
	AC	5	1	9	2	8	10	4	6	3	11	7
Net sales to net working capital	BC	3	2	8	6	5	11	4	9	7	1	10
	AC	3	1	8	6	5	11	4	9	7	2	10
Current debt to tangible net worth	BC	3	8	4	2	5	1	7	9	10	11	6
	AC	5	10	3	2	6	1	7	8	9	11	4
Inventory to net working capital	BC	6	10	2	5	7	1	9	4	8	11	3
	AC	9	10	2	6	8	1	7	4	5	11	3
Current debt to inventory	BC	3	9	6	2	5	1	7	8	10	11	4
	AC	7	10	4	3	6	1	5	8	9	11	2
Funded debt to net working capital	BC	7	5	3	10	1	2	8	11	4	9	6
	AC	10	11	8	9	7	3	4	6	2	5	1
Net working capital to net plant	BC	8	10	2	11	5	1	6	4	7	9	3
	AC	10	11	7	9	8	2	5	3	4	6	1
Net plant to sales	BC	3	2	5	11	6	8	4	10	9	1	7
	AC	7	5	9	11	8	10	2	6	4	1	3

BC = Before Capitalization AC = After Capitalization Source: A.T. Nelson, ibid., p.56

TABLE V

Number of Firms Given a Different Ranking
as a Result of Capitalization

	Number of Companies
Current ratio	7
Debt to equity	9
Debt to total capital	9
Return on total capital	0
Times interest charges earned	10
Fixed assets to tangible net worth	10
Funded debt to net plant	7
Net profits on net working capital	5
Net sales to net working capital	2
Current debt to tangible net worth	7
Inventory to net working capital	5
Current debt to inventory	8
Funded debt to net working capital	11
Net working capital to net plant	11
Net plant to sales	9

Source: A.T. Nelson, ibid., pp. 54 and 56.

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THE AUSTRALIAN UNIT OF CURRENCY

Extract from the Chairman's Report, Commonwealth Banking Corporation Board - Sir Roland Wilson, 22 August, 1974:

> "Whatever policy measures the Government and the monetary authorities may decide to pursue, they must be directed first and foremost towards a substantial reduction in the present rate of inflation. This is looming ever more rapidly as the arch-destroyer of the social and economic fabric. It is destroying confidence throughout the community, causing social injustice, sapping initiative and inhibiting constructive business enterprise.
>
> It is not good enough to shrug off the problem by referring to the plight of other countries: this is our country. Nor is it good enough to attempt to avoid the problem by inflating, simultaneously and uniformly, everything expressed in money terms: it cannot be done."

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