

**AN EMPIRICAL STUDY OF RECEIVABLES
MANAGEMENT IN REAL ESTATE SECTOR OF INDIA**

Vishal G. Shah (MBA in Finance)*

Abstract:

Financial performance of any firm is based on financial structure, working capital, and profitability. Working capital is considered to be lifeblood and controlling nerve centre of the business. It is the management of short term financing requirements of a firm which focuses on maintaining an optimum balance of working capital elements – receivables, inventory, payables and cash. This paper represents an empirical study which examines the receivables management in Real estate sector in India with a data of 10 years. For the purpose of the study secondary data is used and researcher has considered 05 units as sample. For the purpose of analysis researcher has used ratio techniques and to test hypothesis ANOVA technique has been applied. The study reveals that the level of investment in receivables as a percentage of sales was more than 50 percent showing the higher level of credit sales in Indian real estate sector.

Key Words: Real Estate Sector, Receivable Management, F-test (Single factor ANOVA)

* Senior Faculty working at BBA college in Bhavnagar, Gujarat.

Introduction:

According to Robert N. Anthony, "Accounts receivables are amounts owed to the business enterprise, usually by its customers. Generally, when a concern does not receive cash payment in respect of ordinary sale of its products or services immediately in order to allow them a reasonable period of time to pay for the goods they have received. The firm is said to have granted trade credit. Trade credit thus, gives rise to certain receivables or book debts expected to be collected by the firm in the near future. In other words, sale of goods on credit converts finished goods of a selling firm into receivables or book debts, on their maturity these receivables are realized and cash is generated. According to Prasanna Chandra, "The balance in the receivables accounts would be; average daily credit sales x average collection period." Receivables are a type of investment made by a firm. Like other investments, receivables too feature a drawback, which are required to be maintained for long that it known as credit sanction. Credit sanction means tie up of funds with no purpose to solve yet costing certain amount to the firm. Such costs associated with maintaining receivables are - Administrative Cost, Collection Cost, Capital Cost, Delinquency Cost and Default Cost.

Receivables are one of the three primary components of working capital, the other being inventory and cash, the other being inventory and cash. Receivables occupy second important place after inventories and thereby constitute a substantial portion of current assets in several firms. The capital invested in receivables is almost of the same amount as that invested in cash and inventories. Receivables thus, form about one third of current assets in India. Trade credit is an important market tool. It acts like a bridge for mobilization of goods from production to distribution stages in the field of marketing. Receivables provide protection to sales from competitions. It acts no less than a magnet in attracting potential customers to buy the product at terms and conditions favourable to them as well as to the firm. Receivables management demands due consideration not financial executive not only because cost and risk are associated with this investment but also for the reason that each rupee can contribute to firm's net worth.

The size of receivables is determined by a number of factors for receivables being a major component of current assets. As most of them varies from business the business in accordance with the nature and type of business, some main and common factors determining the level of

receivable are - Terms of Sale, The Volume of Credit Sales, Credit Policy, Terms of Sale and Collection Policy. The objective of receivables management is to promote sales and profit until that is reached where the return on investment in further finding of receivable is less than the cost of funds raised to finance that additional credit (i.e., cost of capital). The primary aim of receivables management is minimizing the value of the firm while maintaining a reasonable balance between risk in the form of liquidity and profitability. The main purpose of maintaining receivable is not sales maximization not is for minimization of risk involved by way of bad debts.

Literature Review:

P. Janki Ramadu & S.Durga Rao (2007) under their study – “Receivables Management of the Indian Commercial Vehicles Industry”, revealed that the industry had managed receivables efficiently whereas a few individual companies had far less satisfactory scores in this respect.

Vadakarai (2007) in his study titled with “A Study on Receivables Management Variables and Investments in Plant & Machinery” found that the receivables management variables depend upon the investment made in plant & machinery/equipments.

A study by Amarjit Gill 1, Nahum Biger 2, Neil Mathur 3 (2010), under the title "The Relationship Between Working Capital Management And Profitability: Evidence from the United States", the aim of this paper is to find the relationship between working capital management and profitability. A sample of 88 American firms listed on New York Stock Exchange for a period of 3 years from 2005 to 2007 was selected. We found statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. It follows that managers can create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimal level. The study contributes to the literature on the relationship between the working capital management and the firm's profitability.

Bhayani and Ajmera (2009) in their study – “Receivables Management in Refinery Industry in India: An Empirical Study” found that the level of investments in receivables as a percentage of sales across the industry was reasonably less.

M. Kannadhasan (2008) found under his study of – “Receivable Management in a Public Ltd. Company” that the efficiency of receivables management in a public ltd. company was satisfactory.

Objective of the Study

The main objective behind this empirical study was to analyze the receivables management in the Real estate sector of India in terms of the Receivables to Current assets ratio, Receivables to Total assets ratio, Receivable to Sales ratio, Receivable Turnover ratio and Average Collection period.

Research Methodology

“An Empirical study on Receivables Management in Real Estate Sector in India” – has been made with the use of financial statements of the selected Real estate companies and the companies are – DLF Ltd. (Delhi Land & Finance), HDIL (Housing Development and Infrastructure Limited), PDL (Parsvanath Developers Ltd.), SDL (Sobha Developers Ltd.) and Unitech ltd.. The period of the study is 10 years from 2002 to 2011. The data has been collected from www.moneycontrol.com, and the annual reports of the respective companies.

Hypothesis of the Study

1. Ratio of Receivables to Current assets is uniform in the sample units.
2. Ratio of Receivables to Total assets is uniform in the sample units.
3. Ratio of Receivables to Sales is uniform in the sample units.
4. Ratio of Receivables turnover is uniform in the sample units.
5. Average collection period is uniform in the sample units.

Techniques used for Analysis

For the purpose of analysis the researcher has used Ratio techniques and to test the hypothesis ANOVA (single factor) F-test has been applied which is one of the statistical techniques that helps in analyzing the consistency, stability and overall trends in different management receivables ratios of the selected companies.

Empirical Analysis

1. Receivables to Current Assets Ratio:

Ratio of receivables to current assets as a percentage indicates that the size of receivables as a part of total assets. Higher the ratio is, higher the cost of carrying of the receivables shall be. Therefore, it is required for any company to maintain this ratio with the maximum possible lower percentage simultaneously without changing the sales volume.

The ratio is calculated as under:

$$\text{Ratio} = \frac{\text{Receivables at the end of the Year}}{\text{Current Assets}} * 100$$

Table 1 indicates that Unitech had the highest average percentage of receivables to current assets followed by SDL, PDL, HDIL and DLF. The higher ratio shows high proportion of credit sales i.e. receivables standing to credit of the company leading to more requirement of working capital to the firm. As per the suggestion of **Lawrance J.Gitman**, an average manufacturing firm could afford to have percentage of receivables to current assets less than or equal to 37%. When compared with this suggested standard, it could be observed that the industry average was 41.47 which is quite near to the standard showing all the selected companies except Unitech (79.63) maintained the ratio. However, DLF (3.30) and HDIL (3.67) had very lower percentage of receivables to current assets as against the standard.

Table 2 shows the calculation of Single factor ANOVA wherein, F-calculated (44.78) is greater than F-critical (2.58) leading to the conclusion that the ratio of receivables to current assets of the sample companies is not uniform during the study period.

The Ratio of Receivables to Current Assets of the sample companies:-

Table 1

Year	DLF	HDIL	PDL	SDL	Unitech	MEAN	S.D.
2002	3.5299	4.0643	15.2256	21.3788	69.4207	36.4753	23.2959
2003	1.9034	1.0119	9.6969	28.9895	61.8788	31.8911	21.2045
2004	11.8753	0.1581	8.6504	28.6678	53.7360	32.8056	14.8000
2005	0.5470	0.2854	12.9027	15.6624	39.9580	20.2525	13.9339
2006	5.2002	14.8982	13.6755	22.7750	41.7044	23.4523	12.9062
2007	3.8843	21.1414	23.7337	29.1184	37.6728	20.7786	11.9460
2008	11.8852	1.0780	36.8993	40.5870	74.7658	43.3255	22.2316
2009	3.0891	2.4949	31.1939	24.9873	90.8154	46.9523	31.0159
2010	8.4680	2.3526	32.2034	28.1966	87.6921	48.0801	28.0099
2011	3.0728	3.2785	31.5000	28.3581	89.8383	46.4555	30.6762
MEAN	3.3014	3.6714	23.3628	24.8685	79.6295	41.4654	26.9861
S.D.	0.1616	0.2778	5.7539	2.4676	7.2187	3.5285	2.6093

Source: Data self compiled and made available from www.moneycontrol.com

Table 2

ANOVA

Source Variation	SS	df	MS	F	P-value	F crit
Between Groups	23780.69	4	5945.173	44.77852	3.89E-15	2.578739
Within Groups	5974.578	45	132.7684			

Total	29755.27	49				
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2. Receivables to Total Assets Ratio:

This ratio is one type of indicator showing the effective management of receivables. It is calculated using the following formula:

$$\text{Ratio} = \frac{\text{Receivables at the end of the Year}}{\text{Total Assets}} * 100$$

As it can be seen from the Table 3, the industry average of receivables to total assets over last 10 years was 11.6580. In Indian context, it has been observed by **Bhattacharya (2003)** that an average of Indian company maintained 26% of receivables to total assets. And if we compare the said ratio of the selected companies over last decade, we can see that SDL (16.99) and Unitech (20.83) showed much better management efficiency. On the other hand, PDL (45.93) seemed very inefficient regarding this indicator.

Table 4 represents the F-test (One way ANOVA) in which F-calculated (8.08) is greater than F-critical (2.58) proving that the ratio of receivables to total assets differs significantly.

The Ratio of Receivables to Total Assets of the sample companies:-

Table 3

Year	DLF	HDIL	PDL	SDL	Unitech	MEAN	S.D.
2002	11.7077	3.7424	63.4938	28.8914	22.6783	17.1930	3.8787
2003	6.3692	0.7091	47.4855	64.4962	19.3303	12.8497	4.5824
2004	10.2726	(32.9114)	15.0440	32.9807	21.9318	16.1022	4.1221
2005	0.3913	0.4247	19.7176	12.5930	11.4801	5.9357	3.9205
2006	0.7256	20.2868	14.5923	14.3406	8.3990	4.5623	2.7129
2007	2.3415	28.1410	17.0777	11.2733	2.0468	2.1941	0.1042
2008	4.7324	0.8270	32.2109	19.8138	7.2090		

						5.9707	0.8756
2009	0.9681	1.9208	27.7735	11.8375	7.5248	4.2464	2.3181
2010	2.3872	1.7970	30.1847	13.1724	7.7210	5.0541	1.8858
2011	0.9360	2.4786	28.3590	12.7589	11.3102	6.1231	3.6679
MEAN	6.3218	3.1105	45.9264	20.8252	16.9942	11.6580	3.7733
S.D.	3.8084	0.4468	12.4220	5.7037	4.0192	3.9138	0.0745

Source: Data self compiled and made available from www.moneycontrol.com

Table 4

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.539842	4	0.134961	8.084379	5.32E-05	2.578739
Within Groups	0.751229	45	0.016694			
Total	1.291072	49				

3. Receivables to Sales Ratio:

Generally this ratio helps in indentifying the credit sales out of the total sales achieved by the firm during a particular period of time. Higher ratio will lead to higher debtors outstanding at the end of the year requiring a big amount of working capital and vice versa if the ratio is lower. As suggested by **Hampton (1983)**, this ratio could be calculated as under:

$$\text{Ratio} = \frac{\text{Receivables at the end of the Year}}{\text{Sales}} * 100$$

The ratio of receivables to sales of the selected companies is in the table 5. The data in table 5 state that the amount of receivables as a percentage of sales throughout the industry on an

average basis was the lowest of 6.14 in 2005 and the highest of 72.16 in 2011. Among all the companies, PDL showed the highest average of 90.63 followed by Unitech (76.98) indicating that the two companies did believe in credit sales leading to the expansion of the firm. Whereas SDL with an average of 21.99 shows that the company does not believe in taking risk of credit sales and focuses more on cash sales.

Table 6 shows the calculation of Single factor ANOVA wherein F-calculated (3.37) is more than F-critical (2.58) stating that the ratio of receivables to sales of selected companies is not uniform.

The Ratio of Receivables to Sales of the sample companies:-

Table 5

Year	DLF	HDIL	PDL	SDL	Unitech	MEAN	S.D.
2002	48.8636	48.8636	20.8226	15.5661	28.6506	38.7571	7.1464
2003	4.6418	4.6418	14.2733	34.6147	22.1958	13.4188	6.2063
2004	4.4674	4.4674	11.5738	13.2747	16.5584	10.5129	4.2748
2005	1.0627	1.0627	14.5048	8.0320	11.2187	6.1407	3.5907
2006	18.3323	18.3323	9.9048	12.8433	11.7190	15.0256	2.3382
2007	25.7809	25.7809	34.1863	13.2949	3.9951	14.8880	7.7024
2008	2.3455	2.3455	65.4737	38.3241	29.7468	16.0461	9.6878
2009	9.6203	9.6203	142.2226	36.4528	44.8715	27.2459	12.4632
2010	13.4532	13.4532	148.8109	37.6240	54.4875	33.9703	14.5078
2011	19.0194	19.0194	160.4370	27.0220	125.3102	72.1648	37.5794
MEAN	33.9415	33.9415	90.6298	21.2941	76.9804	55.4610	15.2165

S.D.	10.5515	10.5515	49.3611	4.0503	34.1743	11.8114	0.8909
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Source: Data self compiled and made available from www.moneycontrol.com

Table 6

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.566163	4	0.3915407	3.366274	0.0171094	2.578739
Within Groups	5.234076	45	0.1163128			
Total	6.800238	49				

4. Receivables Turnover Ratio and Average Collection Period:-

Receivable turnover ratio measures the liquidity of debtor of any company and average collection period states the average time lag (in days) between the sale and collection thereof. The average collection policy also indicates the credit policy of the firm leading to the management efficiency. Higher turnover and lower collection period reflect the firm's ability in translating a larger business without corresponding increase in receivables and vice versa. The ratios can be calculated as under:

Receivables Turnover Ratio (times):

$$\text{Ratio} = \frac{\text{Sales}}{\text{Average Receivables}}$$

Where, Average Receivables = $\frac{\text{Opening bal.of Receivables} + \text{Closing bal.of Receivables}}{2}$

Average Collection Period (days):

$$\text{Ratio} = \frac{365 \text{ Days}}{\text{Receivables turnover Ratio}}$$

The average collection period of the companies could be compared with the Tandon Committees' suggested norm of 68 days for the purpose of evaluating the efficiency of receivables turnover.

Receivable Turnover Ratio (times):-**Table 7**

Year	DLF	HDIL	PDL	SDL	Unitech	MEAN	S.D.
2003	8.85	15.02	8.88	3.76	4.16	6.50	1.657145
2004	7.93	16.17	9.84	6.43	6.55	7.24	0.489191
2005	7.53	135.27	10.76	14.06	8.56	8.04	0.36245
2006	62.44	10.81	12.02	10.72	9.77	36.11	18.62114
2007	11.00	6.21	5.08	9.97	28.05	19.52	6.028776
2008	9.96	13.00	2.22	4.05	5.94	7.95	1.420726
2009	4.95	15.54	0.67	2.16	2.31	3.63	0.934029
2010	5.62	8.15	0.70	2.87	2.05	3.84	1.26112
2011	6.64	6.63	0.62	3.59	1.00	3.82	1.99533
MEAN	7.74	10.82	4.75	3.67	2.58	5.16	1.826238
S.D.	0.7797	2.963737	2.918482	0.060411	1.117885	0.948793	0.119566

Source: Date self compiled and made available from www.moneycontrol.com

Table 8

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2417.294	4	604.3234	1.397835	0.252188	2.605975
Within Groups	17293.13	40	432.3281			
Total	19710.42	44				

As presented in Table 7, the receivables turnover ratio of the industry varied between 3.63 times in 2009 and 36.11 times in 2006 with an overall industry average of 5.16 times. The receivable turnover ratio of PDL remained very low during the last three years i.e. 2009, 2010, and 2011 whereas the ratio of HDIL stood the highest with 135.27 times in the year 2005 and in the next year i.e. in 2006 DLF scored 66.44 times which was the next best score after HDIL's. Overall, DLF and HDIL showed their efficiency in managing the receivables whereas the rest of the players were lacking this during the last decade.

The one way ANOVA results for receivables turnover ratios of the sample companies are shown in table 8. Since F-calculated (1.3978) is less than F-critical (2.58), we can conclude that receivable turnover ratio of the sample companies is uniform during the study period.

Average Collection Period (Debtors' velocity) in No. of Day:-

Table 9

Year	DLF	HDIL	PDL	SDL	Unitech	MEAN	S.D.
2003	41.26	24.31	41.12	97.17	87.75	64.51	16.43806
2004	46.02	22.58	37.10	56.72	55.74	50.88	3.438055
2005	48.47	2.70	33.92	25.97	42.66	45.56	2.053255
2006				34.06			11.13967

	5.85	33.75	30.38		37.35	21.60	
2007	33.19	58.79	71.80	36.61	13.01	23.10	7.133151
2008	36.65	28.07	164.17	90.18	61.45	49.05	8.766451
2009	73.77	23.48	540.75	168.60	158.28	116.03	29.87937
2010	64.93	44.78	518.48	127.23	177.69	121.31	39.86526
2011	54.96	55.03	586.15	101.81	365.90	210.43	109.9334
MEAN	48.11	39.67	313.63	99.49	226.83	137.47	63.18572
S.D.	4.843981	10.8625	192.6997	1.637382	98.33931	51.59164	33.05559

Source: Data self compiled and made available from www.moneycontrol.com

Table 10

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	212406	4	53101.51	3.49174	0.015465	2.605975
Within Groups	608310.1	40	15207.75			
Total	820716.1	44				

Average collection period of the sample companies is shown in the table 9. The highest collection period on an aggregate basis was 210.43 days in the year 2011 while the lowest was 21.60 days in the year 2006 and industry average remained 137.47 days in the last 10 years. HDIL showed the fastest collection period with an average of 39.67 days followed by DLF with 48.11 days. The remaining players seemed lacking regarding their collection policy. Moreover, the collection period of PDL and Unitech remained very much higher than the industry average.

The single factor ANOVA results for the average collection period of the selected companies are depicted in the table 10. It can be seen that F-calculated (3.49) is greater than F-critical (2.58) showing that the average collection period of the selected companies differ significantly.

Conclusion

The empirical study reveals that the level of investments in receivables as a percentage of sales stood at 55.46% which is more than half of the total sales in aggregate indicating the importance of credit sales in today's competitive era. As compared to the benchmark against the industry average, Unitech and PDL registered poor performance in managing the receivables whereas DLF and HDIL could maintain the average collection period as suggested by the Tandon Committee and in case of PDL and Unitech this ratio was very much higher than the industry average. SDL showed a very tight approach towards its credit sales which could be seen from the ratio of receivables to sales.

References

A. Raheman and N. Mohamed (2007), "Working capital management and profitability case of Pakistani firms": *International Review of Business Research Paper*, vol.3, no.1 pp.279-300.

Amarjit Gill, Nahum Biger, Neil Mathur (2010). "The relationship between working capital management and profitability: evidence from the United States", *Business and Economics Journal*, Vol.2010:BEJ-10.

Aruna Panda, (2012) "The status of working capital and its relationship with sales: An empirical investigation of Andhra Pradesh Paper Mills Ltd (India)", *International Journal of Commerce and Management*, Vol. 22 Iss: 1, pp.36 – 52

Bhalla V. K., (1987), "Financial Management", Khosla Publishing House, New Delhi.

Chandra Prasanna (2006), "Financial Management", Tata McGraw Hill Publishing House Co. Ltd., New Delhi.

Das, P. K. (1995), "Liquidity Management in the Public Sector Undertakings in India", *Journal of Accounting and Finance*, Vol. ix.

Dr R P Rastogi (2009), "Financial Management Theory, Concepts and Problems", Taxmann, New Delhi.

Dr S N Maheshwari (2004), "Fundamentals of Financial Management Problems & Solutions", Sultan Chand & Sons, New Delhi.

M Y Khan, P K Jain (2006), "Financial Management Text, Problems and Cases", Tata McGraw Hill, New Delhi.

P Janki Ramadu and S Durga Rao (2007), "Receivables Management in Commercial Vehicles in India", *The IUP Journal of Applied Finance*.

Vadakarai (2007), "A Study on Receivables Management Variables and Investments in Plant & Machinery", *The International Journal's Research, Journal of Social Science & Management*, vol. 1, no. 7.

Singh, P.K. (2004), "Working Capital Management in Lupin Laboratories Ltd.-A case study", *The Management Accountant*, Vol.vii.

www.cmaindia.org

www.moneycontrol.com

www.business-standard.com