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Liquidity Management in Maharatna Central Public Sector Enterprises in India during the Post-reform Period: A Study of POWERGRID

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Abstract:

Liquidity is a major concern for any business that wants to stay in business. Any company's entire life and existence depends on its access to liquid resources. Adequate liquidity is always desirable for smooth business operation. It should be neither excessive nor inadequate. Having adequate liquid assets in the hands of a business to meet the firms current and futures obligations is essential for the heath of the business firm while when a company has too much liquidity, it builds up a lot of unused resources that don't make any money for the company. When a company has too little liquidity, it slows down business operations, which hurts the company's overall earnings. The keyobjective of managing short- term debt paying capability is to ensure the business must hold adequate amount of liquid resources to pay off its short term debts. In order to maximize value creation for shareholders, customers, employees, and the company itself, sound management of liquid assets must be an integral part of the business's entire strategy. The efficiency in managing liquidity of a firm directly influences the overall profitability of the firm. Thus considering the stiff competition that exists in present market, measuring liquidity and examining the impact of efficient management of liquid assets on the capacity of a business to generate is essential to investigate the managerial efficiency and excellence. The preceding analysis analyses the patterns in the liquidity of the company selected for the study, as well as the consequences of efficient management of liquid assets on the firm's overall profitability.

Keywords: Liquidity, Profitability, Strategy, Managerial, Obligations

Introduction

The ease with which an asset or security can be converted into cash without hurting its market value is referred to as its "liquidity." For handling its regular operations a firm always try to maintain a proportion of liquid asset such cash, bank balance, short terms marketable securities and money market instruments. Liquidity is essential for the existence of a business firm. Adequate liquidity is always desirable for survival of a company. Surplus liquidity means firm does not have adequate investment avenues where it could employ its liquid cash or cash equivalents. Excessive liquidity is very dangerous for the overall success of the firm while having insufficient liquid assets in the hands could interrupt the normal business operation of any business firm. Thus, managing liquid assets in efficient manner is desirable for overall success of the business firm and for creation of wealth for the stakeholder. Company mainly designed their strategies for utilizing liquid assets in most efficient manner to obtain maximum benefits from that in order maximize of stakeholder's wealth. Keeping in mind the cut throat competition that remain in current business environment it is essential for the corporate executives to identify how the efficient management liquid assets influences the profitability or profit earning capability of a firm.

The privatization process first started in U.K. in 1980s and then it spread throughout the world. The privatization process created a talk overin India on denationalization of its public sector undertakings(PSUs) which are sick and not performing well in their areas. Due to increasing imports of essential commodities from foreign developed nations to satisfy the domestic demands. Over dependence on foreign funding agencies for managing, the adverse balance of payment. India also adopted the liberalization policy in the year 1991 which allow entry of foreign players in Indian markets. The Government of India set in policy by discarding the old policy which kept everything under restriction. Since then Government of India moved in a direction of easing the policies, which could help business to grow prosper and become a global leader. Due to easing the policies and entry of foreign player in the domestic markets, a large number of PSEs which grown in India and enjoyed monopoly over the year before the entry of private players in Indian market have started facing severe rivalry from foreign business housed due to the adoption of liberalization policy. Due to the changes in the business environment PEs also made notable changes in its strategy and policies to meet the new changes and to remain in existence. The strategy regarding managing the liquid assets in PEs has also shown a drastic change. Even some well-performed PEs in India have made serious changes in the liquidity management strategies after 1991. Thisresearch study deals with investigating the liquidity management practices of POWEGRID, the only Maharatna company in power transmission sector in India throughout the period 2001- 2022to 2020-2021.

Literature Review

A company's success is contingent on its ability to effectively and efficiently manage its liquid assets. Despite the importance of liquidity management, it is unusual and astonishing that it has not yet attracted as many academics in India as desired. The diverse research works in the topic are evaluated concisely in the following paragraphs.

Olaleye *et al.* (2022) used a cross-sectional survey to investigate the association of liquidity management with financial performance of Nigerian firms belongs to chemical and paints manufacturing industries. Findings showed a significant positive correlation exists between liquidity, asset quality, macroeconomic factors, and capital structure. The study's findings suggest that effective and efficient management of liquid assets had made considerable positive effect on the financial health of the sampled businesses across the time period covered by the research.

Tarseer *et al.* (2020) conducted as research study using panel regression to analyze the influence of liquidity management on the profitability of banks in Nigeria during 2010 to 2018. In this study, statistical tools such as Hausman test was used to choose between fixed effect and random effect. The study found that the liquidity ratios significantly improved the financial performance of the sampled banks, and that the prudent management of liquid assets significantly boosted the sampled firm's total profitability.

Mishra *et al.* (2019) made an effort to describe how the banks which belong to private sector in India can benefit from better management of its liquid assets. Return on assets (ROA) and return on equity (ROE) were employed as dependent factors, while the study's independent variables, which indicated the banks' efficiency in managing liquidity, were the cash deposit ratio (CDR), the credit deposit ratio (CRDR), and the investment deposit ratio (IDR). The research shows that CDR and IDR negatively affect ROA, whereas ROE is not significantly connected with the liquidity of the institutions included in the analysis. Research shows that these financial institutions can prioritize profit growth without jeopardizing their capacity to meet short-term obligations.

Fahleni*et al.*(2019) in their study tried to dissect the effect of effective and efficient management of liquid assets, firm size and dividend on value of the selected Indonesian firm using multiple regression technique to explain the impact of selected independent variables on value of the firm. The outcome of the study confirms that the liquidity, firm size and dividend policy of the selected firms have the capability to enhance value of the firm.

Apara (2015) carried out a study on Steel Authority of India Ltd (SAIL) to analyze the profitability and its determinants such as size, growth, liquidity, leverage and productivity. In this study correlation and regression techniques were used. The analysis indicated a negative link between size, leverage, productivity, and profitability while growth and liquidity had positive correlation with profitability. The outcome derived from the regression analysis also showed the productivity and size as the prominent variables in explaining the profitability of the SAIL.

Priya and Nimalathasan (2013) applied suitable statistical tools and techniques to look at the association that exists between effective management liquid assets and overall earning of Sri Lankan listed manufacturing companies from 2008 to 2012. The results indicated a negative link between liquidity management and profits which ultimately enhanced the overall earnings of the firm during study period.

Lartey *et al.* (2013) attempted using panel regression analysis technique, to scrutinize the association of liquidity with profitability of selected banks of Ghana for a period of 10 years. A modest positive link was found between liquidity and profitability, although this had no appreciable effect on the profitability of the enterprises that were studied.

Ashraf (2012) deployed accounting ratios, descriptive statistics, and other statistical tools tests to investigate the connection of effective utilization of various components of current assets with firm's profitability for 16 Indian enterprises for 5 years period. The empirical findings demonstrate a significant inverse association of net current assets with the overall earning of the firm. It also explains that the bigger the company, the more money it made.

Nandi (2012) makes an attempt by employing regression analysis technique to determine the linear connection net current assets with earning of the firm. In light of the findings, it can be also concluded that the selected firmmaintains a suitable proportion of net current assets to current liabilities at all times. That allows it to maintain a healthy financial reserve during the research phase, which boosts its bottom line.

Uremadu *et al.* (2012) used a statistical technique called time series data analysis to analyze the effects of effective use of net current assets on corporate profitability for a sample of Nigerian businesses. The study disclosed that success in the economy was found to be highly correlated with indices of working capital management. According to the study, efficient management of liquid assets was found to have a beneficial effect on the selected firm's total earning capability.

Sherin (2010) did a research study to determine the correlation between the liquidity and revenue earning capability of selected of pharmaceutical companies. The analysis revealed that the selected firm successfully maintained a healthy equilibrium between operating capital and revenue generation, which ultimately contributed to an increase in the total profitability of the selected pharmaceutical companies.

Velmathi and Ganesan (2009) figured out how well the Neyveli Lignite Corporation Limited managed its current assets and how that affected its profit earning capability during 1999 to 2007. They noticed that the company's financial condition was very good and that it kept a good balance between earning profit and managing its cash flow.

Jafar and Sur (2006) in their study analyzed the effectiveness with which NTPC Ltd. managed its working capital in the after the liberalization. The study disclosed that in the after the liberalization, the selected company was able to reach a greater degree in terms of efficiency in managing of working capital by responding to the new environment brought about by liberalization, globalization, and competitiveness.

Hrishikes (1995) stated in his book named "Total Management by Ratios" that the challenge of liquidity management is especially serious for rapidly expanding businesses. The rising cash flow (profit) curve produces a cheerful sense that "everything is well everywhere," which prompts managers to accelerate their growth efforts. What they fail to account for is the company's actual cash position, which may be demonstrating a declining trend, thereby pushing the company, despite its high profit, towards a severe liquidity problem. Sadly, once a business management pushes the growth buttons, it is tough to undo the actions. Eventually, a high-growth corporation will become ill due to the ongoing depletion of liquidity. Making a profit is perfectlyacceptable; in fact, it is the purpose of business. Yet, if there is no cash flow for the business in from profits, a company will eventually fail.

The primary intention of this research work is to inspect the effects of effectiveuse of various components of current assets on POWERGRID's profit earning. Specifically, it focuses mostly on the issues discussed below:

Objectives

1. To assess the liquidity of the selected company during the study period.
2. To ascertain the liquidity status of the company based comprehensive score.
3. Examine the homogeneity of the chosen aspects pertaining to the liquidity management and profitability of the companies under the study.
4. To assess the degree of association exists in between liquidity and profitability of the selected company.
5. To determinethe impact of liquidity management practices on profit earning capability of the company.

Methodology

This research was conducted using secondary statistics. The data of the POWERGRID was gathered from various sources such as annual reports of the company, articles, books and journals. The data were analyzed using selected ratio analysis technique, ratios such as Working

Capital Ratio (WCR), Acid Test Ratio (ATR), Debtor Turnover Ratio (DTR) and Cash Turnover Ratio (CTR) were used based on the book "Total Management by Ratios" by Hrishikes Bhattacharya and appropriate statistical tools like mean, standard deviation, trend movement, Pearson's simple correlation, Spearman's rank correlation and Kendall's coefficient of concordance were applied as per requirement. 't' test and chi-square ($\chi 2$) applied as per requirement to know whether the calculated values are significant or not.

Profile of the Company

POWERGRID, a statutory corporation under the Ministry of Power, Government of India which engaged in transmission bulk power across different states of India was established in 1989.POWEGRID expands itoperation all over India and cover a wide area for transmission of power. Its business segments also include Consultancy, Telecom, Consultancy Service and Internet service. POWERGRID has been generating surplus continuously since its inception and paying dividend to the shareholder on regular basis.
Considering its consistent performance in their sector for long period and enormous contribution in the field of bulk power transmission throughout the geographical boundary of India, Government of India granted the 'Maharatna" status to POWERGRID in October 2019.

Empirical result

Table I, seek to evaluate the liquidity position of POWERGRID using selected ratios. In this table, linear trend equations were fitted to identify trend in each of the selected ratios and t test was used to examine the relevance of the angle of the trend lines.

Working Capital Ratio (WCR): This ratio is treated as important measure of liquidity which reflects the firm's capacity to pay off its short terms debts. Higher WCR represents more the funds is available for paying off its short terms debts within a particular accounting year. Table I shows that the WCR of the company which has been selected for the study remains between 0.41 (2012-2013) to 2.23 (2002-2003). The average value of WCT was 0.84. The trend line which was fitted for WCR series showed a significant upward trend at 1 % level. The data in the table also demonstrates that the company's trends in meeting its short-term debt payment capacity are improving over time.

Acid Test Ratio (ATR): This is advanced version of WCR ratio which shows the association between quick assets and quick liabilities. This ratio is calculated by eliminating the slow moving stock from the current assets in order to quantity more effective short-term dent paying capacity of a firm. In Table I, ATR of POWERGRID remains between 0.38 (2012-2013) to 2.11 (2002-2003). The average value of ATR was 0.80 during study. The regression line drawn to ATR series indicates a significant rising trend at 5 % level. A significant rising trend in ATR was observed throughout the research study which signifies that the company can easily repay off its short-term liability any time without any obstacles.

Inventory Turnover Ratio (ITR): This is calculated by taking to consideration the turnover of the firm and average stock. This is also an important liquidity ratio which indicates how fast the inventories are being converted into sales. A high ITR indicates the company's ability to manage it inventory in such a manner that it could be convert its inventory into sales and then cash very easily and by this way it could improve its liquidity too. It can be also concluded that a high ITR is considered decent in terms of liquidity and low ITR indicates presence of huge inventories than it requires for smooth running of business. Table I, indicates that the ITR of the selected firm lies between 12.66 (2003-2004) to 31.85 (2016-2017). The average value of ITR was 22.56. The ITR of the company showed a significant rising trend at 5 % level throughout the study. It implied that the significant positive growth of the POWERGRID in inventory management helped in enhancing its overall liquidity as well as profitability.

Debtors Turnover Ratio (DTR): DTR is the ratio of turnover to net credit sales. It can be calculated dividing the turnover by net credit sales. This ratio shows the firm ability to manage its debtors in such a manner so that the collection from debtors could be smooth and that could help in generating values for the organization as well as in liquidity management. Higher the value of DTR more efficient the firm is in managing its debtors as well liquidity. Table I, denotes that the company obtained highest value of DTR in the year 2013-2014 (10.11) while it was least in 2002-2003 (1.29). The mean DTR was 6.64. The trend line of the DTR series showed a significant (1 % level) rising trend throughout the study. It implied that the company successfully managed its debtors in most efficient manner resulting so that both the liquidity and profitability of the business could move in positive direction.

Cash Turnover Ratio (CTR): This is generally calculated to measure how many times a business firm uses it cash to generate sales revenue. This ratio is used to evaluate how efficiently the company is managing its liquid cash to generate sales revenue. A high CTR means the company is efficiently managing its cash to generate values for the firm while low CTR denotes the company is not able manage its cash efficiently. The chosen firm's CTR ranged from 1.90 (2001-2002) to 13.71 (2017-2018), with a mean value of 5.22 (over the study period) as shown in Table I. Trend line of CTR series showed a significant rising trend. This can be inferredfrom the study that the CTR of the company which has been selected for the study have managed its cash in most efficient way which helps in improving its liquidity during the study period.

B. There are several factors, which affect liquidity of a business, out which working capital is one of them, which affects liquidity. The composition of working capital essentially affects a firm's capacity to repay its debts. The excess of current asset over current liabilities (excess of current assets over current liabilities is called as positive working capital, but sometime it may be negative balance that is known as negative working capital) which are used to maintain the day to day operation of a business is known as working capital. The sum total of stock, debtors, cash and receivables is known as current asset. Efficient utilization working capital and its components in is essential for the overall management of liquidity of a company. If a company efficiently manages it current asset, then it expected that the liquidity position of the firm will be improved and it could able to pay off its short term obligation at proper time. In Table II a composite rank based on individual ranks of the WCR, ATR, ITR, DTR and CTR was calculated for making an in depth analysis of the liquidity of the company under study. Kendall's coefficient of concordance (W) was calculated to measure the extent of conformity among the five sets of ranking and Chi-square test was applied to check significance of the computed result. The individual ranking of WCR, ATR, ITR, DTR and CTR was done based on the principle, higher the value more suitable the short-term debt paying capability while final rank was made based on the principle that the lower the point scored the more commending in terms of capacity of paying off short-term debts quickly and vice versa

Table II indicates the significant value of "W" (45.172) calculated during the study. It means liquidity is closely associated with the various components of working capital. This suggests that a company's liquidity could be greatly improved via better management of its working capital components.

The study also shows that in 2020-2021 the company obtained top position in terms of liquidity which was followed by 2016-2017, 2017-2018, 2018-2019, 2015-2015 and 2007-2008, 2019-2020, 2006-2007 and 2013-2014, 2005-2006, 2011-2012 and 2014-2015, 2004-2005, 2008-2009, 2002-2003, 2003-2004 and 2012-2013, 2010-2011, 2001-2002 and 2009-2010 respectively in that order. It can concluded from table II that the company holds better place in terms of overall liquidity in last half as compared to first half of the study.

C. In Table II an effort was made to appraise the degree of alliance exists in between liquidity and the earning capability of the firm using Spearman's rank coefficient (RLP) and "t" test was applied check the significance of RLP value. Here the overall profit earning capability of the firm has been analyzed using mean value and linear trend equation based on return on capital employed (ROCE) and t test. It can be concluded from Table III that the company earns profit (ROCE) at an average rate of 9.72 per cent while the ROCE of the company lies between 7.94 (2002-2003) to 12.55 per cent (2017-2018) throughout the study. The regression line of ROCE sequence reveals that a significant upward trend in ROCE was noticed in study. The table also reveals that calculated value of RLP (0.069) was significant at 1 % level. It demonstrates that liquidity and profitability has a significant positive association during the study, which means increase in one could put positive impact on another. Thus, the study inferred that the company managed its all resources in such a manner that it ensures higher liquidity and higher profitability.

D. We know that the profitability earning capability is generally influenced by various factors. Therefore, in Table IV an effort was made to evaluate the factors, which makes positive contribution in enhancing the profit-earning capability of the business firm. In order to find these factors, correlation coefficients between ROCE and liquidity indicators like WCR, ATR, ITR, DTR, and CTR were calculated, taking into account their sizes as measured by Pearson's simple correlation coefficient, the order of their sizes as measured by Spearman's rank correlation coefficient, and the way their changes are related as measured by Kendall's correlation coefficient.These calculated values of correlation were tested using t test. The result of the correlation shows a notable association between ROCE and WCR, ROCE and ATR, ROCE and ITR, ROCE and DTR and ROCE and CTR was noticed during study. Out of 15 correlation coefficients 9 were positive while rest 6 were negative. From 9 positive correlations coefficients 7 were significant while rest 2 were insignificant. From 6 negative correlation coefficients, all were significant. It can also be concluded from the Table IV that the correlation coefficients between ROCE and WCR and between ATR and ROCE were significant negative while the correlation coefficient between ITR and ROCE, DTR and ROCE and between CTR and ROCE were positive and statistically significant. It hinted that while working capital management affects adversely the profit generatingcapability of the business firm but the effects of debtors, inventory and cash management on overall profitability company was positive and were noticeable throughout the study period.

Concluding remarks

Results show that during the study period, POWEGRID's ability to pay its short-term and immediate debts increased significantly. The efficiency in managing the components of working capital such as debtors, cash and inventory was increasing with passage of time. Therefore, it is expected that this managerial efficiency will definitely make favourable impact on overall liquidity of the company. The outcome of composite rank test also indicates an appreciation in revenue and earning profitability of the company in recent times (2022 Rank-1). The profit earning capability of the firm also appreciated during the study period and the business utilized its current assets in most efficient manner to generate more values for the organization.

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Table: I Selected Ratios relating to Liquidity Management of POWERGRID (2001-2002 to 2020-2021)

Year	WCT	ATR	ITR	DTR	CTR
2001-2002	1.54	1.43	13.19	1.40	1.90
2002-2003	2.23	2.11	12.69	1.29	2.32
2003-2004	1.33	1.24	12.66	2.12	2.82
2004-2005	1.01	0.94	13.19	5.37	4.11
2005-2006	0.75	0.70	17.26	8.10	5.34
2006-2007	0.73	0.69	19.70	8.80	3.00
2007-2008	1.07	1.02	21.35	5.80	2.47
2008-2009	1.00	0.96	20.85	4.60	2.75
2009-2010	0.95	0.92	22.19	3.97	2.17
2010-2011	0.92	0.88	23.10	5.04	2.28
2011-2012	0.62	0.59	24.74	7.78	4.29
2012-2013	0.41	0.38	25.73	8.70	7.68
2013-2014	0.54	0.51	24.10	10.11	3.43
2014-2015	0.47	0.44	24.02	9.29	8.29
2015-2016	0.48	0.45	29.00	8.51	8.42
2016-2017	0.55	0.52	31.85	8.63	7.70
2017-2018	0.49	0.47	30.60	8.68	13.71
2018-2019	0.52	0.49	30.13	8.23	7.88
2019-2020	0.56	0.53	27.55	7.60	6.71
2020-2021	0.70	0.67	27.26	8.87	7.14
Mean	0.84	0.80	22.56	6.64	5.22
Maximum	2.23	2.11	31.85	10.11	13.71
Minimum	0.41	0.38	12.66	1.29	1.90
Slope	-0.570**	-0.053**	0.977**	0.343**	0.385**
t-value	4.911	4.808	11.083	4.619	4.563
*Significant at 5% level, ** Significant at 1 % level					
Source: Authors calculation					

Table: II Statement of ranking in order of liquidity and analysis of Kendall's Coefficient of Concordance among selected liquidity indicators of POWERGRID (2001-2002 to 2020-2021)

Year	WCT	Rank	ATR	Rank	ITR	Rank	DTR	Rank	CTR	Rank	Sum of Ranks	Ultimate Rank
2001-2002	1.54	2	1.43	2	13.19	17.5	1.40	19	1.90	20	60.5	19
2002-2003	2.23	1	2.11	1	12.69	19	1.29	20	2.32	17	58	16
2003-2004	1.33	3	1.24	3	12.66	20	2.12	18	2.82	14	58	16
2004-2005	1.01	5	0.94	6	13.19	17.5	5.37	14	4.11	11	53.5	13
2005-2006	0.75	9	0.70	9	17.26	16	8.10	10	5.34	9	53	11
2006-2007	0.73	10	0.69	10	19.70	15	8.80	4	3.00	13	52	8.5
2007-2008	1.07	4	1.02	4	21.35	13	5.80	13	2.47	16	50	5.5
2008-2009	1.00	6	0.96	5	20.85	14	4.60	16	2.75	15	56	14
2009-2010	0.95	7	0.92	7	22.19	12	3.97	17	2.17	19	62	20
2010-2011	0.92	8	0.88	8	23.10	11	5.04	15	2.28	18	60	18
2011-2012	0.62	12	0.59	12	24.74	8	7.78	11	4.29	10	53	11
2012-2013	0.41	20	0.38	20	25.73	7	8.70	5	7.68	6	58	16
2013-2014	0.54	15	0.51	15	24.10	9	10.11	1	3.43	12	52	8.5
2014-2015	0.47	19	0.44	19	24.02	10	9.29	2	8.29	3	53	11
2015-2016	0.48	18	0.45	18	29.00	4	8.51	8	8.42	2	50	5.5
2016-2017	0.55	14	0.52	14	31.85	1	8.63	7	7.70	5	41	2
2017-2018	0.49	17	0.47	17	30.60	2	8.68	6	13.71	1	43	3
2018-2019	0.52	16	0.49	16	30.13	3	8.23	9	7.88	4	48	4
2019-2020	0.56	13	0.53	13	27.55	5	7.60	12	6.71	8	51	7
2020-2021	0.70	11	0.67	11	27.26	6	8.87	3	7.14	7	38	1
Kendall's coefficient of concordance among five sets of liquidity performance ranks (W) is 0.4755 and Chi-square value of W is 45.1725 being significant at (36.191) 1 % level												
Source: Authors Calculation												

Table: III Analysis of Spearman's Rank Correlation between Liquidity and Profitability of POWERGRID (2001-2002 to 2020-2021)

Year	Liquidity Rank (As per Table II)	ROCE (%)	Profitability Rank (Based on ROCE)	
2001-2002	19	8.46	19	Spearman's rank correlation coefficient between liquidity and profitability (RLP) is 0.069 being significant at 1% level
2002-2003	16	7.94	20	
2003-2004	16	9.20	12	
2004-2005	13	8.64	17	
2005-2006	11	8.67	16	
2006-2007	8.5	9.15	13	
2007-2008	5.5	8.87	14	
2008-2009	14	9.31	10	
2009-2010	20	8.49	18	
2010-2011	18	9.29	11	
2011-2012	11	10.22	5	
2012-2013	16	9.96	7.5	
2013-2014	8.5	10.63	4	
2014-2015	11	9.79	9	
2015-2016	5.5	8.86	15	
2016-2017	2	10.16	6	
2017-2018	3	12.55	1	
2018-2019	4	9.96	7.5	
2019-2020	7	12.37	2	
2020-2021	1	12.03	3	
Average		9.7275		
Maximum		12.55		
Minimum		7.94		
Slope of the Trend Line		0.179**		
t value		5.763		
*Significant at 5% level, ** Significant at 1 % level				
Source: Authors calculation				

Table: IV Analysis of Correlation between ROCE and selected Liquidity indicators of POWERGRID

Correlation Measures	WCR	ATR	ITR	DTR	CTR
Pearson	-.586**	-.582**	.676**	.585	.663**
Spearman	-.648**	-.638**	.740**	.629**	.594**
Kendall	-.459**	-.449**	.593	.459**	.396*

**. Correlation is significant at the 1% level

*. Correlation is significant at the 5% level