

IMPACT OF PREREQUISITE LAG ON PERFORMANCE IN THE INTRODUCTORY FINANCE COURSE

Kasim L. Alli, Clark-Atlanta University
Emmanuel O. Onifade, Morehouse College
Wanda L. Owens, Clark-Atlanta University

ABSTRACT

This paper examines the impact of prerequisites and associated lags on performance in the core finance course at an AACSB-accredited school. Specifically, we examined “Recency Effect” on performance by focusing on the relationship between prerequisite lag and performance in the core finance course for Business students. Using data from a selected sample of 100 AACSB-accredited schools to identify the most common prerequisite courses for the core Finance course, we find weak support for the “Recency Effect”. Although the results indicate significant negative relationship between the prerequisite lag for the first accounting course and core finance course, we do not find significant relationship between the performance in the core finance course and the lags for other common prerequisite courses (Accounting II, Micro- and Macroeconomics and Mathematics). In addition, we find significant positive relationship between the core finance course grade and grades in Accounting I, Accounting II, and Microeconomics. An implication of these results is that Business schools should consider putting in place incentives that encourage students to minimize the lag between taking sequential courses as a means to improving performance in the core finance course.

INTRODUCTION

In explaining “Recency Effect”, Eakin and Reimers (1992) states that individuals tend to put more weight on recent information and are, therefore, able to recall ~~the~~ recent information better than earlier information. Other prior studies (Baldwin and Howard, 1983; Baldwin, Pattison, and Toolson, 1989; Gruber, 1987; and Howe and Baldwin, 1983) provide support for the prediction of the “Recency Effect” theory. In this paper, we extend the prediction of Recency Effect” to examine the relationship between the performance in the core finance course and the time lags of the associated prerequisites. In the context of this study, if a prerequisite to a course is appropriate for the course, we expect that the information learned in the prerequisite should enhance the student’s performance in the course for which it is a prerequisite. We also expect that the earlier the course is taken subsequent to its prerequisite, the better the performance of the student will be in the course because of the recency of the information learned in the prerequisite. In other words, the longer the delay in the time between a course and its corresponding prerequisite, the less the usefulness of that prerequisite to the course will be. In this paper, the core finance course refers to the finance course required in most AACSB accredited schools. Several titles are used for this course, including “Business Finance”, “Corporate Finance”, and “Managerial Finance”. At our subject school, the course is titled “Business Finance”. For this paper, we refer to this core finance course as “Corporate Finance”.

Several studies have examined the role of prerequisites on performance in business and non-business school courses. Didia and Hasnat (1998) examined the determinants of performance in the Corporate Finance course and reported a positive relationship between performance in prerequisite courses (Accounting, Economics, and Mathematics) and performance in the finance course. Pritchard et al, (2000) also found a positive relationship between performance in quantitative skills test and performance in a basic finance course. Johnson and Kuennen (2006) examined the relationship between Basic Mathematics, a prerequisite to Introductory Statistics, and found a positive relationship. Bashford (2000) found that students

who performed better in the English and Mathematics prerequisites performed better in a subsequent course than those who earned lower grades in the prerequisites. However, Marcal and Roberts (2000) found that the students who completed the prerequisites for a business communication class did not outperform those who did not fulfill the prerequisite requirement for the course. Similarly, Wilson (1994) did not find the mathematics prerequisite as being a valid predictor of students' performance in higher level chemistry course. Thus, the results of these prior studies are mixed. One may argue that the mixed results may not only be due to the appropriateness or inappropriateness of a prerequisite to a subsequent course, it may also be due to the time lag between when the prerequisite is completed and when the corresponding subsequent course for the prerequisite is taken. In this paper, we test the impact of course prerequisites and the lags on performance in the core undergraduate finance course and discuss the appropriateness of using specific prerequisites as an integral part of the overall assessment of curriculum. This study adds to this literature by looking at the impact of the lag between completing the Corporate Finance course and its corresponding prerequisites. The results from this study will be useful for providing academic advice to undergraduate students and in refining the curriculum.

Despite the fact that many schools have developed systems to ensure that students comply with prerequisite requirements, anecdotal evidence and our experience indicate that many students are still able to circumvent the prerequisite requirement. Even when institutions have been able to enforce prerequisite requirements, we are not aware of any school where students are required to take courses right after the corresponding prerequisite is completed. For example, many non-finance students will delay taking the finance course and other quantitative courses until later in their course of study. The result of this behavior by students is that the benefit of requiring a prerequisite for a particular course may be weakened. In other cases, students may not be able to take courses at an appropriate time because of resource limitations at the school--for example, space limitations.

The results show that performance in Principles of Accounting I, Principles of Accounting II, Micro Economics and the time lag

between Principles of Accounting I and the core finance course are significantly related to the performance in the core finance course. As expected, the effect of the lag is negative.

The rest of the paper is organized as follows: Section 2 provides a discussion of prerequisite requirements for the core course for a selected sample of AACSB-accredited schools. The data is described in Section 3. Section 4 describes the empirical model and presents the hypotheses. Section 5 presents the results of the analyses, and Section 6 concludes the paper.

FINANCE PREREQUISITES AT AACSB-ACCREDITED SCHOOLS

Table 1 presents an analysis of the prerequisite requirements for the core Finance course for a random sample of 100 AACSB-accredited schools. The information presented was collected from the websites of these schools in 2007. The data indicates that the prerequisite requirements in the sample of AACSB-accredited schools are diverse. The five most common prerequisites for the core Finance course as well as the percentage of the schools that include them in their prerequisite combinations are: Principles of Accounting I (96%); Principles of Microeconomics (64%); Principles of Accounting II (41%); Math/Statistics (40%); and Macroeconomics (31%).

The data also indicate that nine of the one hundred schools (9%) require all five courses and 14 schools (14%) require Accounting I only. Other common prerequisite combinations are: Accounting I and II only (11%); Math/Statistics, Accounting I and Microeconomics only (11%); Accounting I and Microeconomics only (10%); Accounting I and II, Microeconomics and Macroeconomics only (8%); Accounting I, Microeconomics and Macroeconomics only (7%); and Math/Statistics and Accounting I only (6%).

DATA

We collected data on students enrolled in the Corporate Finance course at Clark-Atlanta University. Clark-Atlanta University is a historically black college/university (HBCU) that offers AACSB-accredited undergraduate and MBA degrees. The data, which was collected from the official university records, was from several sections of the business core finance course (CBUS341) administered over 18 semesters, from Fall 1996 through Spring 2006, including summers. Over this period, the course was taught by a total of eight instructors, and as part of departmental policy, one faculty member acted as the coordinator of the course. The course uses a common syllabus, final exam, and instructors meet regularly to ensure consistency in course delivery and overall quality control. This course is required for all students enrolled in the BBA program. The initial sample consists of a total of 1,510 students, who took CBUS341 during the sample period.

Students enrolled in CBUS341 are required to have satisfactorily completed two courses in accounting (CBUS207 – Principles of Accounting I and CBUS208 – Principles of Accounting II), and two courses in economics (CECO251 – Principles of Microeconomics and CECO252 – Principles of Macroeconomics), prior to taking CBUS341. In addition, the accounting and economics courses require the students to complete, at least two semesters of college level mathematics.

For each student enrolled in the course, we obtained grades and the semester the course was taken for Accounting I, Accounting II, Microeconomics, Macroeconomics, and for all math courses taken. We also collected the student's cumulative grade point average for the semester prior to taking CBUS341. We were unable to collect information on the courses the student completed outside the university; thus, if the student's prerequisites were completed as a transient or a transfer student, those courses would not be included in our analysis.

To analyze the effect of performance in prerequisites on success in CBUS341, we assigned a numerical value for each grade received. We assigned a value of 4 for an A, 3 for a B, 2 for a C, 1 for a D, and a grade of 0 if the student received an F in the course. The

university uses only whole letter grades (i.e., no “+” or “-“ attached to the letter grades). Students who had grades of W and WU (withdrawals) and I (incompletes), were eliminated from the sample. Thus, the final sample consists of only students who completed the course.

To obtain information on how the lag on prerequisites affected performance in CBUS341, we computed the number of semesters that had passed between taking each prerequisite and taking the core finance course. We assigned numerical values to each semester for the period from Fall 1996 through Spring 2006. We started with Fall 1996 because that was the earliest semester in which a course was taken as a prerequisite for CBUS341. The first semester of data collected, Fall 1996, was assigned a value of 1. The value assigned to each subsequent semester increased by 1; thus, the value assigned to the last semester of data, Spring 2006, was 36. The lag was computed as the number of semesters that have elapsed between taking the core course and the associated prerequisite. For example, if a prerequisite was taken during a semester that has a numerical value of 3 and the course to which it is a prerequisite was taken during a semester that has a numerical value of 7, the lag value for that prerequisite will be 4 (i.e., 7 minus 3). Thus, lag AC207/341 represents the number of semesters between taking the CBUS207 class and CBUS341. Similar procedures were used to compute the lag between the other prerequisites (CBUS208, CECO251, CECO252 and Mathematics) and CBUS341. To be included in the final sample, a student must have received a grade in the course being analyzed and in the associated prerequisites, and the prerequisite(s) must have been taken and completed prior to the course being analyzed.

Table 2 provides descriptive statistics on the final sample. The final sample consists of 161 student observations. The data indicates that 136 of the 161 students who were enrolled in Corporate Finance did not take the course right after the corresponding prerequisite was completed. The mean time lag between the second accounting class and Corporate Finance is almost three semesters (2.77 semesters), with a median of three semesters. The data also indicates that the mean time lag between mathematics prerequisite and Corporate Finance is almost 6 semesters (5.689) with a median of 6 semesters. The mean (median) time lags between the two economics courses (CECO251 and

CECO252) and CBUS341 are 3.994 (3.0) and 3.019 (3.0), respectively. The mean (median) time lags between the two accounting courses (CBUS207 and CBUS208) and Corporate Finance course are 4.211 (3.0) and 2.789 (2.0), respectively.

EMPIRICAL MODEL

We examined the impact of prerequisite and its time lag on performance in the core Business Finance course using a traditional OLS model where the dependent variable is performance (Grade) in the core course and the independent variables are the time lag variables and the grades earned in the prerequisite courses. We did not include the cumulative GPA (CGPA) prior to enrollment in CBUS341 because it is highly correlated with the grades earned in the prerequisite courses. Table 3 provides the correlation matrix for the variables used in the analysis.

Our general empirical model is as follows:

Grade (i.e., performance) in the core course = f (performance in the prerequisite course(s) and the time lag(s) between taking the prerequisite course(s) and the core course).

Our specific model is based on the most common prerequisite combination requirements by a random sample of 100 AACSB-accredited schools are as follows:

Model 1- Corporate Finance vs. All Prerequisites and Their Lags

$$\begin{aligned} \text{CF341GRD} = & b_0 + b_1(\text{AC207GRD}) + b_2(\text{LAG207/341}) + \\ & b_3(\text{AC208GRD}) + b_4(\text{LAG208/341}) + b_5(\text{MATHGRD}) + \\ & b_6(\text{LMATH341}) + b_7(\text{EC251GRD}) + b_8(\text{LAG251/341}) + \\ & b_9(\text{EC252GRD}) + b_{10}(\text{LAG252/341}) \end{aligned}$$

Model 2 – Corporate Finance vs. Accounting I and Its Lags

$$\text{CF341GRD} = b_0 + b_1(\text{AC207GRD}) + b_2(\text{LAG207/341})$$

Model 3 – Corporate Finance vs. Accounting I and II and Their Lags

$$\begin{aligned} \text{CF341GRD} = & b_0 + b_1(\text{AC207GRD}) + b_2(\text{LAG207/341}) + \\ & b_3(\text{AC208GRD}) + b_4(\text{LAG208/341}) \end{aligned}$$

Model 4 – Corporate Finance vs. Math, Accounting I, and Microeconomics and Their Lags

$$\begin{aligned} \text{CF341GRD} = & b_0 + b_1(\text{AC207GRD}) + b_2(\text{LAG207/341}) + \\ & b_5(\text{MATHGRD}) + b_6(\text{LMATH341}) + b_7(\text{EC251GRD}) + \\ & b_8(\text{LAG251/341}) \end{aligned}$$

Model 5 – Corporate Finance vs. Accounting I and Microeconomics and Their Lags

$$\begin{aligned} \text{CF341GRD} = & b_0 + b_1(\text{AC207GRD}) + b_2(\text{LAG207/341}) + \\ & b_7(\text{EC251GRD}) + b_8(\text{LAG251/341}) \end{aligned}$$

Model 6 – Corporate Finance vs. Accounting I and II, Microeconomics and Macroeconomics and Their Lags

$$\begin{aligned} \text{CF341GRD} = & b_0 + b_1(\text{AC207GRD}) + b_2(\text{LAG207/341}) + \\ & b_3(\text{AC208GRD}) + b_4(\text{LAG208/341}) + b_7(\text{EC251GRD}) + \\ & b_8(\text{LAG251/341}) + b_9(\text{EC252GRD}) + b_{10}(\text{LAG252/341}). \end{aligned}$$

Model 7 – Corporate Finance vs. Accounting I, Microeconomics and Macroeconomics and Their Lags

$$\begin{aligned} \text{CF341GRD} = & b_0 + b_1(\text{AC207GRD}) + b_2(\text{LAG207/341}) + \\ & b_7(\text{EC251GRD}) + b_8(\text{LAG251/341}) + b_9(\text{EC252GRD}) + \\ & b_{10}(\text{LAG252/341}). \end{aligned}$$

Model 3 – Corporate Finance vs. Math and Accounting I and Their Lags
 $CF341GRD = b_0 + b_1(AC207GRD) + b_2(LAG207/341) + b_3(MATHGRD) + b_4(LMATH341)$

Where:

CF341GRD = the grade received in the Corporate Finance course

AC207GRD = the grade received in Principles of Accounting I

AC208GRD = the grade received in Principles of Accounting II

MATHGRD = the grade received in the prerequisite mathematics course (either Math 106 or

Math 210)

LAG207/341 = the time lag between taking Accounting II07 and Corporate Finance 341

LAG208/341 = the time lag between taking Accounting II08 and Corporate Finance 341

LMATH/341 = the time lag between taking mathematics and Corporate Finance 341

EC251GRD = the grade received in Principles of Microeconomics 251

LAG251/341 = the time lag between taking Economics 251 and Corporate Finance 341

EC252GRD = the grade received in Principles of Macroeconomics 252

LAG252/341 = the time lag between taking Economics 252 and Corporate Finance 341

CGPA = cumulative GPA prior to enrollment in CBUS341

For the purpose of the regressions, we used variable descriptions different from course numbers to provide better clarity. All the variables used are self-explanatory. For example, CF stands for Corporate Finance while AC stands for accounting instead of using CBUS for all the courses.

We hypothesize a negative relationship between the time lag variable(s) and performance in the dependent variable. In addition, we expect a positive relationship between performance in the prerequisite variable(s) and performance in the dependent variable.

RESULTS

The results of the analyses are presented in Tables 4 and 5. The results of Model 1 (Table 4, Column 2), where all five most common prerequisites and their lags are included in the regression, show that performances in the Principles of Accounting I and II have significantly positive effect on performance in the core finance course at $p < 0.05$. Surprisingly, none of the lags are significant at $p < 0.05$ and there is no significant relationship between performance in mathematics and performance in the core finance course.

The results for Model 2 (Table 4, Column 3) indicate a significant positive relationship between performance in Accounting I and performance in the core finance course. We also find a significant negative relationship between the lag of Accounting I and the performance in the core finance course. This result is consistent with the “Recency Effect” prediction.

Model 3 (Table 4, Column 4) results indicate significant positive coefficients for both Accounting I and Accounting II performance but insignificant lag coefficients.

The results of Model 4 (Table 4, Column 5) indicate significant positive coefficients for Accounting I and Microeconomics but insignificant coefficient for performance in mathematics. In addition, the only significant lag is the Accounting I lag variable and, as expected, the lag is negative.

Model 5 (Table 4, Column 6) results are consistent with the findings in Model 4. The coefficients for the performance variables for Accounting I and Microeconomics are positive and significant, while only the coefficient for the accounting I lag variable is significant and negative, as expected.

The results of Model 6 (Table 4, Column 7) indicate that only the coefficients for the performance variables, Accounting I, Accounting II, and Microeconomics, are significant and positive, while the coefficients for the lag variables are insignificant.

The results of Model 7 (Table 4, Column 8) are also similar to the Model 6 results in that only the performance variables (Accounting I and Microeconomics) are positively significant. Again, the coefficients for the lag variables are insignificant. As in Model 6,

the coefficient for the performance in Macroeconomics is also insignificant.

Again, as shown in the other models, the Model 8 (Table 4, Column 9) results show that the performance in Accounting I has a positive and significant relationship and its lag also has a significant and negative relationship, as expected. In addition, as also shown in the other models that include Mathematics, neither the effect of performance in Mathematics nor its lag is significantly related to performance in the core finance course.

In order to evaluate the convergence of the effect of the separate sets of prerequisites that we examined in the eight models, we performed a backward and forward stepwise regression on all the predictor variables to select the prerequisite variables and the lags that would best predict performance in the core finance course. Only four of the variables were selected and, therefore, included in the model that produces the results presented in Table 5.

The results shown in Table 5 are mostly consistent with the results obtained in the test of the eight models. In any of the eight models that include performance in Accounting I (AC207GRD), Accounting II (AC208GRD), and Microeconomics (EC251GRD), the results indicate positive and significant coefficients for those performance variables. It is worth noting that these courses represent the top three prerequisites (96%, 41%, and 64%, respectively) for the core finance course in our sample of 100 AACSB-accredited schools shown in Table 1. It is, however, surprising that while neither the performance in Macroeconomics nor its lag shows a significant effect in any of the models that include, the lag of is selected in the variable selection procedure as one of the predictors of performance in the core finance course. (restate)

CONCLUSION

This paper examines the impact of performance in prerequisite courses and their lags on performance in the core finance course at an AACSB-accredited business school. The results show that the performances in the prerequisite courses (Accounting I, Accounting II, and Microeconomics) have a significant positive relationship with

performance in the core finance course. The results also show a significant and negative relationship between the Accounting I lag and performance in the core finance course, a result that is consistent with the “Recency Effect.”

Contrary to the results reported in Didia and Hasnat (1998), we do not find a significant relationship between the performance in Mathematics and its lag on performance in the core finance course. Wilson (1994) did not find mathematics as a valid predictor of performance in higher level chemistry courses either.

The overall results suggest that, at minimum, Principles of Accounting I, Principles of Accounting II, and Microeconomics should be included in the combination of the prerequisites required for the core finance course. Further, the overall results also suggest that faculty advisors should not only insist that their students complete the prerequisites prior to the core finance course, they should also encourage their students to minimize time lag between completing the prerequisites and enrolling for the core finance course.

Having discussed some of the strengths of this study, some of its limitations should also be considered. One limitation is that the data are not randomly selected from the overall population to which the results can be generalized. Another limitation is that the data was not collected from different universities to investigate consistency of our results. Thus, it may be necessary to replicate this study in other colleges and universities.

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Table 1
Distribution of Prerequisites for the Core Finance
Course from a Sample of AACSB-Accredited Schools: N = 100

Prerequisites for Corporate Finance					Percentage of Schools Requiring the Prerequisite Combination
Math	Principles of Accounting I	Principles of Accounting II	Microeconomics	Macroeconomics	
X	X				6%
	X				14%
	X	X			11%
X	X	X			4%
X	X		X		11%
	X	X	X		7%
	X		X		10%
X			X		1%
			X		3%
			X	X	1%
	X		X	X	7%
X	X	X	X		2%
X	X		X	X	6%
	X	X	X	X	8%
X	X	X	X	X	9%
					100%
40%	96%	41%	64%	31%	
Percentage of AACSB-accredited schools that include each prerequisite in their required prerequisite combination					

Table 2
Descriptive Statistics

Variable	N	Mean	Median	Standard Deviation	Minimum	Maximum	Q1	Q3
CF341GRD	161	2.5404	3.0000	1.1832	0.0000	4.0000	2.0000	3.0000
CGPA	161	3.0105	2.9630	0.4408	2.1400	4.0000	2.6967	3.3000
AC207GRD	161	3.0248	3.0000	0.8363	1.0000	4.0000	2.0000	4.0000
AC208GRD	161	2.7702	3.0000	0.8459	1.0000	4.0000	2.0000	3.0000
LAG207/341	161	4.2110	3.0000	1.7830	1.0000	10.0000	3.0000	5.5000
LA8208/341	161	2.7890	2.0000	1.6260	1.0000	10.0000	2.0000	3.0000
MATHGRD	161	2.9193	3.0000	0.7982	1.0000	4.0000	2.0000	4.0000
LMATH/341	161	5.6890	6.0000	2.1370	2.0000	14.0000	5.0000	6.5000
EC251GRD	161	2.3665	2.0000	0.6772	1.0000	4.0000	2.0000	3.0000
EC252GRD	161	2.3106	2.0000	0.6249	1.0000	4.0000	2.0000	3.0000
LAG251/341	161	3.9940	3.0000	1.6640	1.0000	9.0000	3.0000	5.0000
LAG252/341	161	3.019	3.0000	1.4680	1.0000	8.0000	2.0000	3.0000

Table 3
Pearson Correlation of All Variables

	CF341GRD	CGPA	AC208 GRD	LAG208 /341	AC207 GRD	LAG207 /341	MATH GRD	LMATH H/341	EC251 GRD	EC252 GRD	LAG25 1/341
CGPA	0.596 (0.000)										
AC208GRD	0.456 (0.000)	0.571 (0.000)									
LAG208/341	-0.168 (0.033)	-0.199 (0.011)	-0.163 (0.039)								
AC207GRD	0.403 (0.000)	0.557 (0.000)	0.397 (0.000)	0.031 (0.692)							
LAG207/341	-0.268 (0.001)	-0.314 (0.000)	-0.237 (0.002)	0.839 (0.000)	-0.159 (0.044)						
MATHGRD	0.152 (0.054)	0.405 (0.000)	0.120 (0.128)	-0.143 (0.070)	0.059 (0.456)	-0.146 (0.065)					
LMATH/341	-0.074 (0.350)	-0.152 (0.054)	-0.161 (0.042)	0.553 (0.000)	-0.139 (0.079)	0.577 (0.000)	0.055 (0.490)				
EC251GRD	0.407 (0.000)	0.628 (0.000)	0.410 (0.000)	-0.207 (0.008)	0.370 (0.000)	-0.220 (0.005)	0.298 (0.000)	-0.089 (0.260)			
EC252GRD	0.346 (0.000)	0.604 (0.000)	0.420 (0.000)	-0.175 (0.026)	0.356 (0.000)	-0.227 (0.004)	0.301 (0.000)	-0.110 (0.165)	0.556 (0.000)		
LAG251/341	-0.208 (0.008)	-0.238 (0.002)	-0.188 (0.017)	0.238 (0.002)	-0.229 (0.003)	0.382 (0.000)	-0.047 (0.550)	0.316 (0.000)	-0.153 (0.052)	-0.203 (0.010)	
LAG252/341	-0.279 (0.000)	-0.296 (0.000)	-0.213 (0.007)	0.457 (0.000)	-0.275 (0.000)	0.442 (0.000)	-0.100 (0.207)	0.370 (0.000)	-0.170 (0.031)	-0.224 (0.004)	0.453 (0.000)

P-values are in parentheses

Table 4

Regression Results

Dependent Variable: Corporate Finance Grade (CF341GRD)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	0.2753 (0.650)	1.5405 (0.000)*	0.6613 (0.149)	0.5976 (0.288)	0.8335 (0.094)**	0.5027 (0.368)	0.7940 (0.145)	0.9301 (0.078)**
AC207GRD	0.2411 (0.043)*	0.5236 (0.000)*	0.3533 (0.002)*	0.3934 (0.000)*	0.3819 (0.000)*	0.2189 (0.064)**	0.3411 (0.002)*	0.5282 (0.000)*
AC208GRD	0.3610 (0.001)*		0.4478 (0.000)*			0.3550 (0.002)*		
LAG207/341	-0.1485 (0.108)	-0.1387 (0.004)*	-0.1090 (0.216)	-0.1439 (0.016)*	-0.0980 (0.052)**	-0.1252 (0.170)	-0.0737 (0.164)	-0.1797 (0.003)*
LAG208/341	0.0582 (0.571)		0.01041 (0.913)			-0.0915 (0.366)		
MATHGRD	0.0124 (0.908)			0.0280 (0.796)				0.1239 (0.250)
LMATH/341	0.07984 (0.093)**			0.0726 (0.129)				0.0717 (0.142)
EC251GRD	0.2753 (0.650)			0.4409 (0.001)*	0.4660 (0.000)*	0.3379 (0.024)*	0.3969 (0.008)*	
LAG251/341	-0.00645 (0.909)			-0.0449 (0.406)	-0.0347 (0.519)	0.0055 (0.922)	-0.0092 (0.871)	
EC252GRD	0.0449 (0.781)					0.0585 (0.713)	0.1587 (0.325)	
LAG252/341	-0.1028 (0.135)					-0.0969 (0.159)	-0.0809 (0.227)	
F-VALUE	7.80 (0.000)*	20.39 (0.000)*	15.79 (0.000)*	9.94 (0.000)*	14.20 (0.000)*	9.31 (0.000)*	9.94 (0.000)*	11.40 (0.000)*
R ²	34.2%	20.5%	28.8%	27.9%	26.7%	32.9%	27.9%	22.6%
Adjusted R ²	29.8%	19.5%	27.0%	25.1%	24.8%	29.3%	25.1%	20.6%

p-values are in parentheses

* Significant at $p < 0.05$

** Significant at $p < 0.10$

Table 5
Regression Based on Stepwise Variable Selection Procedure
Dependent Variable: CF341GRD

Predictor Variables	Coefficient	p-value
Constant	0.1967	0.6650
AC208GRD	0.3781	0.004
AC207GRD	0.2582	0.017
EC251GRD	0.3581	0.007
LAG252/341	-0.1100	0.051

F (4.160) = 18.21, p < 0.000; R² = 31.8%; Adjusted R² = 30.1%

About the Authors:

Kasim L. Alli is Professor of Finance, School of Business Administration, Clark-Atlanta University, James P. Brawley Drive, Atlanta, GA 30314. Phone: 404-880-8470. He is the corresponding author.

Email: klalli@aol.com or kalli@cau.edu