

Predicting Success in Graduate Financial Statement Analysis Courses – Do Traditional Predictors of Accounting Success Apply?

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Abstract

This study addresses whether the traditional predictors of success in graduate accounting classes apply to Financial Statement Analysis (FSA). FSA is being offered at an increasing number of schools, yet its content and student population differ from that of traditional upper-level graduate accounting courses. Previous studies have shown that GMAT scores, and in some cases, previous accounting work experience are associated with success in the introductory graduate accounting class. This study evaluates the relationship between these factors, as well as other previously untested variables, and performance in FSA. The results suggest that different factors are associated with success in FSA. The grade in the required graduate introductory accounting class is the only variable significantly associated with performance in FSA. These findings may have implications for introducing other broadening courses in the graduate accounting curriculum, as well as policies that limit access to upper-level accounting classes on the basis of introductory accounting grades.

Introduction

In response to increased demand from students, a call from the Accounting Education Change Commission (1990) to develop critical thinking skills, and the broadening of the curriculum as a result of the 150-hour requirement, more business schools are offering Financial Statement Analysis (FSA) to graduate students, (Koehn & Hallam, 1999). This study addresses, for the first time, whether the traditional predictors of success in graduate accounting classes apply to the FSA class.

Unlike other accounting courses in the curriculum, FSA draws a significant number of students from outside the accounting major according to Koehn & Hallam (1999). In fact, their survey data reveal that this course is often targeted at

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finance majors. This strategy has been successful, too, in that FSA is generally the most popular non-finance course taken by the Finance MBA students.

The topic coverage in FSA differs from that in traditional accounting courses. The first indication of this is that the majority of the schools surveyed by Koehn & Hallam (1999) did not require Intermediate Accounting as a prerequisite for FSA, but did require it for other upper level accounting courses. Further, while 97% of the schools they surveyed fundamental accounting concepts, many other nontraditional topics that drew more heavily on financial concepts were included as well. These included profitability analysis, risk analysis, quality of earnings, and the supply and demand for financial information.

In light of these differences between FSA and traditional graduate accounting courses, it is unclear if the same factors are associated with success in FSA as in traditional graduate accounting courses. Previous studies have shown that GMAT scores, and in some cases, previous accounting work experience are associated with success in the introductory graduate accounting class. The purpose of this study is to evaluate the relationship between these factors, as well as other previously untested variables, and performance in FSA.

Literature Review

While there have been no studies of the factors associated with performance in FSA, a number of studies have addressed this issue for the required introductory graduate accounting course. Two of the more common factors that have been evaluated for their association with performance in introductory graduate accounting courses are previous coursework and work experience in accounting. Moses (1987) and Canlar (1986) both found that the number of accounting courses taken prior to graduate work did not help explain performance in the introductory graduate accounting course. Moses found, however, that undergraduate GPA, accounting work experience, and the frequency with which the students read business publications prior to the course were all consistent predictors of performance in the entry-level graduate accounting course (Moses, 1987).

Krausz et al (1999) refined the definition of previous accounting work experience and found that only work experience specifically involved in the "preparation, interpretation or analysis of financial statements" was significant. They also found that previous coursework had to be combined with such work experience in order for it to be of value in predicting performance. More recently, Krausz et al (2000) found that "GMAT scores, and specifically Math GMAT scores, are the best basis for determining who will excel in the initial graduate accounting course." In addition, they found that undergraduate GPA, past work experience and past accounting coursework were not consistently associated with such performance.

The relationship between introductory and subsequent accounting course grade has been evaluated for undergraduate courses. Eckel & Johnson (1983) found that the GPA earned in lower-level accounting courses and the quantitative ACT scores were the best predictors of success in upper-level accounting courses. Hicks & Richardson (1989) examined performance in intermediate accounting and found that overall GPA, GPA in lower-level accounting courses, and the score on a diagnostic exam were the best predictors of intermediate accounting success.

More recently, Sandlin & Reeves (1993) provided additional support for the overall GPA as a predictor of success in intermediate accounting in their analysis of minimum entry requirements for upper-division accounting courses. Hill et al (1996) found strong

positive correlations between performance in the first and second undergraduate accounting courses.

The relationship between performance in introductory courses and subsequent accounting courses at the graduate level has not been analyzed in prior research. Krausz et al (1999) did find that more “A” students than “non-A” students in the introductory course went on to a later graduate accounting course, and that this difference was statistically significant. However, they did not directly address success in upper-level graduate accounting courses.

Study Design

The research sample consisted of 66 students enrolled in FSA over two successive semesters in the MBA program of an AACSB-accredited institution in the Northeast. Based upon the literature reviewed above, prior accounting coursework, prior accounting work experience and GMAT scores were included as independent variables. Undergraduate GPA was not included since Krausz et al (2000) found that GPA was not a useful predictor of graduate accounting performance. Finance work experience was included for the first time since many of the topics in FSA draw on concepts in the finance area as noted above. Previous finance coursework was not included as an explanatory variable since it was not a prerequisite for FSA at the sample school. Finally, the grade in the introductory accounting course was included as an independent variable to further investigate the relationship between introductory and later grades noted in Krausz et al (1999).

Information on the students’ previous exposure to accounting coursework and work experience was obtained from a student questionnaire all students were required to complete at the beginning of the course. GMAT scores (totals, and math and verbal components separately), were extracted from the student’s application for admission to the MBA program and recorded in the variables Total GMAT, Math GMAT and Verbal GMAT. The grade in the introductory graduate accounting course was noted from the students’ transcripts, and recorded as the variable Intro AC Grade.

The length of time since any graduate accounting class was taken was recorded in the variable, AC Class. Hill et al (1996) found some indication that students who took a second undergraduate accounting course immediately following the first did perform better than those with a lag between the courses. Since students in a MBA program often take courses out of sequence and over long periods of time, this time interval was considered to be of particular interest here.

Previous work experience was classified as accounting work experience if it specifically involved working with financial statements. Work experience was classified as finance work experience if it involved working with the stock market, whether directly at an exchange or at an associated firm, or commercial banking. This data was then coded as the binomial variables, AC Wk Exper for accounting work experience, and FN Wk Exper for finance work experience.

Correlation Tests

Table 1 presents both Pearson and Spearman correlations for the independent variables described above. Only the introductory course accounting grade variable is significantly correlated with the grade in FSA. Variables that previously were shown to be significant in predicting performance in entry-level graduate accounting, such as Math GMAT score and accounting work experience were not significantly correlated with FSA

grade. As expected, the GMAT variables are highly and significantly correlated with each other. Consequently, either total GMAT or the component scores will be included alternately in the regressions.

Finally, multiplicative and additive variables were considered to measure the interaction between accounting coursework and work experience. This is consistent with the approach followed in Krausz et al (2000). None of these variables was significantly correlated with FSA grade.

OLS Regressions

Table 2 reports the results of listwise regressions of the independent variables on the FSA grade. Intro AC Grade is included in all regressions since the correlation tests suggest a positive relationship between performance in the introductory course and FSA. AC Class was included to analyze the impact of the time lag discussed above. The GMAT and work experience variables were included since they had been shown to be significant in previous research (Krausz et al, 1999, 2000) on introductory graduate accounting.

The grade in the introductory graduate accounting class is the only significant independent variable, a finding consistent with the relationships suggested by the correlation tests. This is true when the Intro to AC Grade variable is included in the full model, with the variables that measure previous exposure to relevant coursework, and with the variables that take into account previous relevant work experience.

Discussion

The importance of the test results is found not only in which variables are significantly associated with the grade in FSA, but also in those that are not. Koehn & Hallam, (1999), showed that FSA draws a different student population than traditional graduate accounting courses, and that its content differs from that of traditional accounting courses. The research question addressed here was whether these differences affected the factors associated with success in the course. The results suggest that they do. The grade in the previous required graduate introductory accounting class is the only variable associated with success in FSA. The variables that have been shown in earlier research to be associated with superior performance in the introductory course, previous accounting work experience and GMAT scores, are not significant in the current model.

The variable representing finance work experience was also insignificant, despite the inclusion of finance majors and financial topics in FSA. It may be that other forms of knowledge are relevant but did not show as significant here because they were not distinguishable in the context of the present sample.

Several possibilities exist to explain these results. First, FSA may be sufficiently different from an introductory MBA accounting course so that different predictors of success apply. An analysis of the course topics in FSA suggested that these variables might be associated with finance experience, but the results of the regressions suggest that this is not so.

Another possibility is that the variables which have been shown to be useful for predicting success in the required graduate accounting course become insignificant when the grade in the required accounting course becomes known. The newer information of the grade in the required accounting course dominates the contributions of the earlier predictive variables.

The results lend support to the policy, adopted by some schools, of requiring a minimum grade in the introductory course to continue on to upper-level courses. These policies tend to be more prevalent in undergraduate accounting programs. This study suggests that such policies might be appropriate at the graduate level as well.

Conclusion and Suggestions for Future Research

The results suggest that the factors associated with success in FSA differ from those associated with success in traditional introductory graduate accounting courses. This is likely because the courses differ both in their student population and topic coverage. Only the grade in the required introductory accounting class was shown here to be significantly associated with performance in FSA. The strength of the results suggests that the curriculum in the required introductory accounting class should be carefully reviewed so as to best prepare students for later accounting courses.

As the accounting curriculum continues to evolve into a broader information processing perspective, research on additional predictors of success in other non-traditional graduate accounting classes may be warranted. These results reflect the experiences of one particular sample at one school. It is possible that a larger sample, or one including students from more schools, might show that additional variables significantly influence performance.

In addition, research to ascertain whether the same relationship between introductory and non-traditional upper-level accounting grades exists at the undergraduate level is necessary. This will help in the evaluation of the efficacy of using a minimum accounting GPA in the prerequisite courses to limit entry to the all upper-level courses.

Finally, the results of the study may inspire both instructors of introductory accounting courses and the authors of the textbooks used in those classes by showing the importance of the first course for all students who will take later accounting courses, regardless of major. Knowledge of this relationship may also be used to motivate non-accounting students to do well in the introductory course.

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Table 1: Pearson (above diagonal) and Spearman (below diagonal) Correlations of Regression Variables

	<u>FSA Grade</u>	<u>Total GMAT</u>	<u>Math GMAT</u>	<u>Verbal GMAT</u>	<u>Intro AC Grade</u>	<u>AC Class</u>	<u>AC Wk Exper</u>	<u>FN Wk Exper</u>
FSA Grade		.0977	.1936	-.1401	.4783**	.1241	-.1407	.1891
Total GMAT	.1213		.8021**	.5164**	.3391*	-.1724	-.3453*	.0128
Math GMAT	.1765	.7857**		.0626	.5212**	-.2088	-.2844	.0457
Verbal GMAT	-.1373	.6088**	.1097		-.0451	.3065	-.1577	.1261
Intro AC Grade	.3984*	.3339*	.3888*	-.0259		-.1880	-.1792	.1248
AC Class	.0080	-.1388	-.1476	.1639	-.3359		.3975*	.2244
AC Wk Exper	-.0513	-.3224	-.2255	-.1291	-.2722	.4347**		-.1622
FN Wk Exper	.1371	.0990	.0467	.0248	.0617	.0979	-.1662	

Notes to Table 1:

**significant at .01

* significant at .05

FSA Grade	Grade in FSA Course
Total GMAT	Total GMAT Score
Math GMAT	Quantitative GMAT Score
Verbal GMAT	Verbal GMAT Score
Intro AC Grade	Grade in Second Required Grad Intro Accounting Class
AC Class	# Years Since last Grad Accounting Class
AC Wk Exper	Dummy Variable for Accounting Work Experience
FN Work Exper	Dummy Variable for Finance Work Experience

Table 2: Estimates of Coefficients (with t-Statistics in Parentheses) for OLS Regressions on Performance in FSA

	<u>Model 1A</u>	<u>Model 1B</u>	<u>Model 2</u>	<u>Model 3</u>
F Stat Significance	.007	.015	.003	.001
Multiple R	.647	.657	.639	.631
Constant	.797 (.642)	.580 (.454)	.239 (.325)	.250 (.347)
Total GMAT	-0.01 (-.566)			
Math GMAT		-.210 (-.717)		
Verbal GMAT		-.004 (-.152)		
Intro AC Grade	.901** (4.230)	.995** (3.226)	.856** (4.432)	.869** (4.620)
AC Class	.163 (1.590)	.182 (1.633)	.148 (1.526)	.164 (1.790)
AC Wk Experience	-.404 (-1.250)	-.370 (-1.080)	-.377 (-1.210)	-.452 (-1.620)
FN Wk Experience	.136 (.592)	.142 (.601)	.132 (.589)	

Notes to Table 2:

1A) FSA Course Performance = $\alpha + \beta_1$ Total GMAT + β_2 Intro AC Grade + β_3 AC Class + β_4 AC Wk Exper + β_5 FN Wk Exper + e

1B) FSA Course Performance = $\alpha + \beta_1$ Math GMAT + β_2 Verbal GMAT + β_3 Intro AC Grade + β_4 AC Class + β_5 AC Wk Exper + β_6 FN Wk Exper + e

2) FSA Course Performance = $\alpha + \beta_1$ Intro AC Grade + β_2 AC Class + β_3 AC Wk Exper + β_4 FN Wk Exper + e

3. FSA Course Performance = $\alpha + \beta_1$ Intro AC Grade + β_2 AC Class + β_3 Intro AC Class + β_4 AC Wk Exper + e

**significant at .01; * significant at .05

FSA Grade:	Grade in FSA Course
Total GMAT:	Total GMAT Score
Math GMAT:	Quantitative GMAT Score
Verbal GMAT:	Verbal GMAT Score
Intro AC Grade:	Grade in Second Required Grad Intro Accounting Class
AC Class:	# Years Since last Grad Accounting Class
AC Wk Exper:	Dummy Variable for Accounting Work Experience
FN Work Exper:	Dummy Variable for Finance Work Experience