

SALARIES AND THEIR EFFECT ON THE NUMBER OF ACCOUNTING
GRADUATES

By

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Abstract: There has been many articles of literature that comment on the decreasing number of accounting graduates ever since the adoption of the 150-requirement for CPAs. This study looks at the extent to which entry-level salaries effect the number of students who decide to pursue a degree in accounting. The results of this study suggest that entry-level salaries are a major part of the decision-making process for students when selecting their degree plan. The study highlights the importance that students place on earning potential in the early years of their careers and speaks as to why they may chose one degree plan over another.

I. INTRODUCTION

Previous literature has documented how the accounting field as a whole struggles to continuously find an adequate supply of accountants. Accountants are responsible for recording and providing accurate information, making accountants a vital part of an efficient economy. Even in times of financial crisis, accountants play a crucial role in providing reliable information for business and investment decisions. This is why it is essential to have a continuous supply of accountants entering the field.

This study examines the affect that salaries have on the number of students graduating from universities with accounting degrees. Specially, this study answers the question: Do salaries offered by public accounting firms for entry-level positions have a significant effect on the change in the number of students graduating with accounting degrees? Based on prior research and psychology, I hypothesize that there is a positive relationship between the entry-level salaries that public accounting firms offer and the number of accounting students graduating with accounting degrees.

Additionally, this study also tests if the number of accounting graduates fluctuates based upon market conditions. Many would think that an economic downturn would lead to a decrease in the number of accounting graduates because many businesses are forced to downsize to remain competitive. However, I contend that there is no significant difference in the number of accounting graduates in times of irregular market conditions. This will be tested by analyzing data from the Great Recession.

My first hypothesis will be an archival study to find the explanatory power of entry-level salaries on the number of students graduating with accounting degrees. I expect to find that there is a positive relationship between entry-level salaries and the number of accounting graduates. Finding my intended results for my first hypothesis will then lead into my second hypothesis. The second hypothesis will be examined using a pretest/posttest design looking at the financial crisis as a significant event. I expect to see no significant difference in the number of accounting graduates during this time period.

Both of my hypothesis will be explained, in part, by the construal level theory (CLT) of psychological distance. CLT describes the relation between how people think of events as concrete or abstract. The amount of time that exist between college students and their first job leads them to think about the event much more concretely than other events further away in their career. Construal level theory of psychological distance helps to explain the focus on entry-level salaries in this study.

This study will contribute to the research stream by helping to explain the error term that was in Boone and Coe's (2002) results. Boone and Coe (2002) found that approximately 38 percent of the decline in the number of students graduating with an accounting degree was attributable to the implementation of the 150-hour requirement for CPA licensure. Attributing 38 percent of a correlation to one factor is significant, yet it still leaves many questions unanswered. This study will explain a significant portion of the 62 percent error term that Boone and Coe (2002) with more recent data and explore the effects of the supply of CPAs through the financial crisis.

These findings can influence future investment of firms and universities. Given that salaries explain a significant portion of why students chose to become accounting majors, firms may be encouraged to offer higher entry-level salaries than their competitors, so they can attract the top talent to their firm. Universities may also be encouraged to invest in their accounting programs because accountants are typically well paid and have stable careers. Expanding their accounting programs will make it more

likely that universities will see an increase in the amount of donations that come back to the institution.

II. THEORY AND HYPOTHESES

Albrecht and Sack (2000) ran a study that said that 150-requirement was the primary reason for the decline in students graduating with accounting degrees in the 1990s. The authors believed that many students were driven away from the accounting profession because they had to complete an additional 30 units in order to be eligible for CPA licensure. This motivated Boone and Coe (2002) to create a study of their own to see if they could attribute a majority of the decline of accounting graduates in the 1990s to the implementation of the 150-hour requirement. Boone and Coe's (2002) results contradicted those of Albrecht and Sack (2000). Boone and Coe (2002) use a pretest/posttest design to explain that 38 percent of the decline of accounting graduates during the 1990s to the implementation of the 150-hour rule. Although the implementation of the 150-hour requirement explains a significant portion of the decline in accounting graduates, there were still many other factors to be considered.

Gramling and Rosman's (2009) surveyed a group of junior accounting students in Connecticut to see how aware they were of the requirements that existed in the state to become a CPA. Their survey results revealed that many students did not know some of the most basic requirement for licensure. For example, only 53.2 percent of students knew that 150 credit hours were required to be licensed. Only 9 percent of students knew

that 36 accounting units were also required to be licensed in Connecticut. These results indicate that students are unaware of the specifics of the 150-hour, thus, suggesting that other factors are causing the decline in the number of students graduating with accounting degrees.

I, as well as many other students across the country in my position, are contemplating how we will start our lives after being a student. This comes with many financial obligations, which leads students to ask if their entry-level salaries will support the lifestyle that they plan to live in the near future.

The construal level theory of psychological distance can help to explain this line of thinking. CLT describes whether people will think of an event abstractly or concretely. Abstract events are thought of at a broad level. This means that people will know the general steps on how to reach a goal but not the specific requirements that must be undertaken. Concrete events, however, are thought about in much more detail. As events move closer to the present, people are more likely to consider all the things that need to be done to reach that event. For example, a student graduating college will think of starting their first job much more concretely than becoming the boss of the company. This is why entry-level salaries are a key factor to whether students chose to become an accounting major and leads to my first hypothesis:

Hypothesis 1: There is a positive relationship between entry-level salaries and graduation rates for accounting majors.

The Great Recession from 2007-2009 was the greatest economic downturn since the Great Depression in the 1930s. In the time leading up to the crash, the Federal Reserve had interest rates set extremely low. This encouraged many people to apply for loans like mortgages and encouraged investors to find riskier investments to earn bigger returns. Technological advances allowed for new securities like mortgage-backed securities to be created. This combination of low interest rates, agency problems, and technology led to economic disaster. Banks started to make mortgages to subprime borrowers for the sole purpose of bundling them together and selling them as a security. All types of investors from all over the world started to buy the mortgage-backed securities because having a pool of mortgages was supposed to mitigate the risk of each individual subprime borrower yet still yield a high return. Once the housing bubble popped, people started to default on their mortgages and anyone that had invested in mortgage-backed securities started to lose significant amounts of money. This caused banks to stop lending and drove the economy to a halt. Many companies were forced out of business and others downsized to continue operations. Since many firms were forced to downsize during the Great Recession, many would assume that accountants were in the same position as any other position that requires a college degree. However, this may not be the case.

Bills et al. (2016) created a study that analyzed the audit quality of an office when workload is changed. Their results found that for the first year after an office saw an increase in workload, audit quality decreased. They also found that audit quality increased when there is a decrease in workload. Instead of hiring new employees to the office that is seeing an increase in workload, firms will move employees from an office with a lower workload to an office with an increasing workload to accommodate for the new clientele. This suggest that the number of accountants remains constant, even when there is an irregular amount of work.

Leone et al. (2012) focuses on the number of going-concern opinions issued during the dotcom bubble in the late 1990s. During this time, there were many technology and internet companies that were trying to become publicly traded. This created a large amount of work for public accounting firms and the Big Four in particular. The authors found that less going-concern opinions were issued during this period of market irregularity. This was due, in part, because the number of auditors was insufficient to handle the amount of work that was required of them. Instead of hiring more accountants to handle the increased workload, firms instead decided to perform less thorough audits. These results also suggest that the number of accountants remains relatively stable in times of market euphoria and leads to my second hypothesis:

Hypothesis 2: There is no significant difference in the number of accounting graduates between times of financial crisis and regular market conditions.

III. METHOD

Design

This is an archival study because it is the most effective way to see how entry-level salaries affect the number of students that graduate with accounting degrees. With archival data, the study is better able evaluate the effects of market conditions than other forms such as an experiment, thus strengthening its external validity.

Sample Data

The data that was used for this study was obtained from the University of Arizona's accounting department. The data used for the number of graduates was from internal department data. Salary data was obtained through a self-reported survey that was sent out to students that were graduating that semester. The data spanned from the 2012/2013 school year to the 2017/2018 school year for both Undergraduate and Masters of Accounting students.

Model

This study has two parts. Hypothesis 1 is tested using archival data to see the correlation that exist between the independent variable of entry-level salaries and the dependent variable of graduation rates of accounting students. The number of account graduates will be predicted by entry-level salaries. The statistical model is:

$$\text{H1 model: AcctGrad} = \alpha + \beta\text{Year14} + \beta\text{Year15} + \beta\text{Year16} + \beta\text{Year17} + \beta\text{Year18} + \beta\text{Masters} + \beta\text{Salary_lag} + \varepsilon$$

Hypothesis 2 is tested using a pretest/posttest design. The goal of this design is to isolate the differences in the data from before the Great Recession and during the Great Recession. This way, any significant differences can be more easily attributed to the irregular economic environment. The number of account graduates is predicted by entry-level salaries and if the data came from a time in the Great Recession. The statistical model for Hypothesis 2 is:

$$\text{H2 model: AcctGrad} = \alpha + \beta\text{Year14} + \beta\text{Year15} + \beta\text{Year16} + \beta\text{Year17} + \beta\text{Year18} + \beta\text{FinancialCrisisYr} + \beta\text{Masters} + \beta\text{Salary_lag} + \varepsilon$$

Variables

The main variable is entry-level salaries. Salaries show the importance that is placed on the accounting field by the economy. Accountants are vital because they provide reliable information for decision making. The salaries for accountants will be relatively higher than many other professions because the demand for accountants is higher. Entry-level salaries in particular are used in the study because accounting graduates are most concerned about the salary they will receive right after graduating

than the salary they will receive at higher positions they might have in the future.

Construal level theory aids our understanding of this idea because graduating students are better able to think about entry-level salaries in a concrete manner.

The salary variable is included in the statistical models is a one-year lag. This is mainly because students cannot instantaneously change their majors or schedules. If the salaries for entry-level accountants were to drastically change, it would take time for students to be able to select to be an accounting major and complete the required coursework that would allow them to graduate with an accounting degree.

A binary variable for the financial crisis is included in the model for hypothesis 2. Data from years in the time of the financial crisis will be noted by a one while data outside of this period will be noted by a zero. This is an important variable because it will allow the model to delineate the effect of the financial crisis on the number of accounting graduates.

Lastly, there is also one control variable in my model: education level. Given that data from undergraduate and masters students were used in the study, it was important to control for the level of education that each graduate was completing. It is logical to think that graduates completing the Masters of Accounting program would inherently earn a higher starting salary than their counterparts completing their undergraduate studies because the Masters students have a better understanding of accounting concepts and are oftentimes closer to becoming CPA certified.

IV. ANALYSES

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	-54.282356	77.7627597	-0.70	0.5028
salary_lag	0.003707	0.0014234	2.60	0.0285
Masters	-96.754963	6.8040179	-14.22	<.0001
Year 2014	26.574159	10.7621421	2.47	0.0356
Year 2015	26.170086	13.8498777	1.89	0.0914
Year 2016	-4.314706	11.0734246	-0.39	0.7059
Year 2017	2.252173	9.9897956	0.23	0.8267
Year 2018	0.000000	0.0000000	.	.

Fit Statistics

R-Square 0.9879

The above table shows my results for Hypothesis 1. There are three notable aspects about the results. The first is the 0.9879 R-Squared value that is produced from the data set. This says that salaries have a strong correlation with the number of students graduating with accounting degrees. The second notable item is the salary lag. As seen by the p-value, the salary lag variable is significant. This means that it takes time for students to respond to changes in salary for entry-level accounting positions. This is logical given that students often have to wait till the end of a semester to change their

classes and majors. The last notable item from the results is the control for education level. As seen by the low p-value, the binary variable of Masters or no Masters has a strong effect on the salary a student may receive after graduation. This is also logical given that students graduating with Master's degrees are more knowledgeable and are often closer to becoming CPA certified.

The results for Hypothesis 2 were not obtainable from the given data. The data used in the study ranged from the 2012/2013 school year to the 2017/2018 school year. This timeframe would fall outside what is generally considered the Great Recession, which makes Hypothesis 2 untestable.

V. CONCLUSION

This study analyzes if entry-level salaries for entry-level accounting positions have a significant effect on the number of students graduating with accounting degrees. The first hypothesis states that the number of students graduating with account degrees is positively correlated with entry-level salaries. The study also considers if there is a significant difference in the number of accounting graduates between times of regular market conditions and irregular market conditions. The second hypothesis states that there is no significant difference in the number of accounting graduates in times of regular market conditions and irregular market conditions. Hypothesis 1 is accepted, and Hypothesis 2 was not tested due to a lack of available data.

This study contributes to the research stream because it helps to explain the reasoning behind the decline of accounting graduates since the 1990s. Finding what motivates students to choose to enter the accounting field can be significant for a few different reasons. If entry-level salaries are not competitive with other industries, students will not be as inclined to graduate with an accounting degree. Universities may also be influenced to invest in their accounting programs, so they can receive more alumni donations in the future. Given that many accountants have stable careers, business schools across the country may invest more in their accounting programs in hopes that the university will see an increase in donations from alumni in the future. These results can also be important once students select the accounting major. The results may influence firms to offer higher entry-level salaries to attract top talent. If one firm is willing to offer a higher salary to the top graduating talent, the firm could attract better candidates than the other firms.

Although I believe that salaries will explain a significant amount of the number of graduates with accounting degrees, there are still many other factors that they study does not consider which leads to opportunities for future research. Both opportunities for future research would require more generalizable data than what was used in this study. This study could be expanded upon by getting enough data to test Hypothesis 2. Getting data from this period would allow testing of Hypothesis 2. The other opportunity for future research would be to test both hypotheses with nationalized data. Obtaining data

from a national organization instead of only from the University of Arizona would significantly strengthen the external validity of the study.

REFERENCES

- Albrecht, W., and R. Sack. 2000. *Accounting Education: Charting the Course through a Perilous Future*. Sarasota, FL: American Accounting Association.
- Bills, K. L., Swanquist, Q. T., & Whited, R. L. (2015). Growing Pains: Audit Quality and Office Growth. *Contemporary Accounting Research*, 33(1), 288-313. doi:10.1111/1911-3846.12122
- Boone, J. P., & Coe, T. L. (2002). The 150-Hour Requirement and Changes in the Supply of Accounting Undergraduates: Evidence from a Quasi-Experiment. *Issues in Accounting Education*, 17(3), 253-268. doi:10.2308/iace.2002.17.3.253
- Gramling, L. J., & Rosman, A. J. (2009). The Ongoing Debate about the Impact of the 150-Hour Education Requirement on the Supply of Certified Public Accountants. *Issues in Accounting Education*, 24(4), 465-479. doi:10.2308/iace.2009.24.4.465
- Leone, A. J., Rice, S., Weber, J. P., & Willenborg, M. (2012). How Do Auditors Behave During Periods of Market Euphoria? The Case of Internet IPOs*. *Contemporary Accounting Research*, 30(1), 182-214. doi:10.1111/j.1911-3846.2011.01146.x
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117(2), 440-463.