

Summary of Uniform CPA Examination Candidate
Test -Taking and Pass-Fail Patterns
2004-2007

Technical Report

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Abstract

This study provides an analysis of candidate data in the first four years (2004-2007) of the computerized Uniform CPA Examination in order to uncover general patterns in test-taking behavior and pass-fail status of CPA candidates. Unique individual candidates¹ were identified and their behavior analyzed across sections within a window, across windows within a section, and across windows and across sections. Results show that in recent windows, more and more candidates took one section only, and the likelihood of passing the section has been increasing. More than 110,000 unique individual candidates have taken each section since April 2004, and the cumulative pass rate is above 60%. The majority of candidates passed a section by taking it once or twice, while a few took a section many times without passing. A total of 154,401 unique individual candidates have taken one or more sections since the launch of Computer-Based Testing (CBT) and about 30% of them have passed all four sections. The study identified candidates who passed a section more than once, sometimes in adjacent windows. Finally, depending on how to characterize candidates who gave up on the certification process, the study shows an estimated overall drop-out rate around 20%.

¹ Candidates take the CPA Exams in up to four sections and they may take each section more than once. The term “unique candidates” or “unique individual candidates” is used in this document when the candidates who took the test multiple times or in multiple sections are counted only once.

Introduction

The computerized Uniform CPA Examination was launched in the second quarter (04Q2) of 2004. The examination consists of four sections, Auditing and Attestation (AUD), Business Environment and Concepts (BEC), Financial Accounting and Reporting (FAR), and Regulation (REG). In order to qualify as CPAs, candidates are required to pass all four examination sections in addition to meeting other requirements.

With computerized testing, candidates enjoy the option of taking the examination eight months of the year (in four two-month testing windows). They may choose to take all four sections in one testing window, or any one, two, or three sections in one window and the rest in subsequent windows, depending on their test-taking strategies. If they fail any section, they can retake it until they pass all four sections.

Since the beginning of Computer-Based Testing (CBT), state boards of accountancy have required that candidates pass all four sections within an 18-month period. Candidates who fail to pass all sections within that period lose credit for the first section they have passed, and have to retake and pass that section in order to meet the requirement. For example, a candidate who passed AUD but did not pass the other three sections by the end of the 18-month period would need to take and pass AUD again.

Candidates may give up on the certification process without passing all four examination sections. They may do this because they failed or kept failing one or more sections, or because they lost motivation due to a career change or life events, among other causes.

We have accumulated candidate data between 2004 and 2007 to conduct a longitudinal study that tracks candidates' behavior since the launch of CBT. It combines candidate data across 15 windows (from 04Q2 to 07Q4) to reveal general patterns of taking and retaking examination, passing or failing, and remaining in or dropping out of the certification process. An earlier study (Zhang, 2007) analyzed the candidate data from the first 10 windows (04Q2-06Q3). The current study updates and expands the previous analyses.

Data Analysis

For each window and each section, the National Association of State Boards of Accountancy (NASBA) assigns each candidate an Exam Section ID (ESI) unique for that window and that section. To be able to track candidates across sections in one window or across windows, NASBA assigns another code called the Fake National ID (FNI) that can be used by NASBA to link to the true identity of each candidate. This link is unique and consistent throughout the whole CPA certification process for an individual test taker.

This study used the Fake National ID as the index variable to link candidates as well as to combine and merge data of the past 15 windows. Candidates who have no FNI or an invalid FNI were excluded. For individual candidates, the information of interest

includes in what section and in which window they took the test, and whether they passed or failed. Descriptive analyses were performed from the following three perspectives.

First, we analyzed the data across four sections within each window, to find out how many sections candidates chose to take in one window, and the proportion of candidates who passed one or more sections.

Second, we analyzed the data across windows for each section, to find out how many times candidates took a particular section and whether they passed. We also looked at how many candidates passed a section but had to retake it to maintain the credit, due to the 18-month requirement of the state boards of accountancy.

Third, we analyzed the data across all windows and all sections, to find out how many candidates passed or failed how many sections, and finally, how many candidates dropped out of the certification process, and how many sections they took or passed before they dropped out.

For this study, a drop-out candidate is defined as a candidate who did not pass all four sections, and did not take any test for at least 6 windows in a row. We assume that such candidates dropped out from the certification process because they lost all their credits for the sections they passed (if they passed any), although potentially they could come back and start the process again. It should be noted that we are currently unable to identify candidates who had passed one or more sections of the CPA Exams in the paper-and-pencil format prior to 2004 and completed the Examinations in the CBT format by passing the remaining sections. These candidates could be included in this analysis and identified as drop-outs.

Results

Within-Window Across-Section Analyses

Results from the within-window, across-section analysis are summarized in Table 1 and Table 2. Table 1 provides the window-by-window statistics. For each window from 04Q2 to 07Q4, Table 1 gives the number of unique individual candidates across four sections and the percentage of candidates taking one, two, three, or four sections. For a group of candidates who took a given number of sections, Table 1 also provides the percentage of candidates (numbers in italics) who passed none, some, or all of the sections they took. Table 2 re-summarizes the data by averaging values in Table 1, first over all 15 windows, and then over the windows by each calendar year, 2004, 2005, 2006, and 2007.

In any given window, over 90% of candidates took one or two sections, of whom around 65% took only one section. The percentage taking only one section was always higher in the first two quarters of a calendar year, possibly due to the busy season of accounting work. At the same time, the percentage of candidates taking all four sections gradually dropped over the windows, and it was lower than 2% in 07Q1 for the first time.

Table 1: Candidates by Number of Sections Taken and Number of Sections Passed in Each Window from 04Q2 to 07Q4

	Number of Sections Taken			
	1	2	3	4
04Q2 (Total N = 15245)				
Pct. of Candidates	65.93	25.99	2.16	5.92
Pct. Passing 0 Section*	53.39	42.48	31.93	24.94
Pct. Passing 1 Section	46.61	28.12	17.17	13.53
Pct. Passing 2 Sections		29.40	16.57	14.30
Pct. Passing 3 Sections			34.34	15.85
Pct. Passing 4 Sections				31.37
04Q3 (Total N = 23458)				
Pct. of Candidates	58.13	31.56	5.47	4.84
Pct. Passing 0 Section	57.19	43.57	35.12	35.95
Pct. Passing 1 Section	42.81	26.73	17.60	17.36
Pct. Passing 2 Sections		29.70	16.74	11.89
Pct. Passing 3 Sections			30.53	11.63
Pct. Passing 4 Sections				23.17
04Q4 (Total N = 26450)				
Pct. of Candidates	59.01	31.01	5.34	4.64
Pct. Passing 0 Section	59.54	48.45	43.03	43.23
Pct. Passing 1 Section	40.46	25.38	22.08	14.60
Pct. Passing 2 Sections		26.16	15.71	10.93
Pct. Passing 3 Sections			19.18	12.81
Pct. Passing 4 Sections				18.43
05Q1 (Total N = 21522)				
Pct. of Candidates	67.52	25.36	3.91	3.22
Pct. Passing 0 Section	57.37	50.71	46.14	49.93
Pct. Passing 1 Section	42.63	24.68	23.07	15.15
Pct. Passing 2 Sections		24.61	16.05	12.12
Pct. Passing 3 Sections			14.74	8.37
Pct. Passing 4 Sections				14.43
05Q2 (Total N = 24131)				
Pct. of Candidates	68.02	24.78	4.74	2.46
Pct. Passing 0 Section	56.41	45.67	37.29	41.99
Pct. Passing 1 Section	43.59	26.25	19.48	15.85
Pct. Passing 2 Sections		28.08	14.50	11.64
Pct. Passing 3 Sections			28.73	13.32
Pct. Passing 4 Sections				17.20

* Proportion of passing zero or any section(s) are based on the number of candidates taking a given number of sections, not the total number of candidates.

Table 1 (continued): Candidates by Number of Sections Taken and Number of Sections Passed in Each Window from 04Q2 to 07Q4

	Number of Sections Taken			
	1	2	3	4
05Q3 (Total N = 29846)				
Pct. of Candidates	59.59	31.38	5.87	3.16
Pct. Passing 0 Section	53.41	41.09	33.16	34.99
Pct. Passing 1 Section	46.59	25.58	21.12	14.53
Pct. Passing 2 Sections		33.33	16.78	11.98
Pct. Passing 3 Sections			28.94	10.92
Pct. Passing 4 Sections				27.57
05Q4 (Total N = 32282)				
Pct. of Candidates	59.78	31.65	5.45	3.13
Pct. Passing 0 Section	55.35	45.66	43.46	44.20
Pct. Passing 1 Section	44.65	26.09	20.08	15.56
Pct. Passing 2 Sections		28.25	16.72	11.30
Pct. Passing 3 Sections			19.74	11.00
Pct. Passing 4 Sections				17.94
06Q1 (Total N = 26161)				
Pct. of Candidates	68.66	25.26	3.68	2.40
Pct. Passing 0 Section	55.58	46.39	47.71	48.41
Pct. Passing 1 Section	44.42	25.87	23.60	17.04
Pct. Passing 2 Sections		27.73	16.01	13.69
Pct. Passing 3 Sections			12.68	11.31
Pct. Passing 4 Sections				9.55
06Q2 (Total N = 29967)				
Pct. of Candidates	66.16	26.55	4.57	2.73
Pct. Passing 0 Section	55.25	44.21	39.25	41.37
Pct. Passing 1 Section	44.75	26.74	22.66	15.18
Pct. Passing 2 Sections		29.04	16.52	12.85
Pct. Passing 3 Sections			21.56	11.26
Pct. Passing 4 Sections				19.34
06Q3 (Total N = 31800)				
Pct. of Candidates	62.76	29.47	5.63	2.15
Pct. Passing 0 Section	52.91	40.15	33.02	43.05
Pct. Passing 1 Section	47.09	27.82	19.89	15.08
Pct. Passing 2 Sections		32.03	16.20	9.22
Pct. Passing 3 Sections			30.89	11.86
Pct. Passing 4 Sections				20.79

Table 1 (continued): Candidates by Number of Sections Taken and Number of Sections Passed in Each Window from 04Q2 to 07Q4

	Number of Sections Taken			
	1	2	3	4
06Q4 (Total N = 36676)				
Pct. of Candidates	60.77	31.77	5.20	2.26
Pct. Passing 0 Section	54.07	42.85	42.00	42.46
Pct. Passing 1 Section	45.93	27.08	20.82	15.20
Pct. Passing 2 Sections		30.07	16.89	10.62
Pct. Passing 3 Sections			20.29	11.58
Pct. Passing 4 Sections				20.14
07Q1 (Total N = 30051)				
Pct. of Candidates	70.94	24.12	3.15	1.79
Pct. Passing 0 Section	53.32	44.68	45.78	45.91
Pct. Passing 1 Section	46.68	26.62	21.73	17.10
Pct. Passing 2 Sections		28.70	17.19	10.41
Pct. Passing 3 Sections			15.30	10.41
Pct. Passing 4 Sections				16.17
07Q2 (Total N = 32712)				
Pct. of Candidates	66.83	26.94	4.20	2.03
Pct. Passing 0 Section	49.10	38.45	35.59	39.52
Pct. Passing 1 Section	50.90	27.34	20.96	14.18
Pct. Passing 2 Sections		34.21	18.78	11.46
Pct. Passing 3 Sections			24.67	12.82
Pct. Passing 4 Sections				22.02
07Q3 (Total N = 39316)				
Pct. of Candidates	62.03	30.65	4.89	2.43
Pct. Passing 0 Section	50.96	34.92	30.79	34.17
Pct. Passing 1 Section	49.04	26.89	20.02	11.49
Pct. Passing 2 Sections		38.18	16.12	11.39
Pct. Passing 3 Sections			33.07	11.81
Pct. Passing 4 Sections				31.14
07Q4 (Total N = 41047)				
Pct. of Candidates	64.25	29.71	4.16	1.87
Pct. Passing 0 Section	52.54	39.11	36.02	41.74
Pct. Passing 1 Section	47.46	27.80	24.68	15.08
Pct. Passing 2 Sections		33.09	19.47	11.83
Pct. Passing 3 Sections			19.82	13.78
Pct. Passing 4 Sections				17.56

Table 2: Candidates by Number of Sections Taken and Number of Sections Passed Averaged by Calendar Year

	Number of Sections Taken			
	1	2	3	4
All Windows (04Q2-07Q4) Average Total N = 29378				
Pct. of Candidates	64.30	28.23	4.49	2.99
Pct. Passing 0 Section	54.71	43.64	39.37	41.22
Pct. Passing 1 Section	45.29	26.55	21.05	15.32
Pct. Passing 2 Sections		29.80	16.58	11.64
Pct. Passing 3 Sections			23.01	11.75
Pct. Passing 4 Sections				20.06
Year 2004 (04Q2-04Q4) Average Total N = 21718				
Pct. of Candidates	61.02	29.52	4.32	5.13
Pct. Passing 0 Section	56.71	44.83	36.69	34.71
Pct. Passing 1 Section	43.29	26.74	18.95	15.16
Pct. Passing 2 Sections		28.42	16.34	12.37
Pct. Passing 3 Sections			28.02	13.43
Pct. Passing 4 Sections				24.32
Year 2005 (05Q1-05Q4) Average Total N = 26945				
Pct. of Candidates	63.73	28.29	4.99	2.99
Pct. Passing 0 Section	55.64	45.78	40.01	42.78
Pct. Passing 1 Section	44.37	25.65	20.94	15.27
Pct. Passing 2 Sections		28.57	16.01	11.76
Pct. Passing 3 Sections			23.04	10.90
Pct. Passing 4 Sections				19.29
Year 2006 (06Q1-06Q4) Average Total N = 31151				
Pct. of Candidates	64.59	28.26	4.77	2.39
Pct. Passing 0 Section	54.45	43.40	40.50	43.82
Pct. Passing 1 Section	45.55	26.88	21.74	15.63
Pct. Passing 2 Sections		29.72	16.41	11.60
Pct. Passing 3 Sections			21.36	11.50
Pct. Passing 4 Sections				17.46

* Proportion of passing 1 or more sections are based on the number of candidates taking a given number of sections, not the total number of candidates.

Table 2(continued): Candidates by Number of Sections Taken and Number of Sections Passed Averaged by Calendar Year

	Number of Sections Taken			
	1	2	3	4
Year 2007 (07Q1-07Q4) Average Total N = 35782				
Pct. of Candidates	67.04	27.15	3.84	1.97
Pct. Passing 0 Section	52.54	40.85	39.59	41.93
Pct. Passing 1 Section	47.47	26.98	22.04	15.19
Pct. Passing 2 Sections		32.17	17.49	11.01
Pct. Passing 3 Sections			20.87	11.60
Pct. Passing 4 Sections				20.26

* Proportion of passing 1 or more sections are based on the number of candidates taking a given number of sections, not the total number of candidates.

When numbers are averaged by calendar year, Table 2 shows a steady increase (from 61% to 67%) in the percentage of candidates taking one section only, and a steady decrease in the percentage taking all four sections (from 5.31% to 1.97%). In particular, the averaged percentage taking four sections in the first year was much higher than those of later years. The last year (2007) had the highest percentage of candidates taking one section only, and the lowest percentages of candidates taking two, three or four sections.

The percentages of candidates passing one or more sections demonstrate more variation as expected. When averaged, Table 2 indicates that, in general, candidates taking three or four sections were more likely to pass those sections all at once in earlier windows than in later windows. On the other hand, as more candidates tended to take one section per window, the likelihood of passing that section increased steadily over the years (from 43% to 47%).

The tables also show a slow but steady candidate volume increase from the launch of CBT. The average number of unique candidates taking test per window went up from 21,718 in 2004 to 35,782 in 2007, an increase of almost 65%.

Within-Section Across-Window Analyses

Results from the within-section, across window analysis are presented in Tables 3 to 9. Table 3 provides the cumulative pass rates of unique candidates in each section, now all having over 100,000 candidates since CBT. Results show that, as found previously, BEC attracted slightly more unique individual candidates than the other three. FAR had the highest cumulative pass rates (64.11%) and AUD had the lowest (62.84%).

Table 3: Cumulative Pass Rates by Section (04Q2-07Q4)

Status	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
Fail	41069	37.16	42536	36.34	38890	35.89	39858	36.61
Pass	69457	62.84	74514	63.66	69469	64.11	69007	63.39
Total	110526	100	117050	100	108359	100	108865	100

Table 4: Candidates by Number of Tests They Took in Each Exam Section (04Q2-07Q4)

Number of Tests	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1	78674	71.18	84995	72.61	77958	71.94	75086	68.97
2	21140	19.13	20257	17.31	19728	18.21	21365	19.63
3	7086	6.41	7065	6.04	6829	6.30	7964	7.32
4	2389	2.16	2829	2.42	2456	2.27	2861	2.63
5	762	0.69	1099	0.94	875	0.81	969	0.89
6	299	0.27	490	0.42	311	0.29	372	0.34
7	113	0.10	191	0.16	113	0.10	158	0.15
8	30	0.03	64	0.05	46	0.04	53	0.05
9	21	0.02	31	0.03	26	0.02	22	0.02
10	6	0.01	19	0.02	7	0.01	8	0.01
11	2	0.00	5	0.00	5	0.00	3	0.00
12	2	0.00	4	0.00	3	0.00	1	0.00
13	1	0.00	1	0.00			2	0.00
14	1	0.00			1	0.00	1	0.00
15					1	0.00		
Total	110526	100	117050	100	108359	100	108865	100

Table 4 gives the number and percentage of unique individual candidates in each section by the number of times they tested up to 07Q4. Results show that around 72% (68% for REG) tested once, and over 90% tested once or twice. For each section, a small number of candidates took the test many times – up to 15 times for FAR, 14 for AUD and REG, and 13 for BEC.

Table 5: Successful Candidates: Number of Tests to Pass a Section (04Q2-07Q4)

Number of Tests Until Pass	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1	51542	74.21	58228	78.14	51202	73.70	48590	70.41
2	11494	16.55	9857	13.23	11410	16.42	12183	17.65
3	4342	6.25	3888	5.22	4466	6.43	5365	7.77
4	1426	2.05	1532	2.06	1592	2.29	1895	2.75
5	434	0.62	626	0.84	535	0.77	614	0.89
6	148	0.21	247	0.33	179	0.26	219	0.32
7	55	0.08	92	0.12	57	0.08	101	0.15
8	9	0.01	27	0.04	18	0.03	24	0.03
9	4	0.01	10	0.01	5	0.01	10	0.01
10	2	0.00	6	0.01	3	0.00	4	0.01
11					2	0.00	1	0.00
12	1	0.00						
13			1	0.00			1	0.00
14								
15								
Total	69457	100	74514	100	69469	100	69007	100

Table 6: Unsuccessful Candidates: Number of Tests Failed in a Section (04Q2-07Q4)

Number of Tests Failed So Far	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1	29418	71.63	28890	67.92	28299	72.77	28504	71.51
2	7687	18.72	8650	20.34	6909	17.77	7445	18.68
3	2502	6.09	2912	6.85	2268	5.83	2408	6.04
4	898	2.19	1221	2.87	832	2.14	904	2.27
5	313	0.76	449	1.06	335	0.86	340	0.85
6	147	0.36	235	0.55	130	0.33	151	0.38
7	57	0.14	99	0.23	56	0.14	56	0.14
8	21	0.05	37	0.09	28	0.07	29	0.07
9	17	0.04	21	0.05	21	0.05	12	0.03
10	4	0.01	13	0.03	4	0.01	4	0.01
11	2	0.00	5	0.01	3	0.01	2	0.01
12	1	0.00	4	0.01	3	0.01	1	0.00
13	1	0.00			1	0.00	1	0.00
14	1	0.00					1	0.00
15					1	0.00		
Total	41069	100	42536	100	38890	100	39858	100

Table 5 provides a summary by the number of tests taken by candidates before they passed a section. It appears that BEC candidates were more likely (78.14%) to pass at their first attempt, and REG candidates were less likely (70.41%) to pass at their first attempt. Except for REG, over 90% of candidates were able to pass by the second time they took a section.

Table 6 shows the number of tests taken by candidates who had not yet passed a section by the end of 2007. As in Table 5, results show over 90% of them tested once or twice so far, while some candidates have failed many times. In FAR particularly, a candidate had tested in every window since the launch of CBT and failed every single time².

The analysis identified some candidates who took the test again after they had passed it. Most of them passed the second time but some did not. Table 7 gives the number of candidates who passed a section once but failed when they tested again, as well as the percentage of such people of all unique candidates of that section. It seems that such failures tended to be less likely FAR (94 cases, 0.09%) than the other sections (all above 0.20%).

Some candidates passed a section twice. Table 8 provides the number of those candidates and separates them into two groups by the length of intervals, i.e. the number of windows between their first pass and second pass. Again, the percentages in Table 8 are of the total number of unique individual candidates tested in each section. Most of records in Table 8 (99% in AUD, BEC, and REG, and 96% in FAR) belonged to the first group who passed a section six or more windows (18 months) after they passed it the first time. Apparently they were retaking a section as their credit expired after the 18-month period. The second group, however, passed a section twice in adjacent or close-by windows. Although this group was very small, it may reflect either a data problem (such as inaccurate Fake National IDs) or candidates who retested without realizing they already passed. Further investigation of this group of candidates is needed.

Table 7: Candidates Who Passed a Section But Failed When Taking the Same Section Again (04Q2-07Q4)

AUD (Total N = 110526)		BEC (Total N = 117050)		FAR (Total N = 108359)		REG (Total N = 108865)	
N	Pct.	N	Pct.	N	Pct.	N	Pct.
230	0.21	253	0.22	94	0.09	221	0.20

* Percentage is out of Total N.

² IDs of the candidates who took a section 7 or more times, passed or failed, by a given window are provided to NASBA for potential investigation.

Table 8: Candidates Who Passed a Section Twice (04Q2-07Q4)

Number of Windows Apart	AUD (T. N = 110526)		BEC (T. N = 117050)		FAR (T. N = 108359)		REG (T. N =108865)	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
6+ Windows	1282	1.16	1309	1.12	428	0.39	737	0.68
0-5 Windows	15	0.01	3	0.00	16	0.02	4	0.00
Total	1297	1.17	1312	1.12	444	0.41	741	0.68

* Percentage is out of Total N.

When candidates failed a section, in most cases they would retake it until they passed it. It would be interesting to estimate how long they waited to retake a section after a failure. Since candidates were not allowed to take a section more than once during any given window, the questions become how many candidates would retake in the window right after their failure, how many would wait until a later window to retake, and whether the “waiting time” was different for their first retake and their later retakes. The answers to these questions can be found in Table 9.

Table 9(a): Distribution of Candidates by the Number of Windows (Intervals) between Initial Test and First Retake (04Q2-07Q4)

Number of Intervals	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
0	7280	22.86	8361	26.08	7424	24.42	9018	26.70
1	8853	27.79	8307	25.91	8320	27.37	9328	27.61
2	6035	18.95	5810	18.13	6129	20.16	6105	18.07
3	3652	11.47	3458	10.79	3662	12.05	3877	11.48
4	1705	5.35	1734	5.41	1684	5.54	1781	5.27
5	1107	3.48	1076	3.36	936	3.08	977	2.89
6	987	3.10	1138	3.55	685	2.25	800	2.37
7	876	2.75	938	2.93	637	2.10	749	2.22
8	505	1.59	503	1.57	358	1.18	430	1.27
9	345	1.08	303	0.95	225	0.74	268	0.79
10	246	0.77	205	0.64	154	0.51	197	0.58
11	178	0.56	138	0.43	122	0.40	159	0.47
12	63	0.20	69	0.22	48	0.16	71	0.21
13	20	0.06	15	0.05	17	0.06	19	0.06
Total	31852	100	32055	100	30401	100	33779	100

Table 9(b): Distribution of Candidates by the Number of Windows (Intervals) between First Retake and Second Retake (04Q2-07Q4)

Number of Intervals	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
0	4204	39.25	5146	43.62	5027	47.10	5653	45.54
1	3192	29.80	2961	25.10	2841	26.62	3370	27.15
2	1509	14.09	1706	14.46	1380	12.93	1620	13.05
3	718	6.70	878	7.44	684	6.41	813	6.55
4	360	3.36	386	3.27	285	2.67	337	2.71
5	178	1.66	219	1.86	150	1.41	180	1.45
6	214	2.00	238	2.02	113	1.06	179	1.44
7	192	1.79	155	1.31	103	0.97	148	1.19
8	81	0.76	64	0.54	58	0.54	67	0.54
9	38	0.35	32	0.27	24	0.22	25	0.20
10	20	0.19	11	0.09	5	0.05	15	0.12
11	6	0.06	1	0.01	2	0.02	7	0.06
12			1	0.01	1	0.01		
Total	10712	100	11798	100	10673	100	12414	100

Table 9(c): Distribution of Candidates by the Number of Windows (Intervals) between Second Retake and Third Retake (04Q2-07Q4)

Number of Intervals	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
0	1908	52.62	2667	56.35	2263	58.87	2552	57.35
1	922	25.43	1116	23.58	894	23.26	1035	23.26
2	402	11.09	468	9.89	362	9.42	431	9.69
3	182	5.02	228	4.82	157	4.08	203	4.56
4	73	2.01	105	2.22	81	2.11	84	1.89
5	49	1.35	51	1.08	30	0.78	50	1.12
6	42	1.16	45	0.95	29	0.75	45	1.01
7	33	0.91	42	0.89	20	0.52	34	0.76
8	8	0.22	9	0.19	7	0.18	10	0.22
9	6	0.17	2	0.04	1	0.03	5	0.11
10	1	0.03					1	0.02
Total	3626	100	4733	100	3844	100	4450	100

Table 9(d): Distribution of Candidates by the Number of Windows (Intervals) between Third Retake and Fourth Retake (04Q2-07Q4)

Number of Intervals	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
0	735	59.42	1246	65.44	875	63.04	1034	65.07
1	312	25.22	387	20.33	311	22.41	317	19.95
2	113	9.14	152	7.98	111	8.00	133	8.37
3	45	3.64	63	3.31	54	3.89	56	3.52
4	11	0.89	29	1.52	19	1.37	19	1.20
5	8	0.65	8	0.42	4	0.29	6	0.38
6	6	0.49	9	0.47	8	0.58	13	0.82
7	6	0.49	9	0.47	6	0.43	7	0.44
8	1	0.08	1	0.05			4	0.25
Total	1237	100	1904	100	1388	100	1589	100

Table 9 has four sub-tables, 9(a) through 9(d). 9(a) gives the distribution of candidates by their “waiting time” in terms of the number of windows between candidates’ initial test and their first retake for each section, followed by 9(b) between the first and second retakes, 9(c) between the second and third retakes, and 9(d) between the third and fourth retakes. When the number of windows between tests is 0, it means the candidates retook the test in the very next window after they failed. Table 9 clearly shows more candidates chose to retake a section immediately after they failed more than once, as the percentage of candidates who waited 0 windows increased, using AUD for example, from 22.86% in 9(a) to 59.42% in 9(d). Table 9 also shows that a small number of candidates waited many windows to retake a section, up to 13 windows for the first retake.

The distribution of candidates by “waiting time” is provided in Table 10 for who *passed* their first or subsequent retakes, up to four.³ Just as Table 9, Table 10 shows that the percentage of candidates who retook a section immediately increased with the number of retakes required to pass, from 27.27% to 70.60% using AUD for example again. In this case, the slightly larger percentage in Table 10 over the corresponding percentage in Table 9 seems to suggest that the candidates who retook the test immediately may be more likely to pass.

Table 9 and Table 10 both show that more candidates in BEC retook the test right after they failed than in the other sections, at least for the first time. A possible reason is that in general BEC candidates tended to receive their scores earlier and were able to reschedule for testing in the window right after.

³ Either Table 9 or Table 10 includes candidates who did not pass a section until their fifth attempt or later, because such candidates were less than 1% of all candidates in each section.

Table 10: Candidates by Number of Windows between Last Two Tests before Passing a Section, Organized by Number of Tests to Pass Exam (04Q2-07Q4)

Number of Intervals	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
Passed on 2 nd Test								
0	1566	27.37	1859	36.38	1712	28.37	1933	30.75
1	1971	34.45	1573	30.78	2102	34.83	2204	35.06
2	997	17.42	842	16.48	1062	17.60	957	15.22
3	650	11.36	431	8.43	615	10.19	654	10.40
4	274	4.79	217	4.25	274	4.54	278	4.42
5	151	2.64	104	2.04	157	2.60	132	2.10
6	76	1.33	51	1.00	76	1.26	69	1.10
7	27	0.47	27	0.53	31	0.51	49	0.78
8	10	0.17	6	0.12	6	0.10	11	0.17
Total	5722	100	5110	100	6035	100	8267	100
Passed on 3 rd Test								
0	991	50.20	1057	57.48	1318	57.23	1460	56.18
1	661	33.49	476	25.88	642	27.88	768	29.55
2	226	11.45	221	12.02	239	10.38	251	9.66
3	68	3.44	60	3.26	81	3.52	90	3.46
4	21	1.06	15	0.82	16	0.69	20	0.77
5	5	0.25	8	0.44	6	0.26	7	0.27
6	1	0.05	2	0.11	1	0.04	3	0.12
7	1	0.05						
Total	1974	100	1839	100	2303	100	2599	100
Passed on 4 th Test								
0	377	70.60	466	74.80	493	73.15	622	74.58
1	114	21.35	113	18.14	141	20.92	156	18.71
2	34	6.37	34	5.46	32	4.75	37	4.44
3	9	1.69	8	1.28	5	0.74	15	1.80
4			1	0.16	3	0.45	4	0.48
5			0	0.00				
6			1	0.16				
Total	534	100	623	100	674	100	834	100

Across-Window Across-Section Analyses

Tables 11 through 15 summarize the data across all windows and all sections. Table 11 shows that, up to 07Q4, more than 150,000 unique individual candidates took one or more sections of the computerized CPA Examination, and 48.11% of them took all four sections.

Table 12 shows how many candidates passed how many sections, organized by the number of sections they took. We can see that more than 60% of the candidates who took four sections have passed them all. In other words, 29.80% of all candidates passed all four exam sections since the launch of CBT. The percentage was 21.70% in the previous report (Zhang, 2007) when it was calculated up to 06Q3. Among those who took two or three sections, around 30% have passed either two or three sections. Among those who took only one section by 07Q4, 37.42% passed and 62.58% failed.

Table 11: Candidates by Number of Sections They Took (04Q2-07Q4)

Number of Sections	N	Pct.
1	31152	20.18
2	30408	19.69
3	18558	12.02
4	74283	48.11
Total	154401	100

Table 12: Candidates by Number of Sections Passed and by Number of Sections Taken (04Q2-07Q4)

Sections Passed	4 Sections Taken		3 Sections Taken		2 Sections Taken		1 Section Taken	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
0	10599	14.27	6497	35.01	15779	51.89	19494	62.58
1	5626	7.57	3610	19.45	5478	18.01	11658	37.42
2	5091	6.85	2679	14.44	9151	30.09		
3	6958	9.37	5772	31.10				
4	46009	61.94						
Total	74283	100	18558	100	30408	100	31152	100

Table 13: Candidates by Number of Tests before Passing All Sections They Took (04Q2-07Q4)

Tests before Passing All Sections Taken	4 Sections Taken		3 Sections Taken		2 Sections Taken		1 Section Taken	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1							8757	75.12
2					5307	57.99	1950	16.73
3			3999	69.37	1835	20.05	644	5.52
4	21127	45.92	937	16.25	1018	11.12	217	1.86
5	8359	18.17	387	6.71	512	5.60	72	0.62
6	5288	11.49	239	4.15	247	2.70	11	0.09
7	3539	7.69	102	1.77	129	1.41	6	0.05
8	2384	5.18	52	0.9	57	0.62	1	0.01
9	1692	3.68	18	0.31	29	0.32		
10	1108	2.41	9	0.16	9	0.10		
11	766	1.66	11	0.19	7	0.08		
12	526	1.14	4	0.07				
13	370	0.8						
14	269	0.58	1	0.02				
15	183	0.4			1	0.01		
16	133	0.29						
17	69	0.15						
18	63	0.14						
19	49	0.11	1	0.02				
20	25	0.05						
21	21	0.05	1	0.02				
22	13	0.03						
23	5	0.01						
24	5	0.01	1	0.02				
25	6	0.01						
26	4	0.01	2	0.03				
...*				
Total	22882	100	3451	100	9151	100	11658	100

* Candidates who tested more than 26 times are not shown in this table.

Candidates who passed all of the sections they took are then reanalyzed by the number of times they tested. Results are presented in Table 13. We can see that 45.92% of the candidates who passed all four sections accomplished that in four sessions, i.e. they passed each section on the first attempt. For those who took and passed three sections, 69.37% passed each section on a single appointment. The percentage of passing on the first attempt is 75.12% for those who took one section only. Interestingly, for those who took and passed two sections, only 57.99% tested for each section only once. Table 13 also shows that some candidates took more than 25 tests to pass three or four sections.

Candidates were flagged as drop-outs if they did not pass all four sections and did not test in any section for six or more windows. Results of the drop-out analysis are captured in Table 14, where drop-outs are cross-tabulated by the number of sections they took and the number of sections they passed. From the last column of Table 14, we can tell that 16,131 candidates (40.54%) took one section only and 6,856 candidates (17.23%) took all four sections. The last row of the table shows that more than half of the candidates in Table 14 (52.91%) did not pass any section. Some (6.14%) took either three or four sections and quitted the examination process after they passed three sections.

Table 14: Potential Drop-out Candidates by Number of Sections They Took and by Number of Sections They Passed (04Q2-07Q4)

Section(s) Taken	Section(s) Passed								Total
	0		1		2		3		
	N	Pct. *	N	Pct.	N	Pct.	N	Pct.	
1	8935	55.39	7196	44.61					16131
2	6185	49.63	1432	11.49	4845	38.88			12462
3	2017	46.53	724	16.70	214	4.94	1380	31.83	4335
4	3912	57.06	1238	18.06	644	9.39	1062	15.49	6856
Total	21049	52.91	10590	26.62	5703	14.33	2442	6.14	39784

* Percentage is out of the total in the last column.

A total of 39,784 potential drop-out candidates were identified, which leads to an overall drop-out rate estimate of 25.77%.

Caution is needed in drawing conclusions about drop-outs. Some candidates who had passed some sections in the paper-and-pencil format may have been flagged here as drop-outs because they would stop taking tests at one point. From Table 14, we can see some candidates (N = 13,421) passed all the sections they took (cells in **bold italics**). If we consider these candidates had completed the exam process using the credits earned from the Paper-and-Pencil Exams, we can exclude them from this analysis. This will bring the total number of potential drop-outs down to 26,363 and the overall drop-out rate to 17.07%.

Finally, Table 15 gives the number of times the drop-out candidates failed in each section. The results show that over 80% of them took and failed the test once, and a few candidates quitted the process after failing a section up to 8 times. It seems to suggest that most potential drop-out candidates gave up after failing one or two sections at their first attempt.

Table 15: Potential Drop-out Candidates by Number of Times They Failed in Each Section (04Q2-07Q4)

Test(s) Failed	AUD		BEC		FAR		REG	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.
1	11030	81.18	10830	81.04	9891	80.95	10606	81.63
2	1927	14.18	1999	14.96	1683	13.77	1841	14.17
3	461	3.39	385	2.88	468	3.83	422	3.25
4	125	0.92	104	0.78	122	1.00	89	0.68
5	33	0.24	33	0.25	37	0.30	22	0.17
6	10	0.07	8	0.06	16	0.13	11	0.08
7	1	0.01	4	0.03	1	0.01	1	0.01
8			1	0.01			1	0.01
Total	13587	100	13364	100	12218	100	12993	100

Summary

This study summarizes the test-taking and pass-fail patterns of the computerized CPA Examination from the launch of CBT (2004) to the end of 2007 for a total of 15 testing windows (04Q2 – 07Q4). Using the Fake National IDs provided by NASBA, we identified and analyzed unique individual candidates across sections within a window, across windows within a section, and across windows and across sections. Some highlights of the results are recapitulated as follows.

Within any given window, most candidates chose to take one section only. Some took two sections but very few took three or four. As time went by, this pattern strengthened, since in later windows more and more candidates took one section, and the likelihood of passing that section also increased. On the other hand, fewer candidates ventured to take four sections during one window after the first year of CBT, and the probability for them to pass all four sections went down gradually. In general, this confirms that most candidates have been taking advantage of the flexibility of computerized testing to schedule one test at a time to be more concentrated when preparing for the examination.

Around 110,000 unique individual candidates have tested in each section, and the cumulative pass rate since the launch of CBT is over 60%. The majority of candidates passed a section by taking the test once or twice. BEC candidates were slightly more likely to pass by one sitting only. A few candidates tested many times without passing a section.

A small number of candidates took a section again after they passed that section. Most of them retested after six testing windows after their initial pass, most likely to meet the requirement of passing all four sections within an 18-month period. However, a few candidates passed a section twice either in adjacent windows or within 5 windows after, which requires further investigation. Some candidates who passed a section failed to pass it again when they retook it.

When all windows and all sections were analyzed together, the results suggest that a total of 154,401 unique individual candidates have taken one or more sections since the launch of CBT and about 30% of them have passed all four sections.

When we flag candidates who did not pass all four sections but failed to test for more than 6 windows, we have an estimated overall drop-out rate of 25.77%. When we exclude those candidates who passed all the sections they had taken as those who successfully completed the exam process from the paper and pencil time, the drop-out rate estimate is 17.07%. We suspect that the true overall drop-out rate may stand somewhere near the lower estimate.

This report is purely descriptive and meant to take a snapshot of what has been happening among CPA candidates since the launch of CBT. The statistics generated here should be used cautiously to help predict volume and pass rate changes in future administrations and make policy decisions. In addition, this report investigated all the candidates across all testing windows without dividing them into cohorts. Here a cohort is a group of candidates who started the examination process at a given window (for example, 05Q3) by sitting in any of the four sections for the first time during that window. The cohort analysis will be covered by a separate report (Zhang & Zeller, in progress).

References:

Zhang, O. (2007). Summary of Uniform CPA Examination Candidate Test -Taking and Pass-Fail Patterns in the First Ten Windows of Computer-Based Testing (CBT) (04Q2-06Q3). Technical Report No. W0705. American Institute of Certified Public Accountants (AICPA). September 2007.

Zhang, O. & Zeller, K. (in progress). Cohort Analysis of Computerized CPA Examinations Candidates. Manuscript being prepared.