

# *What's Your CMA Worth?*

**We show you how to estimate the lifetime value of the certification.**

**By Gregory Krippel and Sheila Mitchell, CPA**

What rationally acting 22-year-old accounting major, in addition to her college studies, would spend another 300 hours preparing for and taking an optional exam and pay \$425 for the “privilege”? Even more outrageous, after a 26-year career, what rationally acting 48-year-old accounting employee would work eight hours in an accounting/finance department and then spend several hours a night after dinner and/or eight hours on his Saturday until he had accumulated 300 study hours and then pay \$900 to take an exam? And what about incurring additional costs of \$800 for review materials and perhaps as much as \$400 additional travel expenses?

After carefully reading the analyses and resulting evidence in this article, we think (and hope) you'll come to the conclusion that not only are the two people just described acting rationally but that anyone who is from 22 to 59 years old with an accounting degree and not a CMA® (Certified Management Accountant) and who isn't accumulating those 300 study hours isn't acting in their own best interests. If you think we are using hyperbole, how would you describe a 22-year-old who watches one

hour of television for 300 nights and each night burns \$2,046 of cash totaling \$613,692 in present-value dollars (more than half a million dollars)? Would you describe this young person as acting rationally? What 48-year-old would burn \$985 in cash for one hour for 300 nights totaling \$295,590 in present-value dollars? The problem is that no one has shown them their unique CMA advantage, calculated on their exact age, in terms of total present value accumulated over the years remaining in their

career. We consider this their unique opportunity cost of superior earnings going up in smoke when they fail to study for the CMA exam. In this article we are "showing them the money" they are losing and showing them "their" true opportunity cost. Our analysis suggests that the average noncertified reader of this article who isn't investing the 300 hours studying will have to work an additional three years (6,000 hours). For those of you not 22 or 48 years old, see Table 1 to find the present value of CMA certification at your age and Figure 1 for the present value of the CMA depicted graphically.

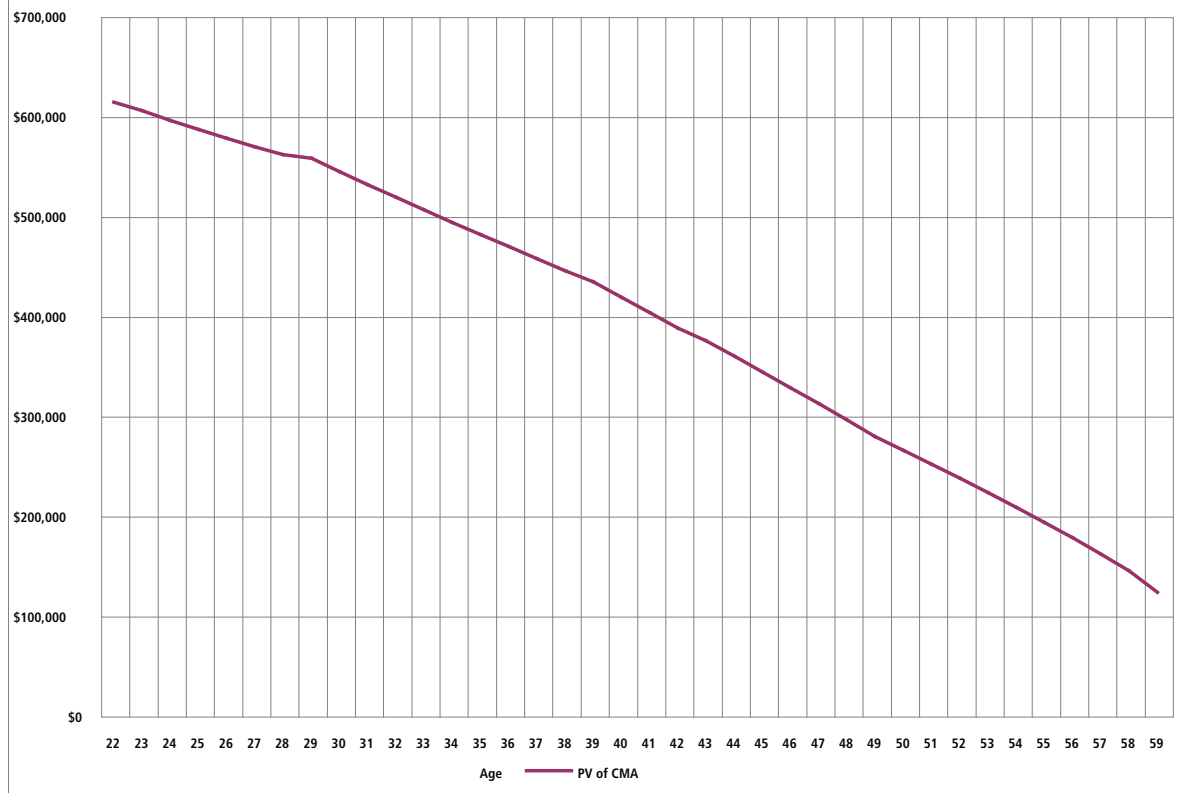
**Table 1: Total Present Value of CMA and Return per Study Hour for Ages 22-59**

Age	PV of CMA Cumulative Lifetime Balance	\$PV Return per Study Hour (300 hrs.)	\$Costs per Hour (2010 Annual Salary /2,000 hrs.)	Rate of Return per Study Hour	Price of Procrastinating Until Next Year
22	\$613,692	\$2,046	\$27	7577%	\$8,485
23	\$605,207	\$2,017	\$28	7219%	\$9,680
24	\$595,527	\$1,985	\$28	6870%	\$9,205
25	\$586,321	\$1,954	\$29	6549%	\$8,759
26	\$577,562	\$1,925	\$30	6251%	\$8,342
27	\$569,220	\$1,897	\$31	5976%	\$7,953
28	\$561,268	\$1,871	\$32	5720%	\$3,684
29	\$557,583	\$1,859	\$33	5522%	\$13,338
30	\$544,246	\$1,814	\$34	5171%	\$13,025
31	\$531,221	\$1,771	\$36	4850%	\$12,762
32	\$518,458	\$1,728	\$37	4554%	\$12,541
33	\$505,917	\$1,686	\$38	4282%	\$12,365
34	\$493,552	\$1,645	\$40	4029%	\$12,231
35	\$481,321	\$1,604	\$41	3794%	\$12,139
36	\$469,182	\$1,564	\$43	3575%	\$12,086
37	\$457,096	\$1,524	\$44	3370%	\$12,080
38	\$445,017	\$1,483	\$45	3177%	\$11,120
39	\$433,897	\$1,446	\$47	3002%	\$15,496
40	\$418,400	\$1,395	\$48	2813%	\$15,366
41	\$403,034	\$1,343	\$49	2635%	\$15,285
42	\$387,749	\$1,292	\$50	2466%	\$12,707
43	\$375,042	\$1,250	\$52	2321%	\$15,579
44	\$359,463	\$1,198	\$53	2166%	\$15,677
45	\$343,786	\$1,146	\$54	2017%	\$15,835
46	\$327,950	\$1,093	\$55	1874%	\$16,047
47	\$311,904	\$1,040	\$57	1736%	\$16,314
48	\$295,590	\$985	\$58	1602%	\$16,518
49	\$279,072	\$930	\$59	1473%	\$13,681
50	\$265,391	\$885	\$59	1396%	\$13,865
51	\$251,526	\$838	\$59	1318%	\$14,102
52	\$237,424	\$791	\$59	1239%	\$14,389
53	\$223,035	\$743	\$59	1158%	\$14,729
54	\$208,306	\$694	\$59	1075%	\$15,120
55	\$193,186	\$644	\$59	990%	\$15,566
56	\$177,620	\$592	\$59	902%	\$16,066
57	\$161,554	\$539	\$59	812%	\$16,622
58	\$144,932	\$483	\$59	718%	\$21,586
59	\$123,346	\$411	\$59	596%	NA

### The Analysis and Resulting Evidence

That CMAs have an advantage of superior earnings over their non-certified counterparts is well known by *Strategic Finance* readers who are acquainted with the IMA Annual Salary Survey articles published in June for the last 20 years. But they know this only in general, unspecific terms. Stating that "you will make more money" undoubtedly is enough to convince many—but not the majority—to study for the CMA exam. We feel certain, however, that if we can demonstrate to readers who aren't CMAs the total present value of the increase in their lifetime-career

**Figure 1: PV of CMA Cumulative Career Earnings Premium, Ages 22–59**



CMA earnings specific to their age that we'll be more effective at convincing them to become CMAs. The IMA Salary Survey articles give us a starting point for calculating their unique CMA advantage: the present value of lifetime earnings increases accumulated over an entire career calculated for the accountant who starts his/her CMA career at 22 as well as for each accountant becoming a CMA from ages 23 to 59.

**Data Inputs**

Let's look at how we came to our conclusions. First, we gathered salary information on CMA-certified and noncertified management accountants over their entire careers from the typical entry age of 22 to the typical retirement age of 65. We considered *Robert Half's 2011 Salary Guide for Accounting & Finance* the best source for the entry-level salary information. This publication provides actual starting salaries for entry-level accountants without certification across all company sizes (small, medium, and large). The 2010 average starting salary was reported as \$39,292, which became our starting point.

The *Salary Guide* suggests that certification carries a (conservative) 10% premium, so we used this figure for estimating the "entry-level only" CMA salary as \$43,211 for a 22-year-old professional ( $\$39,292 \times 1.1$ ). For the remaining analyses, ages 23-65, we used the salary infor-

mation from "The IMA 2010 Salary Survey" (*Strategic Finance*, June 2011, pp. 27-46). For example, that study's Table 6 presented data for the 19-29 age bracket, with \$52,124 as the average salary for the noncertified person (i.e., non-CMA). Using the 22-year-old entry-level salary reported as \$39,292 (as noted above, before the 10% adjustment for certification) and the 19-29-year-old age bracket median salary figure of \$52,124, we divided the difference into equal increments and made estimates for all years in between (i.e., 23, 24, 25, 26, 27, and 28). We repeated this procedure for all other age brackets.

After calculating the average 2010 salary data for accountants from ages 22 to 65, the next challenge was converting these 2010 cross-sectional salary survey numbers into reasonable salary projections from one to 43 years into the future (2011-2054). The convincing power of the CMA advantage argument depends solely on the reliability of these earnings projections. This reliability depends on the accuracy of our salary projections model. To accomplish this task, we used a simple Consumer Price Index moving average model. For example, we obtained initial evidence regarding the salary projection accuracy and tested it on the 1976 starting salary of one of the authors. His Big 8 accounting firm starting salary amounted to the princely sum of \$13,800. Entering this starting salary into our formula and using the 1976 to

2010 average inflation rate (4.1%) for the 34-year period ( $\$13,800 \times 1.04134$ ), the model projected that an entry-level salary with a Big 4 accounting firm in 2010 should be \$54,101. Robert Half reported that entry-level salaries for the Big 4 accounting firms in 2010 ranged from \$49,000 to \$59,250, with the mean being \$54,125. Looking ahead 34 years, our model projected the actual mean starting salary to within \$24, or arguably a 99.96% projection accuracy for the actual 2010 mean starting salary in this one instance.

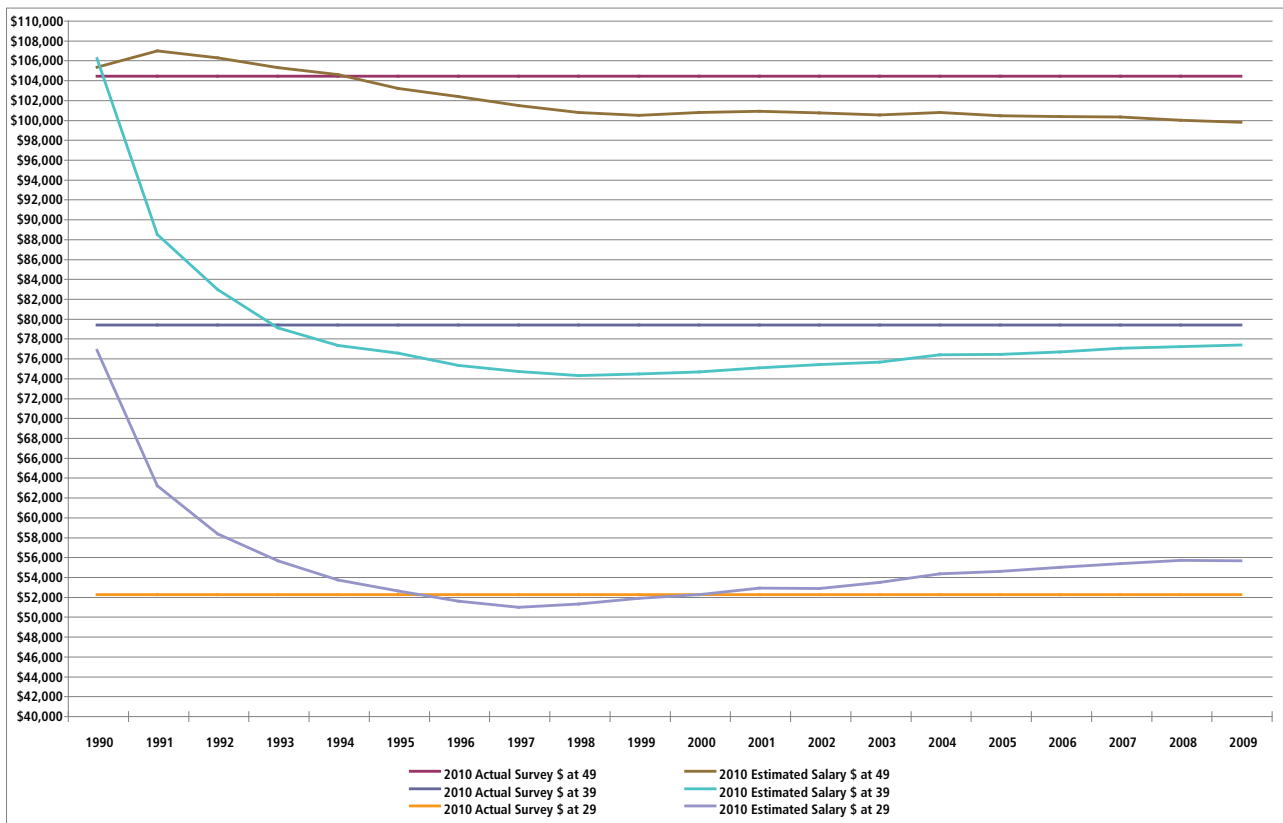
Encouraging as this result is, before continuing with the analysis, we tested it on 160 IMA 2010 Salary Survey points, projecting 80 noncertified 2010 salaries and 80 CMA 2010 salaries. In the salary projection model's final application, we utilized all 20 previous years of actual IMA Salary Survey (1990-2009) numbers to produce each single projected 2010 salary number. In other words, the evidence suggests 94.8% and 92.5% accuracy levels for predicting the 2010 noncertified and CMA salaries, respectively. The gradually increasing salary projection accuracy is shown in Figures 2 and 3 as the model's projected salary line approaches the actual salary line every time we add another previous year's data input into our

projection model. Figure 2 (non-CMA) and Figure 3 (CMA) present the relationship of our 2010 projected salaries to the 2010 actual salaries for the age brackets of 19-29, 30-39, and 40-49.

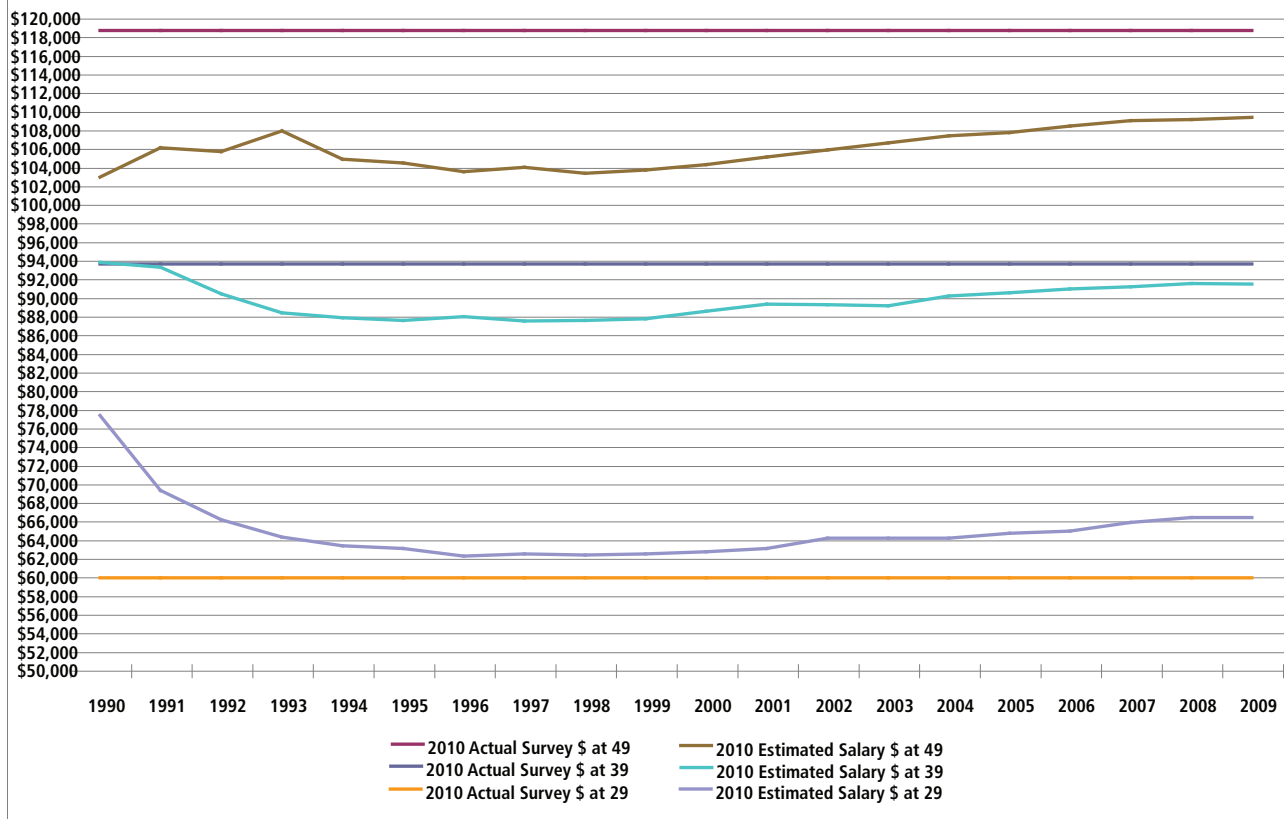
**Total Lifetime Career Earnings**

Finding our salary projection's reliability/accuracy reasonable, we moved on to the final step in our analyses: providing the most relevant CMA advantage numbers. The challenge is that all these noncertified and CMA salary projections and their difference—i.e., the CMA advantage—are in future-dollars terms. Since a decision to study for the CMA exam is made in the present, converting these future-value dollars to present-value dollars through discounting is essential. This present-value-dollars conversion will calculate the CMA advantage in the most relevant terms. That way we can show potential candidates, at their specific age, the total lifetime career advantage of the CMA in terms of present value that results in hundreds of thousands of dollars. Then we can translate these hundreds of thousands of present-value dollars into the thousands of present-value dollars per hour studied, which we consider relevant!

**Figure 2: Comparison of Actual Non-CMA 2010 IMA Salary Survey \$ to Estimated Non-CMA 2010 Salary \$ from Base Years 1990–2009**



**Figure 3: Comparison of Actual 2010 CMA IMA Salary Survey \$ to Estimated 2010 CMA Salary Survey \$ from Base Years 1990–2009**



To improve the relevancy of these numbers, we converted them to present-value dollars using a 5% discount rate. This 5% rate was significantly higher than the 20-year U.S. Treasury bond rate CMT (constant maturity) of 3.86% on July 19, 2011, thus producing more conservative salary projections. Discounting at 5% yielded the estimated CMA certification present value to be \$613,692 for a 22-year-old. (See the first cell in the second column of Table 1. For the complete calculations for this number, see Table 2, which illustrates all calculations.) Thus, for 22-year-olds who passed the CMA exam in 2010, their 300 study hours have earned them more than half-a-million dollars.

In a longer version of this article in which we did more calculations, we replicated this calculation 37 additional times, adjusting each time for the appropriate age (23–59), and calculated the final age unique cumulative lifetime career present-value earnings of the CMA advantage. These final calculations are summarized here and complete the second column of Table 1.

### Return per Study Hour

The ICMA® (Institute of Certified Management Accountants) recommends 300 hours of study; therefore, the

return for every hour of studying for the CMA exam is \$613,692/300 hours, which means \$2,046/hour for a 22-year-old student or young professional. We calculated the cost of each hour of study by dividing the noncertified entry-level accountant (22-year-old) salary of \$39,292 by 2,000 hours in a work year to get an hourly rate of \$20 per hour. We added to this the cost of the exam, a review course, and travel, respectively  $((\$900 + \$800 + \$400)/300 \text{ hours} = \$6.50/\text{hour})$  totaling \$26.50/hour. Rounding to the nearest dollar equals \$27/hour. Thus, a \$27-per-hour investment yields a \$2,046 return—approximately 7,600% rate of return/hour (listed in the first cell of the fifth column of Table 1). This is the rate of return per CMA study hour for a 22-year-old. To enable you to find your relevant number, we calculated the rate of return/hour for all the other ages (23–59), listing them in the fifth column of Table 1.

### Analyzing the Value

What do these numbers mean? IMA sources suggest that approximately 60% of you who are accountants reading this article aren't certified. At the median age of 48, your lack of CMA certification is costing you more than \$295,590 right now. Is any one of those 300 leisure hours

that you could spend studying for the CMA exam worth \$985/hour (\$295,590/300 hour)? If your employer offered you \$985 to exchange one leisure hour for one work hour on a Saturday or to stay one extra hour after work, would you turn down this overtime rate? Yet that’s what our analysis is suggesting you’re doing by failing to study for the CMA exam. You are choosing to turn down \$985/hour.

Benjamin Franklin once said: “Dost thou love life? Then do not squander time; for that’s the stuff life is made of.” More to the point, he was saying that the true cost to a person isn’t measured in money (i.e., dollars and cents) but in time (i.e., hours and seconds). Yet the poet Carl Sandburg may have said it best with “Time is the coin of your life.” Applying their principles to the issue at hand, we note that the IMA 2010 Salary Survey suggests that the mean annual salary for noncertified accountants is \$95,823. Our analysis suggests that the 300 recommended hours of CMA preparation will return more than three years of full-time salary ( $\$295,590/\$95,823 = 3+$  years). In other words, the return on those 300 study hours will be equal to more than 6,000 paid hours of work (2,000 hours/year  $\times$  3 years). For noncertified readers, the cost of ignoring this evidence is that for every one hour you don’t study for the CMA exam, you’ll have to work another 20 hours (6,000 hours/300 hours) at your non-CMA salary position! Your decision is between *investing* one hour studying for the CMA exam or *spending* two-and-a-half eight-hour days working. Who wouldn’t want to trade 300 hours studying to avoid 6,000 hours working?

This information is valuable for entry-level and advanced-level accountants and their accounting managers/mentors. Since college students can take the CMA exam in their senior year, accounting professors need to convince their seniors to study for it. For every hour they study for the CMA exam, they will be earning

Table 2: CMA

Age	Annual Salary without Certification		Inflation-Adjusted Salary without CMA		Annual Salary with CMA	
	Year	Year	Year	Year	Year	Year
22	2010	\$39,292	2011	\$39,292	2010	\$43,221
23	2010	41,125	2012	44,186	2010	45,591
24	2010	42,958	2013	49,080	2010	47,961
25	2010	44,791	2014	53,975	2010	50,331
26	2010	46,624	2015	58,869	2010	52,702
27	2010	48,458	2016	63,764	2010	55,072
28	2010	50,291	2017	68,658	2010	57,442
29	2010	52,124	2018	73,552	2010	59,812
30	2010	54,836	2019	81,908	2010	63,180
31	2010	57,548	2020	90,263	2010	66,549
32	2010	60,261	2021	98,618	2010	69,917
33	2010	62,973	2022	106,974	2010	73,285
34	2010	65,685	2023	115,329	2010	76,654
35	2010	68,397	2024	123,684	2010	80,022
36	2010	71,109	2025	132,040	2010	83,390
37	2010	73,822	2026	140,395	2010	86,758
38	2010	76,534	2027	148,750	2010	90,127
39	2010	79,246	2028	157,106	2010	93,495
40	2010	81,749	2029	172,651	2010	96,001
41	2010	84,252	2030	188,196	2010	98,507
42	2010	86,756	2031	203,741	2010	101,012
43	2010	89,259	2032	219,286	2010	103,518
44	2010	91,762	2033	234,832	2010	106,024
45	2010	94,265	2034	250,377	2010	108,530
46	2010	96,768	2035	265,922	2010	111,036
47	2010	99,272	2036	281,467	2010	113,541
48	2010	101,775	2037	297,012	2010	116,047
49	2010	104,278	2038	312,557	2010	118,553
50	2010	104,257	2039	344,167	2010	118,657
51	2010	104,237	2040	375,777	2010	118,761
52	2010	104,216	2041	407,387	2010	118,864
53	2010	104,196	2042	438,997	2010	118,968
54	2010	104,175	2043	470,606	2010	119,072
55	2010	104,154	2044	502,216	2010	119,176
56	2010	104,134	2045	533,826	2010	119,280
57	2010	104,113	2046	565,436	2010	119,383
58	2010	104,093	2047	597,045	2010	119,487
59	2010	104,072	2048	628,655	2010	119,591
60	2010	104,795	2049	682,371	2010	117,382
61	2010	105,518	2050	736,087	2010	115,172
62	2010	106,241	2051	789,803	2010	112,963
63	2010	106,963	2052	843,520	2010	110,753
64	2010	107,686	2053	897,236	2010	108,544
65	2010	\$108,409	2054	950,952	2010	\$106,334

approximately \$2,046 for their efforts (see Table 1).

If you aren’t a CMA, you can see the total lifetime career cumulative present-value potential earnings and potential rate of return for your investment in time and effort to attain your certification and to begin earning “your potential CMA advantage,” the hundreds of

Year	Inflation-Adjusted Salary with CMA	Future-Value CMA Advantage	Present-Value Factor Discounted at 5%	Present-Value CMA Advantage	CMA PV Cumulative Balance
2011	\$43,221	\$3,929	1.000000000	\$3,929	\$3,929
2012	49,874	5,688	0.952380952	5,417	9,346
2013	56,527	7,447	0.907029478	6,754	16,100
2014	63,180	9,205	0.863837599	7,952	24,052
2015	69,833	10,964	0.822702475	9,020	33,072
2016	76,486	12,723	0.783526166	9,968	43,041
2017	83,139	14,481	0.746215397	10,806	53,847
2018	89,792	16,240	0.710681330	11,541	65,388
2019	99,832	17,924	0.676839362	12,132	77,520
2020	109,871	19,608	0.644608916	12,640	90,159
2021	119,910	21,292	0.613913254	13,072	103,231
2022	129,950	22,976	0.584679289	13,434	116,665
2023	139,989	24,660	0.556837418	13,732	130,396
2024	150,029	26,344	0.530321351	13,971	144,367
2025	160,068	28,028	0.505067953	14,156	158,524
2026	170,107	29,713	0.481017098	14,292	172,816
2027	180,147	31,397	0.458111522	14,383	187,199
2028	190,186	33,081	0.436296688	14,433	201,632
2029	209,432	36,782	0.415520655	15,283	216,915
2030	228,678	40,482	0.395733957	16,020	232,936
2031	247,924	44,183	0.376889483	16,652	249,588
2032	267,170	47,884	0.358942365	17,188	266,775
2033	286,416	51,585	0.341849871	17,634	284,410
2034	305,662	55,286	0.325571306	17,999	302,409
2035	324,909	58,987	0.310067910	18,290	320,699
2036	344,155	62,687	0.295302772	18,512	339,211
2037	363,401	66,388	0.281240735	18,671	357,882
2038	382,647	70,089	0.267848319	18,773	376,655
2039	416,477	72,310	0.255093637	18,446	395,101
2040	450,307	74,531	0.242946321	18,107	413,208
2041	484,138	76,751	0.231377449	17,758	430,966
2042	517,968	78,972	0.220359475	17,402	448,369
2043	551,799	81,193	0.209866167	17,040	465,408
2044	585,629	83,413	0.199872540	16,672	482,080
2045	619,460	85,634	0.190354800	16,301	498,381
2046	653,290	87,855	0.181290285	15,927	514,308
2047	687,121	90,075	0.172657415	15,552	529,860
2048	720,951	92,296	0.164435633	15,177	545,037
2049	771,678	89,307	0.156605365	13,986	559,023
2050	822,405	86,318	0.149147966	12,874	571,897
2051	873,132	83,328	0.142045682	11,836	583,733
2052	923,859	80,339	0.135281602	10,868	594,602
2053	974,586	77,350	0.128839621	9,966	604,568
2054	1,025,313	\$74,361	0.122704401	\$9,124	\$613,692

thousands of dollars earned or the years of work life saved. We suggest that you cut the line from Table 1 unique to your age and tape it on the bottom of your computer monitor. If you're still on the fence, read the last column of Table 1 across from your age; that gives you the potential price of your procrastination if you

wait until next year to study for the CMA exam. Of course there are numerous other reasons to earn your CMA, but seeing the potential life-time value of this certification can be a wake-up call.

To register for the CMA exam, visit [www.imanet.org/cma\\_certification/exam\\_procedures\\_and\\_registration.aspx](http://www.imanet.org/cma_certification/exam_procedures_and_registration.aspx). You can also order review materials there and begin your study program today. Good luck on the exam! **SF**

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#### Authors' Note

*For readers who would like to have the full article and calculations we mentioned earlier, please e-mail the authors at [krippel@coastal.edu](mailto:krippel@coastal.edu).*

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