

# The CMA Advantage

*How Much More Could You Earn?*

By Gregory L. Krippel and Sheila Mitchell, CPA

**E**veryone familiar with the annual IMA® Salary Survey knows that the CMA® (Certified Management Accountant) designation provides an earnings advantage. For the 25 years of its existence, the Salary Survey has consistently shown that accounting and finance professionals who hold the CMA have higher average salaries and average total compensation than their noncertified counterparts.

In November 2011, we presented research aimed at empirically quantifying what we call the CMA advantage, that is, the impact the CMA has on someone’s career earnings. We showed that a 22-year-old entering the accounting profession with the CMA credential can potentially expect to earn approximately \$600,000 more in income (in present-value terms) over his or her career compared to a similarly prepared noncertified professional. And a 48-year-old mid-career professional who earns the CMA could expect to potentially earn almost \$300,000 more (in present-value terms) over the remainder of his or her career than a colleague without the credential. Based on our findings, we believe that the only conclusion to make is that the only thing more expensive and time-consuming than studying for and earning the CMA is *not* doing so.

Three years later, we’re able to provide an update with three additional years of income data (2011-2013). Notably, the average salaries for four of the five noncertified salary classifications declined in that period while only one of the five CMA salary classifications declined. Even more interesting is that gross salary differences across age brackets increased. In 2010, the difference between CMAs and noncertified professionals within each age bracket was approximately \$15,000 in favor of the CMAs. For 2013, that difference is approximately \$28,000 in favor of the CMAs. This suggests that, at least during a time of recession and recovery, the gross salary premium for having a CMA almost doubled in present-value dollars.

This update also includes further revisions to the model based on reader feedback and the use of new assumptions to project earnings. These changes should provide more accurate projections and enable readers to incorporate other variables to get a more specific calculation for their individual situation. Specifically, we made three changes to the model:

**1. Net Present Value (NPV)**

**Figures.** The 2011 model provides a present value (PV) calculation and assumes that an individual’s employer will cover the costs for taking the CMA exam and the 30 hours of continuing professional education (CPE) required each year to maintain the certification. Many readers told us that they personally pay for the exam and their CPE, so we updated the model to include associ-

ated costs, providing a more relevant, comprehensive, and generalizable NPV for the CMA credential.

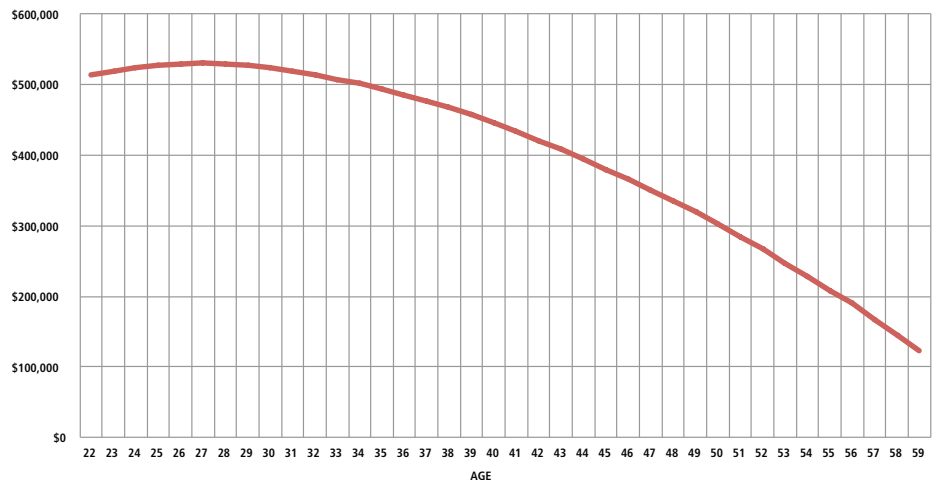
**2. Moving Averages to Project Inflation.** The original model used the consumer price index (CPI) for the period (3.9526%) as a stable inflation rate to project future salary amounts. Now we use a series of 22 historical long-run multiyear rolling averages to give us estimated salary projections that are more theoretically sound and accurate.

**3. Salary Diversity.** The original model had a one-size-fits-all approach that presented one average salary across all sizes of firms, both genders, and all industries. Based on reader feedback, we now attempt to incorporate salary diversity driven by firm size, gender, and industry into our calculations. Now, for example, both a female professional in a mid-sized firm in light manufacturing and a male professional in a small firm in the service sector can get a more accurate and representative look at the CMA advantage for their particular circumstances.

**The Model**

Table 1 presents the NPV of the CMA for ages 22-59. This represents the cumulative amount of additional income you can earn throughout your career by earning the CMA at a specific age. For example, a 40-year-old who becomes a CMA this year stands to earn an additional \$445,495 in cumulative lifetime earnings compared to a noncertified 40-year-old, assuming the CMA has to bear all the costs to attain and maintain the certification. The results of this analysis are also presented graphically in Figure 1.

**Figure 1: NPV of CMA Cumulative Career Earnings Premium Ages 22-59**



**Table 1: Net Present Value of the CMA in Total & Per Study Hour (Ages 22-59)**

Age	Present Value of CMA Cumulative Lifetime Earnings Balance	Present Value of Costs to Attain and Maintain CMA Certification							Net Present Value of CMA	Net Present Value of CMA/ Study Hour
		CMA Exam Fee	Two Days of Lost Wages & Travel Costs	Cost of CMA Review	Cost of 300 Hours of Exam Prep	Cost of IMA Membership	Lost Wages for 30 Hours Annual CPE	Present Value Total Cost		
22	\$575,581	\$1,050	\$764	\$740	\$6,819	\$6,786	\$45,430	\$61,588	\$513,993	\$1,713
23	581,014	1,050	776	740	7,047	6,687	45,474	61,773	519,241	1,731
24	584,933	1,050	788	740	7,275	6,586	45,447	61,885	523,048	1,743
25	589,785	1,050	800	740	7,503	6,483	45,401	61,977	527,809	1,759
26	591,404	1,050	812	740	7,731	6,378	45,282	61,992	529,412	1,765
27	591,898	1,050	824	740	7,959	6,271	45,122	61,965	529,933	1,766
28	591,230	1,050	837	740	8,187	6,161	44,920	61,895	529,336	1,764
29	589,328	1,050	849	740	8,415	6,050	44,676	61,780	527,548	1,758
30	585,521	1,050	864	740	8,700	5,937	44,348	61,639	523,882	1,746
31	580,633	1,050	879	740	8,986	5,821	43,954	61,430	519,203	1,731
32	574,944	1,050	894	740	9,272	5,703	43,513	61,172	513,772	1,713
33	568,555	1,050	910	740	9,557	5,583	43,030	60,870	507,685	1,692
34	561,488	1,050	925	740	9,843	5,461	42,508	60,527	500,961	1,670
35	553,729	1,050	940	740	10,129	5,336	41,946	60,140	493,589	1,645
36	545,251	1,050	955	740	10,414	5,209	41,341	59,709	485,541	1,618
37	536,015	1,050	971	740	10,700	5,079	40,692	59,232	476,783	1,589
38	525,981	1,050	986	740	10,986	4,947	39,996	58,705	467,276	1,558
39	515,105	1,050	1,001	740	11,271	4,812	39,251	58,125	456,979	1,523
40	502,916	1,050	1,014	740	11,521	4,674	38,421	57,421	445,495	1,485
41	489,973	1,050	1,028	740	11,771	4,534	37,527	56,649	433,324	1,444
42	476,471	1,050	1,041	740	12,020	4,391	36,584	55,827	420,644	1,402
43	462,480	1,050	1,054	740	12,270	4,246	35,601	54,961	407,519	1,358
44	448,014	1,050	1,068	740	12,519	4,097	34,578	54,052	393,962	1,313
45	433,064	1,050	1,081	740	12,769	3,946	33,514	53,100	379,964	1,267
46	417,610	1,050	1,094	740	13,018	3,792	32,409	52,103	365,507	1,218
47	401,625	1,050	1,108	740	13,268	3,635	31,259	51,059	350,566	1,169
48	385,082	1,050	1,121	740	13,517	3,474	30,063	49,965	335,116	1,117
49	368,039	1,050	1,134	740	13,767	3,311	28,820	48,822	319,216	1,064
50	349,906	1,050	1,144	740	13,951	3,144	27,490	47,519	302,386	1,008
51	330,896	1,050	1,154	740	14,135	2,975	26,095	46,148	284,747	949
52	311,220	1,050	1,164	740	14,318	2,801	24,652	44,725	266,495	888
53	290,954	1,050	1,173	740	14,502	2,625	23,165	43,255	247,699	826
54	270,113	1,050	1,183	740	14,686	2,445	21,636	41,740	228,374	761
55	248,688	1,050	1,193	740	14,870	2,262	20,064	40,178	208,509	695
56	228,842	1,050	1,203	740	15,053	2,075	18,448	38,569	190,273	634
57	203,982	1,050	1,213	740	15,237	1,884	16,785	36,909	167,074	557
58	180,644	1,050	1,222	740	15,421	1,690	15,073	35,196	145,447	485
59	\$156,557	\$1,050	\$1,232	\$740	\$15,605	\$1,492	\$13,310	\$33,428	\$123,129	\$410

### Starting Salaries

The basis of the model is salary information for CMA-certified and noncertified management accountants over their entire careers—from the 22-year-old entry-level professional to the typical 65-year-old at retirement. For the entry-level salary data, we chose Robert Half's *2014 Salary Guide, Accounting & Finance*. This publication provides actual starting salaries for noncertified entry-level accountants across all company sizes (small, medium, and large). The 2013 average starting salary is \$45,458. This figure became our starting point. The *Salary Guide* suggests certification carries a (conservative) 10% premium. Based on that estimate, we calculate the average salary for a 22-year-old entry-level CMA as \$50,004 ( $\$45,458 \times 1.1$ ).

The remainder of the salary numbers, for ages 23-65, come from the IMA 2013 Salary Survey published in *Strategic Finance* in June 2014. The Salary Survey provides average salaries for five different age groups from 19-29 through 60 and over, and we used that data as the starting point to estimate the average salary for each specific age. For example, Table 6 of the 2013 Salary Survey indicates that the average salary for a noncertified respondent in the 19-29 age bracket is \$56,097. The difference between that number and the starting salary for the 22-year-old entry-level professional (\$50,004) is \$6,093. We divided that into equal increments to get estimates for each age in between (i.e., 23, 24, 25, 26, 27, and 28). We made a conscious decision to use the overall average of \$56,097 as the salary for 29-year-olds as one way to keep the estimates conservative. We repeated this procedure for all other age brackets.

### Projecting Future Salary Amounts

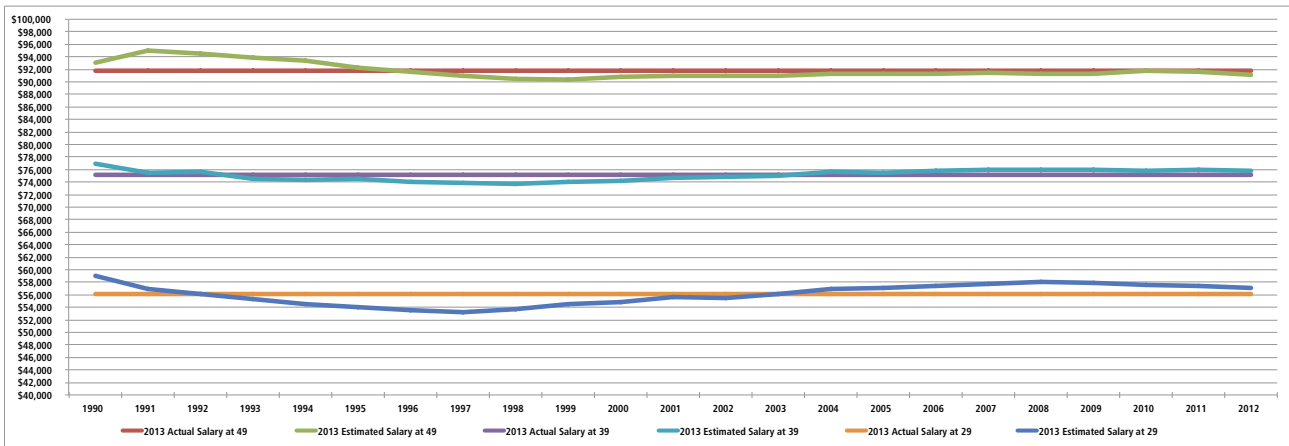
After calculating the average 2013 salary data for accountants ages 22-65, the next challenge was converting those numbers into reasonable salary projections from one to 44 years into the future (i.e., 2014-2057). We decided to base projected salary increases using the inflation rate as reported in the Consumer Price Index (CPI) for the period. In other words, if the CPI inflation rate was 4% in a given year, we assume that wages that year would increase 4%. To test the validity of this method, we took one author's starting salary at a Big 8 accounting firm in 1976 (\$13,800) and entered it into our formula using the average CPI inflation rate (3.9526%) for the 38-year period (1976-2013). The model projected an entry-level salary at a Big 4 accounting firm in 2013 would be \$60,204 ( $\$13,800 \times 1.039526^{38}$ ). Robert Half reported entry-level

salaries for the Big 4 accounting firms in 2013 ranged from \$52,750 to \$64,500, with a median of \$58,625. So our model projected the actual mean starting salary to within \$1,579, a 97.3% projection accuracy.

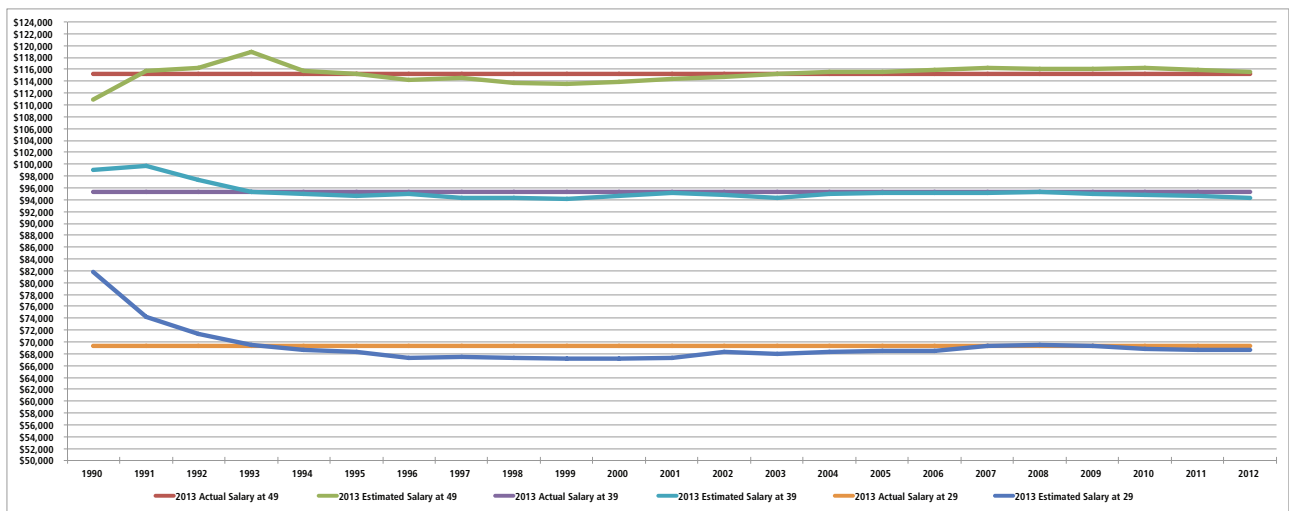
Of course, this accuracy can be attributed to knowing the actual CPI inflation rate for the 38-year period. Had we done this analysis in 1976, we wouldn't have known it. Instead, we could have calculated the moving average from the prior 38-year period (1939-1976) and used it in our calculations. We followed that template here. We determined the CPI long-run historical moving average for 1939-1976 was 3.8016%. Using that figure, our CPI earnings projection model ( $\$13,800 \times 1.038016^{38}$ ) projected that an entry-level salary for a Big 4 accounting firm in 2013 should be \$56,968. Thus our model projected the actual median starting salary within \$1,657 ( $\$58,625 - 56,968$ ), a 97.2% projection accuracy for the actual 2013 mean starting salary. This suggests that our historical long-run moving average CPI projection model could produce a reasonably accurate earnings projection.

Looking to the future, we estimated a CPI moving average for each additional yearly time period. We then tested this application on 184 data points from the 2013 Salary Survey, projecting 92 noncertified salaries and 92 certified salaries. In the salary projection model's final application, we utilized all previous years of actual IMA Salary Survey (1990-2012) data to produce each single projected 2013 salary number. After we corrected our model for a positive bias, these 184 projections yielded

**Figure 2: Actual Noncertified 2013 Salary at Ages 29-49 Compared to Estimated Noncertified 2013 Salary from Base Years 1990-2012**



**Figure 3: Actual CMA 2013 Salary at Ages 29-49 Compared to Estimated CMA 2013 Salary from Base Years 1990-2012**



accuracy rates of 98.3% for the salaries of noncertified respondents (see Figure 2) and 98.5% for the CMAs' salaries (see Figure 3).

**Converting Projects to Present Value**

With the evidence indicating that our salary projections are reasonably reliable and accurate, we moved on to the final step: 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 earn the CMA credential is made in the present, it's essential to convert these future-value dollars to present-value dollars through discounting. This way, we can show potential candidates, at their specific age, the total cumulative lifetime earnings they could gain from

the CMA advantage. For many, this could mean hundreds of thousands of dollars.

We converted the future-value dollars into present-value dollars using a 5% discount rate. This rate is significantly higher than the 30-year U.S. Treasury bond rate CMT (constant maturity) of 3.34% on May 17, 2014, thus producing more conservative salary projections. Discounting at 5% yielded the estimated CMA certification present value to be \$575,581 for a 22-year-old. (See the first value in the second column of Table 1.) Thus, for 22-year-olds who passed the CMA exam in 2013, their 300 study hours have earned them more than half-a-million present-value dollars.

**The Costs of Certification**

Reader feedback from the 2011 article noted that we

didn't include the present-value costs of attaining and maintaining the CMA credential. We identified six costs associated with the CMA credential. The first four are related to earning the designation, and the last two are costs for maintaining the designation. They are:

1. Registration fee for the CMA exam,
2. Two days of lost wages and travel costs,
3. The cost of a CMA review program,
4. Cost of 300 hours of exam preparation,
5. IMA membership fee, and
6. Lost wages for 30 hours of annual CPE.

The cost for registering for the exam was taken directly from IMA's website, and the costs for a CMA review program came from the website of a CMA review course provider. These two costs are found in columns 3 and 5, respectively, of Table 1.

The two days of lost wages and travel costs are for the actual days spent taking the CMA exam. This estimate has two components: travel costs and lost salary. For travel, we estimated \$400 (\$200 per day). For the lost salary, we took the 2013 average noncertified salary for each age and divided it by 2,000 hours to get the age-dependent hourly rate. We then multiplied that by 16 hours to get two days' worth of salary (see column 4 of Table 1).

The final attainment cost is the lost opportunity costs of wages for exam preparation. That was estimated by multiplying the age-dependent hourly rate by 300 hours (see column 6 of Table 1).

To estimate the cost of IMA membership (column 7), we used the current membership fee and projected future membership costs to increase at the same inflation rate as we used to project future salaries. For the lost wages associated with the 30 annual CPE hours (column 8), we converted all the future CMA salaries—from that starting age to retirement—to an hourly rate and multiplied each by 30 hours. (We did not include the actual cost for CPE because IMA offers several opportunities for free and low-cost CPE.) Both these maintenance costs were then converted to present value using the same 5% discount rate.

### Value of the CMA Advantage

The results in Table 1 represent an average across all firm sizes, both genders, and all 13 major industries. To use this table to calculate the CMA advantage for yourself, you need to make three adjustments to the present value in column 2 based on the size of your company, your gender, and the industry you work in.

**Table 2: The Effect of Company Size on Salary**

NUMBER OF EMPLOYEES	EMPLOYED AT LOCATION AVERAGE SALARY	AVERAGE SALARY PER CATEGORY	SIZE EFFECT
<b>Large</b>			
1,000 to 2,499	\$115,797		
2,500 to 4,999	\$118,101	\$124,099	13.76%
5,000+	\$138,400		
<b>Mid-Sized</b>			
100 to 499	\$110,377	\$109,092	N/A
500 to 999	\$107,807		
<b>Small</b>			
1 to 9	\$100,969		
10 to 24	\$ 89,640	\$ 97,413	-10.71%
25 to 99	\$101,631		

### Company Size

In order to estimate the effect of company size (see Table 2), we used the average salaries by location size found in Table 8 of the IMA 2013 Salary Survey. We divided the company sizes into three groups: large, mid-sized, and small. Large firms are companies with 1,000 or more employees at a location. Mid-sized firms have 100 to 999 employees at a location, and small firms have 99 or fewer employees at a location. We then calculated the average salary for those three groups. Using the average salary at a mid-sized firm as the baseline, we determined there was an approximately 14% premium for individuals who work at large firms and an 11% penalty for those at small firms.

The result is that individuals calculating their own CMA advantage would increase the present value of the CMA in column 2 by 14% if they work at a large firm or take away 11% if they work at a small firm. For example, the CMA advantage for a 50-year-old has a present value of \$349,906. If that person works at a large firm, however, the adjusted value is \$398,893, an increase of approximately \$49,000.

### Gender

To estimate the effect of gender (see Table 3), we used data from Table 4 of the IMA 2013 Salary Survey, which presents average salary by gender based on years in the field. We compared the average salaries of each gender to the overall averages in the table. Males appear to have an

**Table 3: The Effect of Gender on Salary**

MEN			
YEARS IN FIELD	AVERAGE SALARY MEN	OVERALL AVERAGE SALARY	
1 to 5	\$ 72,912	\$ 70,276	
6 to 10	\$ 92,473	\$ 86,902	
11 to 15	\$109,919	\$100,240	
16 to 20	\$117,451	\$109,552	
20+	\$136,833	\$125,592	
Total	\$529,588	\$492,562	
Overall Average	\$105,918	\$ 98,512	<b>8%</b>

WOMEN			
YEARS IN FIELD	AVERAGE SALARY WOMEN	OVERALL AVERAGE SALARY	
1 to 5	\$ 64,299	\$ 70,276	
6 to 10	\$ 77,596	\$ 86,902	
11 to 15	\$ 86,311	\$100,240	
16 to 20	\$ 97,853	\$109,552	
20+	\$104,137	\$125,592	
Total	\$430,196	\$492,562	
Overall Average	\$ 86,039	\$ 98,512	<b>-13%</b>

8% premium compared to the overall average, while women's salaries are 13% lower than the overall average. For example, the present-value CMA advantage for a 22-year-old female is \$500,075 ( $\$575,581 \times 0.87$ ), while the CMA advantage for a male of the same age is \$621,627 ( $\$575,581 \times 1.08$ ).

### Industry

Table 4 shows the effect that industry has on average salaries. These results were determined using data from Table 9 of the IMA 2013 Salary Survey. As expected, income levels aren't the same in all industries. For example, the closest industry to the overall median and average salaries, wholesale and retail trade, has no effect, while the industry with the highest average salary, public accounting, provides a 34% premium.

Identify your industry and adjust your present-value CMA advantage just like with gender and company size. For example, if you're a 30-year-old professional working in the manufacturing industry, which provides a 5% premium, you would multiply \$585,521 by 1.05 to get your present-value CMA advantage of \$614,797. If you work in government, which has a -13% effect, you would multiply \$585,521 by 0.87 (100% - 13%) to arrive at the present-value CMA advantage of \$509,403.

**Table 4: The Effect of Industry on Salary**

INDUSTRIES	
Public Accounting	<b>34%</b>
Other (Services)	<b>10%</b>
Manufacturing	<b>5%</b>
Medical/Health Services	<b>4%</b>
Finance, Insurance, and Real Estate	<b>4%</b>
Wholesale and Retail Trade	<b>0%</b>
Transportation, Communications, and Utility Services	<b>-1%</b>
Educational Services	<b>-2%</b>
Mining	<b>-2%</b>
Contract Construction	<b>-10%</b>
Government	<b>-13%</b>
Agriculture, Forestry, Fisheries	<b>-14%</b>
Nonclassifiable	<b>-16%</b>

### Deducting the Costs of the CMA

After making adjustments for company size, gender, and industry, the next step is to deduct the costs of earning and maintaining the CMA throughout your career. The present-value total cost of earning and maintaining the CMA is shown in column 9 of Table 1. But this column assumes that you are responsible for all six of the costs we identified. We also included separate columns for each CMA cost so that you can exclude any costs that your employer might cover or that aren't relevant for other reasons. For example, if your employer pays for the CMA exam fees, you can deduct that amount from the total cost in column 9.

### Return on Investment

It must be noted that the size, gender, and industry effects estimates aren't set in stone and should be considered more like "guidelines" we offer based on data from the IMA 2013 Salary Survey. With this caveat in mind, we are able to illustrate the complete potential CMA advantage for management accounting professionals ages 22 to 59.

The lowest-return scenario, for example, is for a 22-year-old woman who works at a small agriculture, forestry, or fisheries company that doesn't pay for any costs associated with attaining or maintaining the CMA credential. She would have deductions of 11% for company size, 13% for gender, and 14% for industry. Her present-value CMA advantage would be \$356,860 [ $\$575,581 \times (100\% - (11\% + 13\% + 14\%))$ ]. From that,

she would subtract her out-of-pocket CMA costs totaling an estimated \$61,588 (column 9) to arrive at her NPV CMA advantage of \$295,272.

One of the highest-return scenarios would be for a 22-year-old man working for a large firm in the manufacturing industry that picks up all the CMA costs. The present value of his CMA advantage would be \$730,988 [ $\$575,581 \times (100\% + (14\%+8\%+5\%))$ ]. And since his employer picks up all the CMA costs, that's also his NPV CMA advantage.

Using our model, you can calculate your NPV CMA advantage to determine the amount of additional money you stand to earn if you become a CMA this year. If that potential extra money still isn't enough to motivate you to hit the books, there is one additional calculation you can make: the return on study time. Take your uniquely determined NPV CMA advantage and divide it by 300 hours (the recommended study time for the exam). That number represents how much you earn every hour you spend studying for the CMA exam.

The 22-year-old woman working at the small agricultural company would be earning approximately \$985 ( $\$295,272/300$  hours) for every hour she studied, and the 22-year-old male at the large manufacturing firm would earn approximately \$2,437 ( $\$730,988/300$  hours) for every hour. If your supervisor asked you to work overtime one hour a day for the next 300 days and get paid at least \$985 per hour, would you say no? That's what you're turning down by not becoming a CMA.

Of course, there are many other reasons to earn your CMA, but seeing the potential lifetime NPV of this certification can be a wake-up call to some. We feel this information is valuable for everyone, from entry-level to advanced-level accountants as well their managers and mentors. Obviously, the younger you are when you earn the CMA, the greater the advantage, so accounting professors can also use this information to persuade their students to study for and take the CMA exam while still in college. With that in mind, we have one more perspective on the results from our model.

The two 22-year-olds we use in our examples are part of the Millennial generation, which most surveys suggest is interested more in quality of life than dollar amounts. So we reinterpreted our NPV dollar analysis to a quality-of-hours metric. According to Robert Half's *2014 Salary Guide*, the starting salary for an entry-level accounting graduate in the corporate market is approximately \$45,000, which equates to an

hourly rate of \$22.50 ( $\$45,000/2,000$  hours). Comparing that to the most conservative return per study hour rate of \$985, we see that for every hour spent studying for the CMA, the 22-year-old earns the equivalent of approximately 44 work hours. That's more than a week of work.

Examining this issue from a cumulative perspective, we take the most conservative NPV estimate of \$295,272 and divide it by the \$22.50 hourly salary rate. This total amount converts to 13,123 work hours—almost 6.5 work years. There are two ways to interpret that result. Theoretically, the 22-year-old CMA could retire 6.5 years earlier and have the same lifetime career earnings as a noncertified 22-year-old peer who has to work to full retirement age. Alternately, the noncertified 22-year-old will have to work an additional 6.5 years beyond retirement age to finish with the same lifetime career earnings as a CMA-credentialed colleague who only works up to retirement age.

For noncertified accountants, there is simply no better investment of your time and money than those hours and dollars spent attaining and maintaining your CMA credential. We challenge all noncertified readers of this article to use this information to calculate your own unique NPV CMA advantage and convince yourself it's time. To register for the CMA exam, visit [www.imanet.org/cma\\_certification/become\\_a\\_cma/enroll\\_now.aspx](http://www.imanet.org/cma_certification/become_a_cma/enroll_now.aspx). Good luck on the exam! **SF**

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