

Financial Investment Analysis and Recommendation for Natasha Kingery

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PURPOSE

The following analysis is to provide insight into the best financial decision ruling between two potential investment opportunities, assessing on factors such as market discount rates, growth rates, projected incomes and the general time value of money to arrive at the most strategic position relative to your career.

Dear Natasha,

We understand you are seeking financial investment advice regarding two educational investment options. You currently are investing \$75,000 in a 30-year treasury bond and are evaluating the best educational investment options between a Tier-3 Certification in Network Design or an MBA Degree. In our analysis, we will evaluate the discounted cash flows, opportunity cost rates, projected salary growth, Net Present Value (NPV), Future Value (FV) and Internal Rate of Return (IRR) to provide you with the best investment decision.

Option 1: Tier 3 Certification in Network Design

Cost	\$5,000
Gain	\$10,000 annual salary increase post-graduation

Option 2: MBA Degree Program

Cost	\$25,000 per year for three years
Gain	\$20,000 annual salary increase post-graduation

OPTION 1: TIER 3 CERTIFICATION (1-YEAR PROGRAM)

Investment at a 4.79% opportunity cost	
Net Present Value (NPV)	\$231,353.87
Future Value (FV)	\$1,189,792.37
Internal Rate of Return (IRR)	102%

The first option is to invest in a Tier 3 Certification for Network Design. The upsides include a comparatively lower upfront cost, and lack in commitment time as compared to the alternative MBA option, whilst providing career advancement and high income. With the current discount rate (4.79%), we project a Net Present Value (NPV) of \$231,353.87. This is the valuation of the money you would have in today's dollars with the certification option, once all other costs have been adjusted for, meaning that by your retirement age of 65, your Future Value (FV) would be valued at \$1,189,792.37 total.

This option also provides an exceptionally high internal rate of return (IRR) at 102%, which means that the certification would efficiently yield high returns relative to costs. In **Exhibit 1 see *Timeline of Annual Cash Flows for Tier 3 Certification***, we can see this in effect, year-by-year cash flows over 35 years steadily rising over time, granting benefits throughout your career, leading to significant, long-term, and viable financial gains.

Investment at a 7% opportunity cost	
Net Present Value (NPV)	\$164,675.29
Future Value (FV)	\$1,758,169.152
Internal Rate of Return (IRR)	102%

The Tier 3 Certification in Network Design requires an approximately low upfront cost and a low involvement than the MBA program, while still providing meaningful career advancement and income potential. When evaluated using a more conservative 7% opportunity cost (discount) rate, which assumes a higher benchmark return you could earn elsewhere, the investment continues to demonstrate strong financial value.

At this rate, the analysis produces a net present value (NPV) of \$164,675.29, representing the total value of the investment expressed in today’s dollars after accounting for all costs and future earnings. By retirement at age 65, the projected future value (FV) is \$1,758,169.15, reflecting the cumulative growth of increased income over your career. Additionally, the investment maintains an exceptionally high internal rate of return (IRR) of 102%, indicating that the certification remains a highly efficient and high-return opportunity even under more conservative financial assumptions.

OPTION 2: MBA DEGREE (3-YEAR PROGRAM)

Investment at a 4.79% opportunity cost	
Net Present Value (NPV)	\$339,906
Future Value (FV)	\$1,748, 047.56
Internal Rate of Return (IRR)	20.915%

The second option is to invest in an MBA degree with a program cost of \$25,000 per year for the first three years, payments being due at the start of every enrollment. At a 3% growth rate every year of the remaining 31 years of your career post-graduation, your yearly salary increase of \$20,000 will see greater comparative value. At the given discount rate of 4.79%, your Net Present Value (NPV) comes to a worth of \$339,906 in today’s dollars, all other costs having been accounted for. This means that by your retirement age of 65, the projected Future Value (FV) would equal \$1,748,047.56 reflecting the cumulative growth of increased income over your career

This option does have a strong Internal Rate of Return (IRR) at 20.915%, far outweighing the opportunity cost rate, proving the MBA option to be a significant high-return investment option for the

given costs. **Exhibit 2** see *Timeline of Annual Cash Flows for MBA Program*, provides greater insight into the yearly cash flows, accounting for initial costs as well as the follow-on salary gain over the full 35-year horizon, showing how the investment compounds with time.

Investment at a 7% opportunity cost	
Net Present Value (NPV)	\$217,353.57
Future Value (FV)	\$2,320, 593.101
Internal Rate of Return (IRR)	20.915%

For comparative analysis, we have additionally accounted for a 7% cost of capital rate to show how much you could potentially make if you were to more conservatively invest elsewhere at similar risk amounts, to show that the rate reflects opportunity cost i.e. the lowest return an investment has to generate now in order to justify the best decision in alternatives.

At the quoted 7% discount rate, the Net Present Value (NPV) lowers to \$217,353.57 in today’s dollars with all other costs factored in, with the Future Value (FV) equating to \$2,320,593.10 by time of retirement at age 65.

RECOMMENDATION ADVICE

With all opportunities before us having been meticulously assessed with discounted cash flows, opportunity cost rates, projected salary growth, Net Present Value (NPV), Future Value (FV) and Internal Rate of Return (IRR), we have a consistent value comparison of all costs and income over the 35-year horizon.

The two detailed options: (1) Tier 3 Certification in Network Design and (2) an MBA degree, have proven to be strong, sustainable financial options with returns that go beyond the applicable opportunity cost rate, meaning that both options in isolation would be beneficial.

However, in comparison, the difference in benefits to costs shows which option would ultimately prove superior. At a 4.79% discount rate, the Tier 3 choice shows an NPV of \$231,353.87 with a project future value of \$1,189,792.37 with an exceptional 102% IRR. **Exhibit 1 *Timeline of Annual Cash Flows for Tier 3 Certification***, shows these cash flows over the 35-year timespan.

Comparatively, the MBA program, though requiring more upfront costs and having a lower timespan of active payments (at 31 years), still provides higher long-term earnings. With the same 4.79% discount rate, the NPV is over \$100,000 dollars more, standing at \$339,906, with a projected future value of \$1,748,047.56, and an IRR of 20.915%. Whilst the IRR is much lesser than the certification, that's primarily because of the high initial cost, the ultimate dollar value is still far greater, as shown in **Exhibit 2 *Timeline of Annual Cash Flows for MBA Program***, the timeline indicating the accelerated salary growth over the remaining years until retirement.

Since NPV more accurately assesses value added on by an investment in today's dollars, it has greater utility in decision-making processes when choosing between investment options that are strong in. Based on this ruling, the MBA degree stands as the option that most heavily maximizes your financial returns and career growth.

Exhibit 1:

Timeline of Annual Cash Flows for Tier 3

Certification

Discount rate: 4.79%

Growth Rate: 3%

Exhibit 1

Time	Cash Flow (\$)
0	(5,000)
1	0
2	10,000
3	10,300
4	10,609
5	10,927
6	11,255
7	11,593
8	11,941
9	12,299
10	12,668
11	13,048
12	13,439
13	13,842
14	14,258
15	14,685
16	15,126
17	15,580
18	16,047
19	16,528
20	17,024
21	17,535
22	18,061
23	18,603
24	19,161
25	19,736
26	20,328
27	20,938
28	21,566
29	22,213
30	22,879
31	23,566
32	24,273
33	25,001
34	25,751
35	26,524

Exhibit 2:

Timeline of Annual Cash Flows for MBA Program

Discount rate: 4.79%

Growth Rate: 3%

Exhibit 2

Time	Cash Flow (\$)
0	(25,000)
1	(25,000)
2	(25,000)
3	—
4	20,000
5	20,600
6	21,218
7	21,855
8	22,510
9	23,185
10	23,881
11	24,597
12	25,335
13	26,095
14	26,878
15	27,685
16	28,515
17	29,371
18	30,252
19	31,159
20	32,094
21	33,057
22	34,049
23	35,070
24	36,122
25	37,206
26	38,322
27	39,472
28	40,656
29	41,876
30	43,132
31	44,426
32	45,759
33	47,131
34	48,545
35	50,002