

FIN 425 – Course Project
COUG Automotive, Inc.

I, Bryce Forseth, 11752393, worked on this project and am now submitting the following report project.

- I worked by myself.

This report has a total of 6 pages, and I also provide the excel file with supporting evidence including:

- Data used

Introduction

Coug Automotive, Inc. is an American automotive retailer located in Pullman, WA. When the company was first founded, it focused on producing high end batteries for automobile manufacturers. The company continues to manufacture these batteries today, part of its core business practices, which account for about 50% of its total revenue. Noticing a shift in the automotive market, the company recently expanded into the business of manufacturing its own fully electric vehicles. As of now, the company only has one electric car model in the midsize SUV called the “Model-Coug”, which competes with its main rival Tesla, Inc. CougAuto is now questioning to make a new vehicle, “Super-C”, to add a high-end luxury vehicle to add to the company's car fleet. I have completed a full analysis of the new company project, including the income statement, cashflows, and an analysis of the competitor Tesla, Inc. I have found that the new project will provide positive cash flows for the company, and should be accepted. This decision will be explained throughout this report with tables displaying the income statement, cashflows, and a regression model analyzing the risk of the industry, and a valuation of the competitor.

Detailed Analysis

Question 1: Income Statement and Cash Flows Table

When asked to create an income statement and a cash flows table for the company's new project, I compiled all of the quantitative data the company provided me with. I used this data, sorting out all irrelevant costs, to create a full and accurate income statement for the company, located in *Table 1*. Once the income statement was created, I used the earnings before income tax (EBIT), as well as the income tax and depreciation on a five year MACRS schedule, to find the operating cash flows (OCF), located in *Table 1*. With my operating cashflows, I created a total cash flows table (CFFA), as shown in *Table 2*. The explanations for the calculations will follow both tables.

Table 1: Income Statement

Balance Sheet	▼	Year 1	▼	Year 2	▼	Year 3	▼
	Sales	\$ 1,438,000,000.00		\$ 1,058,000,000.00		\$ 636,000,000.00	
	Variable Cost	\$ (1,224,000,000.00)		\$ (900,000,000.00)		\$ (540,000,000.00)	
	Gross Profit	\$ 214,000,000.00		\$ 158,000,000.00		\$ 96,000,000.00	
	Fixed Cost	\$ (68,000,000.00)		\$ (68,000,000.00)		\$ (68,000,000.00)	
	Depreciation	\$ (6,400,000.00)		\$ (10,240,000.00)		\$ (6,144,000.00)	
	EBIT	\$ 139,600,000.00		\$ 79,760,000.00		\$ 21,856,000.00	
	Income Taxes	\$ (34,900,000.00)		\$ (19,940,000.00)		\$ (5,464,000.00)	
	Net Income	\$ 104,700,000.00		\$ 59,820,000.00		\$ 16,392,000.00	

OCF Table		Year1	Year 2	Year 3
	EBIT	\$ 135,334,400.00	\$ 75,776,000.00	\$ 23,260,800.00
	Depreciation	\$ 6,400,000.00	\$ 10,240,000.00	\$ 6,144,000.00
	Income Taxes	\$ (34,900,000.00)	\$ (19,940,000.00)	\$ (5,464,000.00)
	OCF	\$ 106,834,400.00	\$ 66,076,000.00	\$ 23,940,800.00

The calculations for the income statement are basic calculations to follow, but I will explain them further. The calculations for revenue were calculated from the unit price for both cars, and multiplied by the expected sale amount from both cars. The calculations for variable costs were calculated using the manufacturing price for each car, and multiplied by the expected sale amount from both cars. The gross profit takes the difference between revenue and variable costs. The fixed costs derived from the fixed costs for producing both cars, and were added together for a total fixed cost. The depreciation expense came from the value of the equipment that was purchased, using a five year MACRS schedule to calculate the total depreciation over the next 3 year period. The gross profit subtracting the fixed costs and depreciation calculated the earnings before interest and taxes (EBIT). The income taxes were calculated by multiplying the EBIT by the current corporate tax rate of 25%. Subtracting the difference between EBIT and income taxes calculated the net income for each year of the project. The operating cash flows were calculated using the EBIT, depreciation, and income taxes. The formula method I used is the to calculate the OCF is the EBIT plus the depreciation expense, which is subtracted by the incomes taxes.

Table 2: Total Cash Flows (CFFA)

CFFA Table		Year 0	Year 1	Year 2	Year 3
	OCF		\$ 106,834,400.00	\$ 66,076,000.00	\$ 23,940,800.00
	Change in NWC		\$ (43,140,000.00)	\$ (31,740,000.00)	\$ (19,080,000.00)
	NCS	\$ (40,000,000.00)			\$ 3,000,000.00
	CFFA	\$(40,000,000.00)	\$ 63,694,400.00	\$ 34,336,000.00	\$ 7,860,800.00

In the cash flows table, the OCF is derived from the bottom of the income statement, located in *Table 1*. The change in networking capital (NWC) was calculated with the sales from the current year multiplied by 3% to create the change in NWC. Since the company had no preexisting sales, it is left out of year zero. The net capital spending (NCS) was created by using the current cashout flow used to buy the machinery to start the project. This came from two pieces of equipment, valued at 35 million dollars and five million dollars. The added back NCS in year 3 is the expected salvage value of the equipment, which was listed at 3 million dollars for the first piece of equipment, and no value for the second piece of equipment. To calculate the cash flows from financing activities (CFFA), the values for OCF, change in NWC, and NCS are added up for each year.

Question 2: Relevant and Irrelevant Costs

All relevant costs are included in the Income Statement for CougAuto. All revenue and costs associated with the new project are relevant except for the research and development costs, and

the marketing research study. The change in production cost is also relevant to the project since there is a difference in prices if we start selling the new car, or decide to only produce one car. The research and development costs, and marketing research study costs are considered irrelevant. These costs are irrelevant due to the fact that they are sunk costs. These costs have already occurred and cannot be recovered.

Question 3: Analysis on Tesla, Inc

When I performed my analysis on Tesla, INC (TSLA), I retrieved statistical information about their company from Yahoo Finance. To create my analysis, I gathered information on TSLA, United States Treasury Bills, and the S&P 500 index from the past three years on a weekly basis. I chose to analyze these stocks and index over a three year period, to create a strong analysis which included 157 data points. Also using a three year period would create a recent view of the company's performance post COVID-19 pandemic, and show how the electric car industry is currently performing. Using Microsoft Excel, I was able to calculate the alpha and beta estimates.

Alpha: -.05639	Beta: 1.9950
t Stat: -.11169	t Stat: 8.96471
P-value: .91122	P-Value: 9.82E-16

In this analysis, it shows the Alpha is insignificant from the t Stat and P-value. The beta is shown to be significant at a 1% level which is proven from the t Stat value.

Table 3: Regression Model Graph



Table 3 visually provides the alpha and beta graphed out including the security characteristic line. Using the graph, as well as my alpha and beta estimates, I conclude that TSLA is correctly

priced. The security characteristic line flows evenly between all of the data points. With the alpha being very close to 0, this is another reason why I believe that TSLA is priced correctly.

I would imply that the risk of TSLA, and electric car industry as a whole is considered an elevated risk investment. I came to this conclusion with the beta that I estimated in my analysis of TSLA. Since the beta is greater than one, it implies that the electric car industry has elevated risk. My beta estimate is accurate given the industry Tesla is in. The reason for this is because the electric car market is relatively new compared to the history of the stock market, and TSLA is a leader in the industry. With Tesla being the leader in the industry, they have the most volatility in the market when it changes, expressed by the beta estimate I provided. With the growing rise in electric vehicles, and the increasing number of competitors that Tesla has seen yearly, there isn't a guarantee that Tesla will continue to own the current market share that they currently have.

Question 4: Project Decision

To understand whether CougAuto should accept the decision of moving forward with the new project, I calculated the internal rate of return (IRR) and the net present value (NPV) for the project.

IRR: 105.63%

NPV: \$49,837,611.15

I calculated the IRR and NPV thoroughly with my financial calculator, double checking each metric to ensure my values are correct. When inserting my numbers into my calculators cash flows (CF), I used the following numbers:

CF0: (40,000,000)

CO1: 63,694,400

FO1: 1

CO2: 34,336,000

FO2: 1

CO3: 7,860,800

FO3: 1

I: 12%

Once I inserted those numbers in my calculator, I received my following IRR and NPV values. When I reran the numbers, I got the same values both times.

With the IRR and NPV values calculated, I would advise taking on the new project. My first reason is from the IRR rate being 105.63 %. This value is higher than the required rate of capital at 12%, which is the minimum required return to decide whether to accept the project or not. Also, with the NPV being positive the new car will add value to the company. The project will provide \$49,837,611.15 of income over the next three years from the new car being sold. Since

the IRR is higher than the required rate of return, and the NPV is positive, I advise CougAuto to accept the new project.