

University of Connecticut
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Business Decision Modelling

A Student's Dilemma: Rent Or Buy?

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Executive Summary:

Scott and four other students are looking to live together in a house close to campus that has five bedrooms and at least two bathrooms. Scott has four options - she can purchase a house and rent rooms to her four roommates with inclusive or non-inclusive rent or she can rent a bedroom in one of two houses that offer inclusive and non-inclusive rent with her four roommates. If she chooses to purchase the house she will have \$49,534.08 in her bank account if she inclusively rents to her roommates and \$44,782.45 if she rents non-inclusively. If Scott chooses to rent with her four roommates, she will have \$7,115.22 if rented inclusively and \$8,613.95 if rented non-inclusively. All in all, we recommend she buys the house and rents inclusively to her roommates because she has the largest remaining bank balance after three years compared to the other options. We prioritized monetary value because it is something we can calculate to identify the difference between renting and buying. If Scott wants to prioritize non-monetary values such as stress and grades, yet chose the option that gives her the most money in the end, she would choose to rent non-inclusively.

Problem Description:

Scott and four of her friends were looking for a 5-bedroom flat with at least 2 bathrooms. Scott would like to take a decision on whether to buy a house and rent it to her friends with the money she saved or rent along with her friends. For this to happen, we need to analyze the costs and benefits of buying a house and renting a house. In order to make a decision, we need to calculate the rent (either inclusive or non inclusive) Scott would pay over three years and the balance in her bank from the money not spent on rent that is earning 1%. We also need to calculate the monthly rent for four of her friends in such a way that she at least gets all the money that she spent on buying a house. Scott can sell her house after three years and the profit after selling the house should also be taken into consideration.

Factors that needs to be considered for buying a house are:

1. A down payment of at most \$50,000 including \$25,000 of her own and \$25,000 taken from her parents.
2. Annual tax of the house is 1.4427% of the house value and this tax increases with increase in house prices.

3. Insurance of \$1200 annually
4. Maintenance cost of \$6000 for three years. She would get a 3-year closed mortgage with an interest rate of 3.95% with 20% down payment.
5. Hydro and gas would be \$100 and \$30 with an increase of 50% in winter months and a decrease of 50% in summer months.
6. Water Heater Rental would be \$120 every three months.
7. Internet and Television would cost around \$70 monthly for eight months.
8. Additional 20% cost of utilities would be included if the house is inclusive.
9. The house prices are expected to increase by 2% normally.
10. The real estate agent would charge a commission fee of 5% on the final price.

If Scott would like to rent an apartment along with her friends non-inclusively, it will cost \$435/month and she will have to split the cost of utilities with her four other roommates. For heat at \$120 every 3 month, hydro at \$100 every month, and water at \$30 every month. If Scott would like to rent an apartment along with her friends inclusively, it will cost \$510/month and the landlord will pay for utilities.

In the end if Scott wishes to buy a house, Scott will be solely responsible for managing the house, including small maintenance issues, paying bills, doing taxes and any other miscellaneous issues that would come up. There are few questions we need to answer while solving this business case. The questions are as follows:

1. Which option is best for Scott? Buying or Renting ?
2. We need to determine if the time, money and effort that goes into managing the house would outweigh any financial benefit?
3. Would managing a house be so overwhelming that it would hinder her performance academically?
4. If renting was a better option for Scott, would she go with renting the house with utilities included in the rent or non-inclusive in the rent?

Analysis:

1. Base Case Analysis:

There are four outcomes represented in the base case scenario. It includes

Inclusive and Non-Inclusive rent that four of her friends need to pay if Scott decides to purchase the house and rent it to her friends.

Inclusive and Non-Inclusive rent if Scott decides to rent a house along with her friends.

The assumptions that we made here are annual property tax percent and rate of increase in the prices of houses annually in London. In the base case, the annual property tax considered was 1.4427% and the house prices in London increased by 2% annually. After creating the base case, we can look at the pessimistic and optimistic values of the final outcome by fluctuating the values of annual house increase percent assuming Scott will charge \$510 for inclusive and \$435 for non-inclusive in the base case.

Best- or Worst-case Scenario for House price increase rate:

The current house price increase rate is 2%. Our research shows that the increase in the rate of house prices varies from -2% to 10%. However, we have to assume the best and worst case that can be possible with the change in house price rate so we have considered the pessimistic scenario of -4% decrease in house price and optimistic scenario of 10% increase in house price.

Inclusive:

If Scott would like to charge inclusive rent of \$510, with the current rate her balance is \$49,534.08. Optimistically, the balance increases to \$109,922.25. Pessimistically, the balance decreases to \$10,088.06.

Non-Inclusive:

If Scott would like to charge non-inclusive rent of \$435, with the current rate her balance is \$44,782.45. Optimistically, the balance increases to \$105,170.62. Pessimistically, the balance decreases to \$5,336.43.

Based on the values, we can see that the fluctuation in prices has a significant impact on the final balance Scott would get after selling the house. In the case of a non-inclusive scenario, pessimistically, the final balance is dropping to \$5336.43. In such case, renting would be the ideal option for Scott because the final balance that is left after renting a house is \$8,613.95. We can infer that if the house value decreases beyond 4% the optimal decision for Scott would be to rent a house along with her friends. Therefore, when buying and selling a house, knowledge related to the market should be researched and considered: for example, lower interest rates and higher economic growth are potential reasons for higher house prices.

2. Break Even Analysis:

In order to make a decision, Scott must know the break even point at which the final balance equals when buying and renting. If Scott buys a house and rents with an inclusive plan, the breakeven rent charge rate is \$230.18 for each person per month. If Scott buys a house and rents with a non-inclusive plan, the breakeven rent charge rate is \$187.68 for each person per month.

From the results we can suggest that

1. For utilities included, Scott has to charge at least \$230.18 to maintain higher balance after buying a house than renting. If she charges below this value, renting along with her friends would be an ideal option for her.
2. For utilities not included, Scott has to charge at least \$187.68 to maintain higher balance after buying a house than renting. If she charges below this value, renting along with her friends would be an ideal option for her.

In Conclusion, if she buys a house and charges the rent higher than the above two values, she will have a higher balance of buying than renting.

3. Risk Simulation:

Chances of one of Scott's friend dropping out:

If one of Scott's friend drops out from the lease, the final balance after 3 years will reduce because Scott has to take care of the additional costs incurred by loss. We have taken 25% of the chance

that a roommate will drop out and Scott has to take care of the expenses to cover for the costs of one less roommate. For this scenario, we have used Bernoulli Distribution with probability of drop out as 0.25 (Here number of roommates is the uncertain variable). After the analysis, it seems that the final balance decreases from \$49,534.08 to \$30,888.26 if Scott purchases the house and rents it to her friends at \$510 per month.

Fluctuations in bank interest rate:

If we change the deterministic value of 1% annual bank interest rate to a triangular probability distribution ranging between 0.5% to 2%, the difference is not that significant (~\$400). Therefore, we can see that the fluctuations in bank interest rate does not impact Scott's final decision and also the final balance left after buying.

Fluctuations in house price increase rate:

From our research, we have identified that the change in rate of house price varies between -4% and 10%. Also, from our best or worst case scenario we can see that the fluctuation in house price rate has a significant impact on the final balance. In this scenario, we have used uniform distribution between -4% and 10%. The analysis shows that there is a 5% chance that Scott would make less than \$14,458.45 which is significantly higher than \$8,613.95 which she would save in the scenario of renting a house rather than buying one. This indicates that Scott has a great opportunity to make money if he purchases the house and rents it to her friends.

Conclusion:

Scott must weigh a number of factors before reaching a decision that would have a significant effect on her bank account for the next three years. We analyzed Scott's finances over three years based on renting or buying a house using the details provided and Excel Analytic Solver. Our final recommendation buying the house is the most optimal decision for Scott. As it is the most financially favorable to Scott and will provide her with a stable financial position after she graduates from college and begins her career. Based on quantitative analysis, Scott is recommended to buy a house at \$239K and rent the house at \$510 per person inclusive of all utilities charges to her four friends. We also recommend Scott to consider the stress caused from

being responsible for house related issues, time spent in house maintenance and the impact on academic performance.

Recommendations:

Our recommendation to Scott is that she can buy a house for \$239K and can rent the house for \$510 per person each month which is inclusive of all utilities for her four friends based on quantitative analysis. But considering the facts of a house owner's responsibility and the time which can be spent for it, Scott should take care that it is not having a negative impact on her academic performance. She also should make sure that she is making an agreement with her friends that they will not leave the house for next three years.

References

1. Harvard Business Review: A Student's Dilemma: Rent or Buy? by Mehmet Begen, Caitlin Neal, Sabriya Karim.

<https://store.hbr.org/product/a-student-s-dilemma-rent-or-buy/W14207>

1. Base Case:

2	Rent or Buy?			
3				
4				
5				
6	Input Parameters			
7	Scott's Money	\$25,000.00		
8	Money from Parents	\$25,000.00		
9	Number of Roommates	4		
10	Bank Interest Rate	2%		
11	House Original Principal Amount	\$47,800.00		
12	Mortgage Left	\$176,908.31		
13	House Original Value	\$239,000.00		
14	Rate of Increase in House Price	2%		
15	Percentage of Annual Property Tax	1.4427%		
16	Commission rate	5%		
17	Monthly Mortgage Payment	\$1,003.95		
18	Maintenance Cost for 3 years	\$6,000.00		
19	Annual Insurance	\$1,200.00		
20	Monthly Payment for TV and Internet (8 months)	\$70.00		
21	Quarterly payment for water heater	\$120.00		
22	Gas Bill (Mar, Apr, Sept, Oct)	\$30.00	November to February	\$45.00
23	Water Bill (Mar, Apr, Sept, Oct)	\$100.00	November to February	\$150.00
24	Increase in utilities in inclusive deal	20%	May to August	\$15.00
25	Non-Inclusive	\$435	May to August	\$50.00
26	Inclusive	\$510		
27				
28	Decisions			
29	Non-Inclusive	435		
30	Inclusive	510		
31	Inclusive indicator	1		
32				
33	Output			
34	Balance for buying	\$49,739.32		
35	Balance for renting	\$9,210.21		
36	Decisions	Buy		
37				

Calculation		
Buying	Bank Balance after 3 years	\$10,633.80
	Selling value of the house after 3 years	\$253,628.71
	Commision	\$12,681.44
	Mortagage Left	\$176,908.31
	Housing selling profit	\$64,038.97
	Total Balance after 3 years	\$74,672.77
	Amount needs to be returned to parents	\$25,000
	Total money left in case of buying	\$49,672.77
Renting	Final balance for renting non-inclusive one	\$9,015.93
	Final balance for renting Inclusive one	\$7,499.08
	Rent non-inclusive one	\$9,015.93

Utilities Bill	January	February	March	April	May	June	July	August	September	October	November	December
Water Bill	\$150.00	\$150.00		\$100.00	\$100.00	\$50.00	\$50.00	\$50.00	\$100.00	\$100.00	\$150.00	\$150.00
Gas Bill	\$45.00	\$45.00		\$30.00	\$30.00	\$15.00	\$15.00	\$15.00	\$30.00	\$30.00	\$45.00	\$45.00
Heater Bill	\$120.00	0	0	0	\$120.00	0	0	\$120.00	0	0	\$120.00	0
Total	\$315.00	\$195.00		\$130.00	\$250.00	\$65.00	\$65.00	\$185.00	\$65.00	\$130.00	\$250.00	\$195.00
SUPERPERSON	\$63.00	\$39.00		\$26.00	\$50.00	\$13.00	\$13.00	\$37.00	\$13.00	\$26.00	\$50.00	\$39.00

Months	Renting									
	Non-inclusive					Inclusive				
	Account Base	Monthly Fee	Beginning of month Balance	interest	Total balance	Account Base	Monthly Fee	End-of-month interest	total	
Month 1	\$25,000.00	\$490.00	\$24,500.00	\$20.82	\$24,520.82	\$25,000.00	\$510.00	\$24,490.00	\$20.81	\$24,510.81
Month 2	\$24,522.82	\$474.00	\$24,048.82	\$20.44	\$24,069.26	\$24,510.81	\$510.00	\$24,000.81	\$20.40	\$24,021.21
Month 3	\$24,069.26	\$461.00	\$23,608.26	\$20.06	\$23,628.33	\$24,021.21	\$510.00	\$23,511.21	\$19.98	\$23,531.19
Month 4	\$23,628.33	\$448.00	\$23,180.33	\$19.67	\$23,199.99	\$23,531.19	\$510.00	\$23,021.19	\$19.57	\$23,040.76
Month 5	\$23,199.99	\$440.00	\$22,759.99	\$19.30	\$22,779.30	\$23,040.76	\$510.00	\$22,530.76	\$19.15	\$22,549.91
Month 6	\$22,779.30	\$440.00	\$22,339.30	\$18.94	\$22,358.24	\$22,549.91	\$510.00	\$22,039.91	\$18.73	\$22,058.64
Month 7	\$22,358.24	\$472.00	\$21,886.24	\$18.56	\$21,904.80	\$22,058.64	\$510.00	\$21,548.64	\$18.31	\$21,566.95
Month 8	\$21,904.80	\$448.00	\$21,456.80	\$18.19	\$21,474.99	\$21,566.95	\$510.00	\$21,056.95	\$17.90	\$21,074.85
Month 9	\$21,474.99	\$461.00	\$21,013.99	\$17.81	\$21,031.80	\$21,074.85	\$510.00	\$20,564.85	\$17.48	\$20,582.32
Month 10	\$21,031.80	\$465.00	\$20,548.80	\$17.42	\$20,566.22	\$20,582.32	\$510.00	\$20,072.32	\$17.06	\$20,089.38
Month 11	\$20,566.22	\$474.00	\$20,074.22	\$17.03	\$20,091.25	\$20,089.38	\$510.00	\$19,579.38	\$16.64	\$19,596.02
Month 12	\$20,091.25	\$474.00	\$19,597.25	\$16.64	\$19,613.89	\$19,596.02	\$510.00	\$19,086.02	\$16.22	\$19,102.24
Month 13	\$19,613.89	\$490.00	\$19,123.89	\$16.23	\$19,140.12	\$19,102.24	\$510.00	\$18,592.24	\$15.80	\$18,608.04
Month 14	\$19,140.12	\$474.00	\$18,666.12	\$15.84	\$18,681.96	\$18,608.04	\$510.00	\$18,096.04	\$15.38	\$18,111.42
Month 15	\$18,681.96	\$461.00	\$18,220.96	\$15.46	\$18,236.43	\$18,111.42	\$510.00	\$17,603.42	\$14.96	\$17,618.39
Month 16	\$18,236.43	\$485.00	\$17,735.43	\$15.07	\$17,750.50	\$17,618.39	\$510.00	\$17,086.39	\$14.54	\$17,101.93
Month 17	\$17,750.50	\$448.00	\$17,287.50	\$14.70	\$17,302.20	\$17,101.93	\$510.00	\$16,572.93	\$14.12	\$16,587.04
Month 18	\$17,302.20	\$472.00	\$16,815.20	\$14.33	\$16,829.53	\$16,627.04	\$510.00	\$16,117.04	\$13.70	\$16,130.74
Month 19	\$16,829.53	\$448.00	\$16,367.53	\$13.94	\$16,381.47	\$16,130.74	\$510.00	\$15,607.74	\$13.28	\$15,621.02
Month 20	\$16,381.47	\$448.00	\$15,919.47	\$13.57	\$15,933.04	\$15,621.02	\$510.00	\$15,093.02	\$12.85	\$15,105.87
Month 21	\$15,933.04	\$461.00	\$15,458.04	\$13.19	\$15,471.23	\$15,105.87	\$510.00	\$14,578.87	\$12.43	\$14,591.30
Month 22	\$15,471.23	\$485.00	\$15,046.23	\$12.79	\$15,059.02	\$14,591.30	\$510.00	\$14,063.30	\$12.01	\$14,075.31
Month 23	\$15,059.02	\$474.00	\$14,575.02	\$12.40	\$14,587.42	\$14,141.31	\$510.00	\$13,547.31	\$11.59	\$13,558.90
Month 24	\$14,587.42	\$474.00	\$14,101.42	\$12.01	\$14,113.43	\$13,547.31	\$510.00	\$13,032.31	\$11.16	\$13,043.46
Month 25	\$14,113.43	\$498.00	\$13,603.43	\$11.59	\$13,615.02	\$13,144.06	\$510.00	\$12,514.06	\$10.74	\$12,524.79
Month 26	\$13,615.02	\$474.00	\$13,129.02	\$11.20	\$13,140.22	\$12,514.06	\$510.00	\$12,004.06	\$10.31	\$12,014.37
Month 27	\$13,140.22	\$461.00	\$12,669.22	\$10.82	\$12,679.04	\$12,145.11	\$510.00	\$11,535.11	\$9.89	\$11,544.99
Month 28	\$12,679.04	\$485.00	\$12,184.04	\$10.41	\$12,194.45	\$11,535.11	\$510.00	\$11,014.45	\$9.46	\$11,023.91
Month 29	\$12,194.45	\$448.00	\$11,736.45	\$10.04	\$11,746.49	\$11,014.45	\$510.00	\$10,504.45	\$9.04	\$10,513.49
Month 30	\$11,746.49	\$448.00	\$11,288.49	\$9.67	\$11,298.15	\$10,513.49	\$510.00	\$10,003.49	\$8.61	\$10,012.10
Month 31	\$11,298.15	\$472.00	\$10,816.15	\$9.28	\$10,825.43	\$10,142.11	\$510.00	\$9,593.11	\$8.19	\$9,601.29
Month 32	\$10,825.43	\$448.00	\$10,367.43	\$8.90	\$10,376.33	\$9,601.29	\$510.00	\$9,086.29	\$7.76	\$9,094.05
Month 33	\$10,376.33	\$461.00	\$9,906.33	\$8.52	\$9,914.85	\$8,893.05	\$510.00	\$8,383.05	\$7.33	\$8,390.38
Month 34	\$9,914.85	\$485.00	\$9,421.85	\$8.12	\$9,430.97	\$8,390.38	\$510.00	\$7,870.38	\$6.91	\$7,877.29
Month 35	\$9,430.97	\$474.00	\$8,947.97	\$7.72	\$8,955.69	\$7,870.38	\$510.00	\$7,355.69	\$6.48	\$7,362.17
Month 36	\$8,955.69	\$474.00	\$8,473.69	\$7.32	\$8,481.01	\$7,355.69	\$510.00	\$6,841.01	\$6.05	\$6,847.06

Buying									
Expenses					Revenue				
Account Base	Mortgage	tax	insurance	maintenance	Utility per person	Internet&TV per person	Total Expense	Rent Revenue for 4 person	balance after interest balance
\$1,200.00	\$1,003.95	\$287.34	\$1,200.00	\$166.67	\$63.00	\$70.00	\$3,108.95	\$2,040.00	\$1,124.05
\$1,195.01	\$1,003.95	\$287.34	0	\$166.67	\$39.00	\$70.00	\$1,761.95	\$2,040.00	\$1,412.05
\$1,144.26	\$1,003.95	\$287.34	0	\$166.67	\$26.00	\$70.00	\$1,683.95	\$2,040.00	\$1,770.80
\$1,771.81	\$1,003.95	\$287.34	0	\$166.67	\$50.00	\$70.00	\$1,827.95	\$2,040.00	\$1,983.85
\$1,985.54	\$1,003.95	\$287.34	0	\$166.67	\$13.00	\$70.00	\$1,605.95	\$2,040.00	\$2,419.58
\$2,421.64	\$1,003.95	\$287.34	0	\$166.67	\$13.00	\$70.00	\$1,605.95	\$2,040.00	\$2,855.69
\$2,858.11	\$1,003.95	\$287.34	0	\$166.67	\$37.00	\$70.00	\$1,749.95	\$2,040.00	\$3,148.16
\$3,150.83	\$1,003.95	\$287.34	0	\$166.67	\$13.00	\$70.00	\$1,605.95	\$2,040.00	\$3,584.88
\$3,587.93	\$1,003.95	\$287.34	0	\$166.67	\$26.00	0	\$1,613.95	\$2,040.00	\$4,013.97
\$4,017.38	\$1,003.95	\$287.34	0	\$166.67	\$50.00	0	\$1,757.95	\$2,040.00	\$4,299.48
\$4,303.08	\$1,003.95	\$287.34	0	\$166.67	\$39.00	0	\$1,691.95	\$2,040.00	\$4,651.13
\$4,655.08	\$1,003.95	\$287.34	0	\$166.67	\$39.00	0	\$1,691.95	\$2,040.00	\$5,003.13
\$5,007.38	\$1,003.95	\$293.08	\$1,200.00	\$166.67	\$63.00	\$70.00	\$3,111.70	\$2,040.00	\$3,935.68
\$3,939.02	\$1,003.95	\$293.08	0	\$166.67	\$39.00	\$70.00	\$1,767.70	\$2,040.00	\$4,211.32
\$4,214.90	\$1,003.95	\$293.08	0	\$166.67	\$26.00	\$70.00	\$1,689.70	\$2,040.00	\$4,565.20
\$4,569.08	\$1,003.95	\$293.08	0	\$166.67	\$50.00	\$70.00	\$1,833.70	\$2,040.00	\$4,775.28
\$4,779.44	\$1,003.95	\$293.08	0	\$166.67	\$13.00	\$70.00	\$1,611.70	\$2,040.00	\$5,207.73
\$5,212.16	\$1,003.95	\$293.08	0	\$166.67	\$13.00	\$70.00	\$1,611.70	\$2,040.00	\$5,640.46
\$5,645.25	\$1,003.95	\$293.08	0	\$166.67	\$37.00	\$70.00	\$1,755.70	\$2,040.00	\$5,929.55
\$5,934.59	\$1,003.95	\$293.08	0	\$166.67	\$13.00	\$70.00	\$1,611.70	\$2,040.00	\$6,362.89
\$6,368.30	\$1,003.95	\$293.08	0	\$166.67	\$26.00	0	\$1,619.70	\$2,040.00	\$6,788.60
\$6,784.37	\$1,003.95	\$293.08	0	\$166.67	\$50.00	0	\$1,763.70	\$2,040.00	\$7,070.66
\$7,076.67	\$1,003.95	\$293.08	0	\$166.67	\$39.00	0	\$1,697.70	\$2,040.00	\$7,418.97
\$7,425.28	\$1,003.95	\$293.08	0	\$166.67	\$39.00	0	\$1,697.70	\$2,040.00	\$7,767.58
\$7,774.18	\$1,003.95	\$298.95	\$1,200.00	\$166.67	\$63.00	\$70.00	\$3,117.56	\$2,040.00	\$6,696.61
\$6,702.31	\$1,003.95	\$298.95	0	\$166.67	\$39.00	\$70.00	\$1,773.56	\$2,040.00	\$6,967.47
\$6,974.67	\$1,003.95	\$298.95	0	\$166.67	\$26.00	\$70.00	\$1,695.56	\$2,040.00	\$7,319.10
\$7,325.32	\$1,003.95	\$298.95	0	\$166.67	\$50.00	\$70.00	\$1,839.56	\$2,040.00	\$7,525.76
\$7,532.16	\$1,003.95	\$298.95	0	\$166.67	\$13.00	\$70.00	\$1,617.56	\$2,040.00	\$7,954.59
\$7,961.25	\$1,003.95	\$298.95	0	\$166.67	\$13.00	\$70.00	\$1,617.56	\$2,040.00	\$8,383.79
\$8,389.92	\$1,003.95	\$298.95	0	\$166.67	\$37.00	\$70.00	\$1,761.56	\$2,040.00	\$8,669.25
\$8,676.72	\$1,003.95	\$298.95	0	\$166.67	\$13.00	\$70.00	\$1,617.56	\$2,040.00	\$9,099.16
\$9,106.89	\$1,003.95	\$298.95	0	\$166.67	\$26.00	0	\$1,625.56	\$2,040.00	\$9,521.33
\$9,529.42	\$1,003.95	\$298.95	0	\$166.67	\$50.00	0	\$1,769.56	\$2,040.00	\$9,799.86
\$9,808.19	\$1,003.95	\$298.95	0	\$166.67	\$39.00	0	\$1,703.56	\$2,040.00	\$10,144.62
\$10,152.24	\$1,003.95	\$298.95	0	\$166.67	\$39.00	0	\$1,703.56	\$2,040.00	\$10,499.68

sell price of house	\$253,628.71
remained mortgage	\$176,908.31
sell profit	\$64,038.97
Final Balance	\$49,537.56

Best Case / Worst Case:

Inclusive

Scenario Summary			
	Current Values:	Pessimistic	Optimistic
Changing Cells:			
\$C\$14	2%	-4%	10%
Result Cells:			
\$C\$34	\$49,534.08	\$10,088.06	\$109,922.25

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

Non-Inclusive

Scenario Summary			
	Current Values:	Pessimistic	Optimistic
Changing Cells:			
\$C\$14	2%	-4%	10%
Result Cells:			
\$C\$34	\$44,782.45	\$5,336.43	\$105,170.62

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

2. Break Even analysis:

Non-inclusive

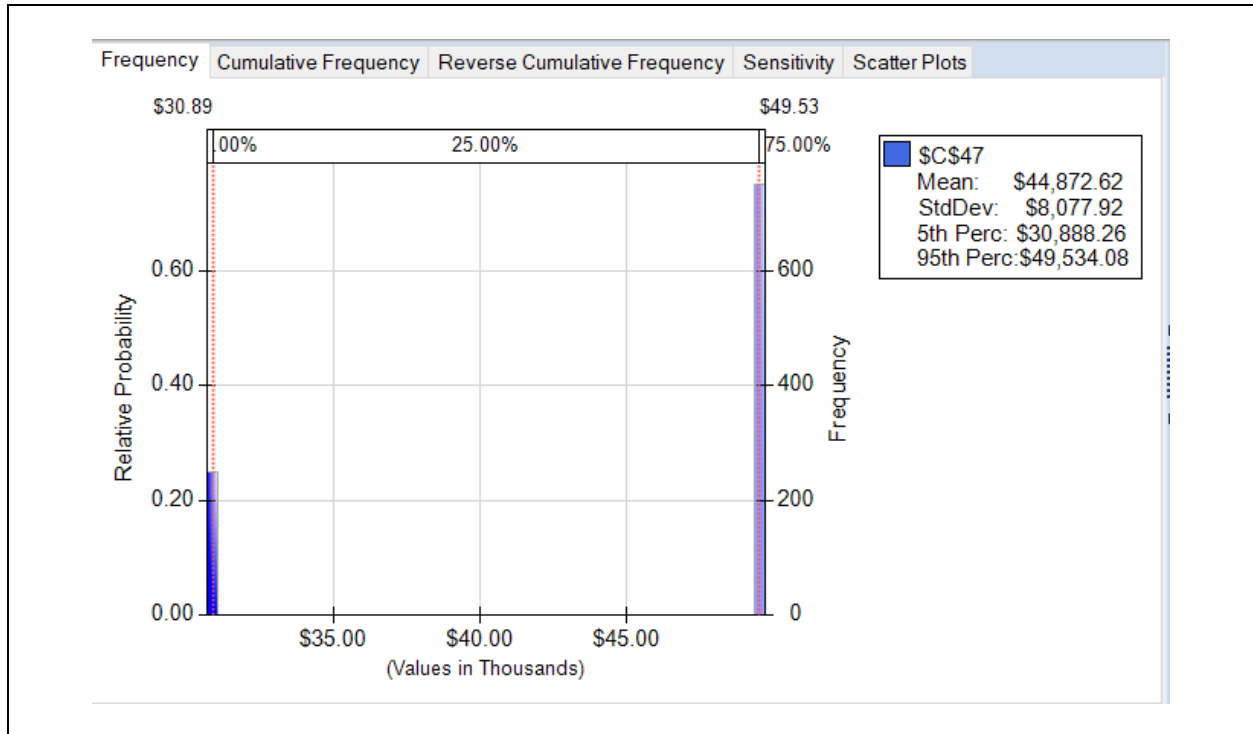
Decisions		
	Non-Inclusive	187.6800722
	Inclusive	510
	Inclusive indicator	0
Output		
	Balance for buying	\$8,613.95
	Balance for renting	\$8,613.95
	Decisions	Rent or Buy
Calculation		
Buying	Bank Balance after 3 years	-\$30,425.02
	Selling value of the house after 3 years	\$253,628.71
	Commision	\$12,681.44
	Mortagage Left	\$176,908.31
	Housing selling profit	\$64,038.97
	Total Balance after 3 years	\$33,613.95
	Amount needs to be returned to parents	\$25,000
	Total money left in case of buying	\$8,613.95

Inclusive

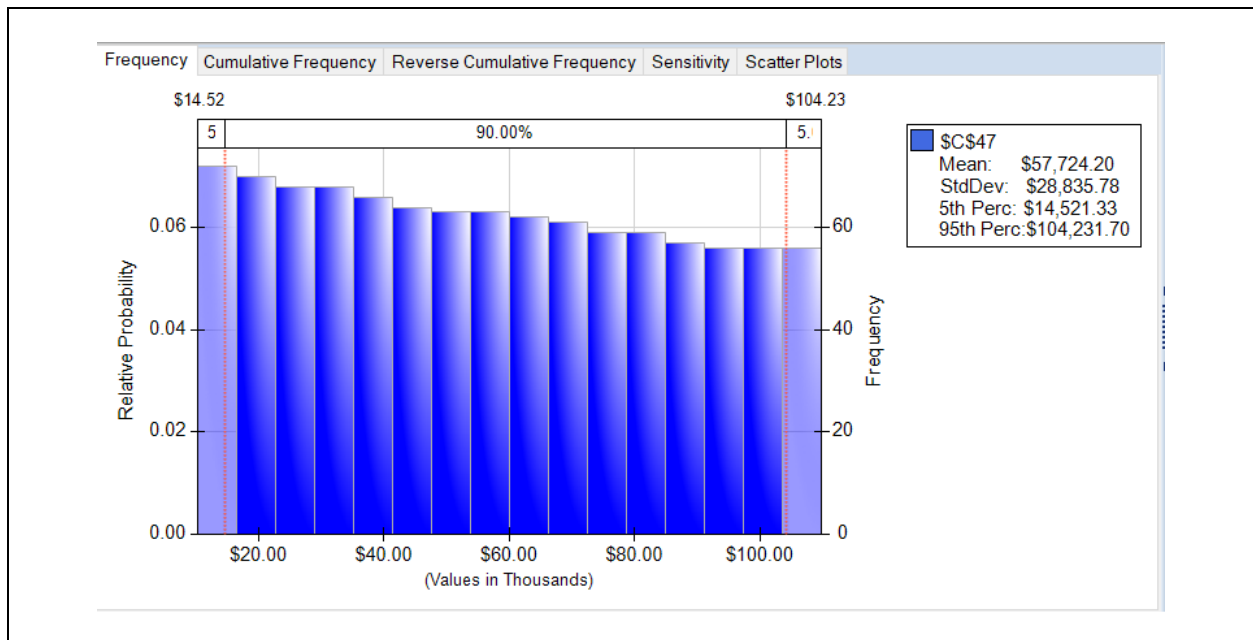
Decisions		
	Non-Inclusive	435
	Inclusive	230.1884484
	Inclusive indicator	1
Output		
	Balance for buying	\$8,613.95
	Balance for renting	\$8,613.95
	Decisions	Rent or Buy
Calculation		
Buying	Bank Balance after 3 years	-\$30,425.02
	Selling value of the house after 3 years	\$253,628.71
	Commision	\$12,681.44
	Mortagage Left	\$176,908.31
	Housing selling profit	\$64,038.97
	Total Balance after 3 years	\$33,613.95
	Amount needs to be returned to parents	\$25,000
	Total money left in case of buying	\$8,613.95

3. Risk Simulation

Chances of one of Scott's friend dropping out:



Fluctuations in bank interest rate:



Fluctuations in house price increase rate:

