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MBA 614
4/11/12

Final Project – Rental Property Analyzer

2.2 - Executive Summary

While I didn't perform work for any official business, the work performed was to address a business need for myself and my father. About seven years ago we began investing in rental properties, at the rate of approximately 1 per year. Right now we currently have seven rental properties, and we are continuously looking for the "right deal". As a "side-business" we do not have a significant amount of time to devote to rental property analysis. However, my father, a retired CPA, and me, an aspiring business consultant, have slightly different views as to the important parts to analyze with a rental property. As such, we both run various analyses, typically in Excel with different results based on a variety of factors. To combine our analyses, numerous spreadsheets need to be created. The task can be exhausting.

Therefore, to combat this exhausting task, I decided to create an easy to use rental property analysis spreadsheet. The user interface is such that it can be easily modified with each property analyzed. It includes a number of different evaluators from NOI calculations to sensitivity analysis based on the various yearly increases in rent.

The project has one centralized spreadsheet where all calculations are combined to give an overview to each rental property considered. Following the overview, there is a tab dedicated to each of the following: sensitivity analysis, purchase price information, financing assumptions, rental income assumptions, predicted yearly expenses, and finally a tab that will bring in current rates from bankrate.com.

Based on user-entered information, the spreadsheet provides the return on invested capital over a 10-year period for each rental property. As a general rule, my father and I will not invest in a property that has a predicted ROI of lower than 12% in the first year, and a minimum of 15% within the first four years. The ROI calculation is based on revenues, expenses, and acquisition information; all provided by the user through simple to use userforms. These userforms can be accessed from the ribbon under the real estate tab, or individually on each of the dedicated sheets.

2.3 Implementation Documentation

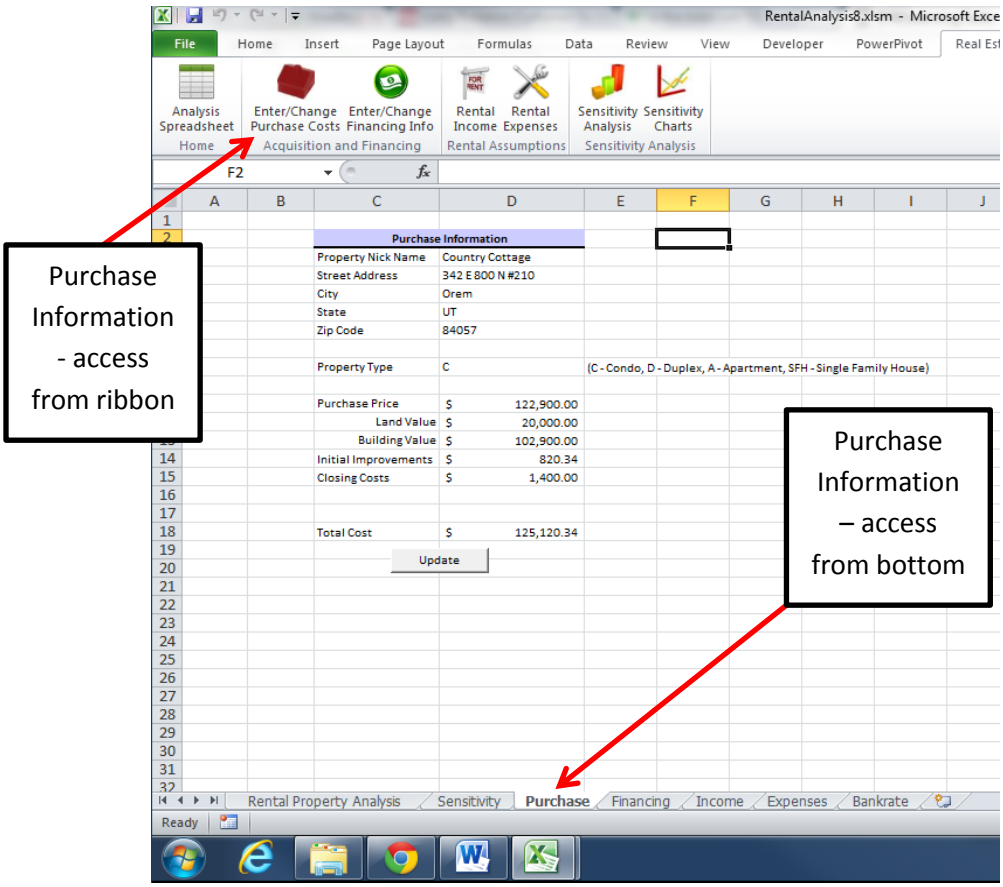
To create the rental property analyzer, I first gathered together the various spreadsheets my father and I had used previously in evaluating rental properties. I then consulted the book Investing in Real Estate by McLean Eldred to gain additional insights into which calculations were most important when considering the purchase of a rental property.

After my research, I determined that the focus of the analysis would be return on invested capital (ROI) and a sensitivity analysis involving the estimated yearly increase in rents. Based on the desired outcomes, I figured out what user inputs would be required to return both the ROI and sensitivity analyses.

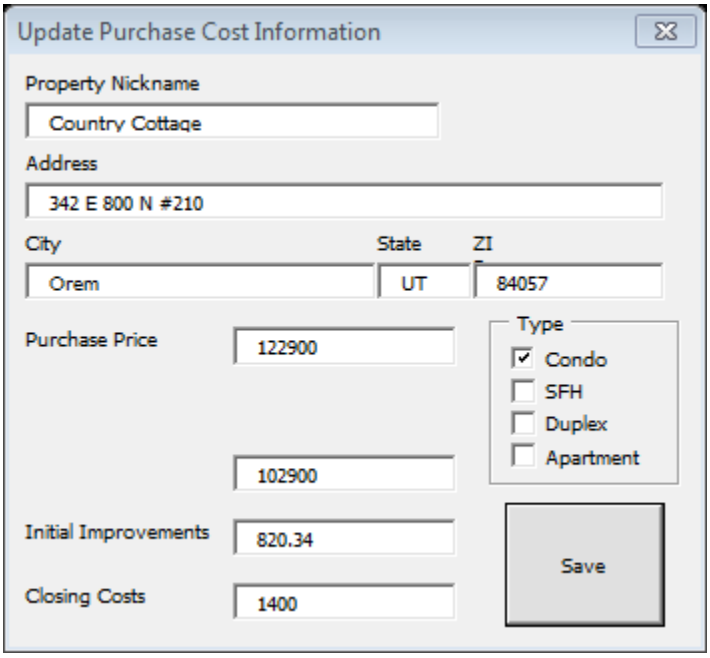
First, I determined that the user would need to input the basic purchase information for the proposed rental property. This information would include the basic information about the property, along with the purchase price. The purchase price would also include a breakdown for the land value and building value, which information can be found by looking at the tax records for a property. This land and building values would not be included in any calculations, but are there for further reference as we continue to build on the rental property analyzer. The purchase information also included initial improvements that would be required to the property before it could be rented, as well as the estimated closing costs for the loan.

Based on the entered information, the user will see the total cost of the property, which will be relevant to the financing decisions which will be made subsequently.

This is an example of the purchase tab. The purchase tab can be accessed by the user from the tabs at the bottom of the worksheets, or the user can access the purchase information from the ribbon under the real estate tab at the top of the excel file. The button to access the purchase information section is located in the "Acquisition and Financing" group as shown below.

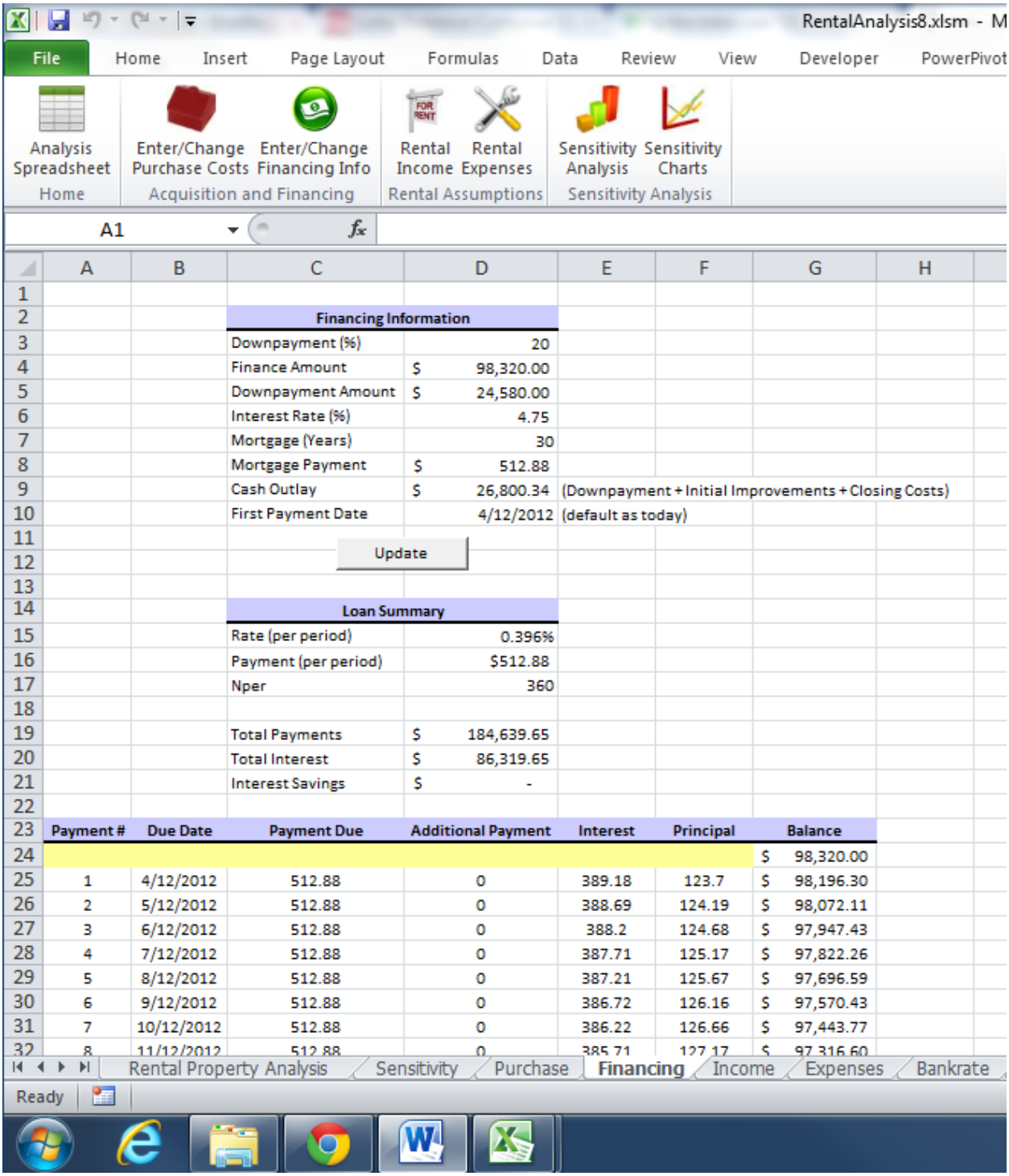


If the user accesses the purchase information from the ribbon, the user will automatically be brought to the appropriate spreadsheet – Purchase, and a userform will be shown to help facilitate the user entering the information. However, should the user prefer to enter the information directly into the spreadsheet they are able to do so.

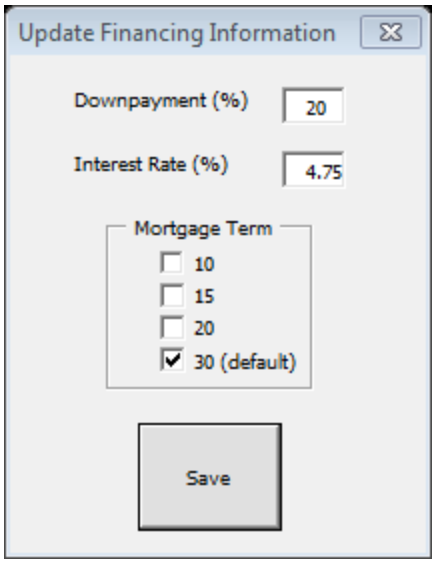


The second required inputs for the ROI and sensitivity analyses are the financing assumptions. Similar to the purchase information, the financing information has its own dedicated spreadsheet and the user can access this information either directly through the sheets the bottom of the worksheet or by clicking the button next to the previous button – "Enter/Change Financing Info".

Again, as with the purchase information, the button in the ribbon will function the same way, activating the spreadsheet and automatically showing the userform. The userform facilitates use as it automatically calculates some of the required inputs based on a lower amount of information entered by the user. With the user inputted information, the financing spreadsheet automatically calculates the mortgage payment based on the terms of the loan. Additionally, it will automatically create the amortization table. **It is extremely important to note, the user must have the analysis tool-pack installed in Excel for the calculations to work. Below is a sample of the financing spreadsheet:



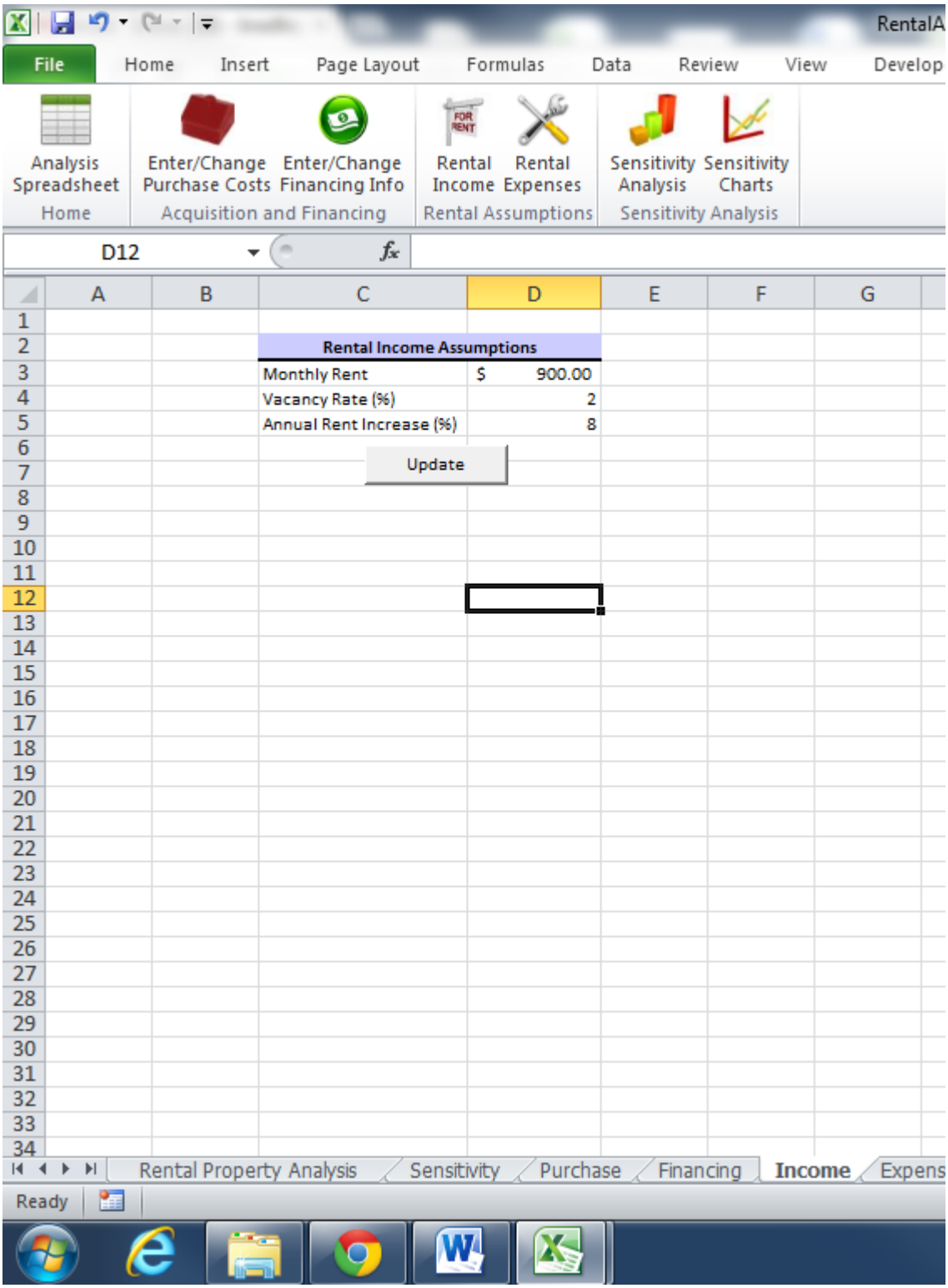
As you will note, the userform only requires a fraction of the information, and simplifies the process. Therefore, by either clicking the ribbon button, or the update button on the actual spreadsheet the user will gain access to the userform included below:



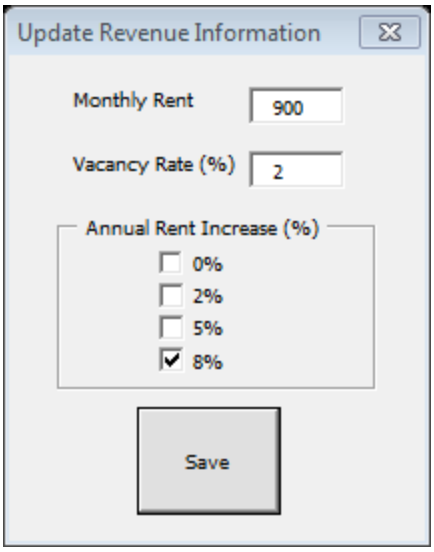
If the user does not enter a mortgage term, the spreadsheet is set to default to the 30 year mortgage option.

The third part of the inputs required for the ROI and sensitivity analyses include the rental income information. The most basic of the userforms, this sheet asks for items including monthly rent amount, predicted vacancy rate, and the estimated annual rent increase. Again, as in the previous sections, there are two ways to access the sheet: either through the tabs at the bottom of the worksheet or from the ribbon at the top.

The ribbon will again automatically take the user to the sheet and bring up the easy to use userform.

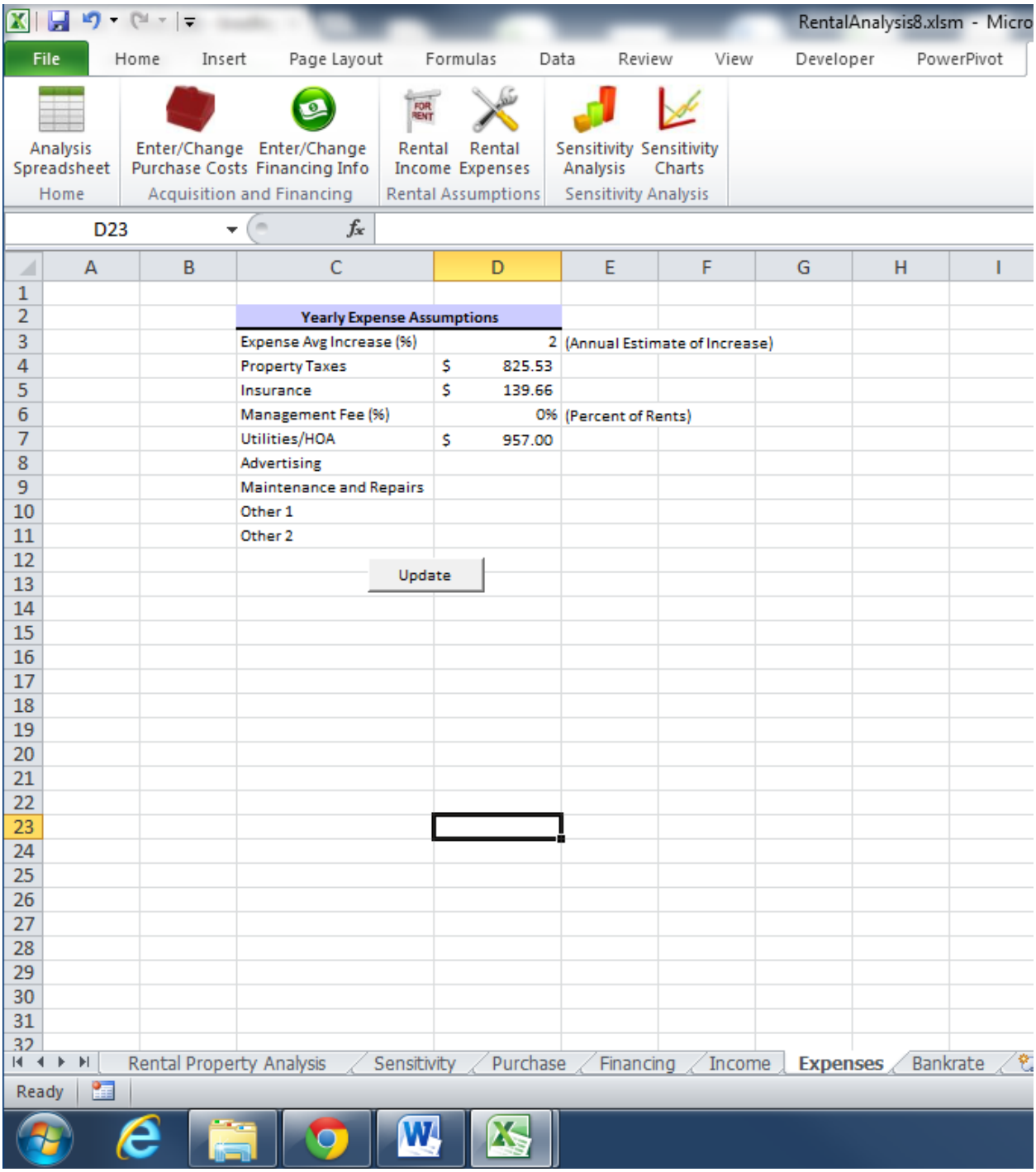


The following is the userform associated with the Income sheet:

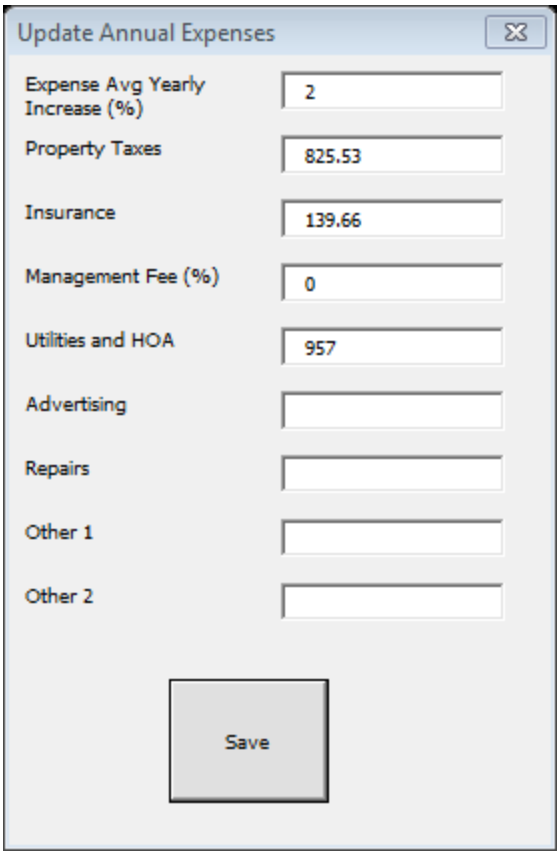


The final section requiring user input is the expenses section. The expenses section addresses the user's predictions concerning annual expenses for the rental property. The first user input is the expense average increase (%), this is the percentage that the user thinks expenses will go up annually. This will affect all of the other expenses inputted by the user. The other expenses include: property taxes, insurance, management fees, utilities/HOA, advertising, maintenance and repairs, and then two other categories for whatever the user would like to enter.

Included below is the spreadsheet for the expenses page, which can be accessed both ways as with previously outlined sections.

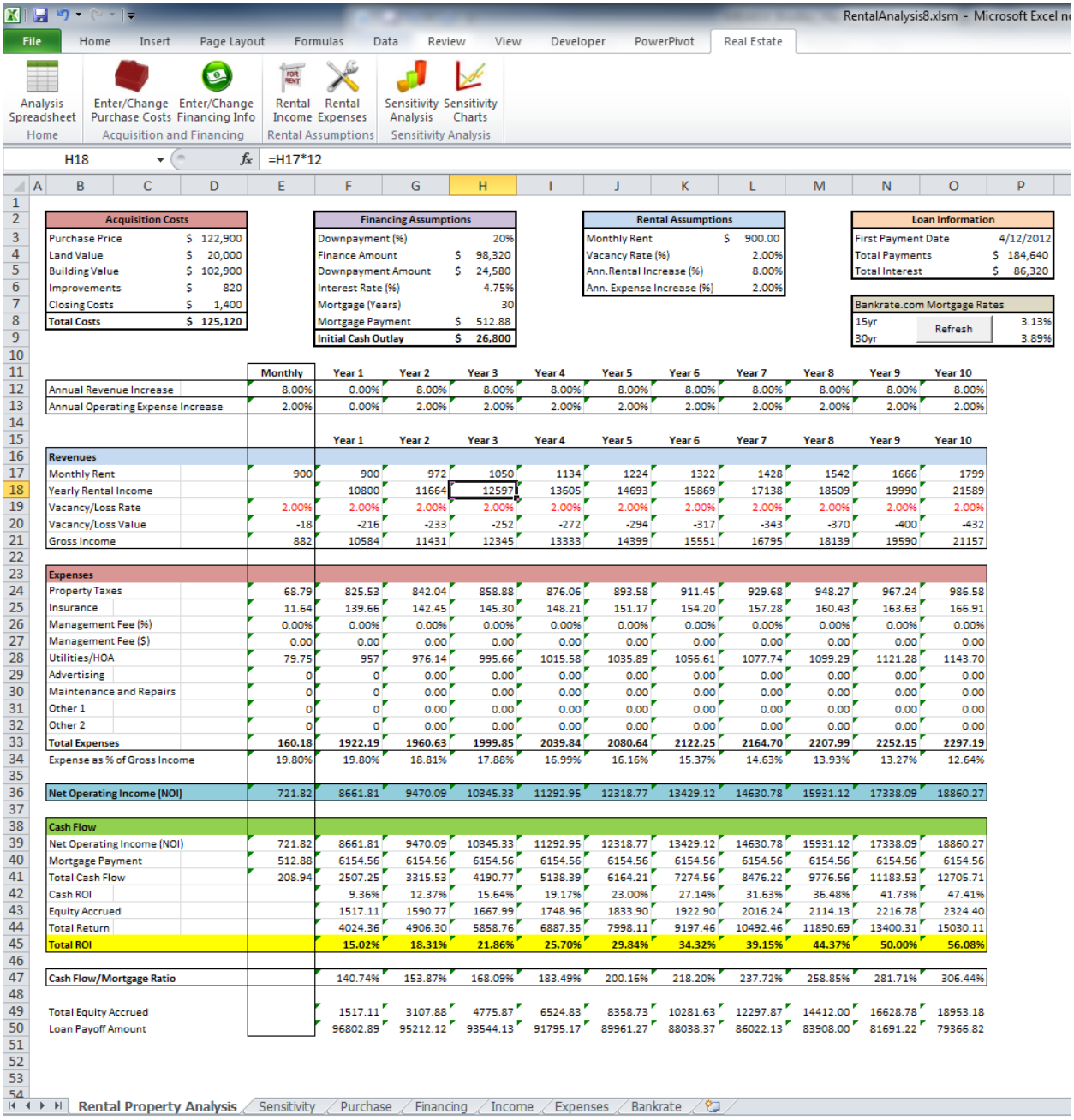


The userform for the expenses page as shown:



After the user enters all of the required information, the user can access and see all of the information in one simple to use spreadsheet. This spreadsheet can be accessed from the worksheet tabs by selecting the “Rental Property Analysis” sheet, or by accessing the ribbon under the Real Estate tab and hitting the Analysis Spreadsheet button in the home section.

The spreadsheet is included below.



RentalAnalysis8.xlsm - Microsoft Excel

File | Home | Insert | Page Layout | Formulas | Data | Review | View | Developer | PowerPivot | Real Estate

Analysis Spreadsheet (Home) | Enter/Change Purchase Costs | Enter/Change Financing Info (Acquisition and Financing) | Rental Income | Rental Expenses (Rental Assumptions) | Sensitivity Analysis | Sensitivity Charts (Sensitivity Analysis)

H18 =H17*12

Acquisition Costs	
Purchase Price	$ 122,900
Land Value	$ 20,000
Building Value	$ 102,900
Improvements	$ 820
Closing Costs	$ 1,400
Total Costs	**$ 125,120**

Financing Assumptions	
Downpayment (%)	20%
Finance Amount	$ 98,320
Downpayment Amount	$ 24,580
Interest Rate (%)	4.75%
Mortgage (Years)	30
Mortgage Payment	$ 512.88
Initial Cash Outlay	**$ 26,800**

Rental Assumptions	
Monthly Rent	$ 900.00
Vacancy Rate (%)	2.00%
Ann.Rental Increase (%)	8.00%
Ann. Expense Increase (%)	2.00%

Loan Information	
First Payment Date	4/12/2012
Total Payments	$ 184,640
Total Interest	$ 86,320

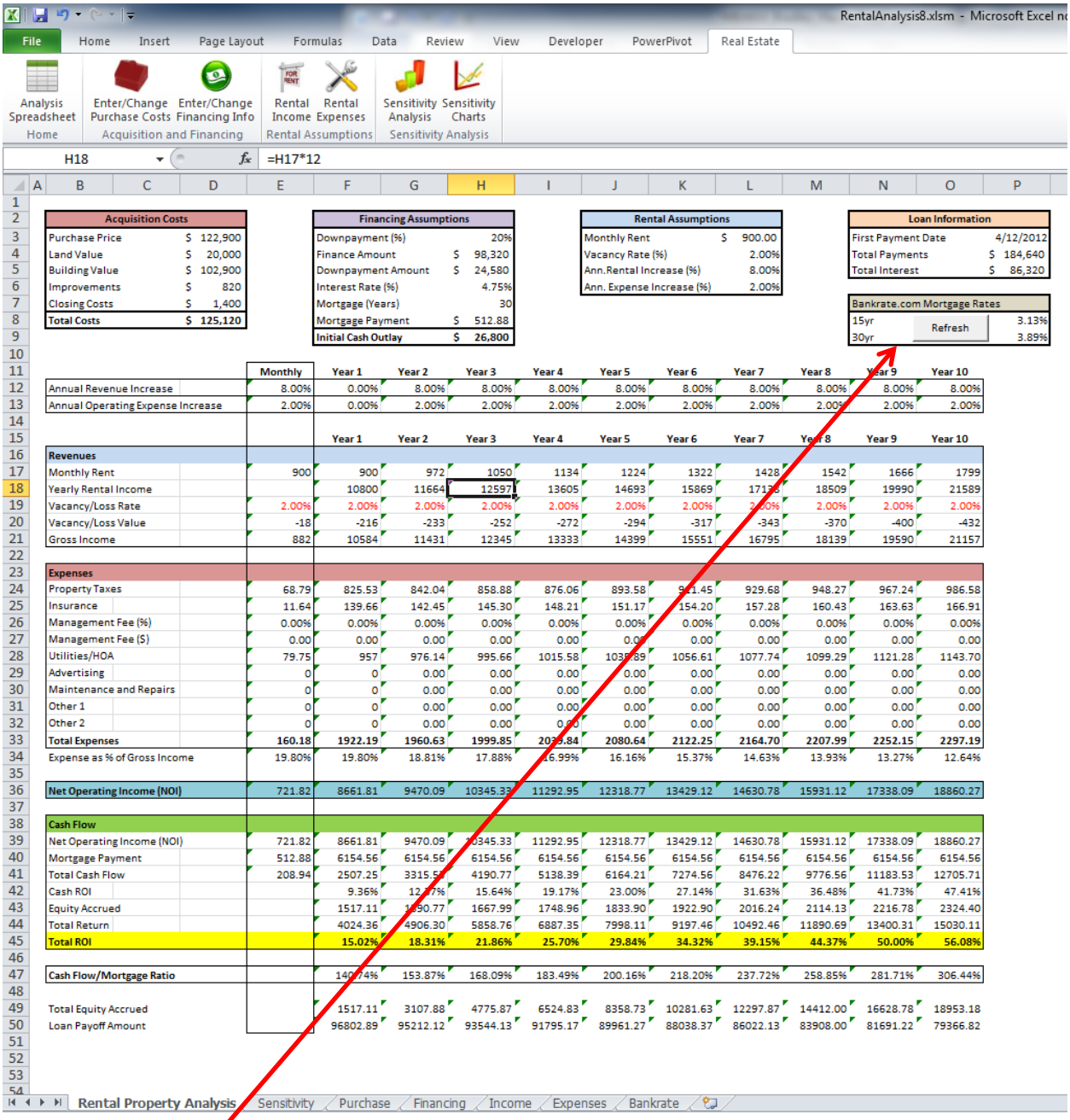
Bankrate.com Mortgage Rates		
15yr	Refresh	3.13%
30yr		3.89%

	Monthly	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Annual Revenue Increase	8.00%	0.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Annual Operating Expense Increase	2.00%	0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues											
Monthly Rent	900	900	972	1050	1134	1224	1322	1428	1542	1666	1799
Yearly Rental Income		10800	11664	12597	13605	14693	15869	17138	18509	19990	21589
Vacancy/Loss Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Vacancy/Loss Value	-18	-216	-233	-252	-272	-294	-317	-343	-370	-400	-432
Gross Income	882	10584	11431	12345	13333	14399	15551	16795	18139	19590	21157
Expenses											
Property Taxes	68.79	825.53	842.04	858.88	876.06	893.58	911.45	929.68	948.27	967.24	986.58
Insurance	11.64	139.66	142.45	145.30	148.21	151.17	154.20	157.28	160.43	163.63	166.91
Management Fee (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Management Fee ($)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Utilities/HOA	79.75	957	976.14	995.66	1015.58	1035.89	1056.61	1077.74	1099.29	1121.28	1143.70
Advertising	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maintenance and Repairs	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other 1	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other 2	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Expenses	**160.18**	**1922.19**	**1960.63**	**1999.85**	**2039.84**	**2080.64**	**2122.25**	**2164.70**	**2207.99**	**2252.15**	**2297.19**
Expense as % of Gross Income	19.80%	19.80%	18.81%	17.88%	16.99%	16.16%	15.37%	14.63%	13.93%	13.27%	12.64%
Net Operating Income (NOI)	721.82	8661.81	9470.09	10345.33	11292.95	12318.77	13429.12	14630.78	15931.12	17338.09	18860.27
Cash Flow											
Net Operating Income (NOI)	721.82	8661.81	9470.09	10345.33	11292.95	12318.77	13429.12	14630.78	15931.12	17338.09	18860.27
Mortgage Payment	512.88	6154.56	6154.56	6154.56	6154.56	6154.56	6154.56	6154.56	6154.56	6154.56	6154.56
Total Cash Flow	208.94	2507.25	3315.53	4190.77	5138.39	6164.21	7274.56	8476.22	9776.56	11183.53	12705.71
Cash ROI		9.36%	12.37%	15.64%	19.17%	23.00%	27.14%	31.63%	36.48%	41.73%	47.41%
Equity Accrued		1517.11	1590.77	1667.99	1748.96	1833.90	1922.90	2016.24	2114.13	2216.78	2324.40
Total Return		4024.36	4906.30	5858.76	6887.35	7998.11	9197.46	10492.46	11890.69	13400.31	15030.11
Total ROI		**15.02%**	**18.31%**	**21.86%**	**25.70%**	**29.84%**	**34.32%**	**39.15%**	**44.37%**	**50.00%**	**56.08%**
Cash Flow/Mortgage Ratio		140.74%	153.87%	168.09%	183.49%	200.16%	218.20%	237.72%	258.85%	281.71%	306.44%
Total Equity Accrued		1517.11	3107.88	4775.87	6524.83	8358.73	10281.63	12297.87	14412.00	16628.78	18953.18
Loan Payoff Amount		96802.89	95212.12	93544.13	91795.17	89961.27	88038.37	86022.13	83908.00	81691.22	79366.82

Rental Property Analysis | Sensitivity | Purchase | Financing | Income | Expenses | Bankrate

This spreadsheet compiles all of the information from the user to calculate the yearly ROI. It also shows a couple other key statistics for rental properties including the total equity accrued, loan payoff, and the cash flow/mortgage ratio.

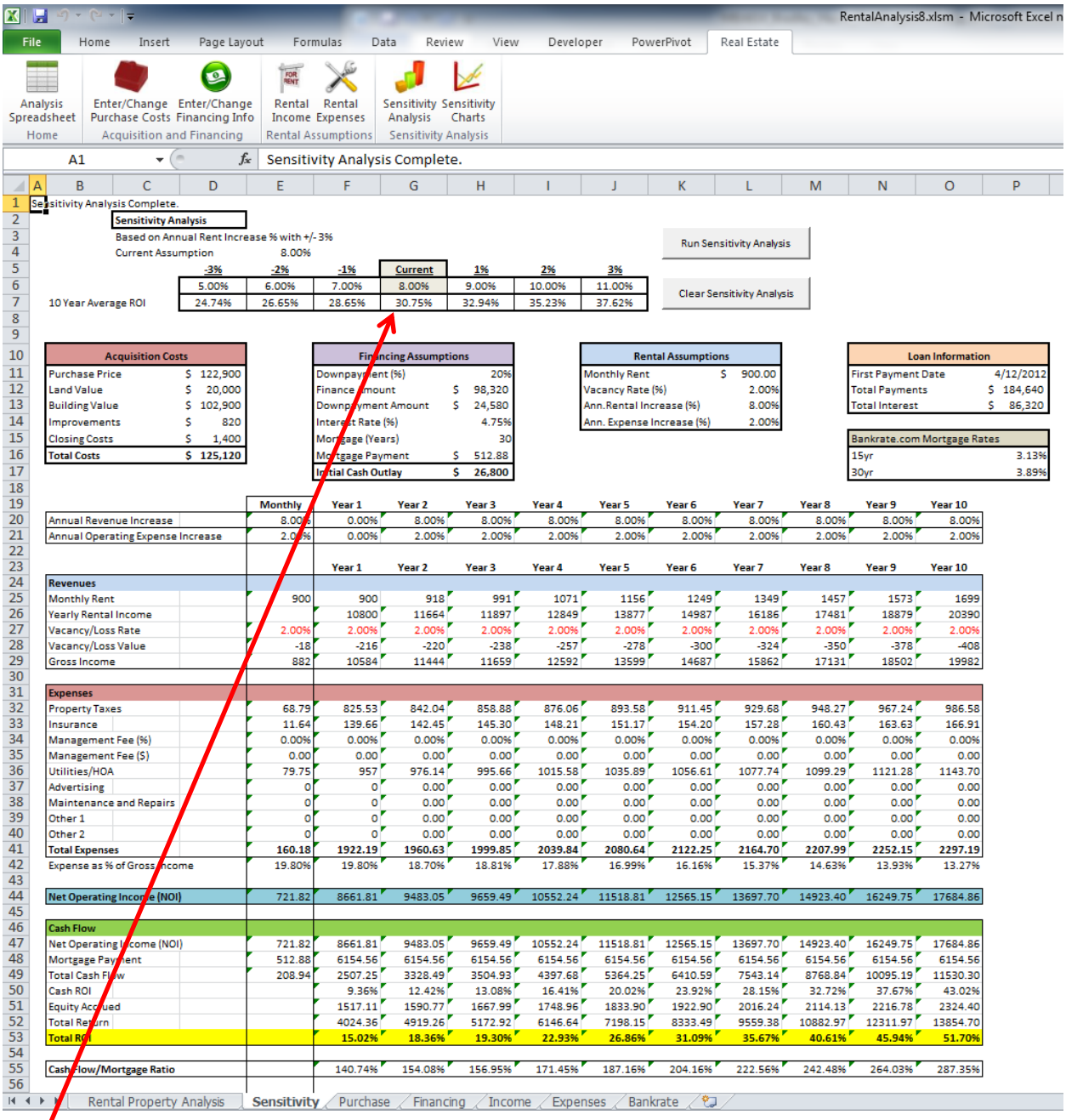
The ROI is the key statistic and is highlighted in yellow.



The spreadsheet also has a feature that allows the user to see current rates from bankrate.com for both a 15yr and 30yr mortgage. This rate shown on the website is the national average. This information could help the user with the financing assumptions.

The last feature of the spreadsheet is a sensitivity analysis. This feature can again be accessed from either the worksheet tabs or the ribbon.

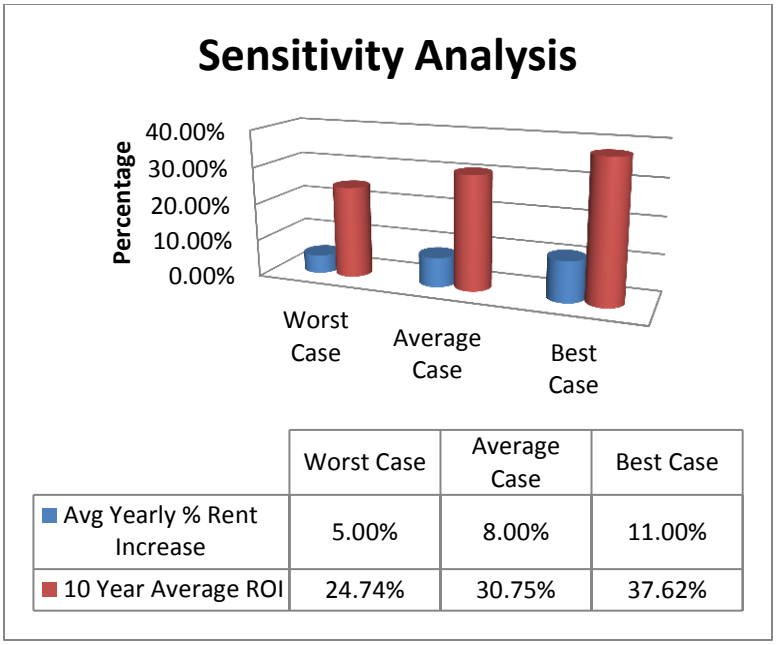
If the user hits the sensitivity analysis button, the user will be taken to the sensitivity page shown below:



As you can see, the sensitivity page is an exact replica of the rental property analysis sheet with an additional 7 lines at the top for a sensitivity analysis. The sensitivity analysis is based on the yearly rent increase expected or inputted from the user. The sensitivity analysis calculates the range of yearly rent increase with a +/- 3%, then returns the 10 year average ROI for each.

For simplicity a clear sensitivity analysis button was included as well.

Finally, the user can also create a chart based on the sensitivity analysis with the ribbon button at the top of the worksheet entitled “Sensitivity Charts”. An example of the chart is shown below, comparing the best, average, and worst case for the sensitivity analysis.



	Worst Case	Average Case	Best Case
Avg Yearly % Rent Increase	5.00%	8.00%	11.00%
10 Year Average ROI	24.74%	30.75%	37.62%

To create the ribbon component of the worksheet, I used the Custom UI Editor that was discussed in class. I also accessed the code from the userforms worksheet to see how the editor was used for each of those buttons.

In conclusion, the spreadsheet is a good starting point for rental analysis. There are many additional features which I plan on adding at a later time, and I think that this provides an excellent base.

2.4 Learning difficulties and conceptual difficulties

One of my biggest obstacles was trying to implement the appropriate chart. I was struggling with the placement, and tried a number of solutions. However, I found that I was best helped by searching some popular vba forums. I also struggled a little with trying to incorporate more vba features into my rental analysis worksheet. At times I feel so comfortable with Excel spreadsheet work, I forget to think about the end-user that may not be as familiar with excel. For this reason, I decided to incorporate a number of userforms. I tested this solution by sending the sheet to my friend to test. He has recently started looking into rental properties to purchase, so I wanted to make sure that he could adequately move through the various inputs.

2.5 Assistance

I did not receive assistance on this project.

2.6

Please see 2.3, this details both the process and explanation for each component.