

RE 618 / Fin 618 – Real Estate Investment Analysis

Homework – Disposition Analysis

Dr. Stanley D. Longhofer

- 1) Five years ago, Bob the Builder developed a 15,000 square foot shopping center for \$1.8 million. This property generated NOI of \$180,000 in the first two years and \$200,000 in the next three years. The annual debt service on his mortgage is \$117,000. His original loan amount was \$1.35 million and his current loan balance is \$1.24 million.

Recently, Bob has received an offer from an investor willing to purchase the building for \$2.15 million. If he sells, Bob expects to incur transaction costs equal to 4 percent of the sale price.

Alternatively, Bob could continue to hold the property for another five years. He believes NOI will be \$225,000 for the foreseeable future. At the end of five more years, Bob believes he can sell the property at a 9.5 percent terminal cap rate. At that time, his mortgage balance will be \$1.07 million.

Bob's required return on this investment is 16 percent.

- a) Conduct an historical (retrospective analysis) of this investment. Over the past 5 years what has been Bob's internal rate of return from this investment? What does this analysis have to say about whether Bob should keep or sell the property today?

Bob's up-front cash investment was the \$1.8 million development cost less the \$1.35 million mortgage for a total investment of \$450,000.

Bob's annual cash flows were NOI – ADS. In years 1 and 2, this totaled 180,000 – 117,000 = 63,000. In years 3 through 5 this totaled 200,000 – 117,000 = 83,000.

If Bob sells the property today, his sale cash flows will be the sale price, less the costs of sale, less the mortgage balance outstanding: \$2,150,000 – 86,000 – 1,240,000 = \$824,000.

<u>Years</u>	<u>Cash Flow</u>	<u>Frequency</u>
0	(450,000)	
1-2	63,000	2
2-4	83,000	2
5	83,000 + 824,000 = 907,000	1

The IRR of this investment has been 26.0 percent. This tells Bob nothing, however, about whether he should continue to hold the property or sell it today.

- b) Do a prospective analysis of the keep vs. sell decision. Should Bob sell the property or keep it?

If Bob sells the property he receives \$824,000 today and nothing in the future.

If Bob keeps the property, his annual cash flow will be \$225,000 – 117,000 = \$108,000. His proceeds from selling the property in five years will be $225,000/0.095 - 94,737 - 1,070,000 = 1,203,684$.

	<u>Keep</u>	<u>Sell</u>	<u>Difference</u>
PV	0	(824,000)	(824,000)
PMT	108,000	0	108,000
FV	1,203,634	0	1,203,634

The differential cash flows “look like” an investment. With $N = 5$, the IRR of this investment is $19.4\% > r = 16\%$, so Bob should keep the property instead of selling it today.

- c) If Bob keeps this property he has the opportunity to improve the property at a cost of \$900,000 (cash). Doing so will raise the expected future NOI to \$300,000 per year. Calculate the differential cash flows from renovating instead of keeping the property as is. Should Bob make this investment?

If Bob improves the property his annual cash flow increases to $300,000 - 117,000 = \$183,000$, while the sale cash flows increase to $300,000/0.095 - 126,316 - 1,070,000 = 1,961,579$.

	<u>Renovate</u>	<u>Keep</u>	<u>Difference</u>
PV	(900,000)	0	(900,000)
PMT	183,000	108,000	75,000
FV	1,961,579	1,203,684	757,985

The differential cash flows “look like” an investment. With $N = 5$, the IRR of this investment is $5.5\% < r = 16\%$, so Bob should reject the option to renovate the property and keep it as it is today. Notice also that the NPV of renovating the property is \$633,129 which is less than the NPV from keeping the property (\$926,713), once again indicating that Bob should keep the property as is rather than renovating it.

- d) The reason Bob has considered selling this property is that he would like to get back some of his equity to purchase another property. Alternatively, Bob could refinance his mortgage, taking out \$700,000 in equity and raising his annual debt service to \$193,000. If he does so, his mortgage balance will be \$1.74 million after five more years. Calculate the differential cash flows from refinancing vs. keeping the property as it is. Should Bob refinance his loan?

The up-front cash flows from refinancing are \$700,000. The annual cash flows will be $225,000 - 193,000 = 32,000$, while the sale cash flows will be $225,000/0.095 - 94,737 - 1,740,000 = \$533,684$.

	<u>Refinance</u>	<u>Keep</u>	<u>Difference</u>
PV	700,000	0	700,000
PMT	32,000	108,000	(76,000)
FV	533,684	1,203,684	(670,000)

The differential cash flows “look like” a loan with an IRR of 10.2%. Because this is less than Bob’s cost of capital, Bob should accept the alternative and refinance the property. Doing so is like getting a loan of \$700,000 at 10.2 percent interest that he can reinvest in his other projects that earn 16 percent.

- e) Which of the four options (selling the property, keeping it as is, renovating it, or refinancing it) should Bob choose?

Refinancing the property is Bob's best alternative.