

How Prods 10

\$702 for 20 more years. If they refinance the \$72,750 balance at the prevailing rate of 7 percent, over the remaining 20-year life of the current mortgage, the monthly payment would drop to \$564. The Philipatoses plan to live in their house for at least 5 more years. They will not have to pay a penalty for prepaying their current mortgage, and closing and other costs associated with the new mortgage are \$2,400 after taxes. Substituting these values into Worksheet 5.4 reveals (in Item 7) that it will take the Philipatoses 23 months to break even with the new mortgage. Because 23 months is considerably less than their anticipated minimum 5 years (60 months) in the home, the economics easily support refinancing their mortgage under the specified terms.

their MTR = 25%

also they are in 25% tax bracket

MTR = 25%

worksheet 5.4

Mortgage Refinancing Analysis for the Philipatos Family



Using the form below, the Philipatoses find that by refinancing the \$72,750 balance on their 10-year-old, \$80,000, 10-percent, 30-year mortgage (which has no prepayment penalty and requires payments of \$702 per month) with a 7-percent, 20-year mortgage requiring \$564 monthly payments and \$2,400 in total after-tax closing costs, it will take 23 months to break even. Because the Philipatoses plan to stay in their home for at least 60 more months, the refinancing is easily justified.

MORTGAGE REFINANCING ANALYSIS			
Name	Demi and Nicholas Philipatos	Date	September 6, 2005
Item	Description	Amount	
1	Current monthly payment (Terms: \$80,000, 10%, 30 years)	\$ 702	
2	New monthly payment (Terms: \$72,750, 7%, 20 years)	564	
3	Monthly savings, pretax (Item 1 - Item 2)	\$ 138	
4	Tax on monthly savings [Item 3 × tax rate (25%)]	35	
5	Monthly savings, after-tax (Item 3 - Item 4)	\$ 103	
6	Costs to refinance:		
a.	Prepayment penalty	\$ 0	
b.	Total closing costs (after-tax)	2,400	
c.	Total refinancing costs (Item 6a + Item 6b)	\$ 2,400	
7	Months to break even (Item 6c ÷ Item 5)	23	

loss of tax deduc, - Δ PMT ≠ After-tax costs

remaining only

80,000 / 10,000

72,750 / 10,000 × 7.52

*excl...
TI...
SO...
look up...
Ex...
5.11*

tax insure

23, how long

plan to remain in home

There are two basic reasons to refinance—to reduce the monthly payment or to reduce the total interest cost over the term of the loan. If a lower monthly payment is the objective, the analysis is relatively simple: Determine how long it will take for the monthly savings to equal your closing costs (see Worksheet 5.4).

If your objective is to reduce the total interest cost over the life of the loan, the analysis is more complex. The term of the new loan versus the existing loan is a critical element. If you refinance a 30-year loan that is already 10 years old, with another 30-year loan, you are extending the total loan maturity to 40 years. Consequently, even with a lower interest rate, you may pay more interest over the life of the newly extended loan. Therefore you should refinance with a shorter-term loan, ideally one that matures no later than the original loan maturity date. (The example in Worksheet 5.4 is prepared on this basis.)