

Session 7 – A Case Study

Adirondack Savings Bank (ASB) has \$1 million in new funds that must be allocated to home loans, personal loans, and automobile loans. The annual rates of return for the three types of loans are 7% for home loans, 12% for personal loans, and 9% for automobile loans. The bank's planning committee decided that at least 40% of the new funds must be allocated to home loans. In addition, the planning committee specified that the amount allocated to personal loans cannot exceed 60% of the amount allocated to automobile loans.

Formulate a LP model that can be used to determine the amount of funds ASB should allocate to each type of loan in order to maximize the total annual return for the new funds.

How much should be allocated to each type of loan? What is the total annual return? What is the associated percent return?

If the interest rate on home loans is increased to 9%, would the amount allocated to each type of loan change?

If the total amount of new funds available was increased by \$10,000. What effect would this change have on the total annual return?

If \$1 million in new funds is available but the planning committee agreed to relax by 1% the requirement that at least 40% of the funds must be allocated to home loans, by how much would the maximum annual return change?