

A Capital Budgeting Problem

Welend Bank is in the process of devising a loan policy that involves a maximum of \$12 million. The following table provides the pertinent data about available types of loans.

Type of loan	Interest rate	Bad debt %
Personal	14%	10%
Car	13%	7%
Home	12%	3%
Farm	12.5%	5%
Commercial	10%	2%

Assume bad debt is unrecoverable (i.e., it's lost and returns no revenue). Competition requires the bank to allocate at least 40% of the funds to farm and commercial loans. To assist the housing industry in the region, home loans must equal at least 50% of the personal, car and home loans. The bank has also a stated policy of not allowing the overall ratio of bad debts on all loans to exceed 4%.

Formulate a mathematical model to assist Welend Bank in devising a loan policy.