EconActivity: Credit-Default Swaps

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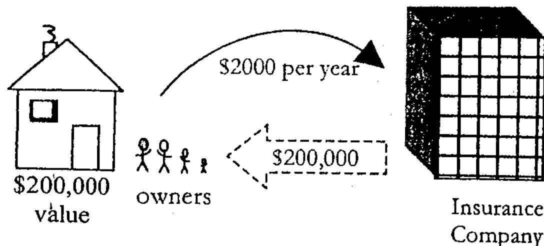
(What are credit default swaps, and how did they contribute to the 2007-2008 Banking Crisis?)

Model 1: Home Owner's Insurance



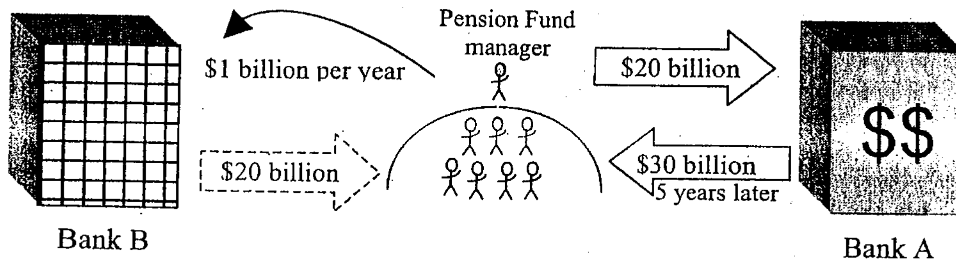
If the house is destroyed the insurance company will pay the owners $200,000.

Critical Thinking Questions

1. How much does the family in Model 1 pay the insurance company each year? (This payment is called the **insurance premium.**)

2. The insurance company holds policies for one thousand families identical to that in Model 1 (a $200,000 house and a $2000 premium). In a given year, five of these houses are destroyed. How much money does the insurance company net [net = $\$\$_{in} - \$\$_{out}$] that year from these policies?

Model 2: Bond Insurance



A pension fund gives Bank A $20 billion for a bond that will be worth $30 billion after five years. Bank A invests this $20 billion and plans to make enough in five years to give Pension Fund back its $20 billion plus the promised $10 billion in interest, *and* make some profit.

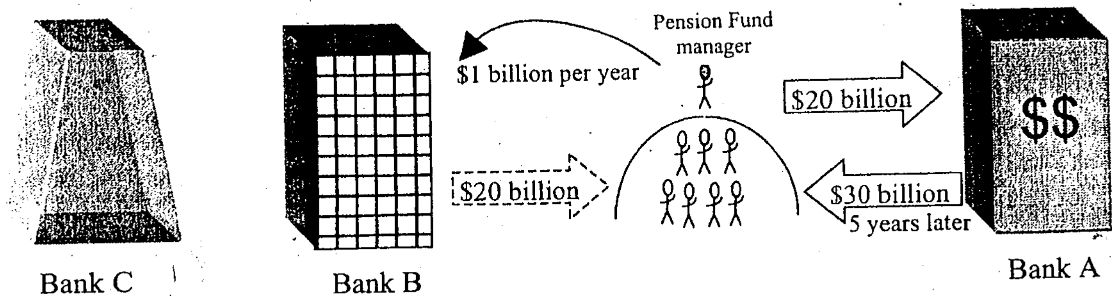
To cover possible failure of Bank A, Pension Fund also purchases insurance for $1 billion/year from Bank B. The terms of this insurance policy state that if Bank A defaults on the bond, Bank B will pay the fund $20 billion.

Critical Thinking Questions

3. Considering all the transactions in Model 2, how much profit will Pension Fund have made at the end of five years assuming Bank A <u>fulfills</u> its obligation? Show your work.

4. How much does Pension Fund lose if Bank A defaults in the first year, but Bank B fulfills it obligation? Show your work.

Model 3: Propagation of Risk



To take on this insurance policy, Bank B must either have money on hand to cover a large portion of a possible payout to Pension Fund, *or* purchased insurance to cover such a payout.

Bank B does not have enough money so it purchases the following insurance policy from Bank C:

"In the event Bank B must pay Pension Fund $20 billion, Bank C agrees to pay Bank B $20 billion. In exchange for this coverage, Bank B agrees to pay Bank C $800 million/year."

Critical Thinking Questions

5. In Models 1-3, what meaning is associated with the use of a solid versus dotted arrow?

6. Use solid and dotted arrows to diagram the various parts of such the arrangement between Banks B and C described in Model 3.

7. Bank C does not have enough capital on hand to cover a $20 billion payout either. Describe how Bank C might cover its risk with respect to Bank B?

8. (E) Is Bank A mentioned in the agreement between Banks B and C?

9. Bank C is blind to Bank A's involvement in this network of risk, and by coincidence chooses to use Bank A to insure its possible obligation to Bank B. Add arrows to Model 3 to represent this network of risk.

10. Describe the consequences of Bank A going bankrupt on each of the following:

Pension Fund:

Bank A:

Bank B:

Bank C: