

The Credit Crisis: Actions Taken and Lessons Learned

An Overview of the Current Financial Crisis
and Some Ideas for Resolving It

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Overview of the Overview

We take a bird's eye view of the financial system to gain intuitive understanding of the current financial crisis.

Here are the elements of the argument:

Financial derivatives are zero-sum contracts. Insurance and mortgages are examples, but other financial contracts are zero-sum, too.

The whole financial system is made up of such contracts, so it is itself zero-sum in aggregate. This lets us think about it as a single entity, as if we were viewing it from a great height.

Economic losses arise in the real economy. The financial system does not increase or decrease these losses; it just distributes them to the ultimate investors who will have to bear them.

Today there are trillions of dollars of losses in real estate values trying to pass through the system, but they are too big and the system is breaking down.

Overview of the Overview

Banks and financial institutions use their capital both to support lending and marketmaking and also for proprietary investments. Losses on their investments force them to cut back on providing financial services.

Uncertainty about how big the mortgage-related losses will be and who will end up bearing them destroys confidence. Banks and other institutions cut back lending much more than their reduced capital would require.

The breakdown of the financial system is producing additional real losses.

- some firms are failing,
- others firms can't get credit they need and are laying off workers and cutting back operations,
- financial markets are disrupted; for example, people may sell stock at very low prices when it is the only liquid market where they can raise cash

The cycle of mortgage delinquency, foreclosure and eviction, and fire sales of houses is creating further damage in the real economy.

Overview of the Overview

What to do to fix the problems?

The financial system needs more capital immediately. Current bailout plans are focusing on doing that. But...

... it will be very hard to stabilize the system as long as it is connected to the huge losses that continue to be generated in the real economy.

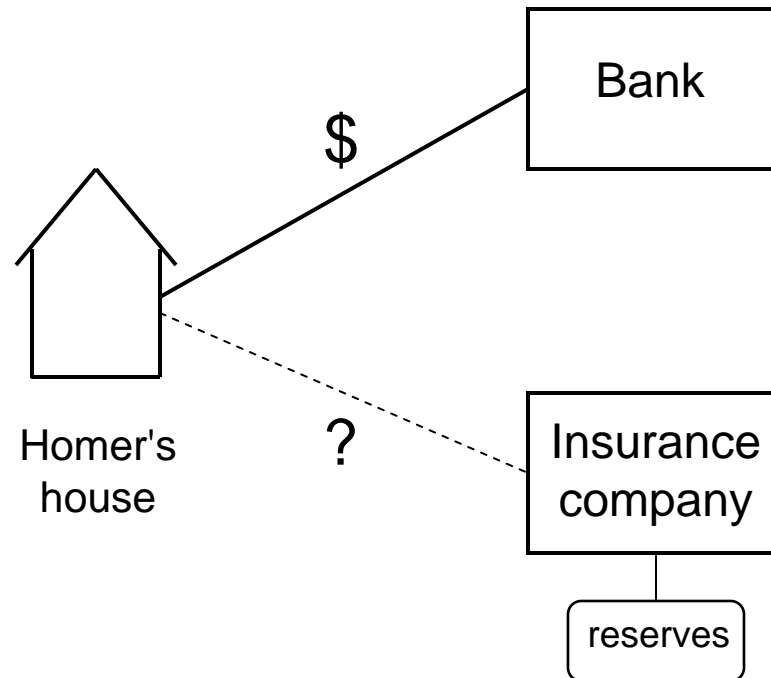
An approach that would stabilize the financial markets quickly and also give the government the chance to restructure mortgage loans to break the cycle of defaults and further losses would be to disconnect the financial system from the source of risk. I describe an approach that would do that.

Turning the "approach" into a "plan" will require careful thought. I offer some principles to follow in design a plan.

Galveston, 1900

Consider a homeowner in Galveston in the year 1900.

We'll call him Homer.

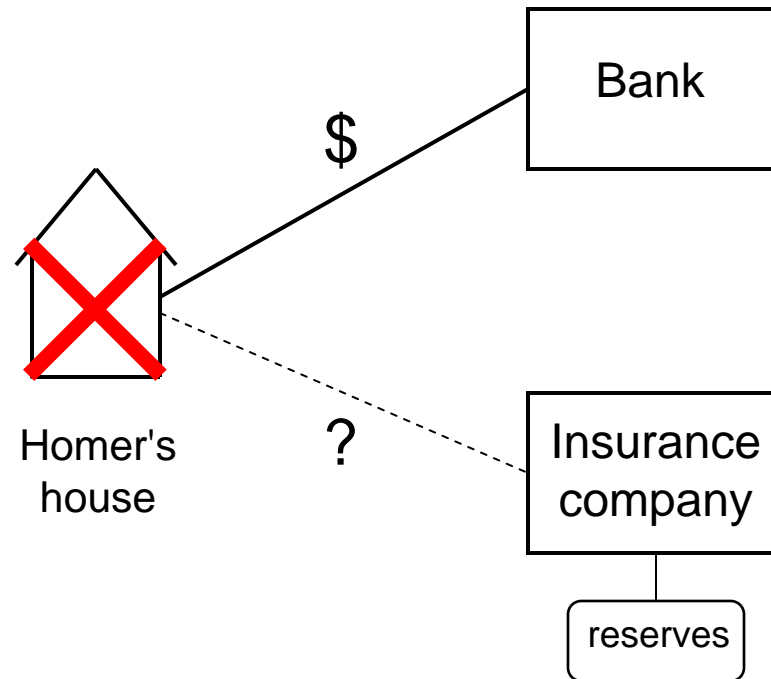


Homer has a mortgage from the local bank, and he also keeps his savings there.

He may or may not have insurance on the house.

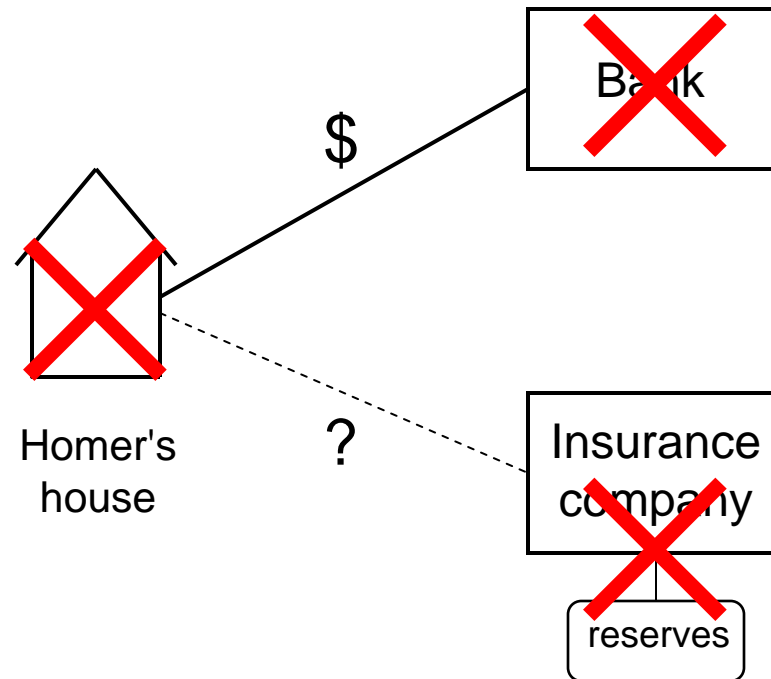
Galveston, 1900

Homer's House was Washed Away in the Galveston Flood of 1900



Galveston, 1900

The Galveston Flood of 1900 Destroyed the Whole Town



Homer's house was gone. So was his savings in the bank, and so was the insurance company. If he had insurance, it was worthless.

Galveston, 2008

Things are Different in 2008

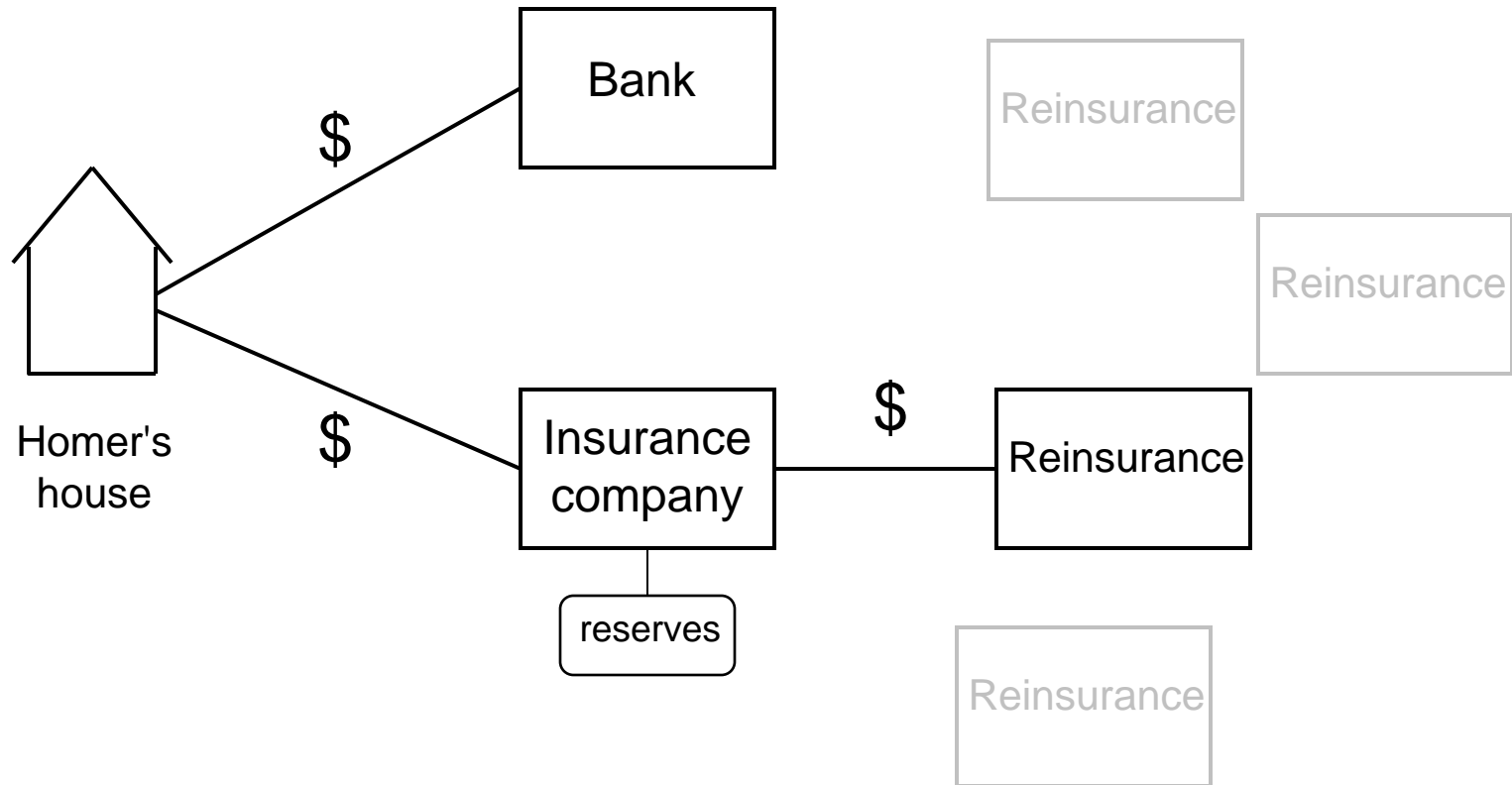
The financial system distributes risk much differently today. Here's a modern day example.

- Homer's house is worth \$300,000
- He has a mortgage loan from the bank for \$250,000
- He also has insurance fire and flood coverage for \$225,000

An insurance contract is a familiar kind of "derivative" instrument. Its payoff depends on (is "derived from") the value of an underlying asset (the house).

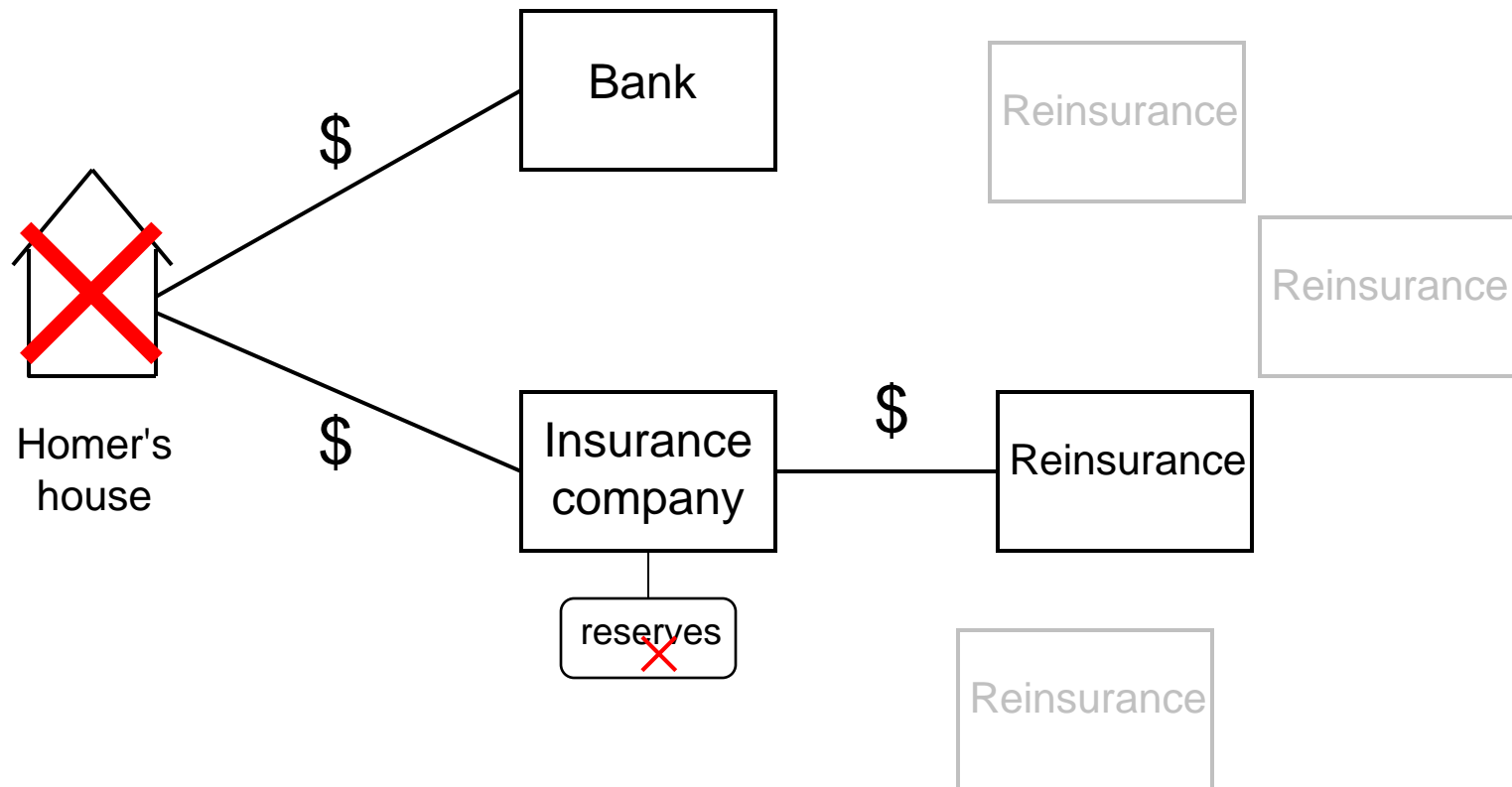
Galveston, 2008

Today, insurance companies protect themselves against very large claims by buying reinsurance.



Homeowners Insurance as a Zero Sum Contract

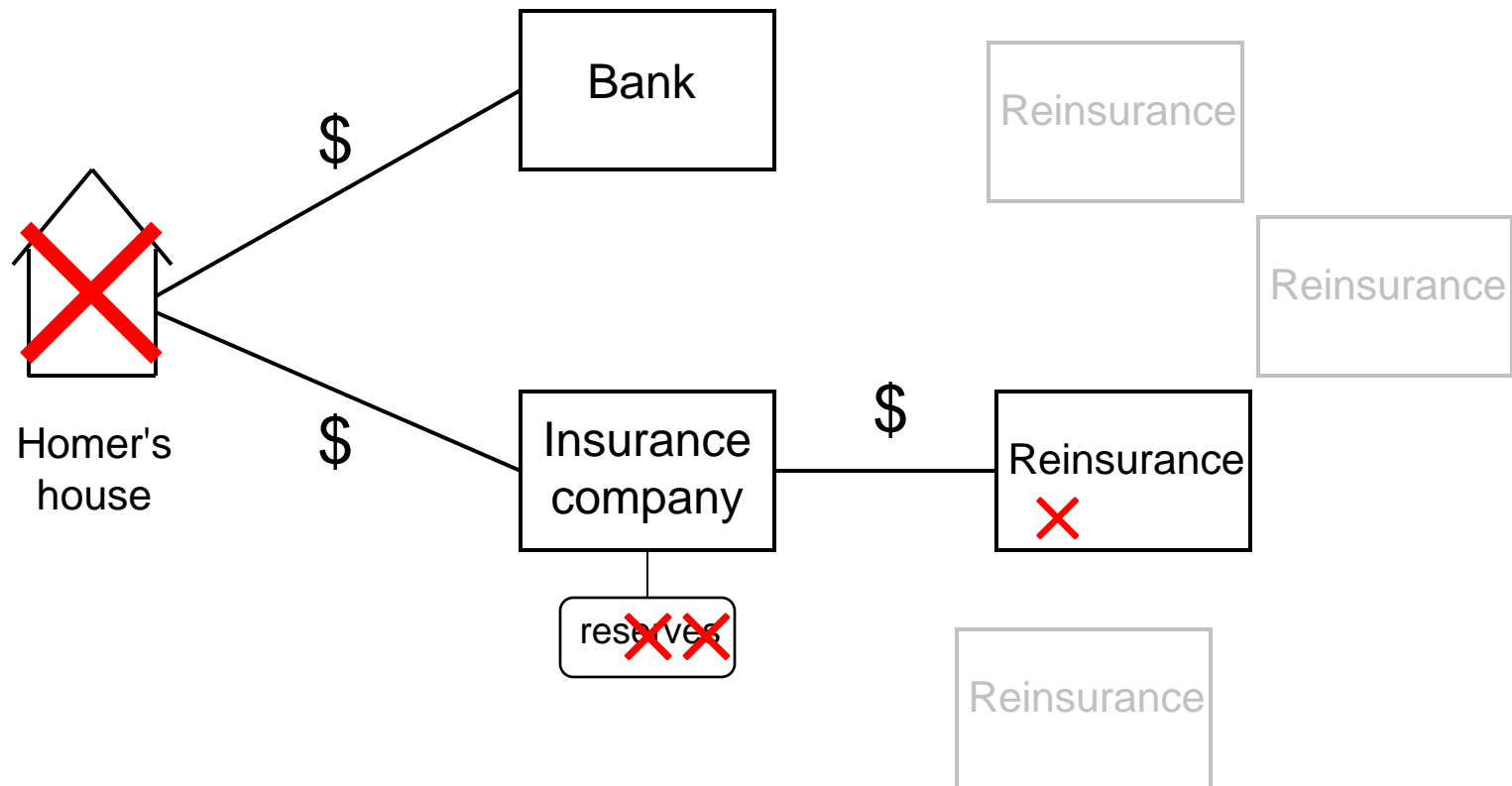
Homer has Insurance Against Damage from Fire and Flood



If his house burns down, insurance will cover the loss out of its reserves.

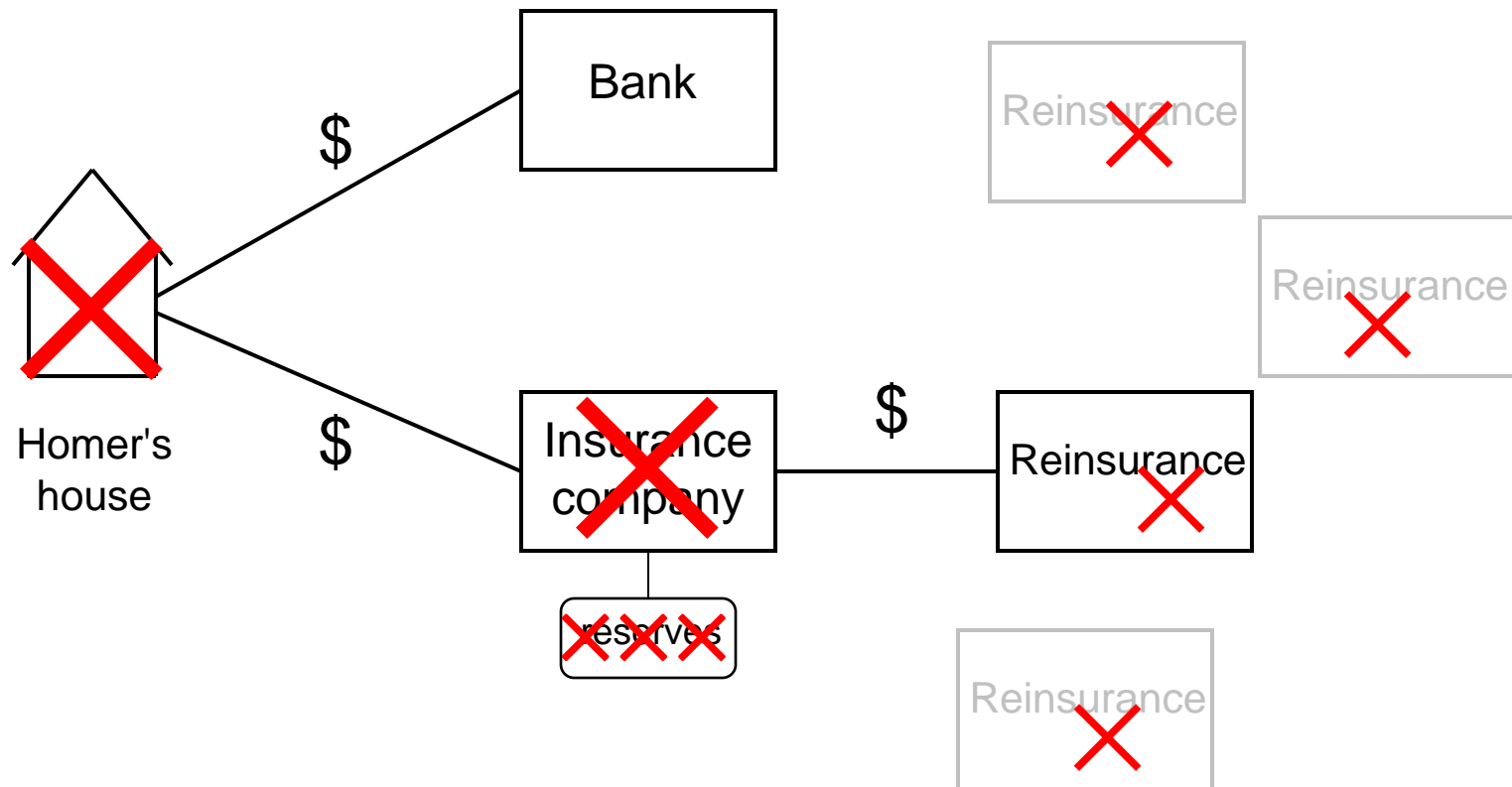
Homeowners Insurance as a Zero Sum Contract

Major Losses in a Large Hurricane will be Partly Covered by Reinsurance



Homeowners Insurance as a Zero Sum Contract

But a Giant Hurricane can Still Overwhelm the Insurance Coverage



When the insurance company's reserves and reinsurance are exhausted, losses must be covered out of firm capital. The stockholders lose some or all of their investment, and the company may be bankrupted.

Homeowners Insurance as a Zero Sum Contract

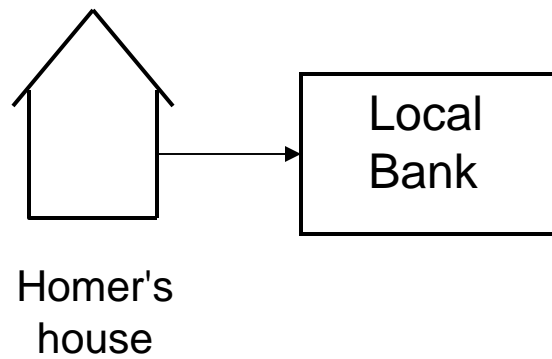
Key things to see in this example so far

- Homer's \$300,000 house is totally destroyed. That loss has to be borne by someone. When the insurance company pays, Homer saves \$225,000 and the company loses \$225,000.
- There are two parties to each insurance contract. If the homeowner is paid a dollar, that dollar has to come from the insurance company. The contracts are "zero-sum." The gain plus the loss must always sum to zero.
- The insurance company passes a portion of the loss to the reinsurer. What the reinsurance pays, Homer's insurance company receives and again the amounts offset. All derivatives are zero-sum contracts.
- Losses are generated by events in the real economy, not the financial sector.
- But a loss that is too big for the system to handle can cause business failures in the financial sector. Employees are fired, and it may no longer be possible to buy insurance or other financial services. This increases (real sector) losses.
- The insurance industry will have to get new capital to continue writing insurance.

Mortgage Finance in 1900

Now let's look at Homer's mortgage.

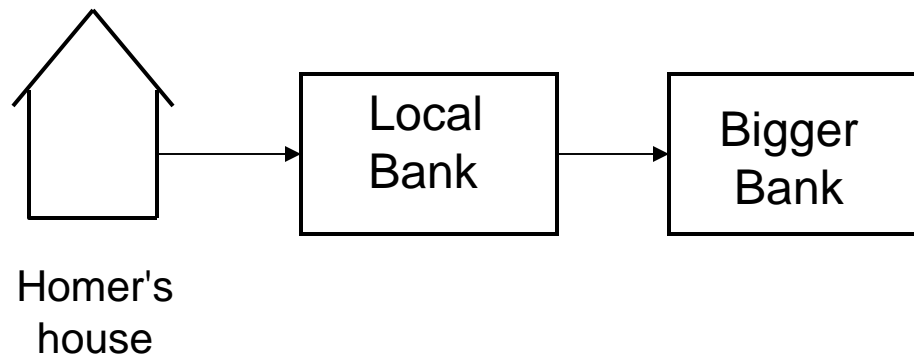
In 1900, mortgage loans were made by the local bank



Mortgage Finance in 2008

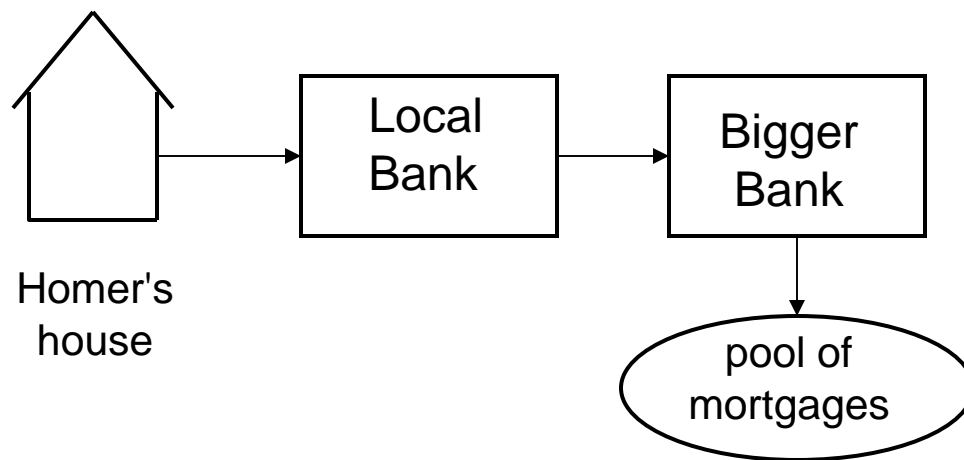
In 2008, the local bank still arranges the loan, and services it over time.

But the loan itself is probably sold to a larger bank.



Mortgage Finance in 2008

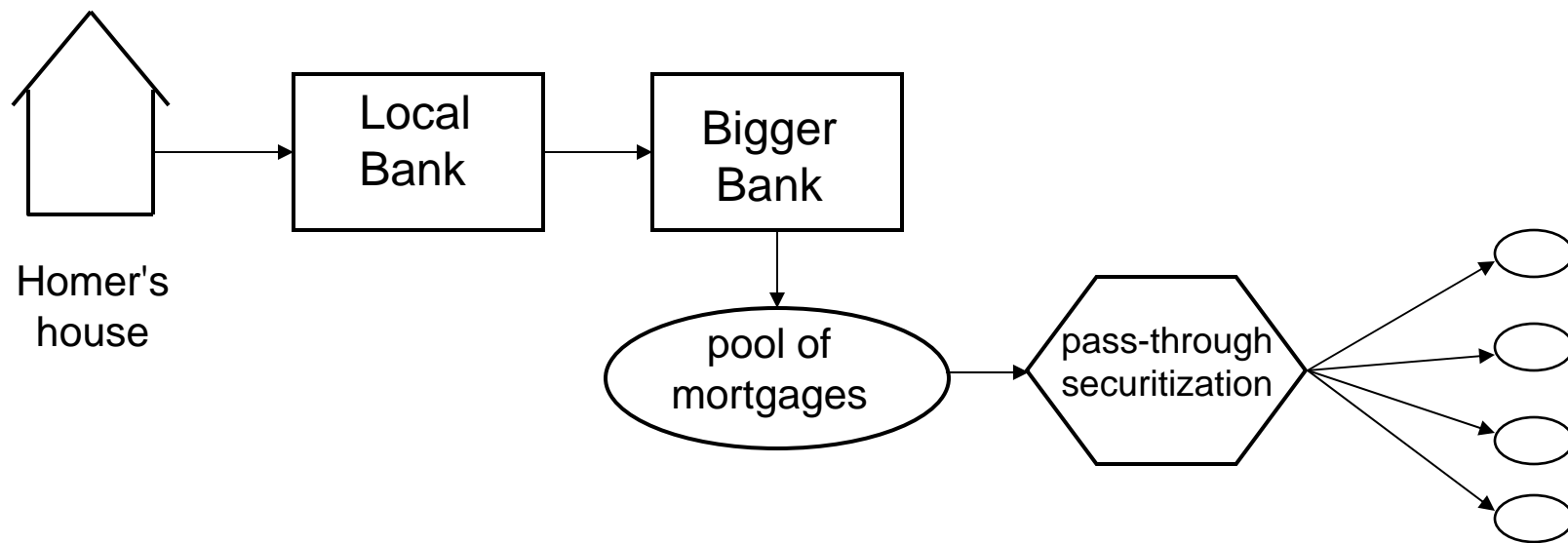
The bigger bank will put Homer's loan into a pool of similar mortgages, which will then be securitized.



Mortgage Finance in 2008

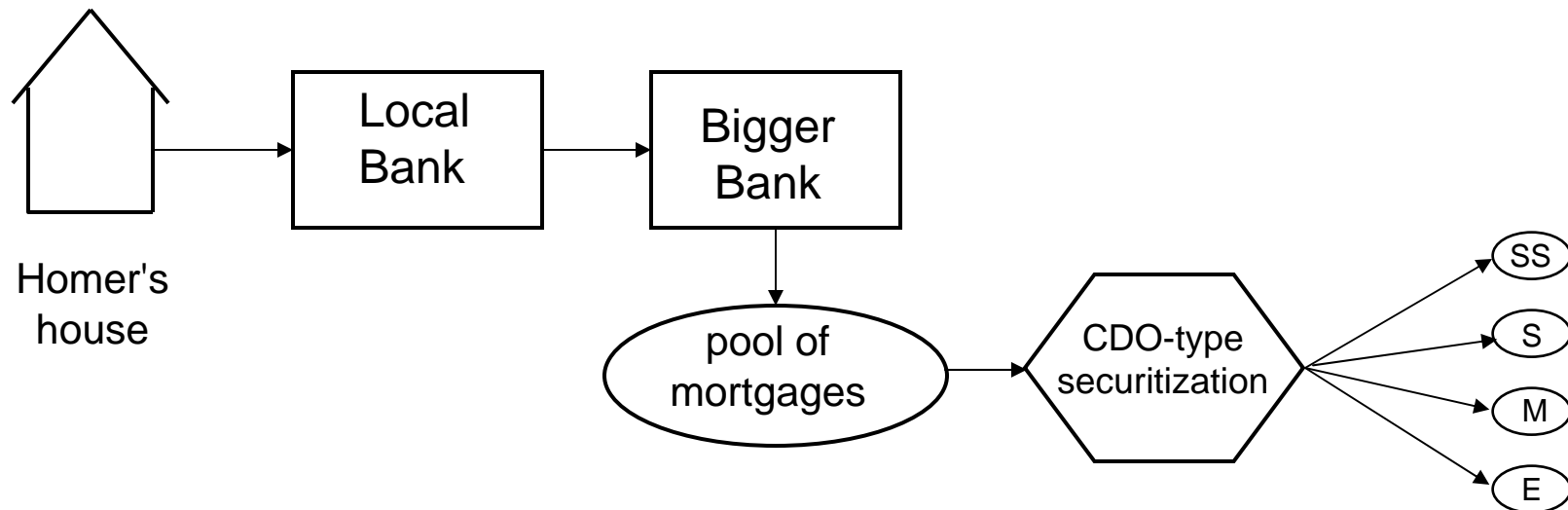
The most basic securitization is a mortgage pass-through.

Only a single class of mortgage-backed derivatives is created from the pool.



Mortgage Finance in 2008

A CDO-type securitization creates "tranches" with different risk exposures.

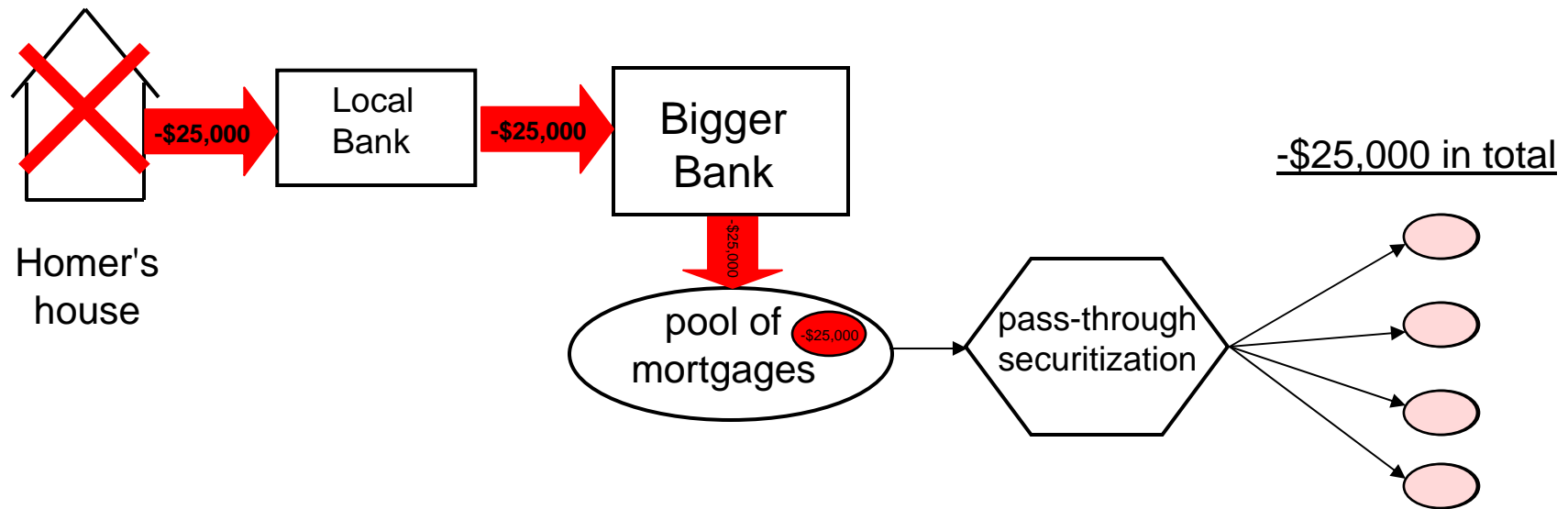


Mortgage Finance in 2008

Homer owes \$250,000 on his mortgage loan when the hurricane hits.

Insurance covers \$225,000 of the loss but he is still \$25,000 short. Unfortunately, Homer is wiped out financially so he can't pay.

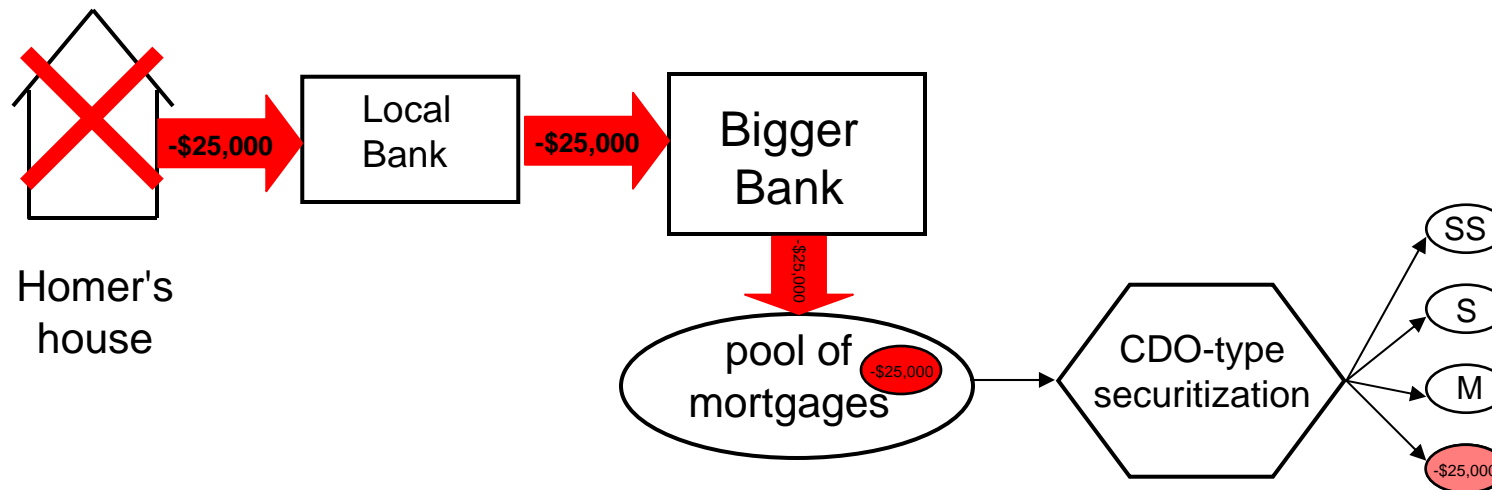
Homer defaults. Let's follow that \$25,000 loss through the system.



Mortgage Finance in 2008

In a CDO-type securitization, default losses are allocated to the tranche securities in sequence.

All losses fall on the "first-loss" tranche until it is wiped out. These "toxic" mortgage-backed securities have become very dangerous to own but very hard to sell. The original \$700 billion Treasury bailout plan was to buy them up.



Senior and "super senior" tranches have a lot of protection.

The Financial System as a Single Zero-Sum Entity

The financial system passes through cash flows from investors to borrowers and from borrowers to investors dollar for dollar.

It also passes through losses from defaults dollar for dollar.

Since the entire financial system is made up of zero-sum contracts like insurance and mortgage loans, we can aggregate it and think about it as a single zero-sum entity, without having to focus on all of the complexity.

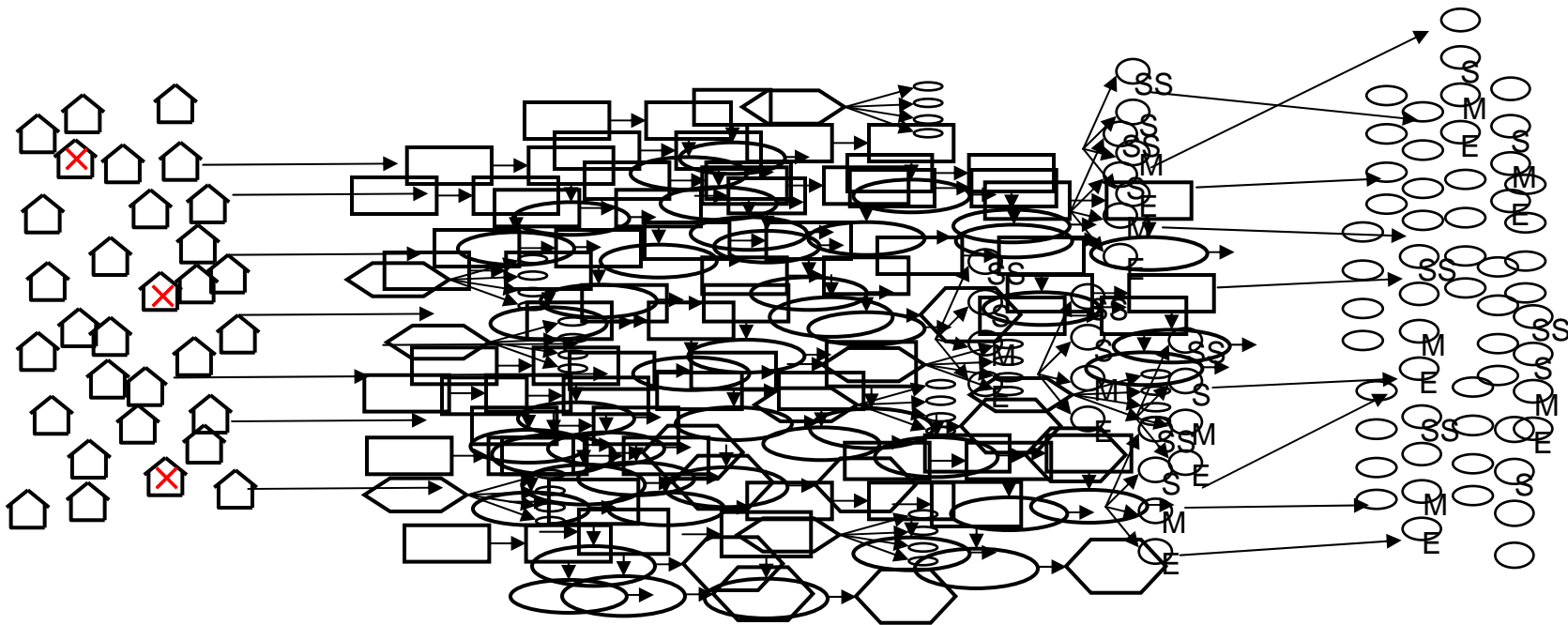
The Financial System as a Single Zero-Sum Entity

The Financial System Allocates the Losses among the Ultimate Investors

Real Sector

Financial System

Ultimate Investors



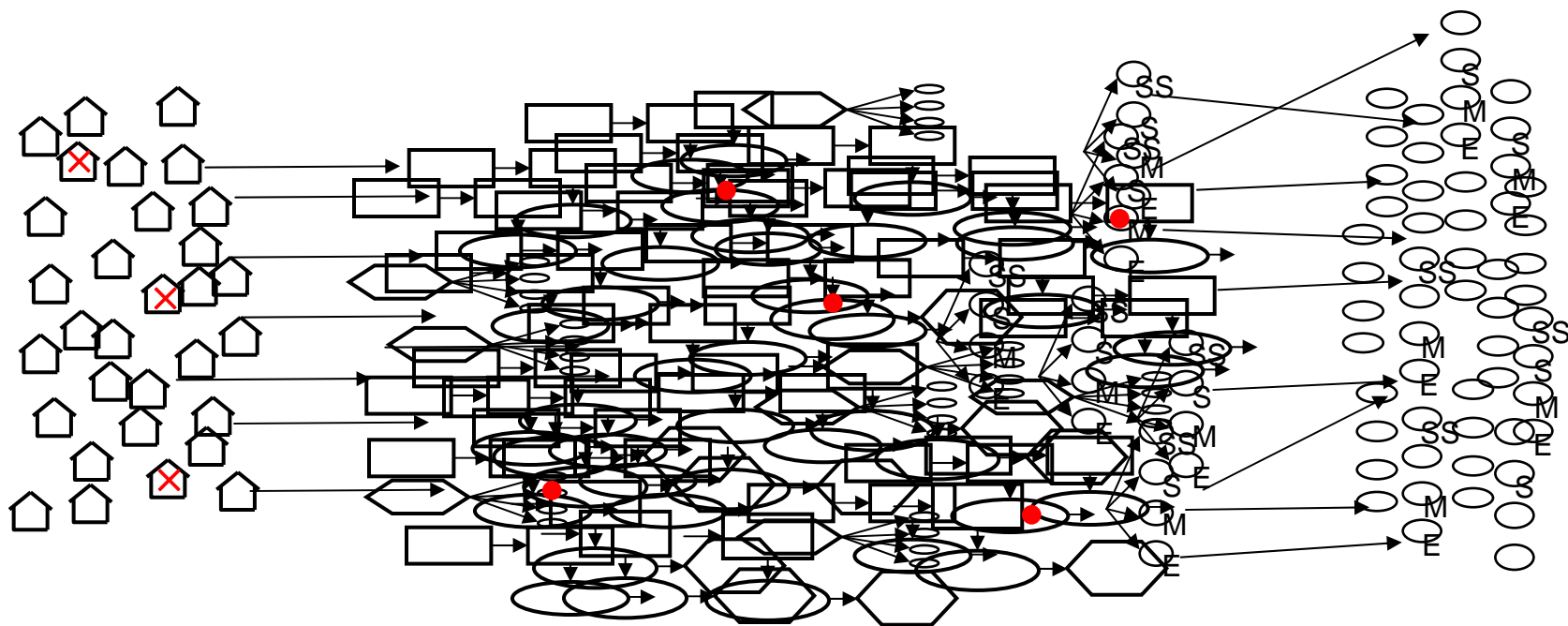
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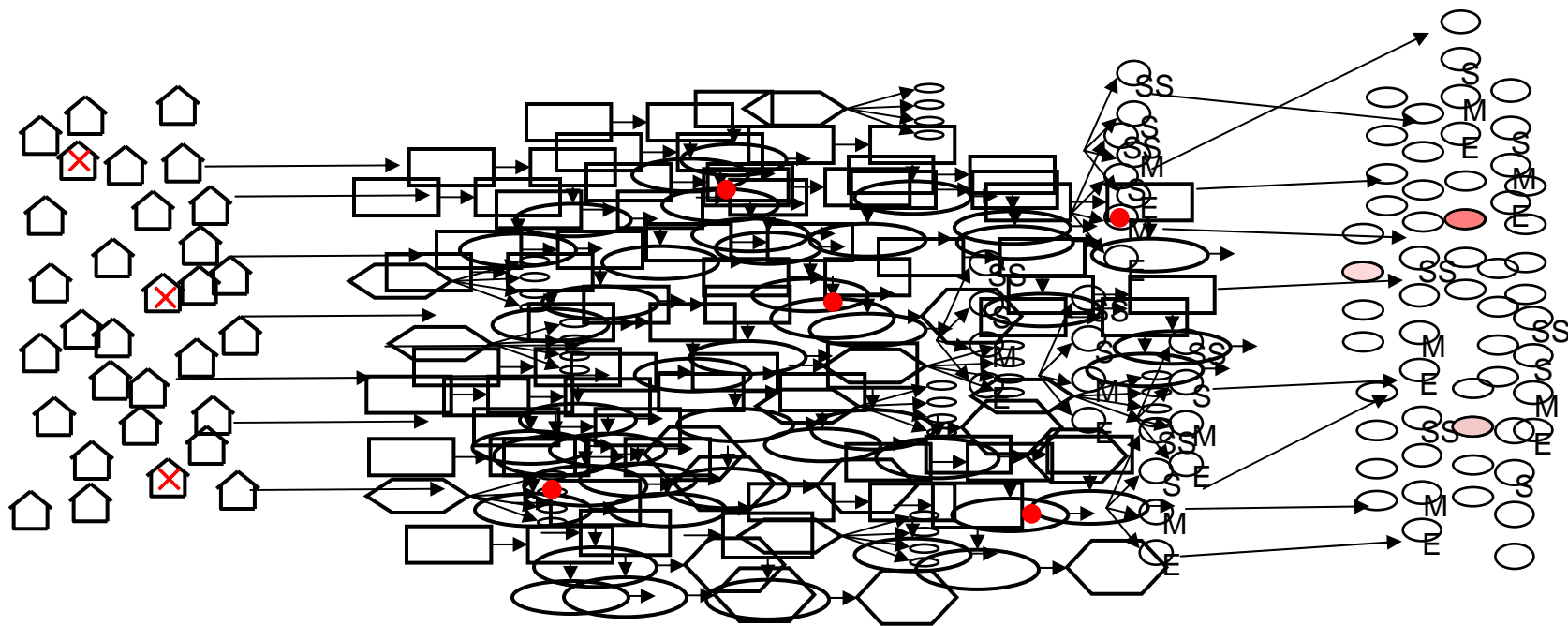
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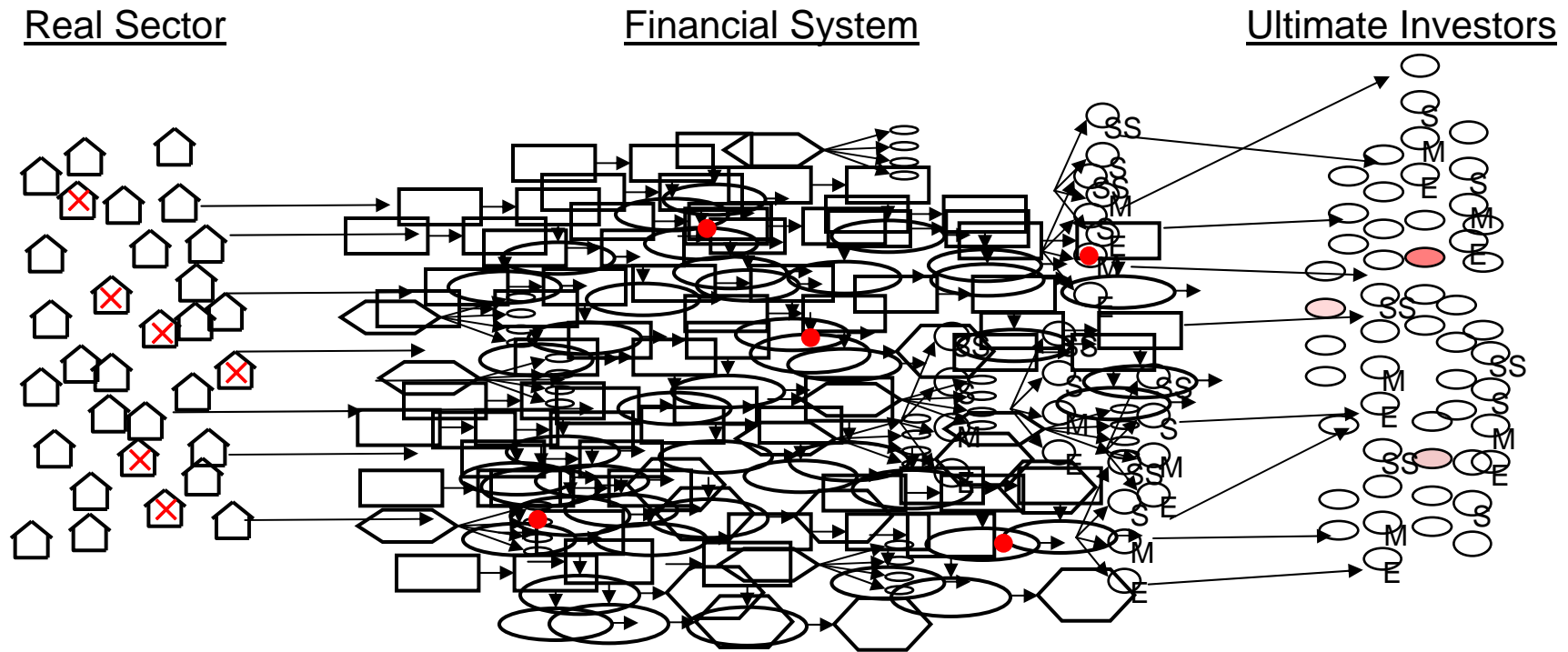
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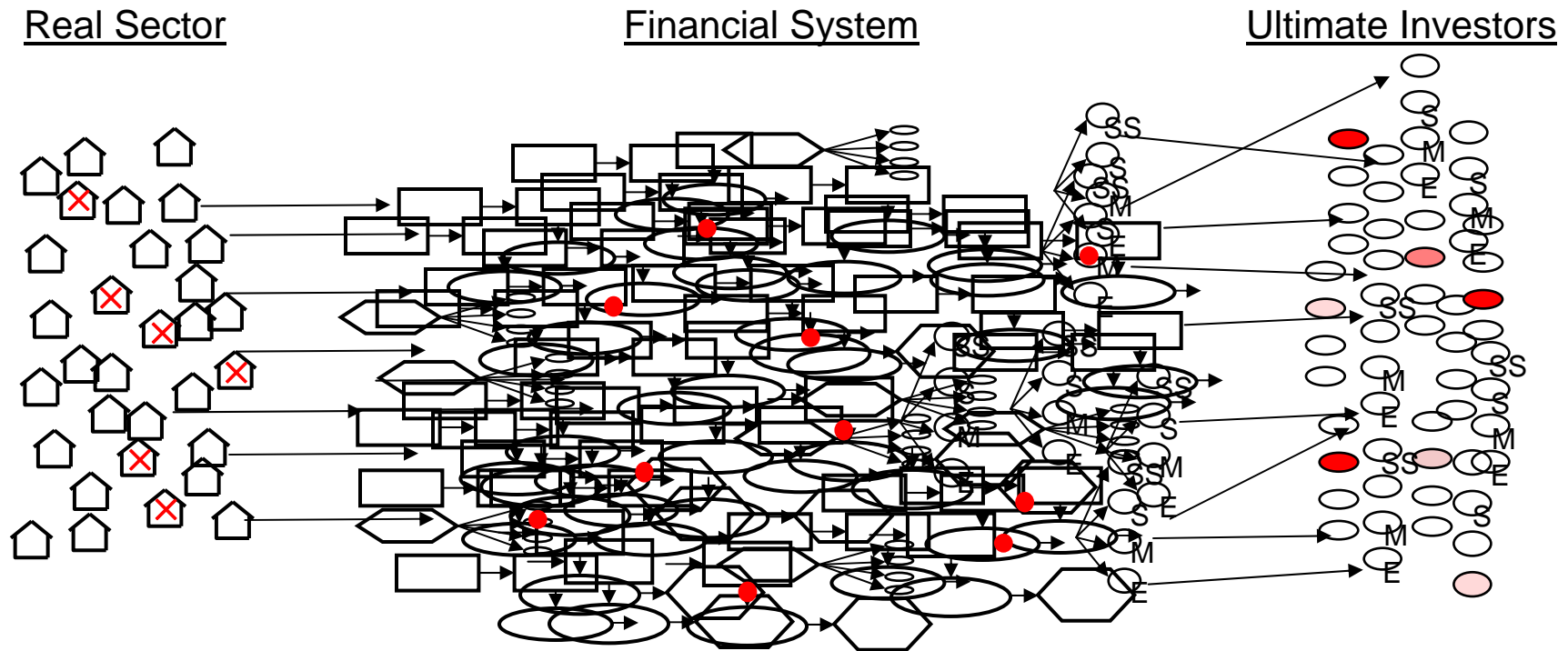
The Financial System in the Current Crisis

The Losses from the Housing Market Today are Too Large.
The Financial System is Breaking Down.



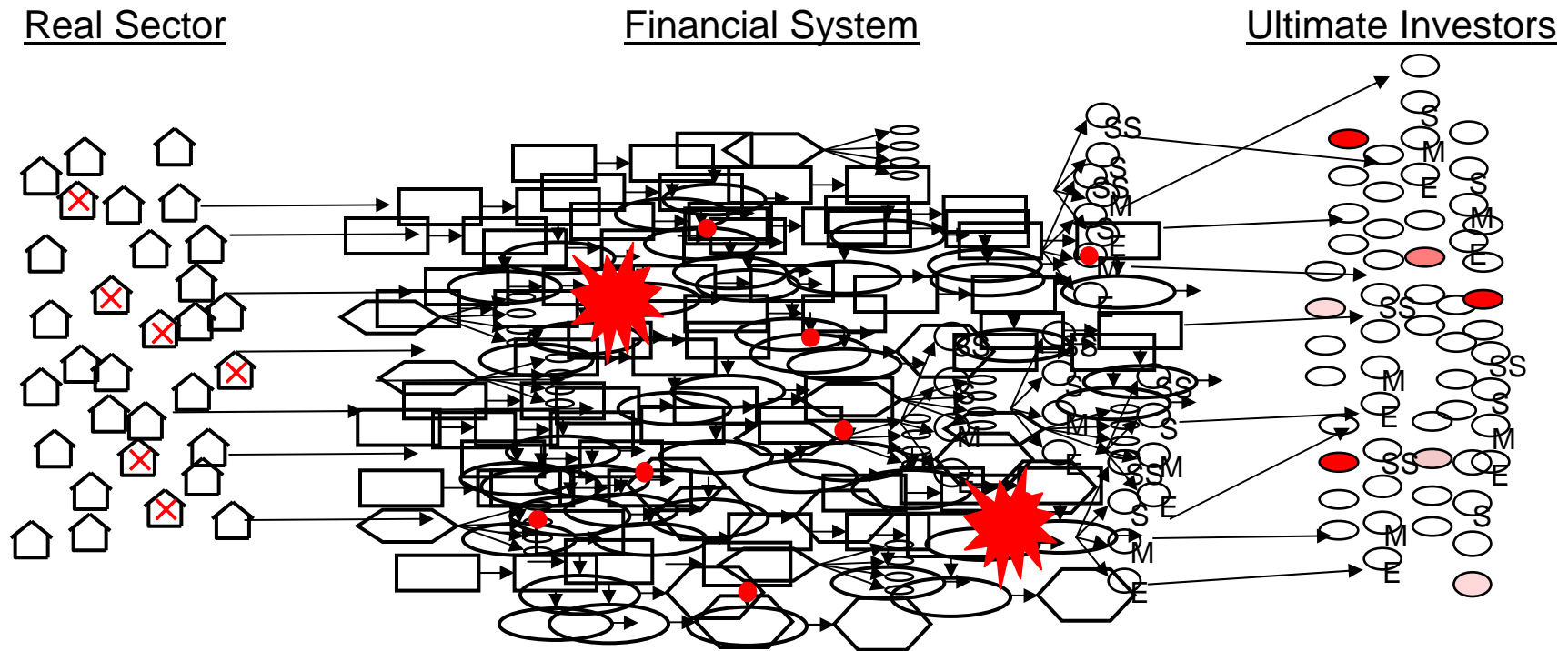
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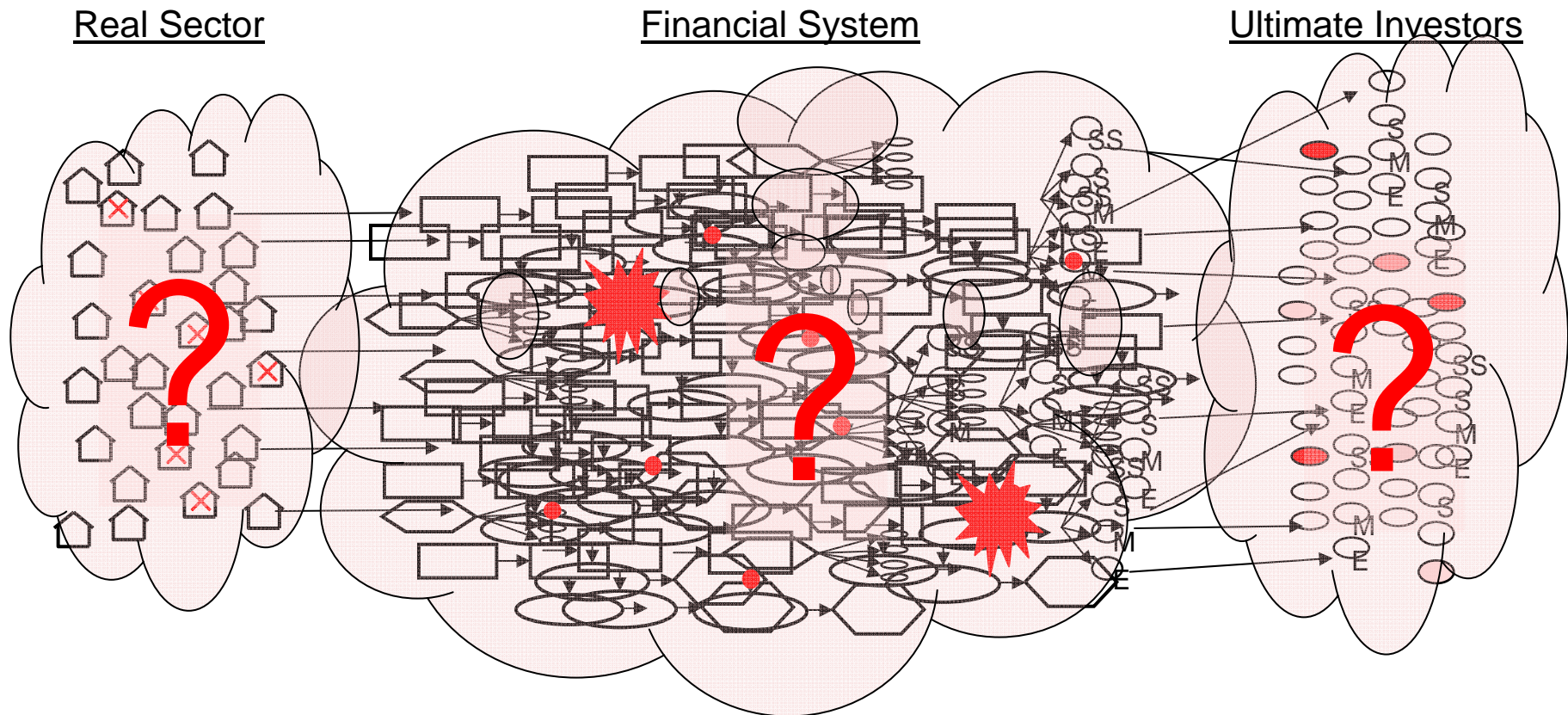
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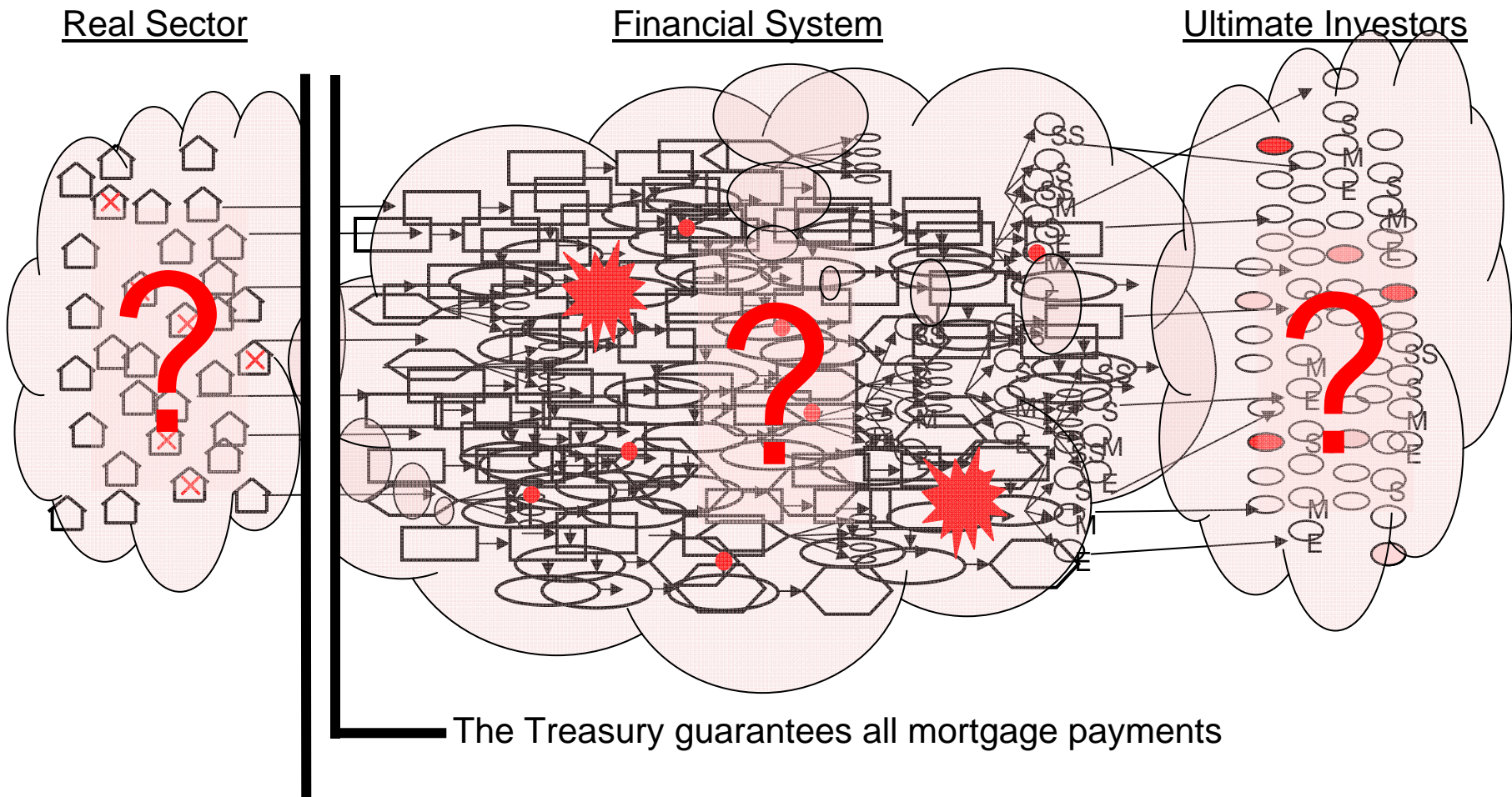
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Uncertainty over Which Firms will be Bankrupted Makes the Situation Much Worse and is Paralyzing the System



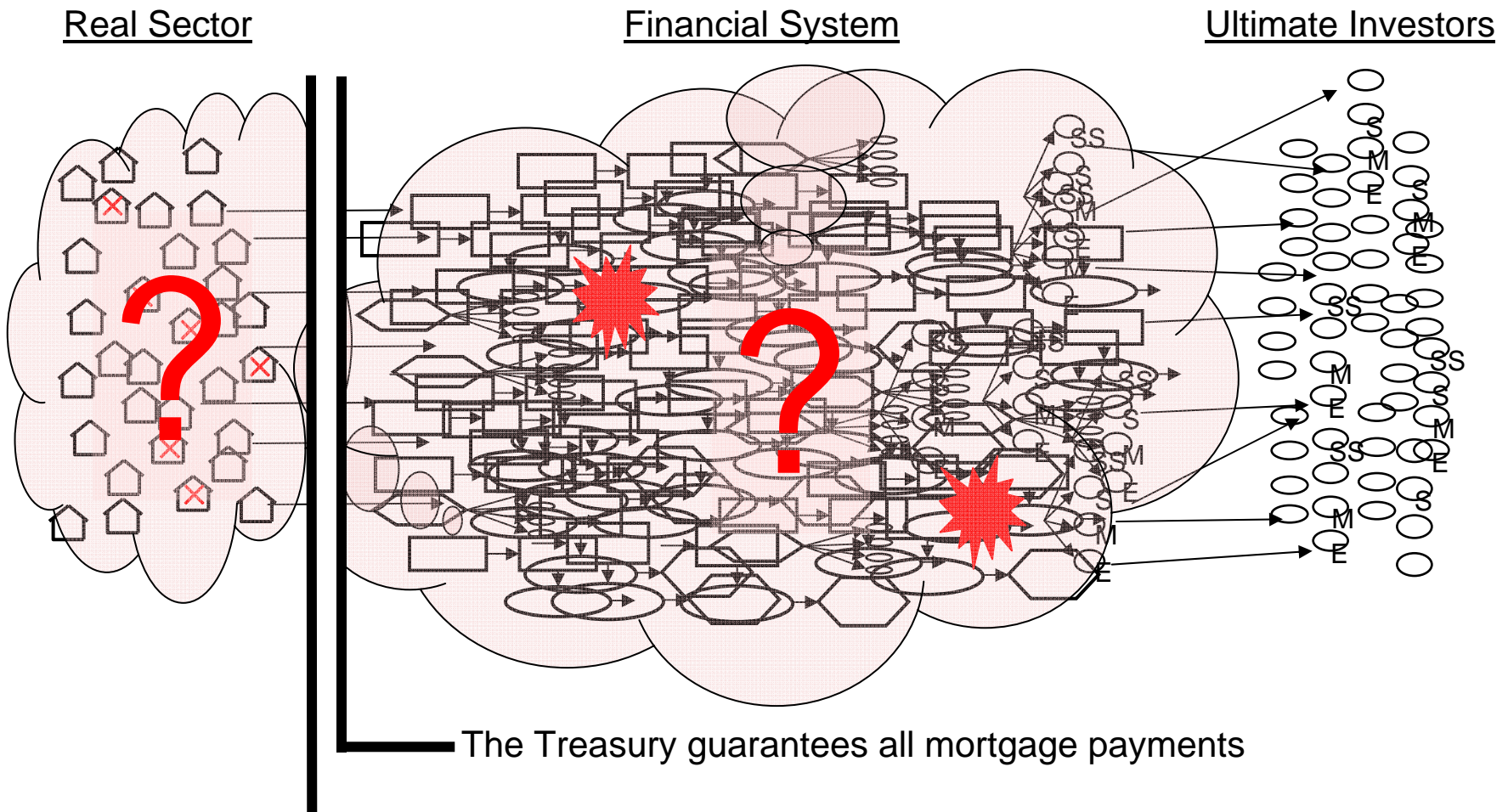
The Financial System in the Current Crisis

The Federal Government can Stabilize the Financial System
by Disconnecting it from the Real Sector Risk



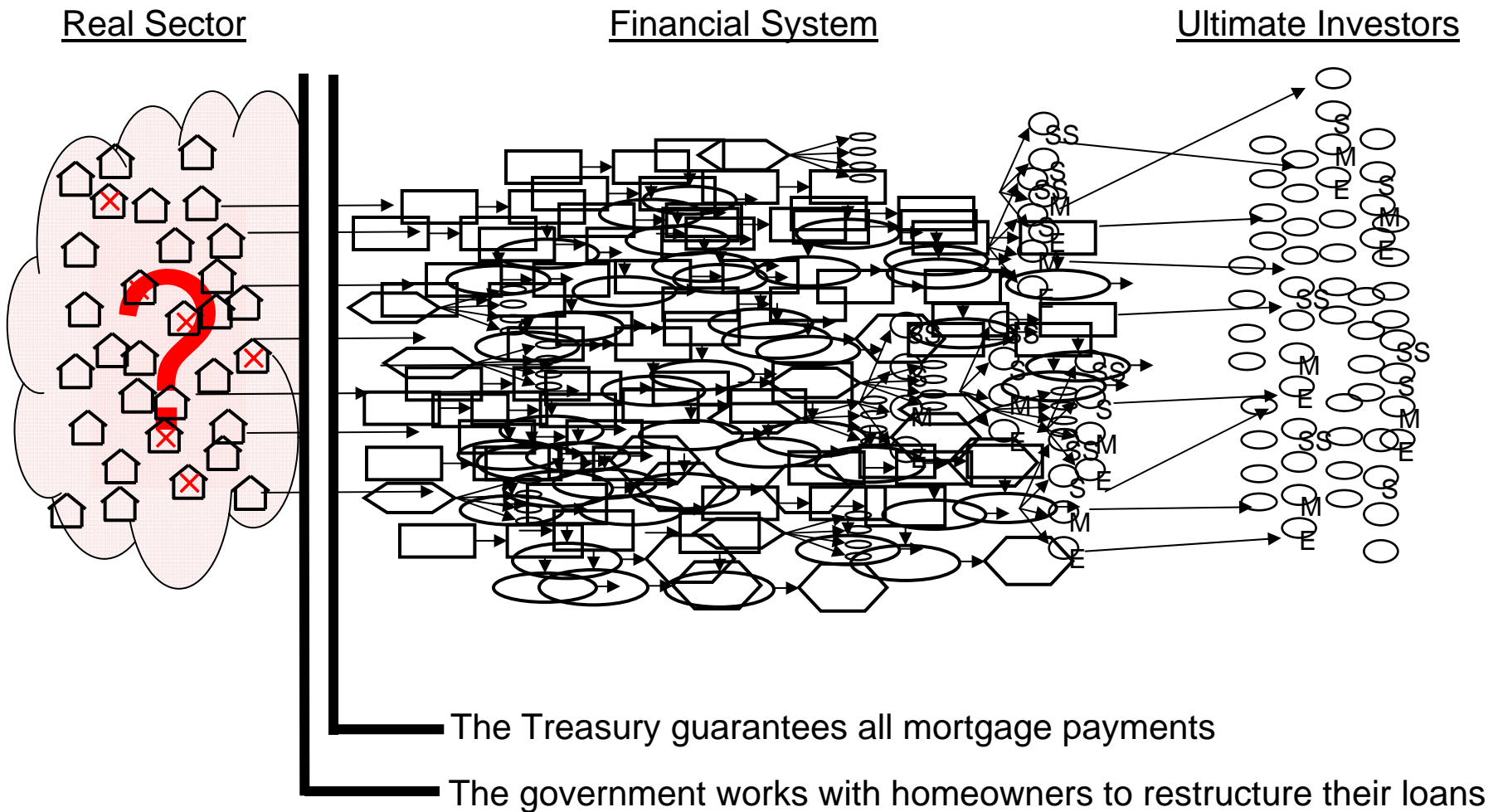
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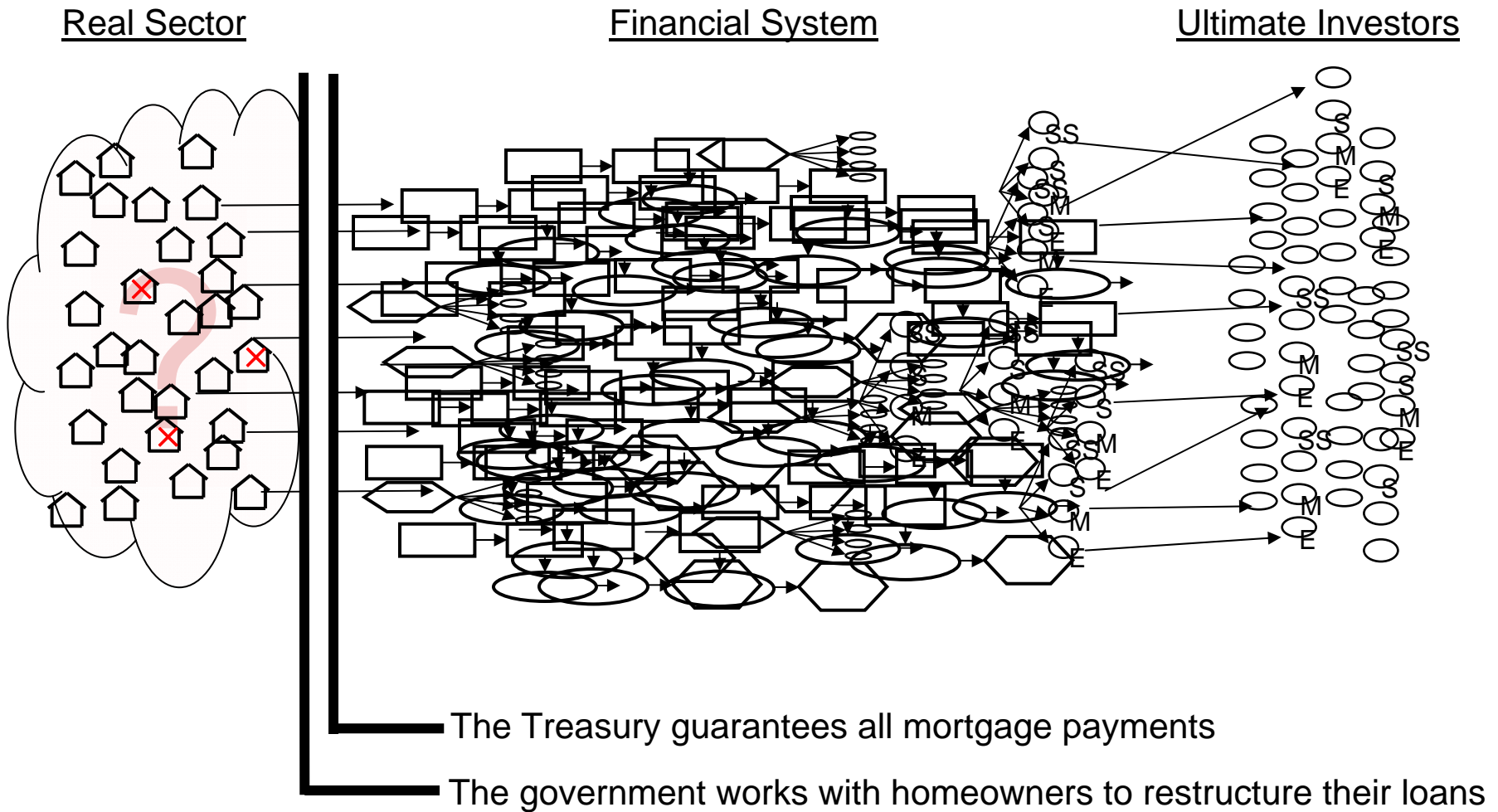
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Important principles in turning the "approach" into a "plan"

A Viable Plan Should...

- make cash flows from all mortgages highly predictable
- minimize foreclosures and forced sales of houses
- be widely viewed as "fair" to all (no windfall profits, losses shared)
- hold down the cost to the taxpayers
- minimize breaking of legal financial contracts
- minimize "moral hazard" in future risk-taking decisions

Important principles in turning the "approach" into a "plan"

A Viable Plan Could...

- provide lower interest rates for borrowers
- reduce payments to lenders (because they would no longer be bearing default risk)
 - ideally without abrogating legal contracts
 - in such a way that different types of mortgage-backed securities were impacted equally
- be optional for homeowners who are not delinquent
- provide incentives for homeowners not to walk away from underwater mortgages

Important principles in turning the "approach" into a "plan"

Current Proposals

Beginning to focus seriously on the mortgage market.

Problems if the plan

- is too narrowly targeted (all mortgage cash flows need to be stabilized)
- buys up mortgage loans (too expensive)
- requires voluntary write-offs of principal (not feasible for securitized mortgages)
- is not widely perceived to be fair to all parties (politics will delay implementation)
- forces breaking of legal contracts (court challenges will delay implementation)