Week of May 25th

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Risk v Uncertainty

- Classical uncertainty = Risk
  - A given investment has a distribution of possible returns with known (or assumed to be known) probabilities
  - Expected returns are certain
- Knightian uncertainty = ‘Unknown unknowns’
  - A given investment has an unknown distribution of possible returns, where either the possible returns, the distribution of their possibilities, or both are unknown
  - Expected returns are, at best, given by a distribution based on Bayesian priors
Unrealized gains and risk vs Opportunity cost

- When a firm has unrealized capital gains, there is a risk involved in keeping those assets.
- The opportunity cost of keeping those assets is what you could do with the money you could turn them in for at that time.
- The risk is the potential for those unrealized gains to disappear as the market evolves (and potentially crashes).
Collateralized Debt Obligations

- Basically, when you have one loan, you have a certain distribution of returns, with mean ‘mu’ and variance ‘var’
- For an individual loan, the expected return to an investor buying the loan is mu, with a variance of var
- For an aggregation of identical loans, the mean return is still mu, but the variance of the return approaches zero (Central Limit Theorem)
- However, if the underlying mean return falls as the probability of default rises, the mean return of the aggregated asset also falls
  - Securitization can remove idiosyncratic risk but not global risk
Credit Default Swaps

- Insurance on income streams
- Insurance policy where you pay a premium to an insurer, who promises to pay the value of the underlying asset in the event of default
- As long as the \((\text{rate of default}) \times (\text{loss in event of default})\) is less than or equal to the premium, on aggregate, this is a money-maker for the insurer
- Again, when the rate of default rises, this is a problem
Maturity mismatch

- People like to lend short and borrow long, but banks make money by charging a premium for doing the reverse.
- A bank lends long and borrows short, rolling its debt over on a daily basis to meet its obligations, knowing it can repay its debts in the long-run.
- This works as long as short-term lending is sufficiently cheap in comparison to the rate that banks can charge for long-term lending.
- As credit freezes, this ratio goes the wrong way for banks, and they become illiquid.
  - Being illiquid means you have the assets to pay back your liabilities, but you cannot do so now, only because people will not lend.
  - Being insolvent means the value of your assets has fallen below the value of your liabilities, meaning you do not have the money to pay back creditors even in the long run.
Limited Liability Corporations

- Limited liability corporations are incorporated companies where the individuals providing the funding are not liable for the companies’ losses beyond the capital that they invest. In other words, the worst an investor can do is lose what they invest.

- In a regular partnership, the individuals funding the company can be liable beyond their investments, leading to personal bankruptcy, etc.

- Moral hazard, as your costs plateau for risky investments