Acronyms!

- LTV = Loan-To-Value
- DTI = Debt-To-Income
- SDA = Standard Default Assumption
- HPA = Home Price Appreciation
- SATO = Spread at Origination
- IO = Interest-Only
- CDR = Constant Default Rates
- ARMs = Adjustable Rate Mortages
- FICO = Fair Isaac Corporation
- WAC = Weighted Average Coupon
- IMO = Indiana, Michigan, and Ohio
- CPR = Conditional Prepayment Rate
- ABS = Asset-Backed Securities
- ABX = A financial benchmark that measures the overall value of mortgages made to borrowers with subprime or weak credit (Investopedia)

Key Definitions

- **Current mortgage loan** $\Rightarrow$ contractual monthly payments up to date
- **Delinquent mortgage loan** $\Rightarrow$ one or more monthly payments late
- **Foreclosure**
  - Legal process to sell collateral (property) to pay off the mortgage loan
  - Typically starts after three missed payments

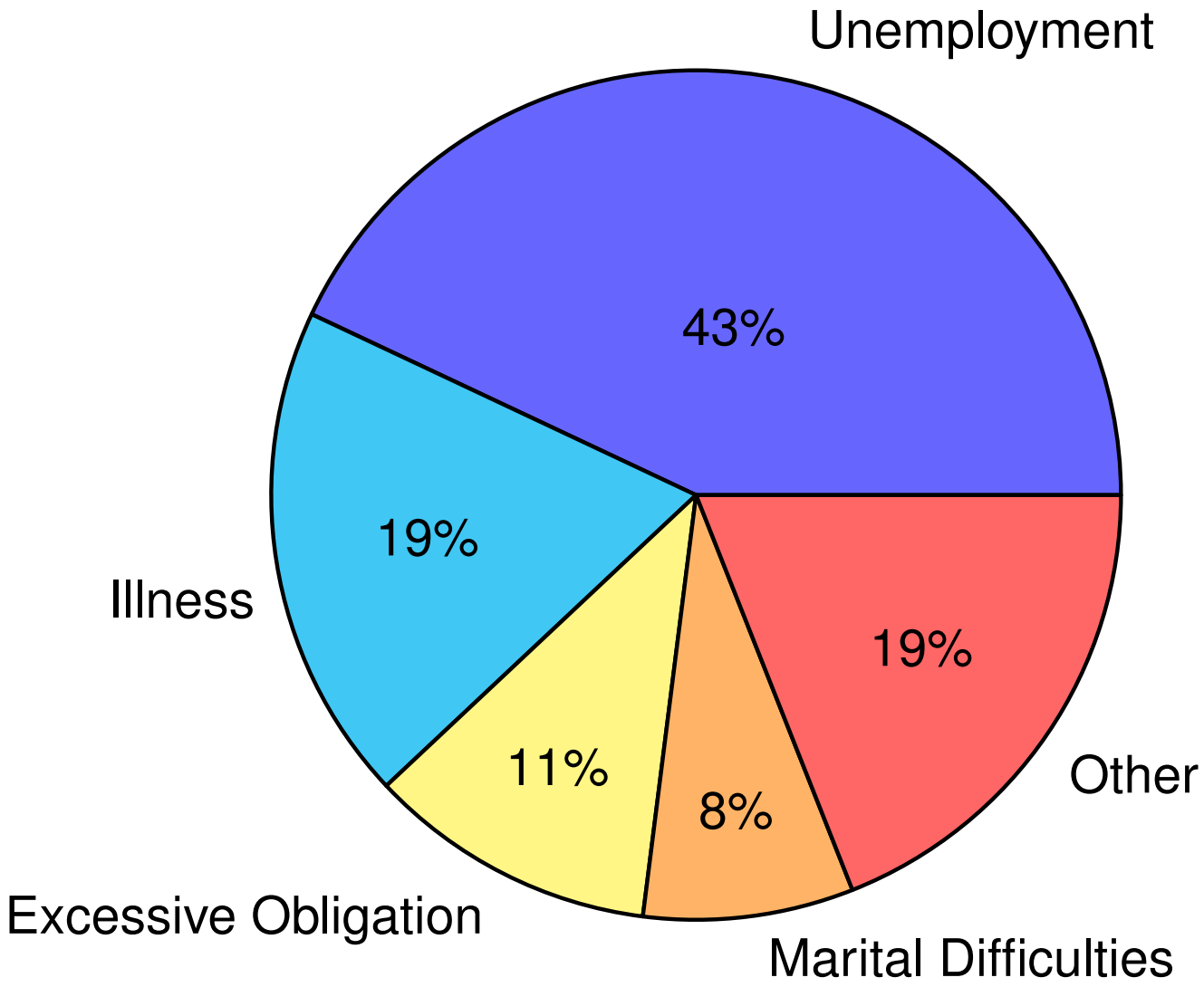
Short Sale Definition

- **Short Sale** - Homeowner sells the property for less than the outstanding loan balance, but the lender accepts that amount to pay off the loan

Default

- Default Definition:
  - No standard industry definition
  - In this article defined as the loan being liquidated when the previous state was REO or delinquent/foreclosure with a loss
  - Occurs the month the loan is liquidated
- Historically, mortgage defaults rates have been low initially, rise for a few years, then decline after fairly seasoned
  - Pattern captured by the Standard Default Assumption (SDA) curve
  - Rise linearly for 30 months, stay level until month 60, then decline

Trigger Events for Mortgage Delinquencies



Payment Shock

- Most of the loans originated in the subprime market in recent years have been adjustable-rate mortgages (ARMs)
- Usually the initial coupon is set artificially low, so the rate is biased to rise at the first reset date
- Many borrowers cannot handle the new higher monthly payment

SATO

- The **spread at origination (SATO)** is the loan coupon less the average prevailing mortgage rate
- A high SATO indicates the borrower is high risk

Valuation of Mortgage Credit Risk

- Need to combine a default model with a prepayment and loss severity model to get projected cumulative losses

HPA

- **Home Price Appreciation (HPA)** is the most important economic factor in determining subprime mortgage performance

Deal Example

Deal Name	FICO	$LTV > 90$	Prch	2nd Lien	WAC	IMO
JPMAC 06-CH2 MV9	636	6.8	31.7	0	7.71	4.9
LBMLT 06-6 M9	638	9.5	56.4	4.8	8.24	2.6

Drill Problem #1

- Q: Given the following loan, calculate (Debt-to-Income) DTI. Is this indicative of a low or high risk loan?
  - Monthly housing payment = $2,500
  - Monthly gross income = $10,000
- A: $\text{DTI} = \frac{\text{Monthly housing payment}}{\text{Monthly gross income}} = \frac{2{,}500}{10{,}000} = 25\%$
- This is good (low-risk to medium-risk) because it is relatively low ($<30\%$)

Drill Problem #2

- Q: Given the following loan, calculate (Loan-to-Value) LTV. Is this indicative of a low or high risk loan?
  - Current loan amount = $300,000
  - Current house value = $500,000
- A: $\text{LTV} = \frac{\text{Current loan amount}}{\text{Current house value}} = \frac{300{,}000}{500{,}000} = 60\%$
- This is good (low-risk to medium-risk) because it is relatively low ($<80\%$)

Drill Problem #3

- Q: What is the most important economic factor in determining subprime mortgage performance?
  - A: HPA = Home Price Appreciation