

Managing Fallout in a Volatile World

MBA National Secondary Marketing Conference
Tuesday, April 8, 2003

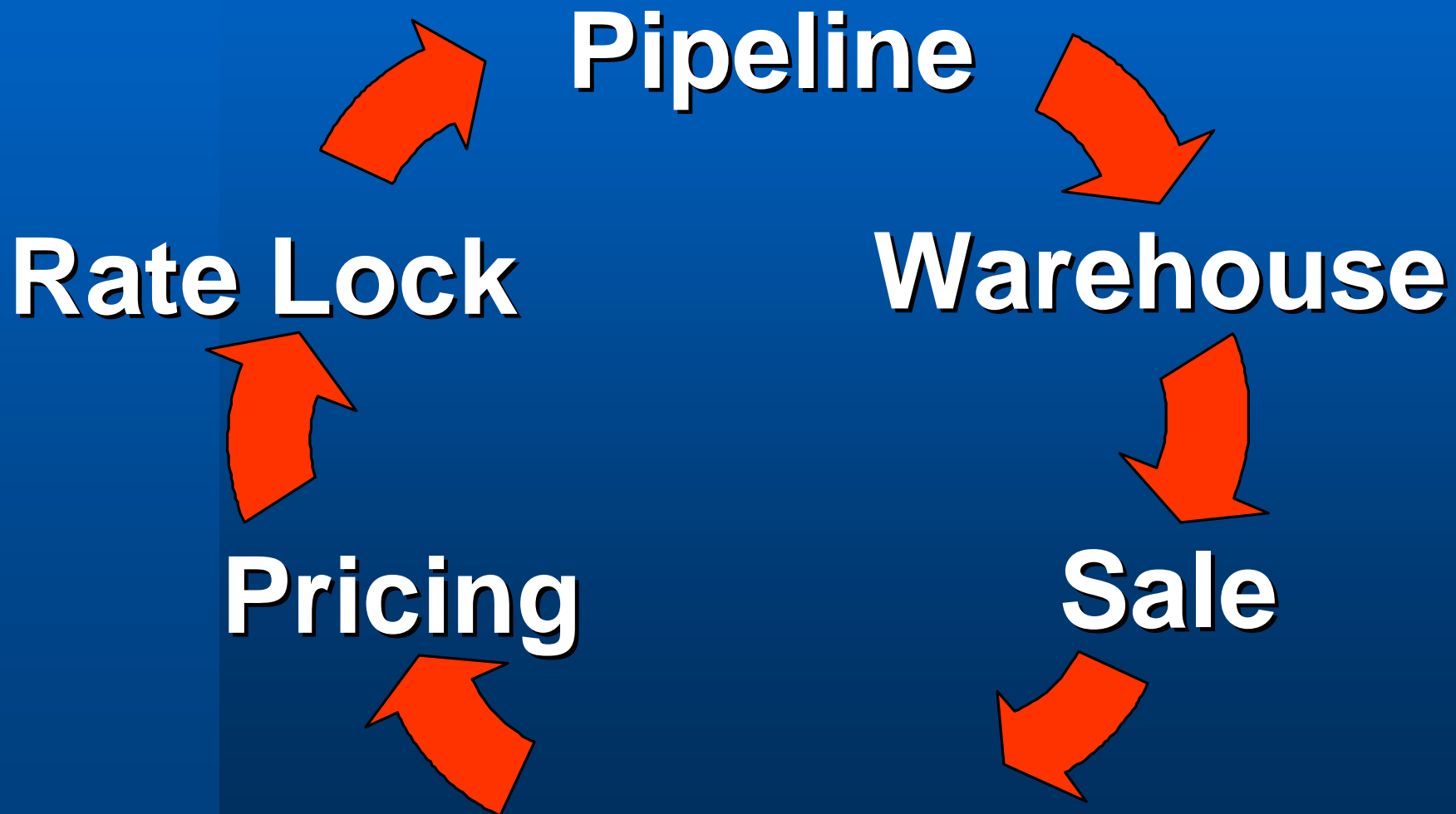
Pete Taglia, Vice President
FTN Financial Corporation (*First Tennessee Bank*)

Bill Williams, First Vice President
Commercial Federal Bank

Session Outline

- What is fallout?
- How do you manage fallout (read ... HEDGE)
- Options
- Strategic Concerns
- Emerging Trends
- Here's the Market ... What would you do?

Life Cycle of a Residential Loan



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Definition of Fallout

- **The Decline in Value of the Rate Lock due to:**
 - termination of the commitment (due to any reason)
 - concessions made to borrower

Which of the Following Could be Considered Fallout?

- **Rate Lock does not close**
- **Borrower renegotiates discount points**
- **Borrower renegotiates rate**
- **Closing date extension granted**
- **Hint: All of the above**

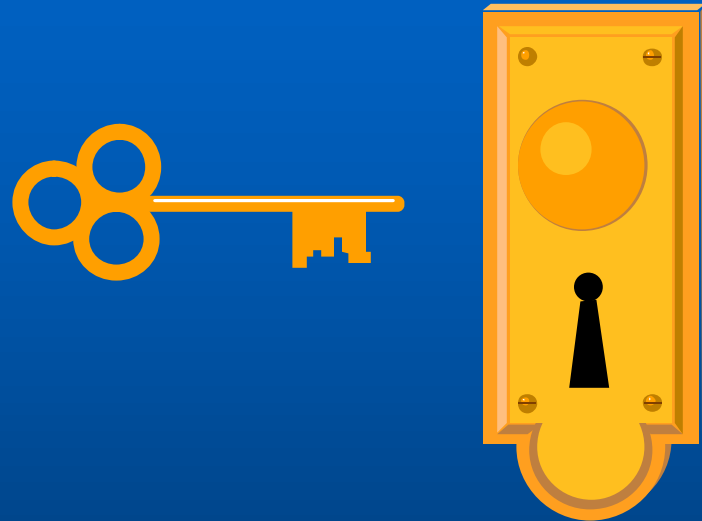
* **Common Mistake: Confusing Nominal vs. Effective Fallout**

Factors Affecting Fallout

- **Rate Lock Types**
- **Type of Product**
- **Purpose of Loan (refi v. purchase)**
- **Source of Loan**
 - retail v. wholesale
 - geographic region
 - branch
- **lock period**
- **processing status of loan (INFORMATION)**
- **policy considerations: re-locks, float downs, negotiations**

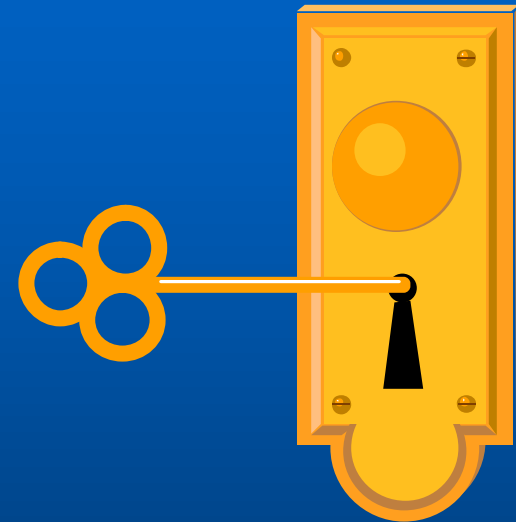
Rate Lock Types

- Float



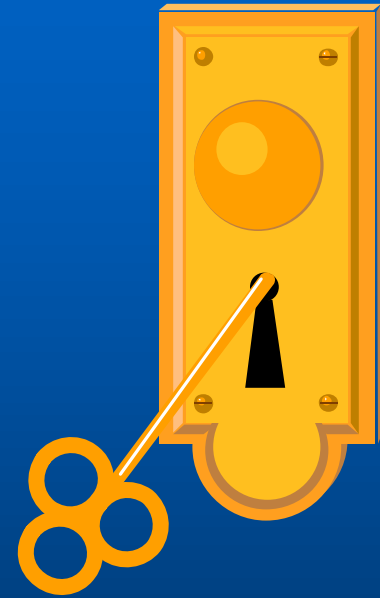
Rate Lock Types

- Float
- Lock



Rate Lock Types

- Float
- Lock
- Lock / with Float Down Option



Rate Lock Types

- Float
- Lock
- Lock / with Float Down Option
- Extended Rate Lock



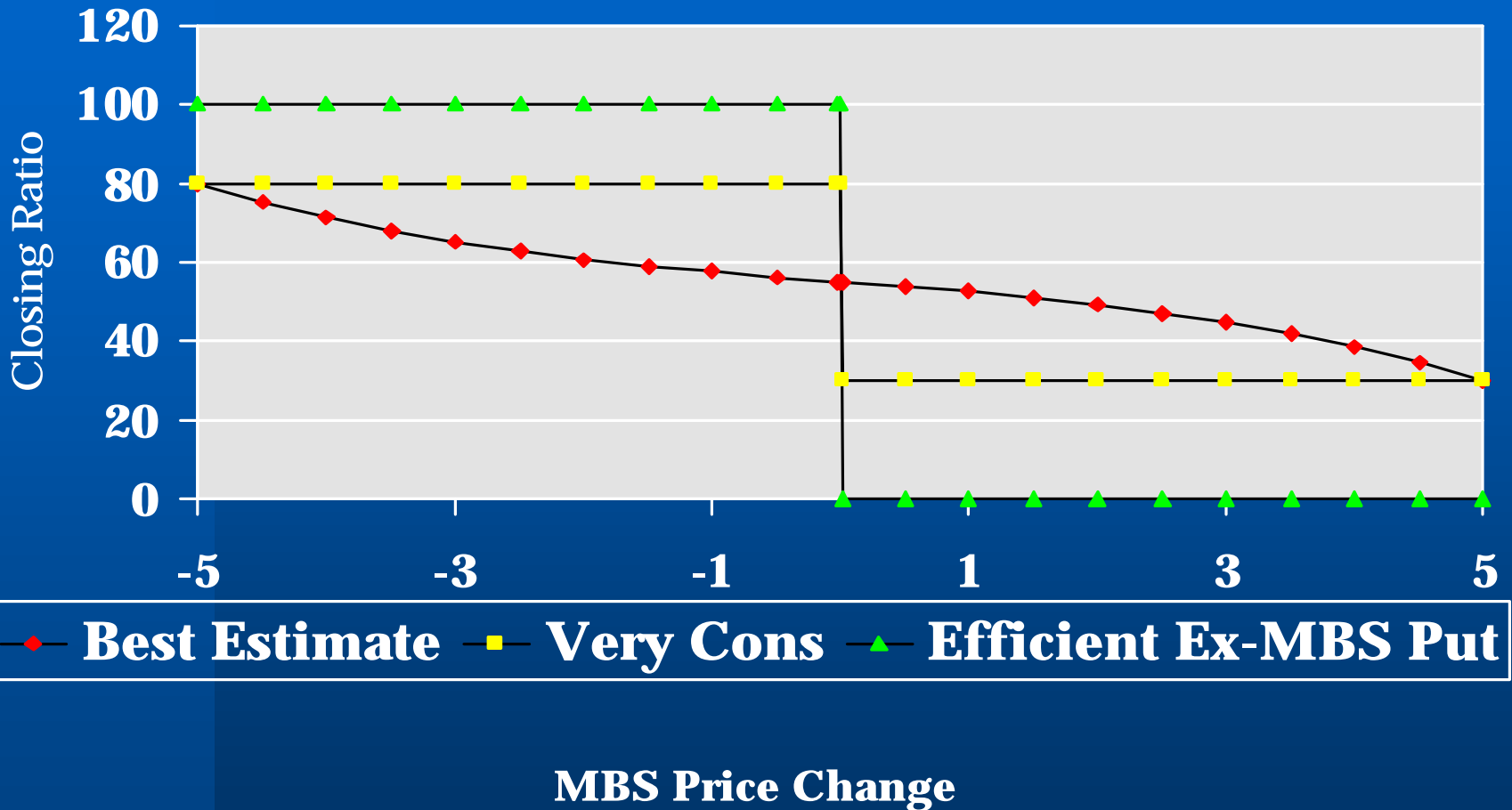
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Fallout: Nominal vs. Effective Closing %

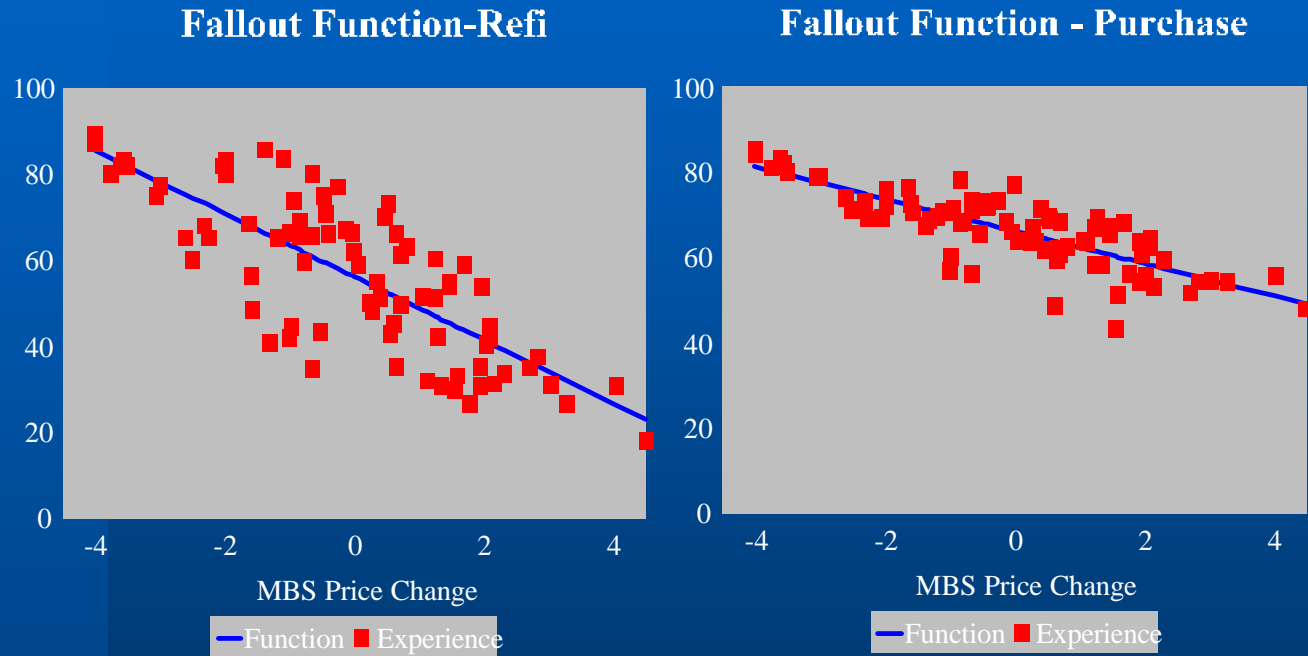
- **Nominal Closing Ratio**
 - # of loans that close/total # of loans
- **Effective Closing Ratio**
 - # of loans closing at the original rate and points/ # of loans
- **Note: Remember the Hedger's goal of preserving profits**

FALLOUT FUNCTION - VARIOUS APPROACHES¹⁴



ACTUAL FALLOUT HISTORY

Comparison of Fallout Functions



Including effect of rate-lock renegotiations

prepared by Quantitative Risk Management

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HEDGE
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Hedging 101:

Definition #1:

Match P/L of Asset with P/L Change of Hedge Instrument

? Value of Loans = ? Value of Hedge

Definition #2: Preserving Profits

(Q. What is the most money you can hope to make with a perfect hedge?)

“The only perfect hedge is in an English garden.”

-- Harley Bassman, Merrill Lynch Capital Markets

- **True for rate locks, not true for closed loans (which can be sold forward)**
- **Point is that by issuing rate locks, you are dealing in “the uncertain” -- so you need to apply the best models and best hedge strategy available to neutralize the risks under most scenarios.**

Impact of Interest Rate Movement

- **on closed loans**
 - Rates up, value goes down
 - Rates down, value goes up
- **on rate locks**
 - Same effects as above on the underlying instrument, but with an additional dynamic:
 - As rates go down, close less loans
 - As rates rise, close more loans

Hedge Cost Definition

The only condition under which you can reasonably assess the cost of a hedge with a single number is when the hedge position results in a flat profit/loss profile.

The cost of obtaining a hedge portfolio that is equal but opposite to the profile of the unhedged rate lock is the hedge cost.

Main Factors Affecting Hedge Cost

Fallout Function Elasticity. The sensitivity of closing ratios with respect to changes in interest rates. More elastic functions (I.e., more option-like rate locks) have higher hedge costs.

Interest Rate Volatility. Volatility determines the price paid/charged by the market for option contracts needed to create a flat profit/loss profile. Higher volatility results in higher costs for the purchase or replication of options.

Rate Lock Period. 60-day rate locks have more “time value” than 45-day rate locks and are therefore more expensive to hedge. (Long-term options cost more than short-term options.)

Example of Hedge Costs

30-Year 8.00% Conforming Costs

Type of Rate Lock	Rate Lock Period	Hedge Cost
Purchase	15	0.05
Purchase	30	0.09
Purchase	45	0.11
Purchase	60	0.17
Refinance	15	0.13
Refinance	30	0.23
Refinance	45	0.32
Refinance	60	0.51
7.50% At-the-Money MBS Option	15	0.53
7.50% At-the-Money MBS Option	30	0.72
7.50% At-the-Money MBS Option	45	0.88
7.50% At-the-Money MBS Option	60	1.21

10% Treasury bond volatility, fallout functions same as Pipeline A and B

QRM Mortgage Banking System [_] [□] [×]

Setup Task Lists Utilities Autoprocess Help Exit Position Optimization

User Specified Hedge Entry [×]

Current Profile	Eq. MBS	TBPV	Convexity	Vega	Time Decay
Current F					499
Prop Adj					-97
Adj Net F					402
					UP 200
					-20790
					30228
					9437

Adjusted Rate Risk Profile [×]

The graph displays the market value change of a portfolio under different yield curve shifts. The x-axis represents the parallel yield curve shift in basis points, ranging from -250 to 250. The y-axis represents the market value change in thousands, ranging from -400 to 300. Three lines are plotted: 'Current' (blue line with diamond markers), 'Trades' (red line with triangle markers), and 'Adjusted' (green line with square markers). The 'Adjusted' line is the flattest, indicating reduced sensitivity to yield curve shifts compared to the 'Current' and 'Trades' lines.

Parallel Yield Curve Shift (basis points)	Current (Market Value Change in Thousands)	Trades (Market Value Change in Thousands)	Adjusted (Market Value Change in Thousands)
-200	120	-220	-100
-100	100	-120	-50
-50	60	-60	-20
0	0	0	0
50	-60	60	-20
100	-120	120	-50
200	-330	270	-70

User Specified Hedge Entry

Ok	B/S	
X	Sell	

rem Tot Op

Company **ABC** Portfolio **Inter1st** Market **Daily** Assumption **Normal** Cycle Parameters **Normal**

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The Classic Profile of a Mortgage Hedger

- Why are we frowning?
- What happens in the rally?
- What happens when the market tanks?
- How can we play the game successfully?

- Negative Convexity

HEDGING QUIVER

Sell MBS

Sell Loans for Cash

Sell Futures

Buy Puts

OPTIONS AS A TOOL

MBS

Treasury

Puts

Calls

OPTIONS

MBS Options

- **Risk Policy Consideration**
- **No Basis Risk**
- **Volatility**
- **Cost**
- **Convexity**
- **Coupon**

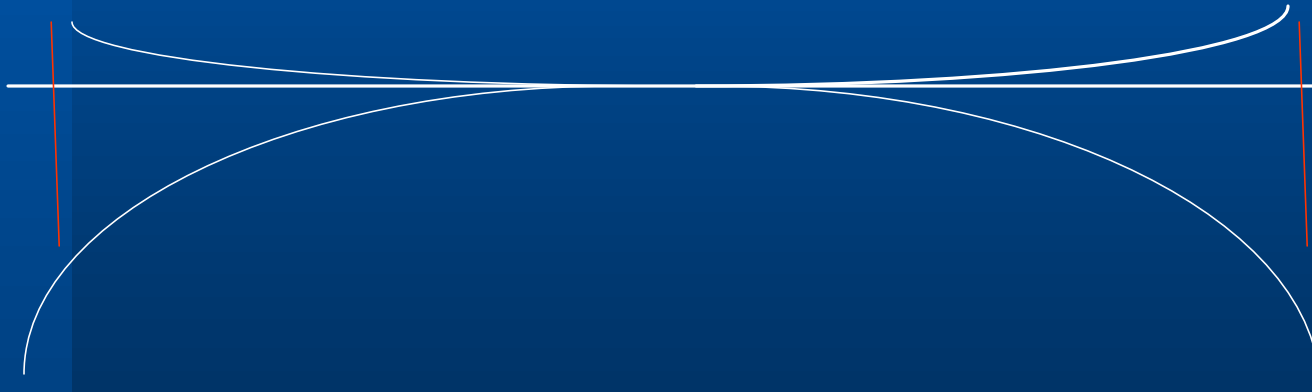
Treasury Options

- **Policy Considerations**
- **Basis Risk**
- **Volatility**
- **Cost**
- **Convexity**
- **Wide variety of Instrument**
 - **Bonds**
 - **Notes**
 - **Five Year**

OPTIONS - What Do They Really Do For Us?

- **\$\$ Cost \$\$**
- **Add Positive Convexity**

Remember our Frown?



A PUT OFFERS.....

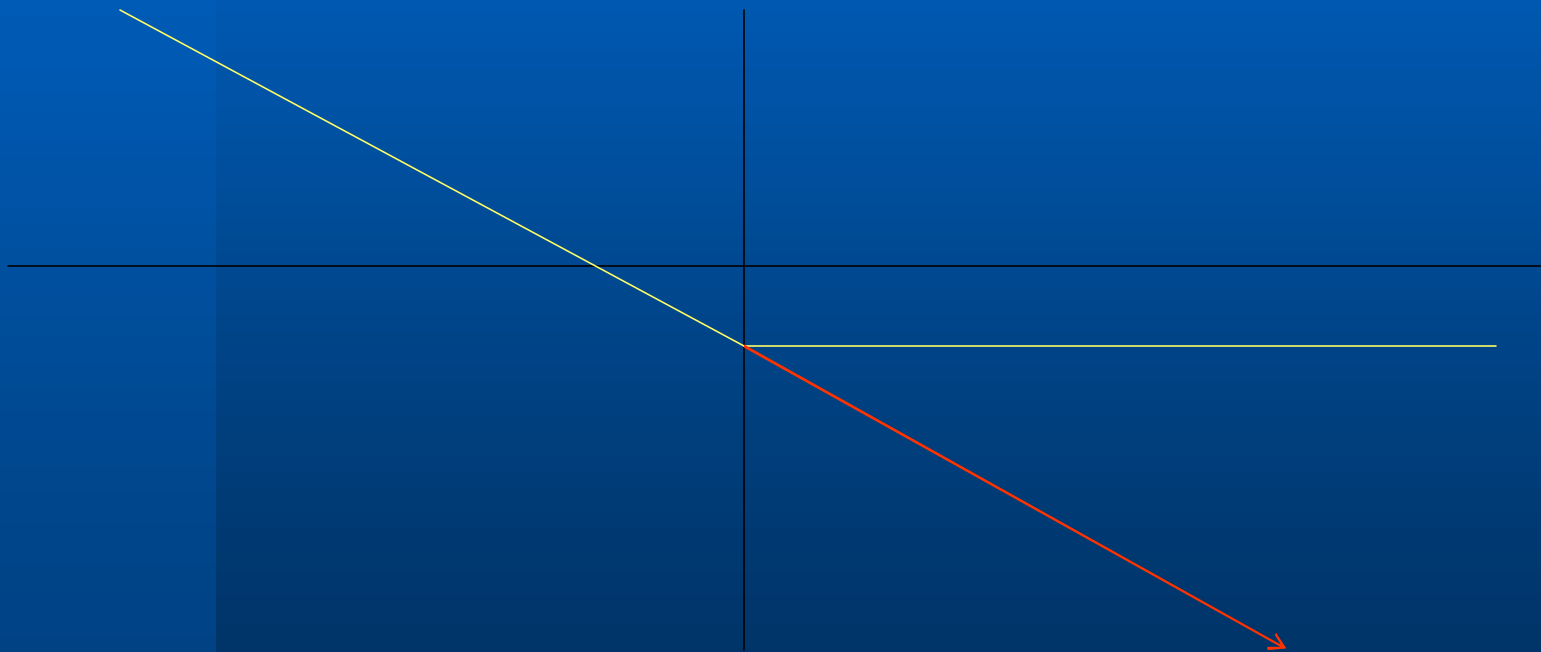
- ⑩ Protection as rates fall
- ⑩ Provide exposure if prices rise

A premium is paid for this option

BASIC PUT OPTION PROFILE

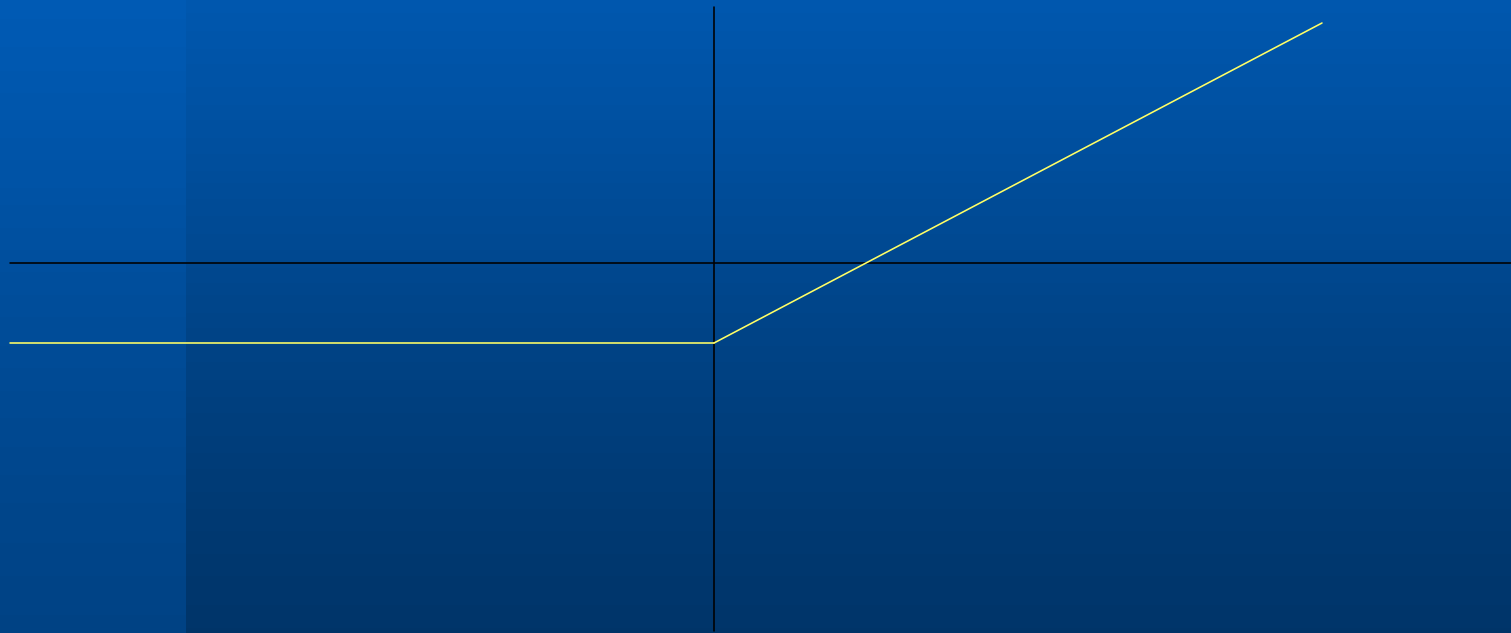
As the Market Rallies our Loss is capped by the Premium.

As the Market Tanks the Option Gains in Value



BASIC CALL OPTION PROFILE

**When the Market Rallies We Participate !
If the Market Tanks We Lose the Premium**



DYNAMIC vs. STATIC HEDGES

- **Static Hedge Position Matches All Derivatives**
 - **Position Designed to Anticipate Changes in Instrument Relationships Due to Market Level Changes**
- **Dynamic Hedge Matches TBPV Only - - No Options Are Used**
 - **Alter Position as Model Hedge Ratio Changes**
 - **Smaller/Larger Position as Prices Rise/Fall**

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Strategic Concerns

- Regulators -- in a post-Enron, post-WorldCom world
- Decisions Made in Other Areas Impact Hedging/Risk Management (e.g., *Do we want to be servicers?*)
- Profitability
- Competition
 - How can we price and sell loans relative to...
 - local competition?
 - Mega Lenders?
 - How do we compete considering the changing role of GSEs?
- FAS 133

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EMERGING TRENDS

- Advancements in Front-End Technology
 - Better Information => Reduction in hedge costs
 - Real Time Information => Reduced delay in the hedge decision, results in real time hedging
- Branch Level Pricing => Transfer of fallout risk
- Risk Based Pricing=> Quantification of fallout risk
- Advanced Applications of Financial Models => Better assessment of risk

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HERE'S MARKET WHAT WOULD YOU DO?

- Hired as “Risk Manager”
- Stay Flat
- Production
 - \$10 million in rate locks

PIPELINE HEDGING STRATEGY EXAMPLE: \$10 MILLION

<u>Amount</u>	<u>Likely Outcome</u>	<u>Hedging Tool</u>
● \$4 million	will close	forwards
● \$2 million	will close, not sure when	futures
● \$2 million	might close	options
● \$2 million	won't close	no hedge

Questions?