GROUP 3

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Recommendation: Synthetic Put Options on Vanguard Mortgage-Backed Securities ETF

- Vanguard MBS ETF primarily invests in US Agency MBS issued by **Ginnie Mae, Fannie Mae and Freddie Mac**
- It seeks to track the performance of a market-weighted **U.S. mortgage-backed securities Float Adjusted index** and hence comes with interest rate risk.

Investment Horizon: Short term

Outlook: Bearish

Security Stats:

Current Price- $45.13

52 Week high- 53.34

52 Week Low-44.30

Investment Strategy Payoff

Synthetic Put Option= Short sell the underlying Asset + Buy Call option on the Underlying Asset.

- **Short Sell** = $ 45.13 (Current Price)

- **<u>Call option on VMBS ETF</u>**
- Strike Price: $45 (At the Money)
- Call Price/Premium: $1.00
- Expiration date: 11/18

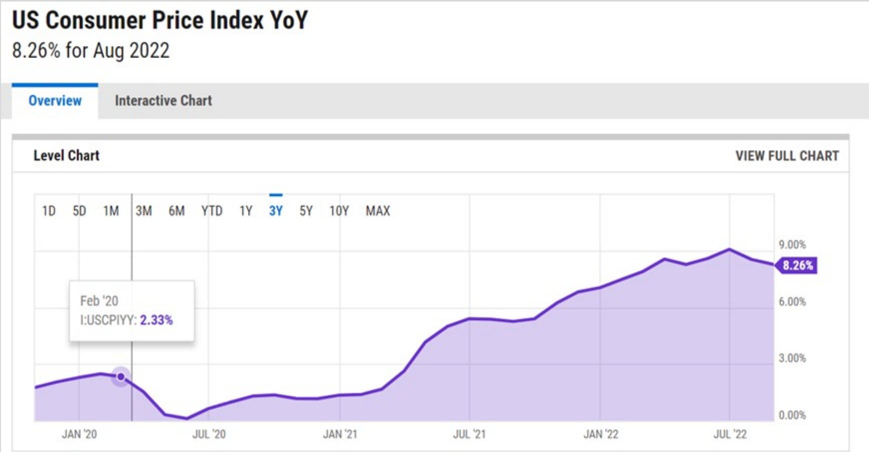
- **Expected Profit/Loss:**
- Target Price: $39 (Around 13% fall in price)
- Expected Profit: $45.13-$39-$1=$5.13 (At Target Price)
- Maximum Expected Loss- $45.13-$45-$1=$(0.87) (if call option needs to be exercised)
- Breakeven Price: $44.13

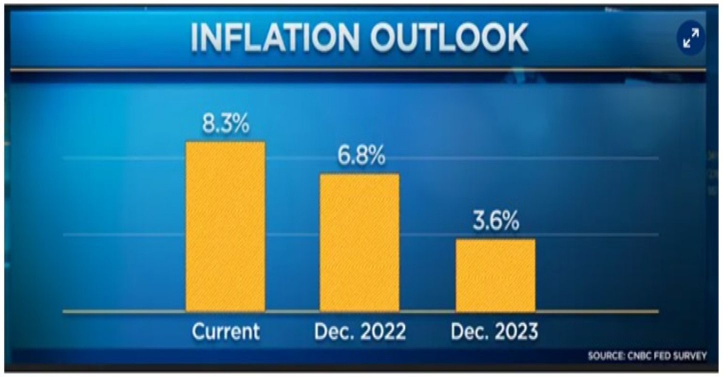
Investment Thesis:

Our recommendation is based on following three hypotheses

1. Fed will continue to hike the interest rate to curb inflation

Fed will continue to use contractionary monetary policy to reduce the gap between pre covid and post covid inflation rate.





Inflation expectations

How will this affect our Security Value

➢ **Interest Rate Risk-**

Interest Rate Mortgage Rate Bond Value as investors demand higher returns (Opportunity Risk)

MBS also experience Negative Complexity wherein as mortgage rates go up the price of an MBS goes down by a greater amount than the price goes up when rates go down by the same amount.

Rate hikes 2022-Present

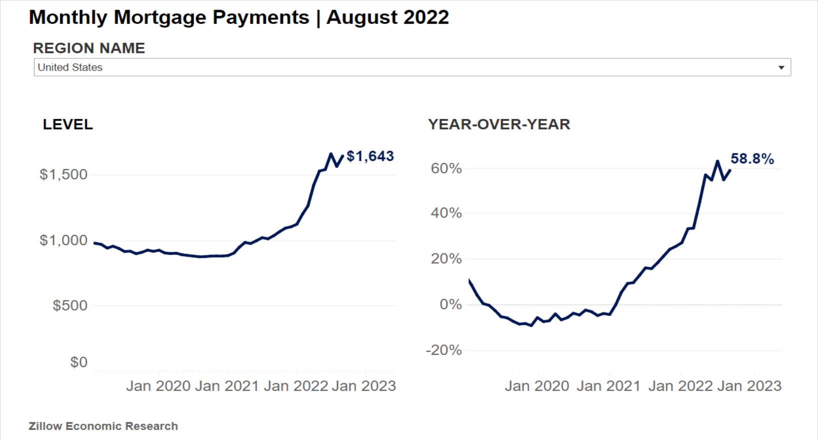
MEETING DATE	RATE CHANGE	TARGET RANGE
March 15-16, 2022	+25 basis points	0.25-0.5 percent
May 3-4, 2022	+50 basis points	0.75-1 percent
June 14-15, 2022	+75 basis points	1.50-1.75 percent
July 26-27, 2022	+75 basis points	2.25-2.5 percent
Sept. 20-21, 2022	+75 basis points	3-3.25 percent

Source: Fed's board of governors

- **Extension Risk-** The chance that during periods of rising interest rates, homeowners will prepay their mortgages at slower rates. This will lengthen the duration or average life of mortgage-backed securities held by the fund and delay the fund's ability to reinvest proceeds at higher interest rates. Extension risk is high for the fund.

- **Default risk-**

- We predict a higher default rate in the coming period as the EMI level has drastically increased in response to a mortgage rate increase for variable interest rate loans wherein Income has remained constant, and expense has increased due to a decrease in purchasing power.
- Current layoff trends will fuel the default risk further.



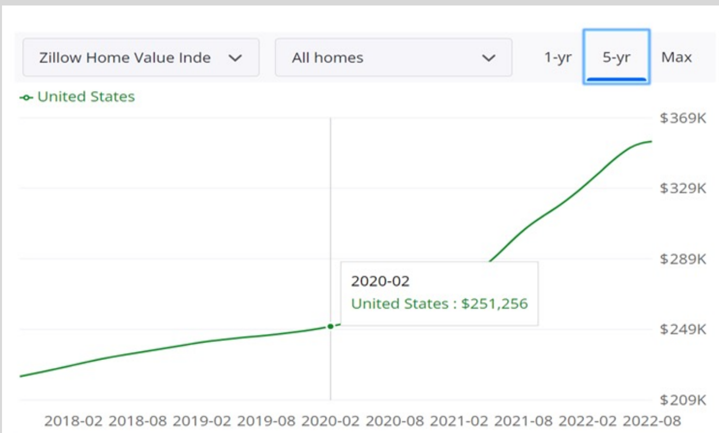
2. <u>US Housing market to see severe Corrections</u>

FORTUNE

Wall Street: The U.S. housing market to see the second biggest home price decline since the Great Depression

Lance Lambert

Mon, October 3, 2022 at 5:37 AM · 5 min read



The price of housing, like the price of any product or service in a free market, is driven by the law of supply and demand.

<u>The reason for Pandemic Housing Boom:</u>

a. Household saving which increased sharply during the COVID-19 crisis.

a) Lower consumption, both as a result of lockdowns or precaution

b) Increase in disposable income from government transfers

b. Low Mortgage rate

Mortgage Rate ↑ Demand ↓ Home Prices ↓

<u>Foreclosure risk-</u> If home prices were to drop, a home could be worth less than its mortgage. For example, a person could have a $300,000 home and a $250,000 mortgage, and a housing market crash could cause that home's value to drop to $200,000. As a result, homeowners could owe more than what their home is worth, triggering a wave of foreclosures.

3. Continuing High Inflation :

↑ Inflation ↓ Value of money ↑ Yield Expectation of the security holders

We are of the opinion that downward trend in ETF price over past 5 months have only incorporated the effects of interest rate risk which was due to hike in interest rates by Fed and hence we strongly believe that over the period of 1.5 months the housing market corrections and other economic conditions will make the ETF slide down with greater intensity and hence we are expecting around 13% decrease in price.

Risk Factor

Fed May not Hike interest rate due to Global fear of recession as there is a growing risk that financial markets are on the verge of instability due to a soaring US dollar.

FEDERAL RESERVE · **Published** October 3, 2022 5:04pm EDT

UN urges Fed to pause interest rate hikes on global recession fears

Higher interest rates represent an 'imprudent gamble,' UN agency warns

Why nots

Why Synthetic Put and not Put options?

Many problems can be minimized or eliminated when a trader uses a synthetic option instead of purchasing a vanilla option as it is less affected by the problem of option being worthless. However Synthetic Option comes with high interest charge on short selling and hard to borrow costs. Hence, we have worked out payoff on Vanilla put option which can be looked into if trading costs for synthetic Put are high.

If we go for → Put option on VMBS ETF

Strike Price: $45

Put Price/Premium: $0.90

Expiration date: 11/18

Expected Profit/Loss →

Target Price: $39
Breakeven Price: $44.1
Minimum Expected Profit: $45-$39-$0.9=$5.1 (If Target price)
Maximum Expected Loss- $(0.90)

Why MBS ETF Exposure and direct exposure in Mortgage-backed Securities?

- Ease of trading
- Diversification
- Price transparency

Why short MBS ETF and not MBS Index itself?

The only way to take a short position on index is by entering a short position on the ETF tracking that index.

Why option and not futures?

We are Volatility Bullish.

Questions