



SINGLE-FAMILY FINANCING ESSENTIALS: MBS & TBA  
**CONVEXITY & 2<sup>ND</sup> MORTGAGES**

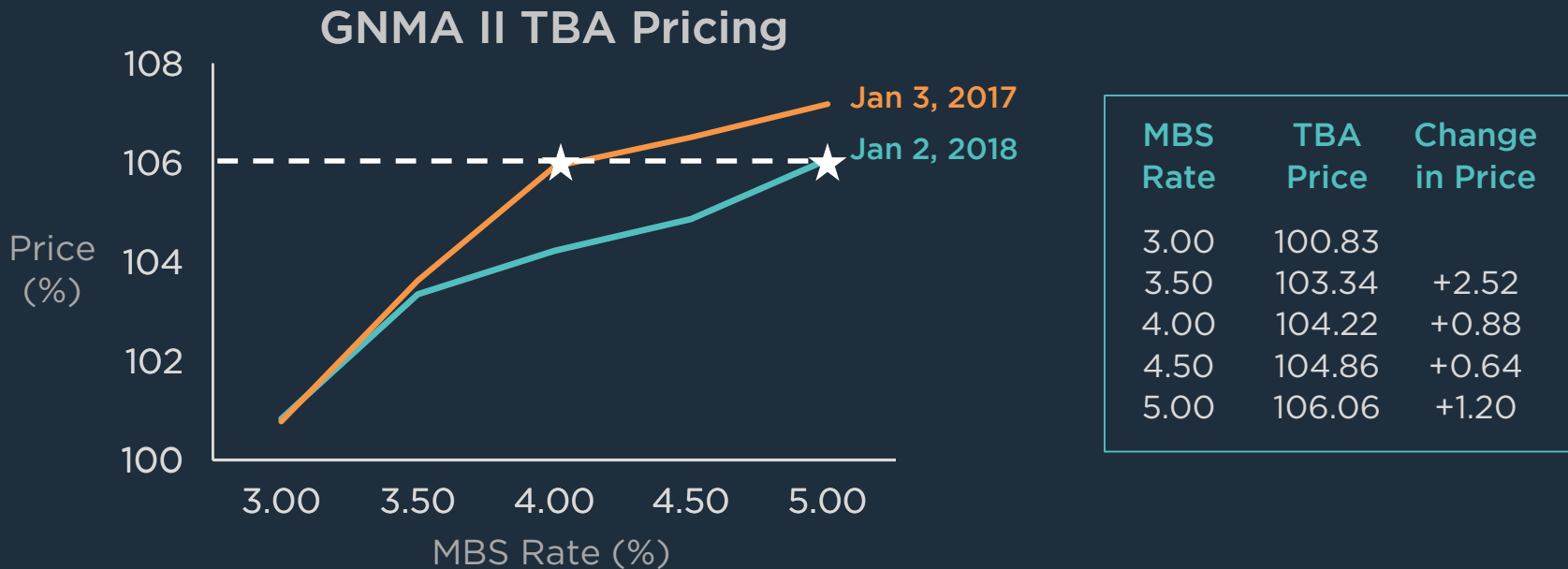
10 January 2018

# 01 / WHAT IS **CONVEXITY**?

as rates increase, the change in price decreases

# TBA PRICING CONVEXITY

Change in price decreases as MBS rate increases



Prices for higher rate MBSs are lower today than one year ago

More difficult to generate upfront premium on TBA trade:

**4% MBS price on Jan 3, 2017  $\approx$  5% MBS price on Jan 2, 2018!**

## 02 / **COMBATING CONVEXITY**

investing in 2<sup>nd</sup> mortgages as DPA

# CASE STUDY: **CONVEXITY & GRANT DPA**

## Mortgage rates need to be increased significantly to fund grant DPA

In order to earn a net income of 1.00, mortgage rates would need to be set as follows\*:

<u>Grant DPA</u>	<u>Mtge Rate</u>
0.00	3.750%
1.00	4.000%
2.00	4.500%
3.00	5.000%
3.50	5.500%

Increasing grant DPA by 0.50 from 3.00 to 3.50 requires a rate increase of 0.500%!

\*Rates as of January 2, 2018



# LOWER RATE & INCREASE INCOME USING 2<sup>ND</sup> MORTGAGES†

Mortgage rates need to be increased significantly  
less to fund 2<sup>nd</sup> mortgages!

In order to earn a net income of 1.00, mortgage rates would need to be set as follows\*:

Lower rate by **0.500%** and **double PV net income** to 2.38 (200%PSA) with 2<sup>nd</sup> mtge DPA:

Grant DPA	Mtge Rate	2 <sup>nd</sup> Mtge	Mtge Rate
0.00	3.750%		
1.00	4.000%		
2.00	4.500%		
3.00	5.000%	3.00%	4.500%
3.50	5.500%		

†Due on sale, 0% interest, assuming 10% loan loss

\*Rates as of January 2, 2018

# LOWER RATE & INCREASE INCOME USING 2<sup>ND</sup> MORTGAGES†

Mortgage rates need to be increased significantly  
less to fund 2<sup>nd</sup> mortgages!

Upfront net income: **0.25**

PV of 3.00% 2<sup>nd</sup> Mortgage  
(0%, due on sale, 10% loan loss):

PSA	PV
100%	<b>1.84</b>
150%	<b>2.01</b>
200%	<b>2.13</b>

Higher prepayment speed =  
higher PV of recouped 2<sup>nd</sup> mtge

Lower rate by **0.500%** and  
**double PV net income** to 2.38  
(200%PSA) with 2<sup>nd</sup> mtge DPA:

2 <sup>nd</sup> Mtge	Mtge Rate
3.00%	4.500%

†Due on sale, 0% interest, assuming 10% loan loss

\*Rates as of January 2, 2018

# BENEFITS OF 2<sup>ND</sup> MORTGAGES<sup>†</sup>

## 1. Increases PV net income

## 2. Lowers mortgage rate

- Borrower's mortgage payment decreases; 0% due on sale means that the 2<sup>nd</sup> mortgage doesn't affect borrower's monthly payments
- HFA rates become more competitive, increasing volume

## 3. Lowers prepayment speeds

- Slower prepayment speeds are more appealing to investors and generate higher pay ups
- Especially valuable for HFAs who receive servicing income

## 4. Creates valuable asset

- Repayment of 2<sup>nd</sup> mortgage provides ongoing income

<sup>†</sup>Due on sale, 0% interest





THANK YOU

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