

# Why Don't Lenders Renegotiate More Home Mortgages?

Redefaults, Self-Cures and Securitization

Paul Willen

(Joint with Manuel Adelino and Kris Gerardi)

Federal Reserve Bank of Boston

FTC Micro Conference

November 19, 2009

**I am speaking today as a researcher and a concerned citizen and not as a representative of the FRB Boston or the Federal Reserve System.**

## Introduction

- (1) Data
- (2) Simple Model
- (3) Aren't most mods still positive NPV?

# Brochure



Board of Governors of the Federal Reserve System  
Federal Deposit Insurance Corporation  
National Credit Union Administration  
Office of the Comptroller of the Currency  
Office of Thrift Supervision

## Interest-Only Mortgage Payments and Payment-Option ARMs— Are They for You?



Board of Governors of the Federal Reserve System

# The “Win-win” Solution

# The “Win-win” Solution

- The problem:

*Foreclosing is costly for both the borrower and the lender. The mortgage holder gains only half of what is lost by the homeowners...*

# The “Win-win” Solution

- The problem:

*Foreclosing is costly for both the borrower and the lender. The mortgage holder gains only half of what is lost by the homeowners...*

- The solution:

*In the old days, when the mortgage was granted by your local bank, there was a simple solution to this tremendous inefficiency. The bank forgave part of your mortgage...*

# The “Win-win” Solution

- The problem:  
*Foreclosing is costly for both the borrower and the lender. The mortgage holder gains only half of what is lost by the homeowners...*
- The solution:  
*In the old days, when the mortgage was granted by your local bank, there was a simple solution to this tremendous inefficiency. The bank forgave part of your mortgage...*
- But...  
*Unfortunately, this win-win solution is not possible today. Your mortgage has been sold and repackaged in an asset-backed security pool and sold in tranches with different priorities.*

# The “Win-win” Solution

- The problem:  
*Foreclosing is costly for both the borrower and the lender. The mortgage holder gains only half of what is lost by the homeowners...*
- The solution:  
*In the old days, when the mortgage was granted by your local bank, there was a simple solution to this tremendous inefficiency. The bank forgave part of your mortgage...*
- But...  
*Unfortunately, this win-win solution is not possible today. Your mortgage has been sold and repackaged in an asset-backed security pool and sold in tranches with different priorities.*
- All these quotes from: Zingales, Luigi (2008) “Plan B,” *The Economists’ Voice*: Vol. 5 : Iss. 6, Article 4.

# (1) What do we see in the data?



# (1) What do we see in the data?

- Renegotiation is indeed unlikely.
- Percentages of mortgages that received a modification within 12 months of first 60-day delinquency:

# (1) What do we see in the data?

- Renegotiation is indeed unlikely.
- Percentages of mortgages that received a modification within 12 months of first 60-day delinquency:

---

---

Concessionary  
Mods

---

# (1) What do we see in the data?

- Renegotiation is indeed unlikely.
- Percentages of mortgages that received a modification within 12 months of first 60-day delinquency:

Concessionary Mods	
Private-label	2.6%

# (1) What do we see in the data?

- Renegotiation is indeed unlikely.
- Percentages of mortgages that received a modification within 12 months of first 60-day delinquency:
- But securitization has little to do with it.

	Concessionary Mods
Private-label	2.6%
Portfolio	3.2%
Marginal Effect	-0.3%
(z-stat)	-1.69

# (1) What do we see in the data?

- Renegotiation is indeed unlikely.
- Percentages of mortgages that received a modification within 12 months of first 60-day delinquency:
- But securitization has little to do with it.

	Concessionary Mods	All Mods
Private-label	2.6%	8.4%
Portfolio	3.2%	8.7%
Marginal Effect	-0.3%	0.2%
(z-stat)	-1.69	0.58

# (1) What do we see in the data?

- Renegotiation is indeed unlikely.
- Percentages of mortgages that received a modification within 12 months of first 60-day delinquency:
- But securitization has little to do with it.

	Concessionary Mods	All Mods	All Mods + Prepayments
Private-label	2.6%	8.4%	15.5%
Portfolio	3.2%	8.7%	14.7%
Marginal Effect	-0.3%	0.2%	0.9%
(z-stat)	-1.69	0.58	1.95

# Cures

# Cures

- Broadest measure of renegotiation is *Cure rate*



# Cures

- Broadest measure of renegotiation is *Cure rate*
- Probability that a seriously delinquent borrower

# Cures

- Broadest measure of renegotiation is *Cure rate*
- Probability that a seriously delinquent borrower
  - Becomes current.

# Cures

- Broadest measure of renegotiation is *Cure rate*
- Probability that a seriously delinquent borrower
  - Becomes current.
  - Prepays.

# Cures

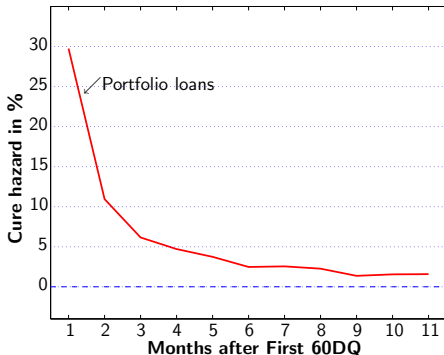
- Broadest measure of renegotiation is *Cure rate*
- Probability that a seriously delinquent borrower
  - Becomes current.
  - Prepays.
  - Captures *anything* the servicer might do to help.

# Cures

- Broadest measure of renegotiation is *Cure rate*
- Probability that a seriously delinquent borrower
  - Becomes current.
  - Prepays.
  - Captures *anything* the servicer might do to help.

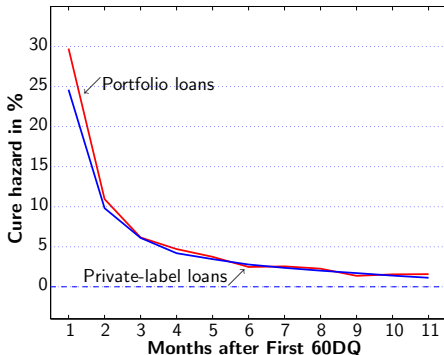
	All Loans	Subprime	FICO < 620	Non-missing Documentation and DTI	Fully Documented
Portfolio Mean	0.300	0.257	0.320	0.280	0.299
Private-label Mean	0.256	0.289	0.328	0.289	0.324
Marginal effect (Logit)	-0.022 -4.32	0.043 4.31	0.004 0.44	0.022 2.8	0.025 2.43
Hazard Ratio (Cox)	0.895 7.08	1.062 2.14	0.926 3.36	1.009 0.43	0.971 1.36
# Mortgages	66,451	33,719	27,639	25,543	18,097

# Understanding the cures



- Most of the cures are “self-cures”
  - 1 85% of cures occur in first two months.
  - 2 Almost certainly self-cures
  - 3 Unobserved heterogeneity.

# Understanding the cures



- Most of the cures are “self-cures”
  - 1 85% of cures occur in first two months.
  - 2 Almost certainly self-cures
  - 3 Unobserved heterogeneity.

## (2) Simple Model



## (2) Simple Model

- Logic is that foreclosure costs lender a lot.

## (2) Simple Model

- Logic is that foreclosure costs lender a lot.
  - Lender typically recovers less than half the balance on the loan.

## (2) Simple Model

- Logic is that foreclosure costs lender a lot.
  - Lender typically recovers less than half the balance on the loan.
- Wouldn't a concession to borrower cost less?

## (2) Simple Model

- Logic is that foreclosure costs lender a lot.
  - Lender typically recovers less than half the balance on the loan.
- Wouldn't a concession to borrower cost less?
  - Not necessarily!

## (2) Simple Model

- Logic is that foreclosure costs lender a lot.
  - Lender typically recovers less than half the balance on the loan.
- Wouldn't a concession to borrower cost less?
  - Not necessarily!
- Decision is not whether to renegotiate or foreclose

## (2) Simple Model

- Logic is that foreclosure costs lender a lot.
  - Lender typically recovers less than half the balance on the loan.
- Wouldn't a concession to borrower cost less?
  - Not necessarily!
- Decision is not whether to renegotiate or foreclose
  - But whether to renegotiate or **do nothing!**

## (2) Simple Model

- Logic is that foreclosure costs lender a lot.
  - Lender typically recovers less than half the balance on the loan.
- Wouldn't a concession to borrower cost less?
  - Not necessarily!
- Decision is not whether to renegotiate or foreclose
  - But whether to renegotiate or **do nothing!**
  - Possible that borrower will cure without assistance before foreclosure – self-cure risk.

## (2) Simple Model

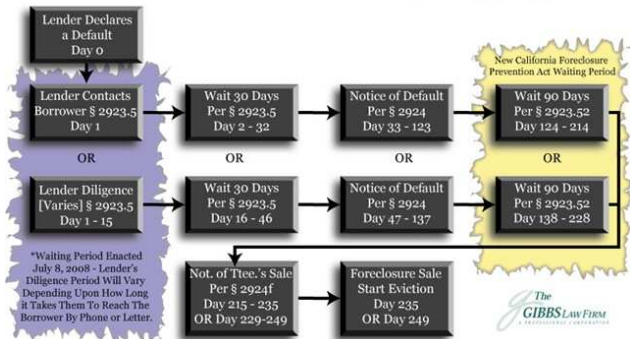
- Logic is that foreclosure costs lender a lot.
  - Lender typically recovers less than half the balance on the loan.
- Wouldn't a concession to borrower cost less?
  - Not necessarily!
- Decision is not whether to renegotiate or foreclose
  - But whether to renegotiate or **do nothing!**
  - Possible that borrower will cure without assistance before foreclosure – self-cure risk.



# Foreclosure Timeline

## California's New Foreclosure Timeline

- Post Enactment of Civil Code §§ 2923.52-2923.55

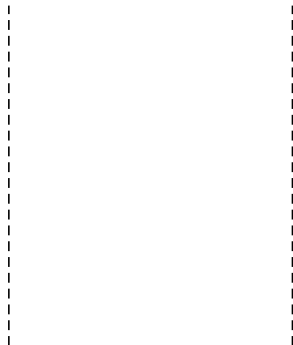


- Show simple model in the paper.

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.



- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$\alpha_0 - \alpha_1$$

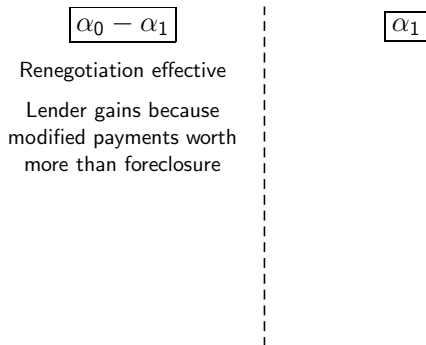
- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.





- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

$$\alpha_0 - \alpha_1$$

$$\alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

Borrower never repays

Foreclosure is delayed  
May or may not help lender

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

Borrower always repays

Lender loses because  
borrower would have paid  
in full

$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

Borrower always repays

Lender loses because  
borrower would have paid  
in full

$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

Successful Renegotiation  
Don't help borrowers who  
would have defaulted

$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

Borrower always repays

Lender loses because  
borrower would have paid  
in full

$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

Successful Renegotiation  
Don't help borrowers who  
would have defaulted

$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

"Redefault risk"  
Lender loses if  $R$  is large  
or if  $P_2 - P_1$  is big

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

Borrower always repays

Lender loses because  
borrower would have paid  
in full

“Self-cure risk”  
Costly assistance to  
borrowers who can pay

$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

Successful Renegotiation  
Don't help borrowers who  
would have defaulted

$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

“Redefault risk”  
Lender loses if  $R$  is large  
or if  $P_2 - P_1$  is big

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

Borrower always repays

Lender loses because  
borrower would have paid  
in full

“Self-cure risk”  
Costly assistance to  
borrowers who can pay



$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

Successful Renegotiation  
Don't help borrowers who  
would have defaulted

$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

“Redefault risk”  
Lender loses if  $R$  is large  
or if  $P_2 - P_1$  is big

- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

Borrower always repays

Lender loses because  
borrower would have paid  
in full

“Self-cure risk”  
Costly assistance to  
borrowers who can pay



$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

Successful Renegotiation  
Don't help borrowers who  
would have defaulted



$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

“Redefault risk”  
Lender loses if  $R$  is large  
or if  $P_2 - P_1$  is big



- Show simple model in the paper.
- Let  $\alpha_0$  be probability of default without a modification.
- Let  $\alpha_1$  be probability of default with a modification.

$$1 - \alpha_0$$

Borrower always repays

Lender loses because  
borrower would have paid  
in full

“Self-cure risk”  
Costly assistance to  
borrowers who can pay



$$\alpha_0 - \alpha_1$$

Renegotiation effective

Lender gains because  
modified payments worth  
more than foreclosure

Successful Renegotiation  
Don't help borrowers who  
would have defaulted



$$\alpha_1$$

Borrower never repays

Foreclosure is delayed  
May or may not help lender

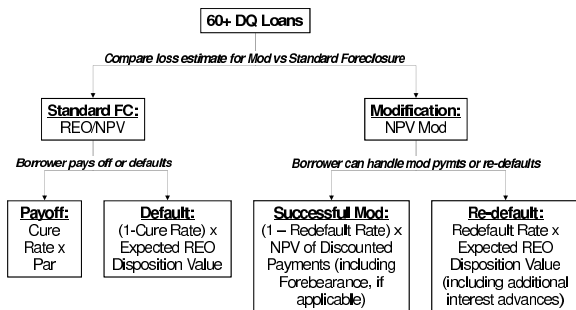
“Redefault risk”  
Lender loses if  $R$  is large  
or if  $P_2 - P_1$  is big



# What do firms actually do?

# What do firms actually do?

## Modification/Foreclosure Decision Tree



But...

# But...

- For some reason, this argument *was* new to

# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007

# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007
- Proponents of renegotiation focus on:

# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007
- Proponents of renegotiation focus on:
  - Costs of foreclosure



# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007
- Proponents of renegotiation focus on:
  - Costs of foreclosure
  - Benefits of renegotiation

# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007
- Proponents of renegotiation focus on:
  - Costs of foreclosure
  - Benefits of renegotiation
- Advocates rarely discuss the costs of renegotiation

# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007
- Proponents of renegotiation focus on:
  - Costs of foreclosure
  - Benefits of renegotiation
- Advocates rarely discuss the costs of renegotiation
  - COP Report – Does not mention self-cure in 187 pages!

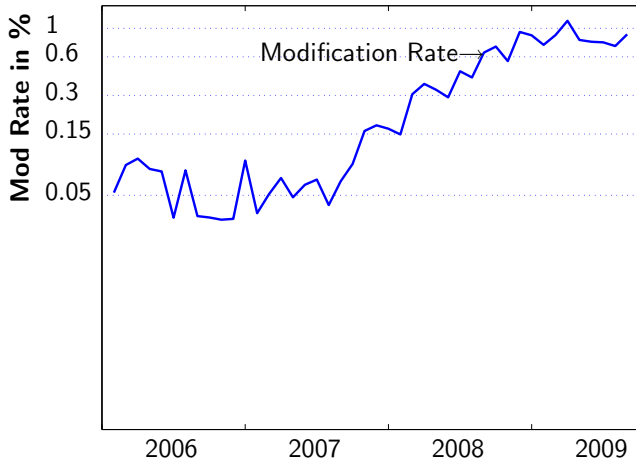
# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007
- Proponents of renegotiation focus on:
  - Costs of foreclosure
  - Benefits of renegotiation
- Advocates rarely discuss the costs of renegotiation
  - COP Report – Does not mention self-cure in 187 pages!
  - White (2009a,b)

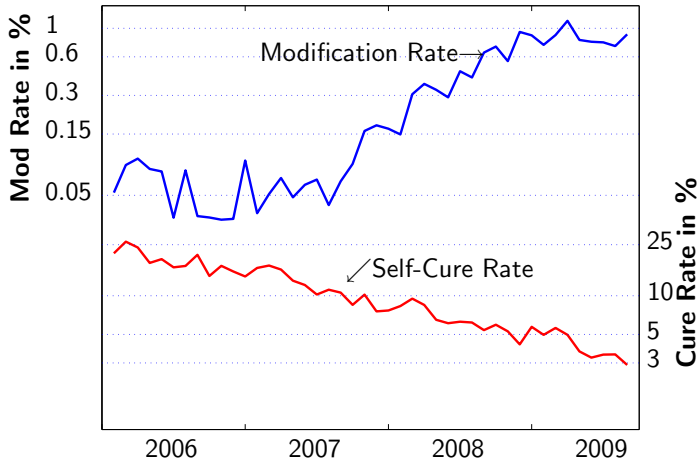
# But...

- For some reason, this argument *was* new to
  - a lot of reporters who had been covering this story since 2007
- Proponents of renegotiation focus on:
  - Costs of foreclosure
  - Benefits of renegotiation
- Advocates rarely discuss the costs of renegotiation
  - COP Report – Does not mention self-cure in 187 pages!
  - White (2009a,b)
  - Piskorski, Seru and Vig (2009)

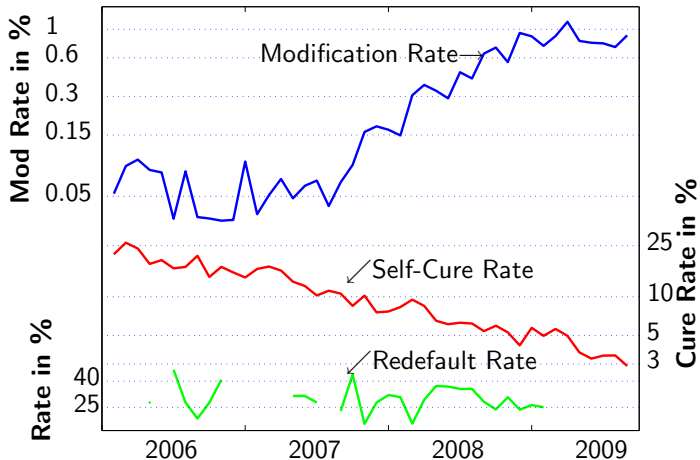
# Basic pattern is consistent



# Basic pattern is consistent



# Basic pattern is consistent





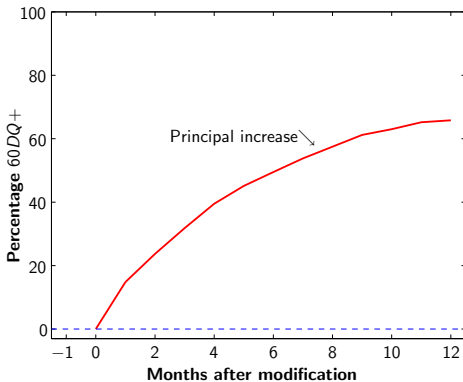
### (3) But aren't most mods still positive NPV?

- Some more criticism

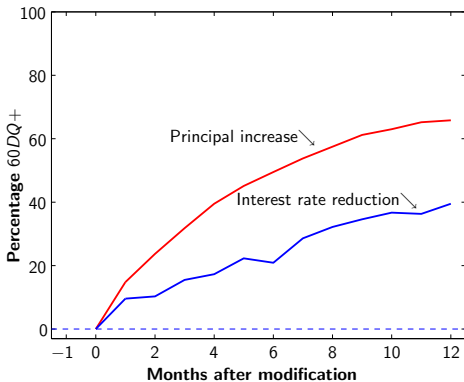
*In any event, the Boston Fed study never actually tests the rates it cites in the net present value calculation it presents. The Panel's staff tested the Boston Fed staff's NPV formula with very conservative assumptions, and found that even when using the Boston Fed staff's much higher- than-current self-cure and redefault rates, there is still room to undertake a NPV maximizing modification.*

– TARP Congressional Oversight Panel, October 10, 2009.

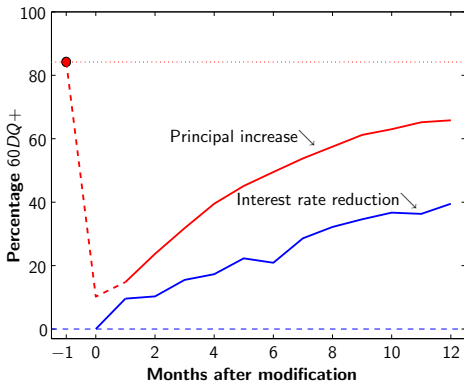
# What types of mods work?



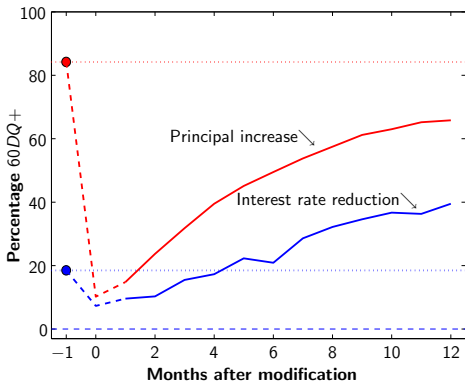
# What types of mods work?



# What types of mods work?



# What types of mods work?



# The slide you've all been waiting for...

# The slide you've all been waiting for...

- The end.