Some Facts About the Subprime Crisis

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Disclaimer

I am speaking today as a researcher and as a concerned citizen
not as a representative of:

- The Boston Fed
- or the Federal Reserve System

When I say “we”, I don’t mean Ben and me.
Caveat

Everything I’m about to say could be wrong:

No one who cannot rejoice in the discovery of his
own mistakes deserves to be called a scholar.

–Donald Foster

Details can be found in three papers available at
www.bos.frb.org

1. Subprime Facts: What (we think) we know about the subprime
   crisis and what we don’t (PPDP 08-02)
2. Negative Equity and Foreclosure: Theory and Evidence (PPDP
   08-03)
3. Subprime Outcomes: Risky Mortgages, Homeownership and
   Foreclosure (WP 07-15)

Mortgages are a bit personal for me right now
Subprime is my life

Conventional wisdom

Story goes something like this:

Borrower lured in by “below-market teaser”
Can afford the payments
Reset hits
Payment “explodes”
  Lender makes money on the higher rate but...
  Delinquency
Not accurate picture.
Do lenders make money at the reset?

- Subprime 2/28s.
- LP data for the whole country.
- Prepayment Probabilities for Subprime 2/28 ARMs, by Year of Origination

![Graph showing cumulative prepayment rates](image)

Subprime Business Model

- Extract high fees
- High interest rates prior to reset
- Borrowers refinances (or defaults) prior to reset.
- NOT the same as credit cards.
Do borrowers default at the reset?

- Subprime 2/28s just in MA, CT and RI.

![Default percentages - Subprime 2-28 ARMs](image)

Rate adjustments not that big

- Whole country
- Subprime 2/28’s, first lien.
- Source: LP (Prepared by the BOG)

<table>
<thead>
<tr>
<th>Year of Origination</th>
<th>Initial (pre-reset) interest rate</th>
<th>1-year prime ARM rate</th>
<th>Margin of fully-indexed (post-reset) rate over benchmark rate</th>
<th>Fully indexed interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>7.3</td>
<td>3.9</td>
<td>6.1</td>
<td>11.5</td>
</tr>
<tr>
<td>2005</td>
<td>7.5</td>
<td>4.5</td>
<td>5.9</td>
<td>10.5</td>
</tr>
<tr>
<td>2006</td>
<td>8.5</td>
<td>5.5</td>
<td>6.1</td>
<td>9.1</td>
</tr>
<tr>
<td>2007</td>
<td>8.6</td>
<td>5.7</td>
<td>6.1</td>
<td>9.1</td>
</tr>
</tbody>
</table>

And even this overstates the total payment change because there’s typically a second lien with

- FIXED RATE
- 10-year amortization
- Much higher rate
A counterfactual

Overall Relationship

Reverse Causality?


![Graph showing foreclosures and delinquency rates]

What causes foreclosure?

- Negative equity is necessary for default to make sense
  - If house is worth more than outstanding balance on mortgage
    - Sell!
    - In fact, servicers will usually force you to sell.
  - But most people with negative equity don’t default
    - IN 1991 in MA, we estimate that about 100,000 people had negative equity
    - Over the next three years, only about 7 percent lost their homes
  - Irrational?
    - No!
- Negative equity is not sufficient for optimal default!
  - Even in a completely frictionless world.
What do these two men have in common?

Eric Rosengren    Ed McMahon

Ed and Eric

<table>
<thead>
<tr>
<th></th>
<th>Eric Rosengren</th>
<th>Ed McMahon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Booming voice</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Memorable laugh</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Silver hair</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Negative Equity</td>
<td>in 1993</td>
<td>in 2008</td>
</tr>
<tr>
<td>Foreclosure</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Why the different outcome?
- Different stochastic discount factor
- Ed values consumption today relative to future more than Eric

Willen (Boston Fed)        Subprime Facts                  July 28, 2008            13 / 17
Outlook
