

**Discussant Notes on
Hybrid Interest Rate Choice in the
Subprime Mortgage Market: An
Analysis of Borrower Decisions**

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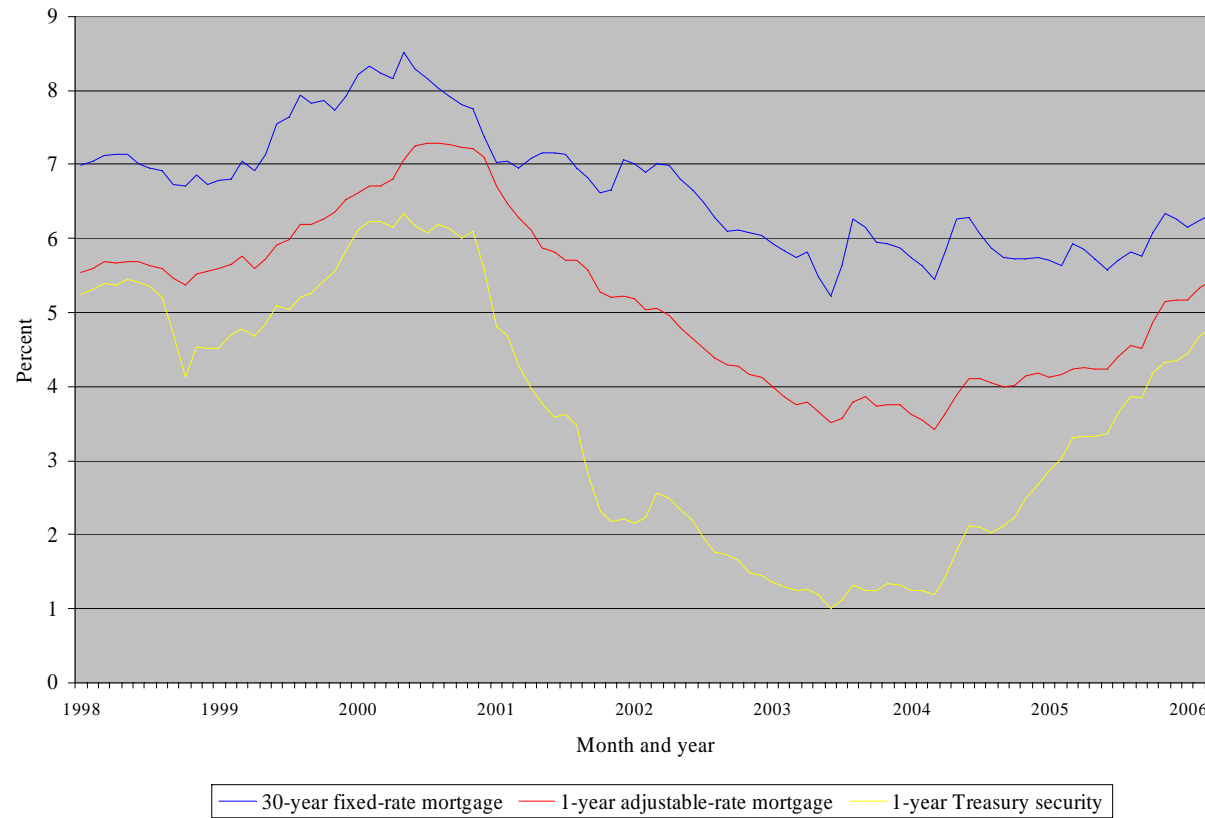
Original versus the current version of the paper

- Original version from November 2007 still uploaded to the FMA website
- Current – significantly restructured – literature+testing- version received by mail from the authors recently .
- „paper analogy to the hybrid mortgage – adjustable rate mortgage ARM on which the initial rate is initially fixed for some period of time, after which the interest rate becomes adjustable...”

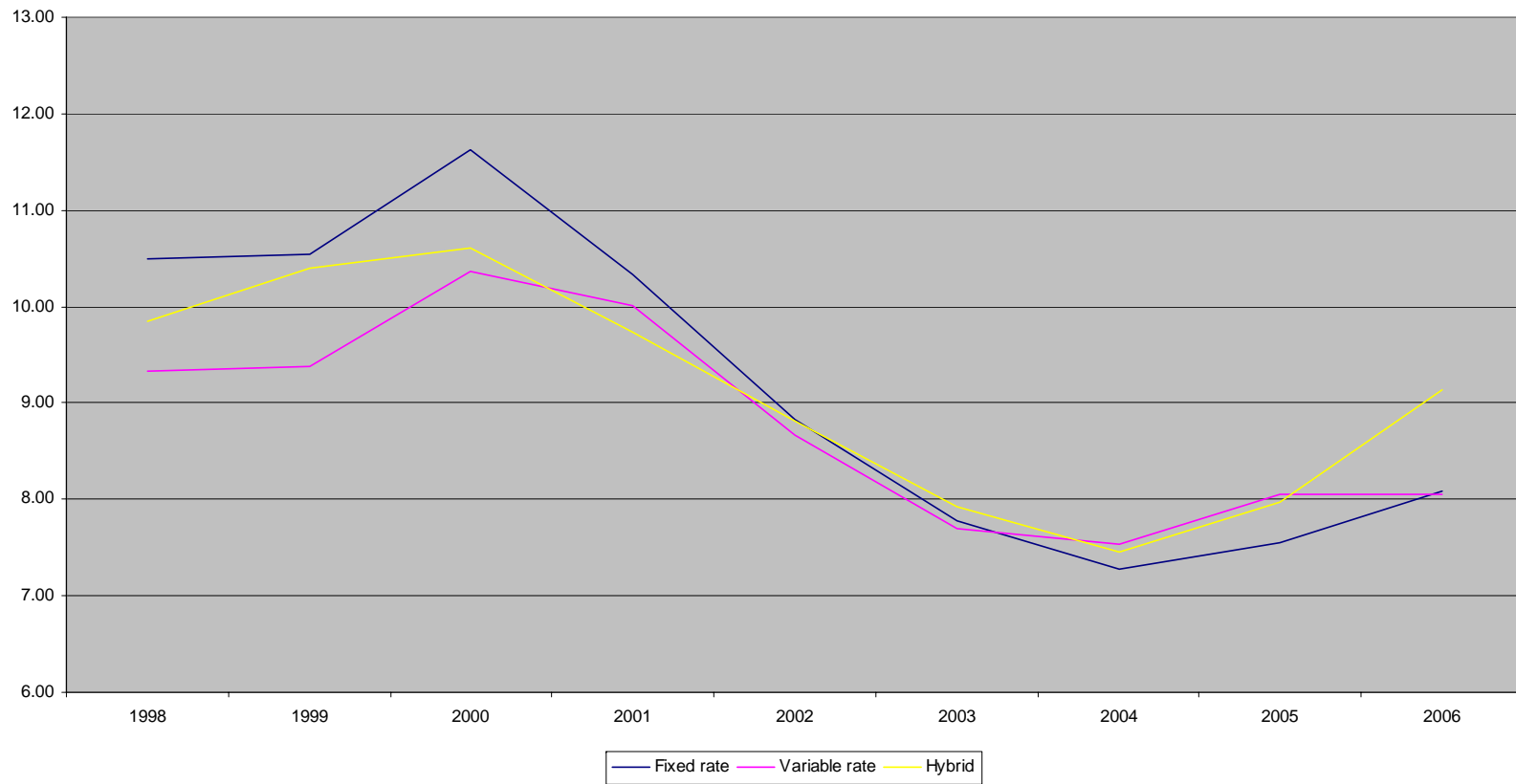
Types of mortgage products- what game ?

- Mortgages originated between Q3 1995 and Q1 2006 at eight subprime mortgage subsidiaries of large financial institutions.
 - Includes loans originated through brokers, originated directly by the lender, and purchased from other lenders.
 - Covers a large part of subprime mortgage market, including nearly a quarter of loans that reported HMDA risk premiums in 2004.
 - **Source of risk again in the innovation of real estate financing/mortgage: what lessons learnt from failure of Savings & Loans?**
 - **One-off game rather than repeatable game ? Borrowers believe in the easier mortgage restructuring – lower rate and/or home value appreciation....**
- | | | |
|--|-------|--------|
| • Open-end first mortgages | 2.7% | |
| • Open-end second mortgages | 6.6% | |
| • Mortgages with negative amortization | | <0.05% |
| • Mortgages with balloon payments | | 2.1% |
| • Closed-end, fixed-rate first mortgages | | 24.3% |
| • Closed-end, variable-rate first mortgages | 24.4% | |
| • Hybrid first mortgages | | 14.5% |
| • Hybrid second mortgages | 1.6% | |
| • Closed-end, fixed-rate second mortgages | 23.9% | |
| • Closed-end, variable-rate second mortgages | 0.2% | |

Interest rates, 1998-2006 – interpretation...



Subprime interest rates interpretation...for borrowers decision making



Average FICO risk score- how reliable are those scores ? Certain US evidence of falzification...

<i>Year</i>	<i>Fixed rate</i>	<i>Variable rate</i>	<i>Hybrid</i>
1998	607	598	591
1999	598	593	579
2000	593	580	575
2001	600	577	590
2002	610	581	590
2003	624	591	591
2004	627	609	597
2005	636	614	605
2006	635	612	598

Average loan-to-value percentage-page 6 reflecting the general trend of rising real estate prices average property value and average loan size increased for all types of interest rates...? Should be corrected for Real estate bubble...One-off game !

<i>Year</i>	<i>Fixed rate</i>	<i>Variable rate</i>	<i>Hybrid</i>
1998	77	76	78
1999	78	76	77
2000	82	76	77
2001	78	77	79
2002	76	78	78
2003	77	80	78
2004	78	80	78
2005	77	80	79
2006	76	79	78

Average initial mortgage payment-to-income percentage...

<i>Year</i>	<i>Fixed rate</i>	<i>Variable rate</i>	<i>Hybrid</i>
1998	22	18	22
1999	23	20	21
2000	25	18	21
2001	24	28	24
2002	23	28	21
2003	22	23	21
2004	22	23	22
2005	22	23	25
2006	24	24	24

Hybrid mortgage discount...- for rising market only

<i>Year</i>	<i>Actual rate</i>	<i>Fully indexed rate</i>	<i>Percentage points discount</i>	<i>Initial PTI, actual</i>	<i>Initial PTI, fully indexed</i>
1998	9.84	10.88	1.04	0.205	0.227
1999	10.40	10.71	0.30	0.201	0.207
2000	10.61	12.59	1.98	0.215	0.250
2001	9.73	9.39	-0.34	0.217	0.212
2002	8.82	8.07	-0.75	0.216	0.202
2003	7.93	6.89	-1.04	0.213	0.194
2004	7.45	7.83	0.38	0.216	0.224
2005	7.97	9.98	2.01	0.226	0.272
2006	9.14	11.75	2.61	0.224	0.304

Explanatory variables

- Observable borrower characteristics: FICO, LTV, home value, payments to income, income, full documentation dummy.- with respect to the previous data issues ?
- Time periods: 1998-2000, 2001-2003, 2004-2006. Important !data for 2007-8 needed – might spoil the model...
- Broker origination dummy Yes

Selected findings

- Hybrid borrowers were riskier than fixed-rate or variable-rate borrowers.
- Hybrid borrowers were more likely to be in high mobility areas than fixed-rate borrowers but less likely to be in high mobility areas than variable-rate borrowers – **real estate bubble sensitivity**
- Hybrid loans were less likely to be originated in 2001-2003 and 2004-2006 than 1998-2000.

Selected findings (continued)

- Brokers were more likely to originate fixed and variable-rate loans than hybrid loans.
- Borrowers are more likely to choose hybrid loans over fixed-rate loans when the interest rate spread is large and variable-rate loans when the spread is small – expectations can explain the pattern until 2006,.

Why do borrowers choose hybrids when the interest rate spread is large?

- Spread reflects expectations for future interest rates: High spread suggests future interest rates will be higher.
- Recall that hybrid borrowers have relatively low FICO scores. **Maybe even lower than noted**
- Evidence suggests that there is a high rate of migration from low scores to higher scores over relatively short time periods (see Courchane, Surette, and Zorn 2004; Crew-Cutts and Van Order 2005). **Take care...**

Use of hybrid mortgages as a transition product Yes

- It is plausible that borrowers who choose hybrid loans expect to improve their credit scores and refinance into lower price loans after the initial fixed-rate period.
- Note also that Courchane, Surette, and Zorn (2004) also found that subprime credit use was associated with adverse life events such as marital dissolution, major medical expenses, unemployment of a large change in income.