### **Option ARM Credit Risk**

August 2006

Washington Mutual Bank Confidential Information subject to confidentiality agreement with recipient.

JPM\_WM00212640

## **Executive Summary**

#### Option ARM Background:

- Option ARM loans present borrowers with flexible payment options on a monthly basis and tangible economic benefits (lower cash flow obligations and reduced initial interest costs) in return for greater interest rate risk.
- Option ARMs are structured to mitigate the potential effect of negative amortization. Stable minimum payments for 12-month periods, annual payment adjustment caps, slow moving indexes, and a lifetime interest rate cap can moderate or offset the risks of Option ARM loans over time.
- Almost all Option ARM borrowers select the minimum payment every month with very high persistency, regardless of changes in the interest rates or payment adjustments. However, the selecting the minimum payment option does not always lead to the deferral of accrued interest or increased negative amortization.

#### WaMu Option ARM Performance and Risk Management:

- ▶ ... WaMu has many years of experience originating Option ARMs primarily through the Retail and Wholesale channels.
- Since 1999, more than 60% of all aggregate Option ARM payments led to interest-only or positive amortization. As a result, the Option ARM portfolio currently has positive net amortization.
- Less than 1% of all loans originated since 1999 exceeded 105% negative amortization. Very few loans reached the 5th year payment recast period and usually had better credit performance after recast.
- Option ARM origination quality has been consistent or improving since 2005, regardless of channel, documentation, or category risk.
- Recently implemented policy changes has mitigated the credit risk of recent Option ARM originations.
- ► Risk-Based Pricing, implemented in June 2005, has the effect of limiting Teaser Rate "depth" for higher risk borrowers and transactions.
- ► The credit risk of Option ARM originations in 2006 and beyond is further mitigated by WaMu's Enterprise Decision Engine and other practices.
- Expected credit losses and capital charges for unexpected credit losses have been quantified and are incorporated in risk-based pricing adjustments at the loan level. This approach enables competitive risk-adjusted pricing across the credit spectrum within the prime market segment.

## Payment Features of the Option ARM

#### **Option ARMs are Unique**

#### Option ARMs are different from any other mortgage product:

- Borrowers have ability to select one of up to 4 payment options each month over the life of the loan.
- interest is accrued monthly according to the:
  - : Initial Start Rate for a short-term period, or
  - Fully-indexed Rate for the remainder of the loan, or Lifetime interest Cap.
- Option ARM minimum monthly payments adjust annually while the interest rate adjusts monthly according to changes in the index.
- Option ARMs are available with a 40-year term.
- In contrast, Hybrid ARM payment amounts and interest rates periodically adjust at the same time.

#### **Amortization**

## Option ARMs can incur negative or accelerated amortization depending on changes in the Index value and the Borrower's payment selection:

- The minimum payment for the first year is set according to the initial start rate.
- That initial payment typically does not cover accrued interest when the fully-indexed rate becomes effective.
- Negative amortization can occur for a few years if the minimum payment option is consistently selected.
- Negative amortization is less likely to occur after the first 5<sup>th</sup> year recast because the minimum payment becomes an amortizing payment unless the fully-indexed rate rises enough to cause negative amortization.

#### **Borrower Payment Options**

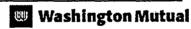
The Borrower has up to 4 payment options each month, although not all options are available every month:

- 15-yr Pmt amortizes the loan within a 15-year term
- 30-yr Pmt amortizes the loan within a 30-year term
- · Interest Only principal balance remains unchanged
- Minimum Payment lowest payment necessary to remain current on loan obligation
- A Payment Option is not available in any month when the minimum payment amount is a greater than the amount of another payment option.

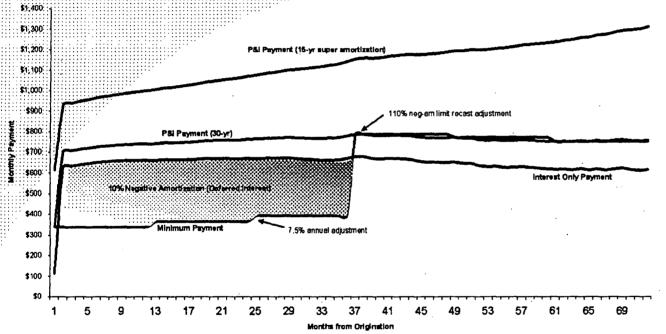
#### **Minimum Payment Adjustment**

The Minimum Payment undergoes annual adjustments and is recast every 5th year or when the neg am cap is reached:

- The minimum payment can increase or decrease by a maximum of 7-1/2% each year until it reaches the P&I amount based on current terms.
- The minimum payment becomes the P&I payment amount every 5<sup>th</sup> year or if the negative amortization cap is reached.
- Payment shock at the time of the first recast can be substantial if the borrower has consistently selected the minimum payment.
- The minimum payment becomes the P&I payment amount if the borrower becomes seriously delinquent.





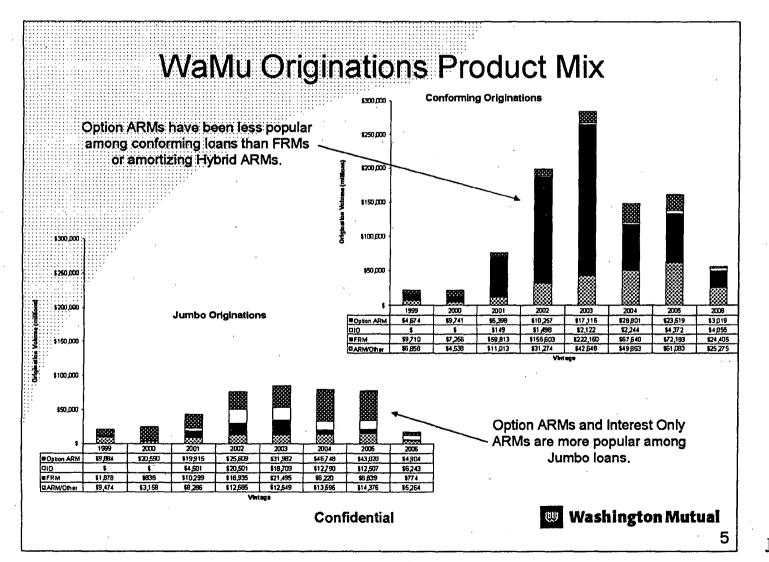


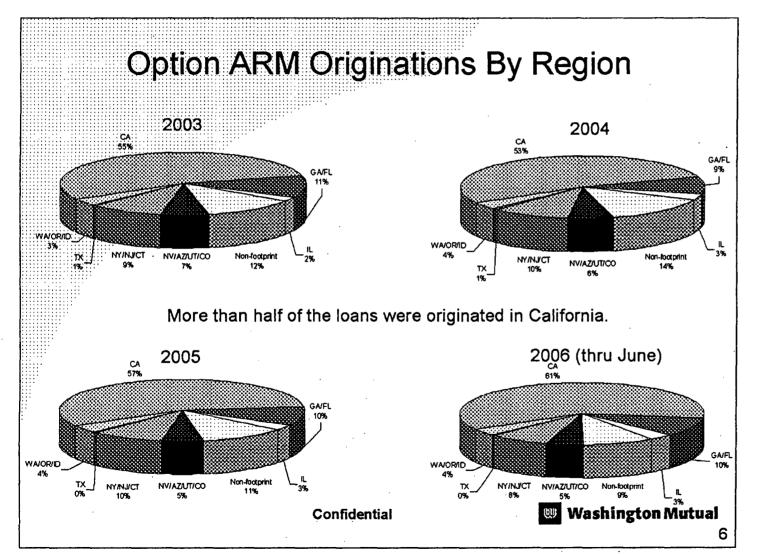
Newly originated Option ARMs with base pricing are projected to reach the negative amortization cap in the 37th month after origination if the borrower always selects the minimum payment option.

Confidential



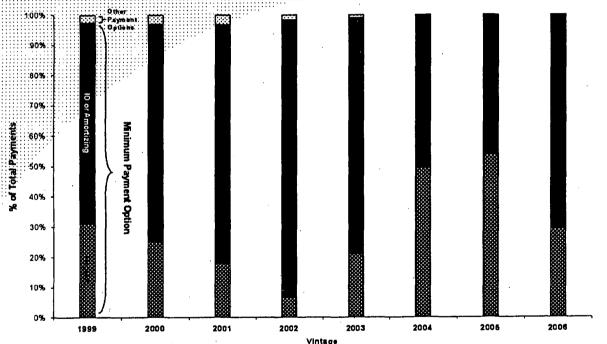
JPM\_WM00212643





JPM\_WM00212645

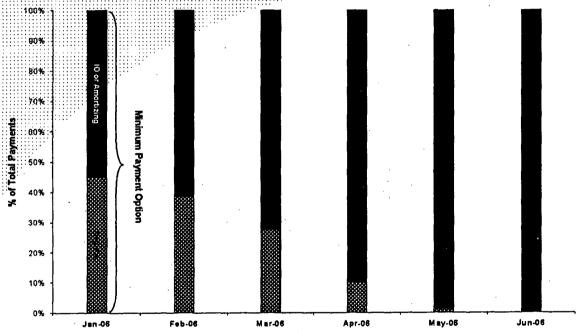




Each bar represents the aggregate of all monthly payments made since origination for each vintage. More than 95% of those payments were minimum payments and less than 40% of those minimum payments led to negative amortization.



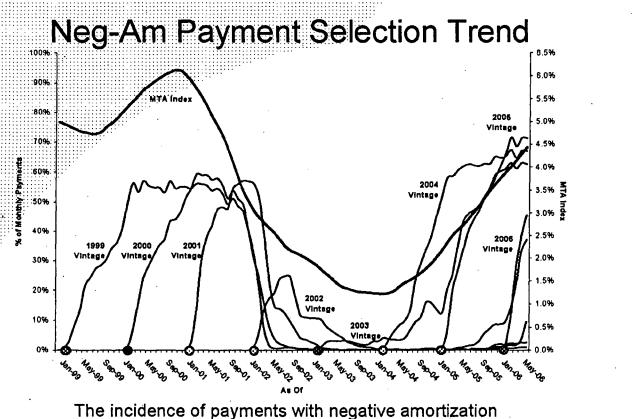




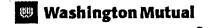
Each bar represents the aggregate of payments for each monthly vintage in 2006.

Minimum payments are amortizing amounts during the start rate period,
thus significant levels of negative amortization do not occur until 3 months after origination.



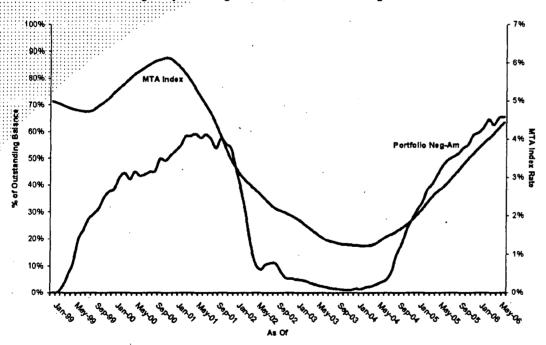


The incidence of payments with negative amortization rises when the MTA Index increases and drops when the MTA Index decreases.



## Option ARM Portfolio Neg-Am Trend

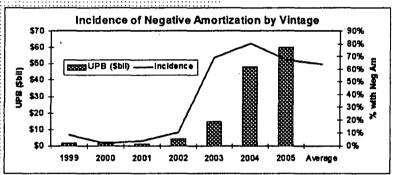
Negatively Amortizing Loans as % of Total Outstanding Balance



The recent rise in the incidence of negative amortization at the portfolio level is similar to the 2001-2002 experience.

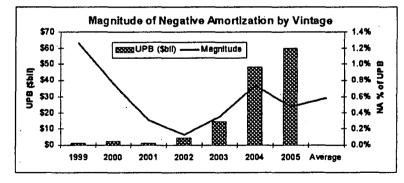


# Serviced Option ARM Portfolio Negative Amortization



The serviced Option ARM portfolio as of 12/31/05 had a high incidence of balances with negative amortization, heavily influenced by recent vintages.

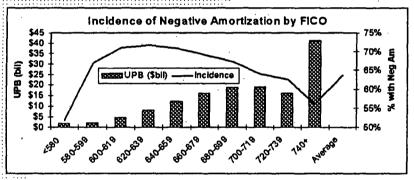
However, the amount of cumulative negative amortization as a % of outstanding balances was very small, less than 0.60%.



Confidential

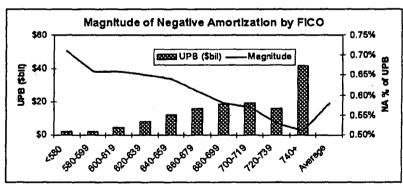
**Washington Mutual** 

## Serviced Option ARM Portfolio **Negative Amortization**



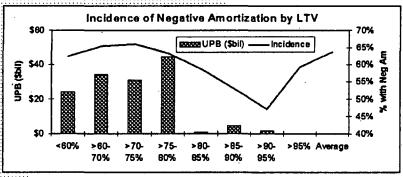
The serviced Option ARM portfolio as of 12/31/05 had a high incidence of balances with negative amortization, dominated by the 740+ FICO score category.

However, the amount of cumulative negative amortization as a % of outstanding balances was very small and lowest in the 740+ FICO score category.



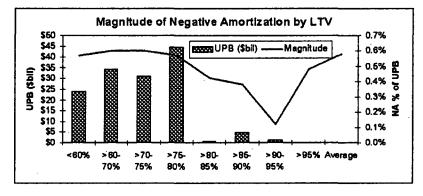


## Serviced Option ARM Portfolio Negative Amortization



The serviced Option ARM portfolio as of 12/31/05 had a high incidence of balances with negative amortization, dominated by the low LTV categories.

However, the amount of cumulative negative amortization as a % of outstanding balances is small and declines in higher LTV categories, a result of smaller start rate discounts from risk-based pricing.



**Confidential** 

**W** Washington Mutual

## Maximum Neg-Am & 5th Year Recast

|                     |  | All O                           | ption ARM C                 | rigina                          | tions                    |                               | Loans At                | 61st month Rec                | ast                        |
|---------------------|--|---------------------------------|-----------------------------|---------------------------------|--------------------------|-------------------------------|-------------------------|-------------------------------|----------------------------|
| Vintage:            | :: Max: Negam :::<br>Bucket:                           |                                 | Origination<br>Volume %     | W A<br>FIC O                    | WA Max<br>Payment        | Loan<br>Count                 | Origination<br>Volume % | 90+ DQ Rate<br>Pre-Recast     | 90+ DQ Rate<br>Post-Recast |
| 1999                | 100%<br>>100% 105%<br>>105% 110%<br>>110%              | 16,992<br>27,099<br>7,114<br>42 | 34 %<br>53 %<br>13 %<br>0 % | 700<br>671<br>664<br>611        | 8%<br>12%<br>24%<br>36%  | 3,272<br>4,706<br>2,134<br>24 | 5%<br>7%<br>3%<br>0%    | 1 %<br>4 %<br>7 %<br>8 1 %    | 1%<br>3%<br>5%<br>19%      |
| 2000                | 100%<br>5100% 105%<br>5105% 110%<br>5110%              | 21,728<br>52,658<br>219<br>34   | 28%<br>72%<br>0%<br>0%      | 696<br>672<br>636<br>612        | 6%<br>10%<br>21%<br>23%  | 3,654<br>8,143<br>71<br>14    | 3%<br>9%<br>0%<br>0%    | 1 %<br>4 %<br>4 6 %<br>10 0 % | 1%<br>2%<br>12%<br>44%     |
| 2001                | :::::100%<br>>:100% 105%<br>>:105% 110%                | 6,380<br>15,105<br>11           | 32 %<br>68 %<br>0 %         | 685<br>674<br>588               | 6%<br>9%<br>21%          | 238<br>841<br>1               | 1 %<br>3 %<br>0 %       | 3 %<br>8 %<br>100 %           | 1 %<br>2 %<br>0 %          |
| 2002                | > 110%<br>100%<br>> 100% 105%<br>> 105% 100%<br>> 110% | 2<br>43,279<br>5,126<br>11<br>2 | 0%<br>91%<br>9%<br>0%       | 659<br>684<br>679<br>623<br>675 | 11%<br>15%<br>23%<br>41% |                               |                         |                               |                            |
| 2003                | 100%<br>> 100% 105%<br>> 105% 110%<br>> 110%           | 70,887<br>15,139<br>8<br>7      | 84%<br>16%<br>0%<br>0%      | 692<br>680<br>700<br>665        | 11%<br>15%<br>33%<br>16% |                               |                         |                               |                            |
| 2004                | 100%<br>> 100% 105%<br>> 105% 110%<br>> 110%           | 81,561<br>112,381<br>11<br>3    | 41%<br>59%<br>0%<br>0%      | 700<br>688<br>667<br>668        | 7%<br>9%<br>13%<br>16%   |                               | •                       | 81 manths                     |                            |
| 2005                | 100%<br>> 100% 105%<br>> 105% 110%                     | 40,632<br>119,578<br>1          | 24 %<br>76 %<br>0 %         | 713<br>696<br>644<br>715        | 4 %<br>3 %<br>0 %        |                               |                         |                               |                            |
| 2006 (thru<br>June) | > 100%<br>> 100% 105%                                  | 18,222<br>13,732                | 41%                         | 702                             | 0%<br>0%                 |                               |                         |                               |                            |

Less than 1% of all loans originated since 1999 exceeded 105% neg-am. The maximum payment adjustment from the original payment was small and very few loans reached the 5th year payment recast period.



## Option ARM Originations by Channel

| Vintage   | Origination Volume (millions) | % UPB | WA FICO | WALTV    | WA DTI | FICO < 620 | LTV >= 90% | Serious DQ<br>% | REO % |
|-----------|-------------------------------|-------|---------|----------|--------|------------|------------|-----------------|-------|
|           |                               |       | A       | LL CHANN | NELS   |            |            |                 |       |
| Overali   | \$371,700                     | 33.3% | 694     | 72%      | 38%    | 9.70%      | 3.06%      | 0.68%           | 0.07% |
| Thru:1999 | \$151,739                     | 0,8%  | 682     | 74%      | 39%    | 14.64%     | 5.07%      | 0.30%           | 0.04% |
| 2000      | \$21,268                      | 7.9%  | 699     | 73%      | 29%    | 8.52%      | 3.07%      | 2.55%           | 0.32% |
| 2001      | \$7,559                       | 10.3% | 693     | 71%      | 34%    | 9.14%      | 1.31%      | 3.07%           | 0.32% |
| 2002      | \$17,272                      | 19.8% | 695     | 71%      | 34%    | 9:37%      | 2.09%      | 1.94%           | 0.23% |
| 2003      | \$29,889                      | 38.4% | 701     | 70%      | 33%    | 7.45%      | 1.71%      | 1.24%           | 0.09% |
| 2004      | \$66,866                      | 57.0% | 700     | 71%      | 36%    | 7.06%      | 1.89%      | 0.67%           | 0.04% |
| 2005      | \$62,206                      | 85.2% | 709     | 71%      | 36%    | 4.14%      | 1.10%      | 0.26%           | 0.02% |
| 2008      | \$14,905                      | 95.2% | 716     | 71%      | 37%    | 1.41%      | 0.86%      | 0.01%           | 0.00% |
| ::::      |                               |       | WHO     | LESALE C | HANNEL |            |            |                 |       |
| Overal    | \$181,645                     | 33.4% | 692     | 71%      | 35%    | 9.09%      | 2.47%      | 0.80%           | 0.09% |
| Thru 1999 | \$74,029                      | 0.6%  | 680     | 74%      | 37%    | 13.85%     | 3.98%      | 0.29%           | 0.05% |
| 2000      | \$12,657                      | 6.8%  | 699     | 73%      | 27%    | 7.31%      | 2.24%      | 2.67%           | 0.37% |
| 2001      | \$4,318                       | 9.9%  | 693     | 71%      | 34%    | 8.05%      | 1.35%      | 3.23%           | 0.35% |
| 2002      | \$8,463                       | 19.8% | 694     | 71%      | 34%    | 8.16%      | 1.91%      | 2.31%           | 0.24% |
| 2003      | \$14,232                      | 40.9% | 697     | 71%      | 33%    | 7.20%      | 1.70%      | 1,61%           | 0.16% |
| 2004      | \$30,693                      | 60.6% | 698     | 72%      | 35%    | 6.62%      | 1.67%      | 0.81%           | 0.07% |
| 2005      | \$29,830                      | 86.1% | 706     | 71%      | 35%    | 3.93%      | 0.77%      | 0.28%           | 0.02% |
| 2008      | \$7,422                       | 96,2% | 718     | 71%      | 36%    | 0.98%      | 0.74%      | 0.02%           | 0.00% |
|           |                               |       | RE      | TAIL CHA | NNEL   |            |            |                 |       |
| Overall   | \$177,693                     | 33.2% | 696     | 71%      | 37%    | 10.59%     | 3.66%      | 0.58%           | 0.05% |
| Thru 1999 | \$72,715                      | 1.1%  | 684     | 75%      | 41%    | 15.75%     | 6.16%      | 0.33%           | 0.04% |
| 2000      | \$8,430                       | 9.5%  | 699     | 74%      | 32%    | 10.28%     | 4.26%      | 2.40%           | 0.25% |
| 2001      | \$3,032                       | 10.8% | 691     | 71%      | 35%    | 11.00%     | 1.20%      | 2.84%           | 0.27% |
| 2002      | \$8,066                       | 19.3% | 695     | 71%      | 34%    | 11.12%     | 2.29%      | 1.42%           | 0.17% |
| 2003      | \$14,633                      | 35.9% | 703     | 70%      | 34%    | 7.98%      | 1.72%      | 0.91%           | 0.04% |
| 2004      | \$33,781                      | 53.6% | 702     | 71%      | 36%    | 7,69%      | 2.10%      | 0.54%           | 0.02% |
| 2005      | \$30,388                      | 84.9% | 710     | 71%      | 37%    | 4.48%      | 1.38%      | 0.24%           | 0.01% |
| 2006      | \$6,646                       | 94.9% | 712     | 71%      | 38%    | 2.04%      | 0.97%      | 0.00%           | 0.00% |

The quality of originations has been improving since 2000.



## NOO and Low Doc Option ARM Originations

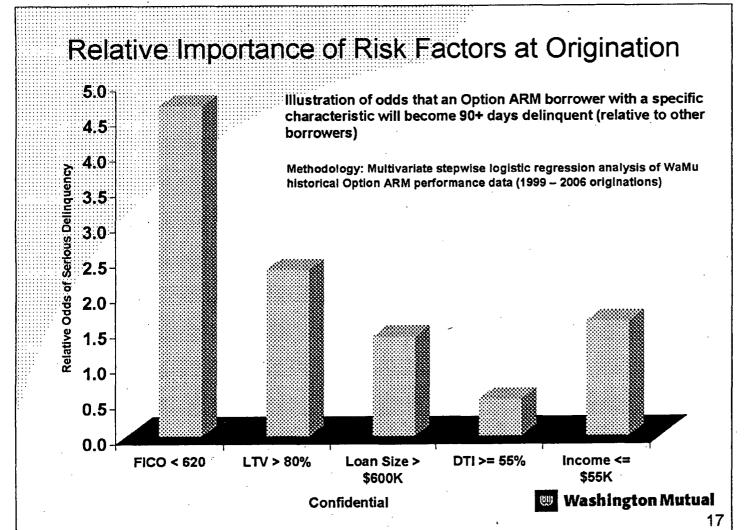
| Vintage                                 | Origination Volume<br>(millions) | % UPB  | WA FICO  | WALTV. | WADTI | FICO < 620 | LTV >=<br>90% |
|---|----------------------------------|--------|----------|--------|-------|------------|---------------|
| ::::::::::::::::::::::::::::::::::::::: |                                  |        | LOW DOC  |        |       |            |               |
| Overall                                 | \$37,364                         | 93.4%  | 714      | 69%    | _ 35% | 3%         | 0%            |
| ::Jun-05:::                             | ::::::::\$4,588                  | 88.4%  | 712      | 69%    | 33%   | 4%         | 0%            |
| Jul-05                                  | \$3,804                          | 91.6%  | 712      | 69%    | 33%   | 3%         | 0%            |
| ::Aug-05:::                             | \$4,233                          | 92.2%  | 713      | 69%    | 34%   | 3%         | 0%            |
| Sep-05                                  | \$3,656                          | 92.9%  | 712      | 69%    | 34%   | 3%         | 0%            |
| :: Oct-05:::                            | <sup>∷</sup> \$3,275             | 94.2%  | 710      | 69%    | 34%   | 3%         | 0%            |
| Nov-05                                  | \$2,969                          | 94.8%  | 708      | 69%    | 35%   | 3%         | 0%            |
| Dec-05                                  | \$2,652                          | 94.3%  | 705      | 69%    | 36%   | 3%         | 0%            |
| Jan-06                                  | \$2,045                          | 94.4%  | 708      | 69%    | 36%   | 3%         | 0%            |
| Feb-06                                  | \$1,613                          | 95.5%  | 715      | 69%    | 36%   | 1%         | 0%            |
| Mar-08                                  | \$2,057                          | 98.0%  | 719      | 71%    | 36%   | 1%         | 0%            |
| Apr-08                                  | \$1,732                          | 98.4%  | 722      | 70%    | 36%   | 1%         | 0%            |
| May-06                                  | \$2,283                          | 99.5%  | 724      | 70%    | 36%   | 0%         | 0%            |
| Jun-06                                  | \$2,456                          | 89.1%  | 726      | 70%    | _36%  | 0%         | 0%_           |
|   |                                  | NON-OV | VNER OCC | UPIED  |       |            |               |
| Överall                                 | \$6,171                          | 92.6%  | 719      | 70%    | 34%   | 0.95%      | 0.36%         |
| Jun-05                                  | \$872                            | 88.6%  | 720      | 70%    | 33%   | 1%         | 0%            |
| Jul-05                                  | \$723                            | 91.7%  | 720      | 70%    | 36%   | 1%         | 0%            |
| Aug-05                                  | \$773                            | 92.0%  | 719      | 70%    | 33%   | 1%         | 0%            |
| Sep-05                                  | \$676                            | 92.7%  | 720      | 70%    | 34%   | 1%         | 0%            |
| Oct-05                                  | \$573                            | 94.2%  | 716      | 70%    | 33%   | 1%         | 0%            |
| Nov-05                                  | \$463                            | 93.2%  | 712      | 69%    | 33%   | 1%         | 0%            |
| Dec-05                                  | \$383                            | 93.1%  | 711      | 69%    | 34%   | 1%         | 0%            |
| Jan-06                                  | \$293                            | 93.5%  | 713      | 70%    | 34%   | 2%         | 0%            |
| Feb-06                                  | • \$224                          | 95.4%  | 716      | 69%    | 34%   | 0%         | 0%            |
| M ar-06                                 | \$276                            | 96.8%  | 718      | 71%    | 36%   | 0%         | 2%            |
| Apr-08                                  | \$234                            | 99.2%  | 723      | 70%    | 32%   | 0%         | 1%            |
| May-06                                  | \$317                            | 99.9%  | 726      | 70%    | 33%   | 0%         | 1%            |
| Jun-06                                  | \$363                            | 85.6%  | 726      | 69%    | 33%   | 0%         | 0%            |

The volume of layered-risk originations has been consistently low while the credit risk of these originations has been consistently high.

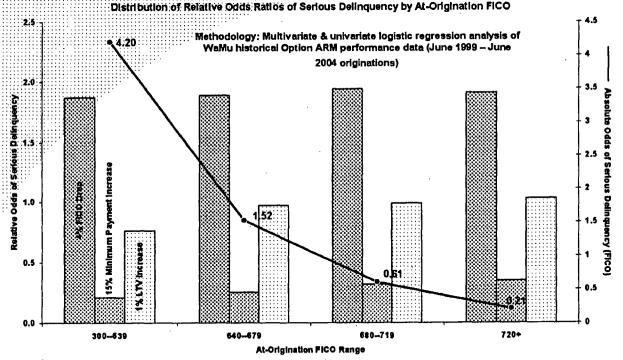
Confidential



**Washington Mutual** 



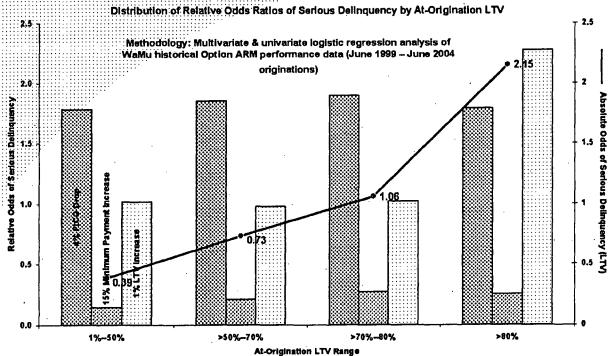




A borrower's At-Origination FICO Score is the most powerful indicator of future performance. A change in FICO score after origination also influence the probability of default.

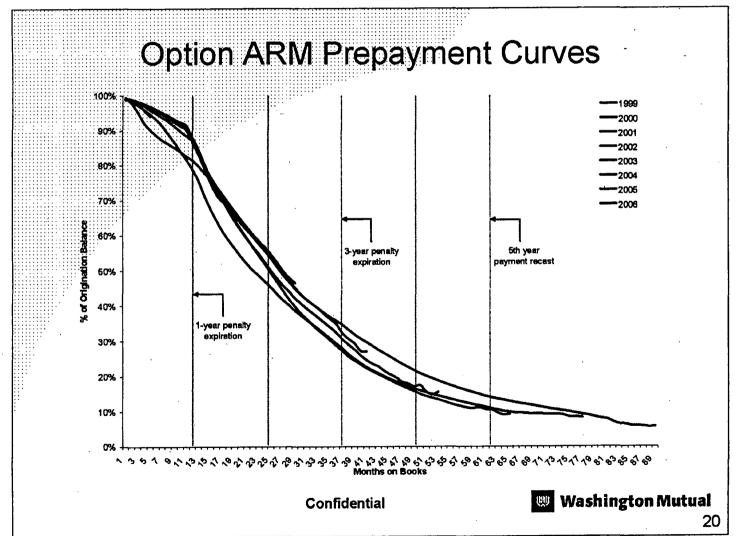


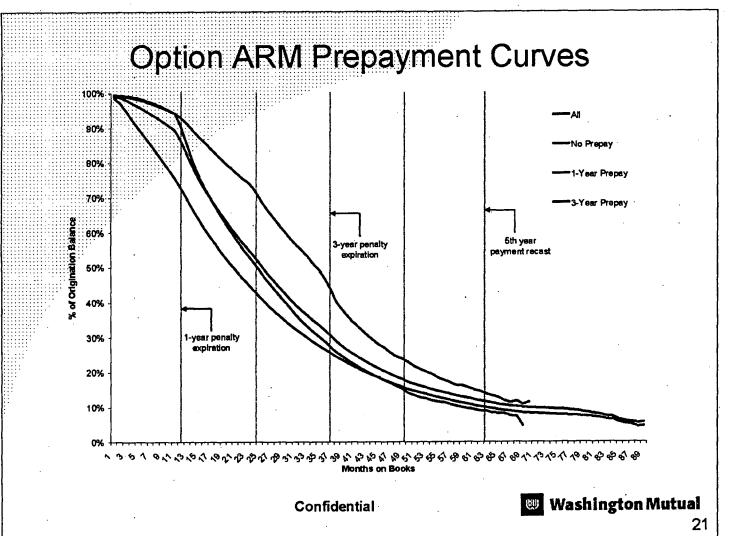
## Relative Importance of Risk Factors After Origination



The at-origination loan-to-value ratio is the 2<sup>nd</sup> most powerful indicator of future loan performance. Changes in borrower home equity after origination influence the probability of default more than changes in minimum payments.







## Implemented Policy Changes

#### **Risk-Based Pricing**

#### Risk-Based Pricing was implemented in June 2005 with additional enhancements in November:

- Start Rate, Margins and Lifetime Interest Caps are adjusted according to FICO, LTV, Loan Amount, and Loan Feature (Units, Co-ops, documentation, secondary financing, occupancy, LTV and FICO)
- incremental Start Rate adjustments further reduce the potential for negative amortization for higher risk borrowers.
- Parameter Exception Pricing adjustments properly compensate for risk according to FICO, LTV, loan amount, and layered risk

#### **Qualifying Rates**

Option ARM qualifying rates are determined according to a risk-based formula imbedded in an automated mechanism that incorporates market dynamics:

- · QRs are equal to the fully-indexed rate
- QRs include risk-based margin adjustments and parameter exception pricing adjustments
- QRs will automatically adjust with monthly index value changes

#### **Negative Amortization Limit**

#### The Negative Amortization Limit for Option ARMs was reduced to 110% from 125%:

• The neg am limit protects against payment shock regardless of future interest rate environments and start rate pricing.

#### **NOO Limits per Borrower**

#### Borrowers with portfolios of Non-owner Occupied properties are constrained:

The maximum number of investor properties available for financing, regardless of the lender, will be constrained to 10 NOO loans per borrower, up to a maximum of \$5 million.



## Impact of Risk-Based Pricing – Teaser Depth

#### **Risk-Based Pricing**

Risk-Based Pricing for Option ARMs was implemented in mid-June: start rates and margins were adjusted from "base pricing" according to LTV/FICO combinations, loan amount and loan feature (NOO, COR, Low Doc, etc.)

The effect was a narrowing of the margin-start rate "depth", as indicated by the change in start rates and margins between May 2005 and June 2006 originations.

#### Margin-Start Rate Depth (June 2006)

One year later, teaser Rate "depth" by FICO and LTV combinations narrowed considerably, as seen in the June 2006 originations.

| Owner-     | Margin-Rate Depth (June 2006) |          |          |       |  |  |
|------------|-------------------------------|----------|----------|-------|--|--|
| Occupied   | 1 70                          | >70 - 80 | >80 - 90 | >90   |  |  |
| 300 - <620 | 0.45                          | 0.67     | -0.84    | -1.43 |  |  |
| 620 <680   | 1:26                          | 1.41     | 0.56     | -0.49 |  |  |
| 680 – <720 | 1.78                          | 1.89     | 0.65     | 0.47  |  |  |
| 720+       | 1.48                          | 1.82     | 1.00     | 0.21  |  |  |

Margin-Start Rate Depth (May 2005)

Teaser Rate "depth" by FICO and LTV combinations (May 2005 Originations) was wider before risk-based pricing became effective in June 2005:

| Owner-   | Margin-Rate Depth (May 2005) |        |          |       |  |  |
|----------|------------------------------|--------|----------|-------|--|--|
| Occupied | 1 70                         | >70 80 | >80 — 90 | >90   |  |  |
| 300 <620 | 1.69                         | 1.75   | 0.24     | 0.00  |  |  |
| 620 <680 | 1.66                         | 1.76   | 0.12     | -0.97 |  |  |
| 680 <720 | 1.57                         | 1.60   | 0.17     | -0.25 |  |  |
| 720+     | 1.36                         | 1.22   | 0.02     | -0.66 |  |  |

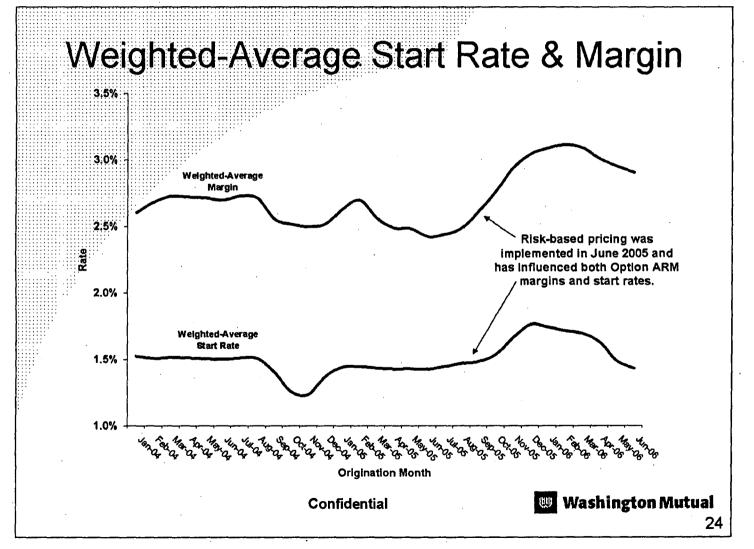
#### Change in Depth (May-05 – Jun-06)

Teaser "depth" narrowed for higher risk categories and widened in lower risk categories or when start rate discounts did not exist:

| Owner-   | BPS change in Margin-Rate Depth (May-Jun) |        |        |       |  |  |
|----------|---|--------|--------|-------|--|--|
| Occupied | 1 – 70                                    | >70 80 | >80 90 | >90   |  |  |
| 300 <620 | (125)                                     | (108)  | (108)  | (143) |  |  |
| 620 <680 | (41)                                      | (35)   | 45     | 48    |  |  |
| 680 <720 | 21  | 29     | 47     | 72    |  |  |
| 720+     | 10  | 60     | 98     | 87    |  |  |

Confidential

**Washington Mutual** 



# Additional Policies and Systems that Mitigate Credit Risk EDE Decisioning Option ARM auto-approvals shows a strong correlation by FICO Score: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong correlation by requested LTV: Option ARM auto-approvals shows a strong

40%

30%

20%

Third Party Due Diligence

Third Party Relationships are constantly evaluated for compliance to policy:

50%

30%

20%

 YTD 2006 broker terminations were primarily due to delinquency, fraud and churning.

| _           | ::Approved: | :Terminated | :: Suspended: | Other | Watch List |
|-------------|-------------|-------------|---------------|-------|------------|
| Viriolesale | 2,569       | 421         | 1,477         | 933   | •          |
| Retail      | 192         | 13          | 35            | 1     | •          |
| LBM         | 4,092       | 521         | 1,149         | 11    | •          |
| Total       | 6,853       | 955         | 2661::::      | 945   | :::::::    |

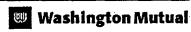
WaMu is evaluating its strategy for employing a fraud tool that will be applied in the Enterprise Decision Engine (EDE) and in manual underwriting processes:

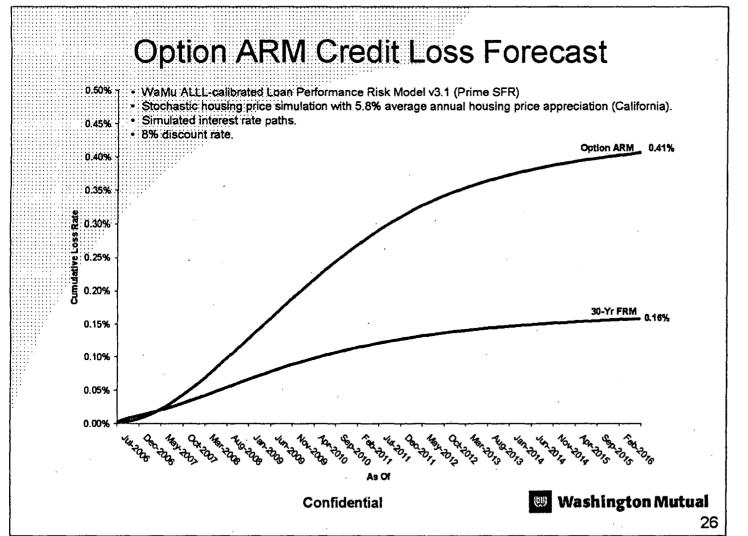
**Anti-Fraud Tool** 

- The fraud tool will evaluate 1003 data integrity and reveal risk-related inconsistencies through separate borrower- and property-related scores.
- "Red Flags" will explain transaction level scores and rulesbased criteria will determine subsequent actions or decisions.
- Third party performance or compliance can also be evaluated within the fraud tool.

0% - 50% > 50% - 60% > 60% - 70%

• The fraud tool is likely to be applied to risk-based products (ex: Option ARMs, Interest Only ARMs, Alt-A and Sub-Prime).





## Annualized Risk Premia

| Option A                  | RM               |
|---------------------------|------------------|
| Loan Pool Balance         | \$65,066,743,334 |
| Loan Count                | 195,861          |
| Weighted-average* FICO    | 698              |
| Weighted-average* LTV     | 76.5%            |
| Lifetime Loss Rate        | 0.41%            |
| Probability of Default    | 2.16%            |
| Loss Given Default        | 18.80%           |
| Annualized Loss Rate      | 0.13%            |
| Basel II Economic Capital | 0.70%            |
| Capital Charge            | 15.0%            |
| Annualized Premium        | 0.23%            |

| 30-Yr FR                  | RM               |
|---------------------------|------------------|
| Loan Pool Balance**       | \$20,426,355,708 |
| Loan Count**              | 126,314          |
| Weighted-average* FICO    | 682              |
| Weighted-average* LTV     | 71.1%            |
| Lifetime Loss Rate        | 0.16%            |
| Probability of Default    | 1.76%            |
| Loss Given Default        | 8.99%            |
| Annualized Loss Rate      | 0.05%            |
| Basel II Economic Capital | 0.34%            |
| Capital Charge            | 15.0%            |
| Annualized Premium        | 0.10%            |

#### **METHODOLOGY**

- WaMu ALLL-calibrated Loan Performance Risk Model v3.1 (Prime SFR)
- Stochastic housing price simulation with 5.8% average annual housing price appreciation (California).
- · Simulated interest rate paths.
- 8% discount rate.
- 3.24 years average loan life (Option ARM).
- Premium = Annualized Loss Rate + (Economic Capital x 15% capital charge).



weighted by at-origination balance

weighted by at-origination balance

<sup>\*\* 10%</sup> random sample of all FRM 30 production since 2003

## Annualized Risk Premia by NOO, Low Doc

| Option ARM Own            | er Occupied         |
|---------------------------|---------------------|
| Loan: Pool Balance:       | :::\$48,154,549,953 |
| Loan Count                | 124,895             |
| Weighted-average* FICO    | 690                 |
| Weighted-average* LTV     | 72.1%               |
| Cumulative Lifetime Loss  | \$181,098,975       |
| Lifetime: Default::::     | \$1,117,584,368     |
| Lifetime Loss Rate        | 0.38%               |
| Probability of Default    | 2.32%               |
| Loss Given Default        | 16.20%              |
| Annualized Loss Rate      | 0.13%               |
| Basel II Economic Capital | 0.63%               |
| Capital Charge            | 15.0%               |
| Annualized Premium        | 0.22%               |

<sup>\*</sup> weighted by at-origination balance

| Option ARM Non-Owner Occupied |  |  |  |
|-------------------------------|--|--|--|
| \$13,010,494,176              |  |  |  |
| 59,641                        |  |  |  |
| 712                           |  |  |  |
| 70.4%                         |  |  |  |
| 0.50%                         |  |  |  |
| 1.49%                         |  |  |  |
| 33.96%                        |  |  |  |
| 0.13%                         |  |  |  |
| 0.97%                         |  |  |  |
| 15.0%                         |  |  |  |
| 0.28%                         |  |  |  |
|                               |  |  |  |

<sup>\*</sup> weighted by at-origination balance

| Option ARM                | Full Doc         |
|---------------------------|------------------|
| Loan Pool Balance         | \$19,897,108,578 |
| Loan Count                | 70,603           |
| Weighted-average* FICO    | 700 -            |
| Weighted-average* LTV     | 76.4%            |
| Cumulative Lifetime Loss  | \$84,429,524     |
| Lifetime Default          | \$389,808,625    |
| Lifetime Loss Rate        | 0.42%            |
| Probability of Default    | 1.96%            |
| Loss Given Default        | 21.66%           |
| Annualized Loss Rate      | 0.12%            |
| Basel II Economic Capital | 0.76%            |
| Capital Charge            | 15.0%            |
| Annualized Premium        | 0.24%            |

<sup>\*</sup> weighted by at-origination balance

| Option ARM Low Doc        |                  |  |  |  |  |
|---------------------------|------------------|--|--|--|--|
| Loan Pool Balance         | \$43,515,545,998 |  |  |  |  |
| Loan Count                | 106,146          |  |  |  |  |
| Weighted-average* FICO    | 697              |  |  |  |  |
| Weighted-average* LTV     | 68.1%            |  |  |  |  |
| Lifetime Loss Rate        | 0.41%            |  |  |  |  |
| Probability of Default    | 2.31%            |  |  |  |  |
| Loss Given Default        | 17.81%           |  |  |  |  |
| Annualized Loss Rate      | 0.12%            |  |  |  |  |
| Basel II Economic Capital | 0.70%            |  |  |  |  |
| Capital Charge            | 15.0%            |  |  |  |  |
| Annualized Premium        | 0.23%            |  |  |  |  |

<sup>\*</sup> weighted by at-origination balance

## Annualized Risk Premia by FICO - LTV

| FICO    | LTV    |          |             |             |       |         |  |
|---------|--------|----------|-------------|-------------|-------|---------|--|
|         | 0%-60% | >60%-70% | > 70% - 80% | > 80% - 90% | > 90% | Overall |  |
| < 620   | 0.22%  | 0.51%    | 0.68%       | 0.73%       | 0.31% | 0.55%   |  |
| 620-639 | 0.14%  | 0.38%    | 0.55%       | 0.67%       | 0.24% | 0.44%   |  |
| 640-659 | 0.06%  | 0.14%    | 0.20%       | 0.25%       | 0.10% | 0.17%   |  |
| 660-679 | 0.09%  | 0.23%    | 0.35%       | 0.42%       | 0.24% | 0.28%   |  |
| 680-699 | 0.07%  | 0.18%    | 0.27%       | 0.29%       | 0.12% | 0.22%   |  |
| 700-719 | 0.04%  | 0.12%    | 0.19%       | 0.22%       | 0.16% | 0.15%   |  |
| 720+    | 0.02%  | 0.07%    | 0.12%       | 0.14%       | 0.12% | 0.10%   |  |
| Overall | 0.08%  | 0.20%    | 0.28%       | 0.38%       | 0.20% | 0.23%   |  |

