

Credit Rationing, Income Exaggeration, and Adverse Selection in the Mortgage Market*

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Internet Appendix

Abstract

We examine the role of borrower concerns about future credit availability in mitigating the effects of adverse selection and income misrepresentation in the mortgage market. We show that the majority of additional risk associated with “low-doc” mortgages originated prior to the Great Recession was due to adverse selection on the part of borrowers who could verify income, but chose not to. We provide novel evidence that these borrowers were more likely to inflate or exaggerate their income. Our analysis suggests that recent regulations changes that have essentially eliminated the low-doc loan product would result in credit rationing against self-employed borrowers.

Key Words: *Subprime Mortgages, Default, Stated Income Loans, Adverse Selection, Reputation, Asymmetric Information, Credit Rationing, Dodd-Frank Act*

JEL Classification: G2, G01, G10, G18, D1, R2

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Internet Appendix

A.1. Acknowledgment of the Journal's Disclosure Policy:

The authors acknowledge receiving financial compensation from their respective institutions. James Conklin and Jiro Yoshida acknowledge that they have no consulting relationship with any financial institution and neither they, nor any of their relatives, have received financial support from any interested party related to topics covered in this paper or have any position in any relevant organization. Brent Ambrose acknowledges that he has on-going consulting relationships with various financial institutions; however, neither he, nor any of his relatives, have received financial support from any interested party related to topics covered in this paper or have any position in any relevant organization. No party had the right to review this paper prior to circulation.

A.2. Summary of Model Predictions

Table A1: Summary of Model Predictions for Mortgage Type Preference, Income Exaggeration, Default Rate, and Interest Rate Premium

| Mortgage Type | Information Verification Cost | |
|--------------------------------------|--------------------------------------|------------------------------|
| | Low (W2) | High (Self-Employed) |
| High Information (<i>Full-Doc</i>) | Preferred | – |
| | No Income Exaggeration | No Income Exaggeration |
| | Low Default Rate | Low Default Rate |
| | No Rate Premium | No Rate Premium |
| Low Information (<i>Low-Doc</i>) | – | Preferred |
| | Large Income Exaggeration | Moderate Income Exaggeration |
| | High Default Rate | Moderate Default Rate |
| | Large Rate Premium | Moderate Rate Premium |

A.3. Derivation of Model Propositions

This section presents the derivation of the three propositions discussed in Section I. First, we consider a W2 borrower's utility-maximizing choice of income exaggeration for a low-doc loan, given a loan cost r . A W2 borrower solves the following utility maximization:

$$\max_x U_W^N(x) = u(L^N; \mu(x)) - rL^N(x) + \rho [pu(L^F; \mu) + (1-p)u(L^N(x); \mu) - rL^N(x)]$$

This objective function is globally concave. The first order condition is:

$$\frac{dU_W^N(x)}{dx} = (1 + \rho(1-p)) \left(\frac{\mu\sqrt{\beta y}}{2\sqrt{x}} - r\beta y \right) = 0.$$

Rearranging gives,

$$x_W = \frac{\mu^2}{4r^2\beta y}.$$

We insert this choice of income exaggeration into the objective function and analyze the borrower's choice between a low-doc loan and a full-doc loan.

$$B_W^N(\mu) \equiv U_W^N(x_W) - U_W^F = (1 + \rho(1-p)) \left(\frac{1}{4r} \mu^2 - \sqrt{\alpha y} \mu \right).$$

This is a convex quadratic function that takes a value of zero when $\mu = \{0, \mu^*\}$, where $\mu^* \equiv 4r\sqrt{\alpha y}$. The benefit of a low-doc loan $B_W^N(\mu)$ is positive if and only if $\mu > \mu^*$ and otherwise non-positive.

A W2 borrower without a concern about future credit access is characterized by $\rho = 0$. The choice of income exaggeration is unchanged. The benefit of a low-doc loan becomes: $B_W^N(\mu) = 1/4r\mu^2 - \sqrt{\alpha y}\mu$, which is smaller in absolute value than for a W2 borrower with future credit concerns. The threshold value μ^* is unchanged.

A self-employed borrower's utility-maximizing choice of income exaggeration for a low-doc loan, given a loan cost r , is defined by:

$$\begin{aligned} \max_x U_S^N(x) &= u(L^N(x); \mu) - rL^N(x) \\ &+ \rho [p(u(L_D^N; \mu) - rL_D^N - \gamma x L_D^N) + (1-p)(u(L^N(x); \mu) - rL^N(x))] . \end{aligned}$$

The first order condition is:

$$\frac{dU_S^N(x)}{dx} = (1 + \rho(1 - p)) \left(\frac{\mu\sqrt{\beta y}}{2\sqrt{x}} - r\beta y \right) - \rho p \gamma \beta y = 0.$$

Rearranging gives,

$$x_S = \left(1 + \frac{\rho p \gamma}{r(1 + \rho(1 - p))} \right)^{-2} \times \frac{\mu^2}{4r^2 \beta y} \equiv Ax_W,$$

where $A \equiv [1 + \rho p \gamma / r(1 + \rho(1 - p))]^{-2} \in (0, 1)$. We plug this choice of income exaggeration in the objective function and analyze the borrower's choice between a low-doc loan and a full-doc loan.

$$\begin{aligned} B_S^N(\mu) &\equiv U_S^N(x_S) - U_S^F \\ &= \mu^2 \frac{(1 + \rho(1 - p))}{4[r(1 + \rho(1 - p)) + \rho p \gamma]} + \mu [\rho p \sqrt{\beta y} - (1 + \rho)\sqrt{\alpha y}] + (1 + \rho)c^H - \rho p r \beta y \\ &\equiv \theta_1 \mu^2 + \theta_2 \mu + \theta_3, \end{aligned}$$

where $\theta_1 \equiv \frac{\sqrt{A}}{4r} > 0$, $\theta_2 \equiv \rho p \sqrt{\beta y} - (1 + \rho)\sqrt{\alpha y} < 0$, and $\theta_3 \equiv (1 + \rho)c^H - \rho p r \beta y$. $B_S^N(\mu)$ is a convex quadratic function that takes a value of θ_3 when $\mu = 0$. The sign of θ_3 depends on c^H . Further rearranging gives

$$B_S^N(\mu) = \theta_1 \left(\mu + \frac{\theta_2}{2\theta_1} \right)^2 + \theta_3 - \frac{\theta_2^2}{4\theta_1}.$$

The global minimum of $B_S^N(\mu)$ is $\theta_3 - \frac{\theta_2^2}{4\theta_1}$. Thus, there are three cases for the solution to $B_S^N(\mu) = 0$.

1. If $\theta_3 > \frac{\theta_2^2}{4\theta_1}$, then $\forall \mu : B_S^N(\mu) > 0$.
2. If $\theta_3 \in \left[0, \frac{\theta_2^2}{4\theta_1}\right]$, then $B_S^N(\mu) = 0$ has two roots: $\mu_S^* = -\frac{\theta_2}{2\theta_1} + \sqrt{\frac{\theta_2^2}{4\theta_1^2} + \frac{\theta_3}{\theta_1}}$ and $\mu_S^{**} = -\frac{\theta_2}{2\theta_1} - \sqrt{\frac{\theta_2^2}{4\theta_1^2} + \frac{\theta_3}{\theta_1}}$. Thus, $B_S^N(\mu) \leq 0$ for $\mu \in [\mu_S^{**}, \mu_S^*]$, and $B_S^N(\mu) > 0$ for $\mu \in (0, \mu_S^{**})$ and $\mu > \mu_S^*$.
3. If $\theta_3 < 0$, then $B_S^N(\mu) = 0$ has one root. Thus, $B_S^N(\mu) \leq 0$ for $\mu \in (0, \mu_S^*]$, and $B_S^N(\mu) > 0$ for $\mu > \mu_S^*$.

A.4. Variable Names and Summary Statistics

Table A2: Variable Names and Descriptions

| | |
|--|--------------------|
| Loan Characteristics | |
| The difference between the rate on the mortgage and the two year Treasury rate | <i>RATE_SPREAD</i> |
| Combined loan to value ratio at origination | <i>CLTV</i> |
| Loan amount at origination | <i>LOAN_AMOUNT</i> |
| Fees as a percentage of loan amount | <i>FEES</i> |
| An indicator set to one if the loan was an adjustable rate mortgage | <i>ARM</i> |
| An indicator set to one if the loan was a prepayment penalty on the loan | <i>PREPAY</i> |
| An indicator variable set to one if the loan was for a home purchase | <i>PURCH</i> |
| An indicator variable set to one if the loan was a cash-out refinance | <i>CASH</i> |
| The FICO score of the primary borrower at origination | <i>FICO</i> |
| An indicator set to one if the loan had interest only payments | <i>IO</i> |
| Months since origination | <i>MONTHS</i> |
| Property Characteristics | |
| An indicator set to one if the property was an investment property | <i>INVESTMENT</i> |
| An indicator set to one if the property was a two-unit property | <i>TWO_UNIT</i> |
| An indicator set to one if the property was a condo | <i>CONDO</i> |
| Borrower Characteristics | |
| The age of the primary borrower | <i>AGE</i> |
| An indicator set to one if the borrower was a minority | <i>MINORITY</i> |
| The total monthly income of the borrowers | <i>INCOME</i> |
| Face-to-face interview between broker and borrower | <i>FACE</i> |
| Interest Rate Environment | |
| The average monthly prime 30-year fixed rate at the time of origination | <i>RATE_30</i> |
| Area Characteristics | |
| Monthly unemployment rate at the MSA level | <i>UNEMP</i> |
| MSA level Herfindahl-Hirschman index for broker competition | <i>HHI</i> |
| Pahl-Index for state level broker regulations | <i>REG</i> |
| MSA house price growth over previous two years | <i>HPI_2YR</i> |
| MSA house price growth since origination | <i>HPI_GROWTH</i> |

Note: This table presents the variable names and descriptions used in subsequent tables.

Table A3: Summary Statistics for Loans by Employment and Documentation Type

| | [1] W2 Full-Doc | | | [2] W2 Low-Doc | | | [3] Self-employed Full-Doc | | | [4] Self-employed Low-Doc | | |
|---|-----------------------|------|---------|----------------------|------|---------|----------------------------------|------|---------|---------------------------------|------|---------|
| | Mean | Std. | Dev. | Mean | Std. | Dev. | Mean | Std. | Dev. | Mean | Std. | Dev. |
| Default | 0.0478 | | 0.2133 | 0.0525 | | 0.2230 | 0.0512 | | 0.2203 | 0.0505 | | 0.2189 |
| Loan Characteristics | | | | | | | | | | | | |
| The difference between the rate on the mortgage and the two year Treasury rate (<i>RATE-SPREAD</i>) | 4.6351 | | 1.5288 | 4.9516 | | 1.4065 | 4.5239 | | 1.4989 | 4.7337 | | 1.4566 |
| Combined loan to value ratio at origination (<i>CLTV</i>) | 82.9510 | | 14.2817 | 83.5768 | | 14.0507 | 83.6182 | | 13.4387 | 83.6585 | | 14.9095 |
| Loan amount at origination (<i>LOAN-AMOUNT</i>) | 174.019 | | 107.689 | 207.296 | | 115.962 | 224.821 | | 138.936 | 231.555 | | 134.122 |
| Fees as a percentage of loan amount (<i>FEES</i>) | 0.0410 | | 0.0197 | 0.0375 | | 0.0180 | 0.0358 | | 0.0186 | 0.0359 | | 0.0182 |
| An indicator set to one if the loan was an adjustable rate mortgage (<i>ARM</i>) | 0.7234 | | 0.4473 | 0.8311 | | 0.3746 | 0.7316 | | 0.4431 | 0.8285 | | 0.3769 |
| An indicator set to one if the loan was a prepayment penalty on the loan (<i>PREPAY</i>) | 0.7900 | | 0.4073 | 0.7528 | | 0.4314 | 0.8125 | | 0.3903 | 0.7484 | | 0.4340 |
| An indicator variable set to one if the loan was for a home purchase (<i>PURCH</i>) | 0.2802 | | 0.4491 | 0.4186 | | 0.4933 | 0.3203 | | 0.4666 | 0.4327 | | 0.4954 |
| An indicator variable set to one if the loan was a cash-out refinance (<i>CASH</i>) | 0.5974 | | 0.4904 | 0.5063 | | 0.5000 | 0.5669 | | 0.4955 | 0.4986 | | 0.5000 |
| The FICO score of the primary borrower at origination (<i>FICO</i>) | 600.5364 | | 59.7866 | 628.0193 | | 61.7492 | 613.4986 | | 59.2660 | 632.4919 | | 63.2627 |
| An indicator set to one if the loan had interest only payments (<i>IO</i>) | 0.1212 | | 0.3263 | 0.1470 | | 0.3541 | 0.1431 | | 0.3501 | 0.2031 | | 0.4023 |
| Months since origination (<i>MONTHS</i>) | 6.7830 | | 7.0646 | 6.7887 | | 6.7864 | 7.1651 | | 7.4309 | 6.9174 | | 6.8689 |
| Property Characteristics | | | | | | | | | | | | |
| An indicator set to one if the property was an investment property (<i>INVESTMENT</i>) | 0.0575 | | 0.2329 | 0.0849 | | 0.2787 | 0.1263 | | 0.3322 | 0.1227 | | 0.3281 |
| An indicator set to one if the property was a two-unit property (<i>TWO-UNIT</i>) | 0.0587 | | 0.2350 | 0.1021 | | 0.3028 | 0.0705 | | 0.2560 | 0.0823 | | 0.2748 |
| An indicator set to one if the property was a condo (<i>CONDO</i>) | 0.0617 | | 0.2406 | 0.0723 | | 0.2589 | 0.0606 | | 0.2387 | 0.0694 | | 0.2541 |
| Borrower Characteristics | | | | | | | | | | | | |
| The age of the primary borrower (<i>AGE</i>) | 43.1441 | | 11.6602 | 40.6433 | | 10.8312 | 43.9410 | | 11.1064 | 42.9128 | | 11.0918 |
| An indicator set to one if the borrower was a minority (<i>MINORITY</i>) | 0.4126 | | 0.4923 | 0.4187 | | 0.4934 | 0.3248 | | 0.4683 | 0.3405 | | 0.4739 |
| The total monthly income of the borrowers (<i>INCOME</i>) | 5.396 | | 3.014 | 6.398 | | 3.199 | 8.465 | | 5.245 | 8.251 | | 4.403 |
| Face-to-face interview between broker and borrower (<i>FACE</i>) | 0.3947 | | 0.4888 | 0.4545 | | 0.4979 | 0.4214 | | 0.4938 | 0.4448 | | 0.4970 |
| Interest Rate Environment | | | | | | | | | | | | |
| The average monthly prime 30-year fixed rate at the time of origination (<i>RATE_30</i>) | 6.0803 | | 0.5642 | 6.0194 | | 0.4903 | 6.1870 | | 0.6614 | 6.0332 | | 0.5119 |
| Area Characteristics | | | | | | | | | | | | |
| Monthly unemployment rate at the MSA level (<i>UNEMP</i>) | 5.3590 | | 1.5017 | 5.3759 | | 1.4690 | 5.3100 | | 1.5263 | 5.2813 | | 1.5256 |
| MSA level Herfindahl-Hirschman index for broker competition (<i>HHI</i>) | 0.0892 | | 0.1281 | 0.0682 | | 0.1084 | 0.0975 | | 0.1422 | 0.0753 | | 0.1203 |
| Paul-Index for state level broker regulations (<i>REG</i>) | 7.6612 | | 3.5965 | 8.0793 | | 3.6356 | 8.1008 | | 3.4888 | 8.2463 | | 3.5411 |
| MSA house price growth over previous two years (<i>HPI_2YR</i>) | 0.2404 | | 0.1619 | 0.2789 | | 0.1665 | 0.2522 | | 0.1676 | 0.2886 | | 0.1774 |
| MSA house price growth since origination (<i>HPI_GROWTH</i>) | 0.0685 | | 0.0957 | 0.0753 | | 0.0945 | 0.0723 | | 0.0945 | 0.0749 | | 0.0938 |
| MIDWEST | 0.2088 | | 0.4064 | 0.1588 | | 0.3655 | 0.1406 | | 0.3477 | 0.1276 | | 0.3336 |
| SOUTH | 0.2543 | | 0.4355 | 0.2198 | | 0.4141 | 0.2280 | | 0.4195 | 0.2330 | | 0.4227 |
| NORTHEAST | 0.1219 | | 0.3272 | 0.1674 | | 0.3733 | 0.0941 | | 0.2920 | 0.1197 | | 0.3246 |
| PACIFIC | 0.0079 | | 0.0887 | 0.0073 | | 0.0851 | 0.0122 | | 0.1096 | 0.0099 | | 0.0990 |
| Origination Year | | | | | | | | | | | | |
| 1999 | 0.0216 | | 0.1455 | 0.0137 | | 0.1163 | 0.0363 | | 0.1870 | 0.0216 | | 0.1452 |
| 2000 | 0.0273 | | 0.1630 | 0.0173 | | 0.1304 | 0.0468 | | 0.2112 | 0.0193 | | 0.1374 |
| 2001 | 0.0464 | | 0.2104 | 0.0366 | | 0.1878 | 0.0663 | | 0.2489 | 0.0344 | | 0.1823 |
| 2002 | 0.0972 | | 0.2962 | 0.0836 | | 0.2768 | 0.1004 | | 0.3005 | 0.0702 | | 0.2555 |
| 2003 | 0.2238 | | 0.4168 | 0.1924 | | 0.3942 | 0.1973 | | 0.3980 | 0.1923 | | 0.3941 |
| 2004 | 0.2803 | | 0.4491 | 0.3537 | | 0.4781 | 0.2353 | | 0.4781 | 0.2695 | | 0.4437 |
| 2005 | 0.2921 | | 0.4547 | 0.2923 | | 0.4548 | 0.2956 | | 0.4563 | 0.3815 | | 0.4858 |
| N | 256,747 | | | 107,621 | | | 19,823 | | | 74,681 | | |

Note: This table presents summary statistics for the funded loans from the New Century database.

Table A4: Comparison of New Century Data to loans originated in 2004 and 2005 as reported in Demyanyk and Van Hemert (2011).

| Variable | Demyanyk and Van Hemert Sample | New Century Data |
|-------------|--------------------------------|------------------|
| Loan Amount | \$190,000 | \$193,000 |
| FRM | 21% | 23% |
| Refinance | 61% | 66% |
| FICO | 620 | 613 |
| CLTV | 84% | 83% |
| Investor | 8% | 8% |
| Full-Doc | 73% | 60% |
| Rate | 7.40% | 7.70% |

Note: This table presents a summary comparison of the data employed by Demyanyk and Van Hemert (2011) with the New Century loans originated in 2004 and 2005 and used in this study.

A.5. Estimation Results for the Semi-log Model of Borrower Income (Section V.)

Table A5 reports the coefficient estimates for the income regressions where the dependent variable is the log of borrower income. Column [1] includes all full-doc W2 observations, while Column [2] includes all full-doc self-employed observations.* The signs and significance of the coefficients generally match across the two subsamples. The coefficients indicate that women and minorities have lower incomes while borrowers with higher credit reputation have higher incomes. An individual's income is positively related to the neighborhood (ZIP code) income level, and negatively related to the changes in MSA house prices in the two-year period prior to loan origination.

We use the coefficients in Table A5 to compute estimates of income for the full-doc (in-sample) and low-doc (out-of-sample) loan borrowers. To calculate an estimate of income exaggeration (*INC_EXAG*), we subtract the estimated income from the reported income. Since estimated and reported income are both in logs, *INC_EXAG* represents the percentage difference between the borrower's reported income and estimated income.†

*Full-doc borrower income is verified by the lender.

†*INC_EXAG* is winsorized at the at the 1% level, but the main results are unchanged without winsorization.

Table A5: Model for Income Estimation

| Dependent Variable: Natural Logarithm of Borrower Monthly Income | [1] | | [2] | |
|---|------------|------------------------|---|-----------|
| | W2 | Log Income Full Doc | Self-Employed Log Income Full Doc | Std. Err. |
| The FICO score of the primary borrower at origination (FICO) | 0.0002*** | (0.0000) | 0.0004*** | (0.0001) |
| An indicator set to one if the borrower was a female (FEMALE) | -0.1157*** | (0.0015) | -0.0985*** | (0.0075) |
| The age of the primary borrower (AGE) | -0.0027*** | (0.0001) | -0.0022*** | (0.0003) |
| An indicator set to one if the borrower was a minority (MINORITY) | -0.0077*** | (0.0016) | -0.0132* | (0.0076) |
| Zip Code Income per Capita (ZIP_INC) | 0.1021*** | (0.0023) | 0.0496*** | (0.0093) |
| Loan amount at origination (LOG_LOAN) | 0.6762*** | (0.0019) | 0.6782*** | (0.0080) |
| An indicator set to one if the property was an investment property (INVESTMENT) | 0.3685*** | (0.0032) | 0.5236*** | (0.0107) |
| MSA house price growth over previous two years (HPI_2YR) | -0.2483*** | (0.0094) | -0.1133*** | (0.0406) |
| Origination Year Dummies | Yes | | Yes | |
| MSA Fixed Effects | Yes | | Yes | |
| Constant | 0.0760 | (0.0835) | 0.1985 | (0.2486) |
| N | 253,114 | | 19,509 | |
| Adj. R^2 | 0.54 | | 0.45 | |


Note: This table presents coefficient estimates from an OLS regression of log borrower income for the full-doc funded loans from the New Century database. The coefficients in columns 1 and 2 are used to estimate the log income of the W2 and self-employed loans, respectively. Heteroskedasticity-robust standard errors adjusted for clustering at the MSA level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

A.6. Example Wholesale Rate Sheets

FIRST MORTGAGE ARM
2 YR. FIXED / 2 YR. PRE-PAY (31/6% CAPS)

| EASYWRITER SPECIAL | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|
| <p>(- 0.19) OFF IN RATE OR <30* YSP*</p> <p>0 PREPAY LOANS NOT ELIGIBLE FOR YSP YSP MUST BE SUBMITTED USING EASYWRITER * IF YOU ARE NOT AN EASYWRITER CUSTOMER, SEE YOUR AE FOR DETAILS **Special will be applied by FF underwriter**</p> | | | | | | | | | |
| <p>100% COMBO HELOC AVAILABLE FOR FULL DOC & LIV.</p> | | | | | | | | | |
| <p>FOR DTI: <45.49%</p> <p>> 40% (FF NVL)</p> <p>600-639 -1.00</p> | | | | | | | | | |
| <p>FOR 12 month bank statements 600-639 0.25</p> <p>12</p> <p>RATE ADD-ON</p> <p>0.25</p> <p>0.95</p> | | | | | | | | | |
| <p>1 Y Prepay</p> <p>0 Y Prepay</p> <p>0.25</p> <p>0.95</p> | | | | | | | | | |
| <p>PREPAYMENT PENALTY BUDOWN</p> <p>Maximum Discount = 1.00% in rate.</p> <p>Yield Spread Premium is not available.</p> | | | | | | | | | |
| <p>BUDOWN = 31</p> <p>200 HIG RATE ADD-ON ONLY</p> | | | | | | | | | |
| <p>BLIND RATE</p> <p>60020*</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |
| <p>80% LTV</p> <p>100% CLTV</p> <p>85% CLTV</p> <p>80% CLTV</p> <p>75% CLTV</p> <p>70% CLTV</p> <p>65% CLTV</p> <p>60% CLTV</p> <p>55% CLTV</p> <p>50% CLTV</p> <p>45% CLTV</p> <p>40% CLTV</p> <p>35% CLTV</p> <p>30% CLTV</p> <p>25% CLTV</p> <p>20% CLTV</p> <p>15% CLTV</p> <p>10% CLTV</p> <p>5% CLTV</p> <p>0% CLTV</p> | | | | | | | | | |

Figure A.1: First Franklin Wholesale Mortgage Rate Sheet

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Subprime First Mortgages
FULL DOCUMENTATION
Loan Amounts for Regular programs and Subprime 80/20
Maximum Loan Amount and Loan-to-Value (LTV)
As of 08/16/06

| FULL DOC (incl. 12 months Bank Statements ³) | | | | | | | | | | Current Occupancy/Primary Residence: SFR, PUD, Low/High-Rise Condos, 2 Units (For other Occupancy and Property types, refer to "Occupancy/Property LTV Adjustment" table) | | | | | | | | | | | | |
|--|---|------------|-------------------------|----------------|---------------|--|------|------|------|--|---------------------------------------|--------|------|--------|--------------|----------|--|--|--|--|--------|--|
| Risk Grade | Mortgage Rating | Discharged | Bankruptcy/Dismissed | NODFC Released | Minimum Score | (For other Occupancy and Property types, refer to "Occupancy/Property LTV Adjustment" table) | | | | | | | | | | | | | | | | |
| | | | | | | 66% | 70% | 75% | 80% | 85% | 90% | 95% | 100% | 80-20 | | | | | | | | |
| AA* | 06/30/12 | 1 day | 2 yrs | 3 yrs | 700+ | \$1M | \$1M | \$1M | \$1M | \$600K | \$750K | \$750K | \$1M | \$200K | Conventional | 2nd Lien | | | | | | |
| | | | | | 680 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 660 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 600 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 580 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 560 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 540 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 520 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| AA | 10/30/12 (See *** for details) Rolling 30s 60/30 = 1 st | 1 day | 2 yrs | 3 yrs | 700+ | \$1M | \$1M | \$1M | \$1M | \$600K | \$750K | \$750K | \$1M | \$200K | Conventional | 2nd Lien | | | | | | |
| | | | | | 680 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 660 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 600 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 580 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 560 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 540 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 520 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| A- | 26/30/12 Rolling 30s 60/30 = 1 st | 1 day | 2 yrs | 3 yrs | 700+ | \$1M | \$1M | \$1M | \$1M | \$600K | \$750K | \$750K | \$1M | \$200K | Conventional | 2nd Lien | | | | | | |
| | | | | | 680 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 660 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 600 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 580 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 560 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 540 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 520 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| B | 10/30/12 Unlimited 30s No rolling 90s ⁴ | 1 day | 1 yr BK G bailout OK | 2 yrs | 700+ | \$1M | \$1M | \$1M | \$1M | \$600K | \$750K | \$750K | \$1M | \$200K | Conventional | 2nd Lien | | | | | | |
| | | | | | 680 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 660 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 600 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 580 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 560 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 540 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 520 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| C | 26/30/12 Unlimited 30s/90s No rolling 90s | 1 day | 1 yr BK G bailout OK | 1 yr | 700+ | \$1M | \$1M | \$1M | \$1M | \$600K | \$750K | \$750K | \$1M | \$200K | Conventional | 2nd Lien | | | | | | |
| | | | | | 680 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 660 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 600 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 580 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 560 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 540 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 520 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| C- | 26/30/12 No 10% Unlimited 30s/90s No rolling 90s | 1 day | 1 yr BK G bailout OK | No Open NOD/FC | 700+ | \$1M | \$1M | \$1M | \$1M | \$600K | \$750K | \$750K | \$1M | \$200K | Conventional | 2nd Lien | | | | | | |
| | | | | | 680 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 660 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 600 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 580 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 560 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 540 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| | | | | | 520 | \$1M | \$1M | \$1M | \$1M | \$500K | \$750K | \$750K | \$1M | \$200K | | | | | | | | |
| DTI Ratios | 50% | | | | | | | | | | 50% ² 50% ³ 50% | | | | | | | | | | 50% | |
| | 500K | | | | | | | | | | 1,500K | | | | | | | | | | 1,500K | |
| Cash Out ⁴ | 500K | | | | | | | | | | 1,500K | | | | | | | | | | 1,500K | |
| | 500K | | | | | | | | | | 1,500K | | | | | | | | | | 1,500K | |

| OCCUPANCY / PROPERTY LTV ADJUSTMENTS | | | | |
|--------------------------------------|------------|----------------|----------|---------|
| Property Type | Risk Grade | Owner-Occupied | 2nd Home | Non-Occ |
| SFR (attached and detached) | All | 0 | -10% | -10% |
| PUD | All | 0 | -10% | -10% |
| Low & High-rise Condo/Town | All | 0 | N/A | -10% |
| 2 Units | All | -10% | N/A | -15% |
| 3-4 Units | All | -10% | N/A | -15% |
| Rural Housing | All | -10% | N/A | -15% |

* Maximum \$500K. Borrower cannot own any other real estate in whole or in part.

Subprime Matrix

8/15/2006

Figure A.2: Countrywide Wholesale Mortgage Rate Sheet

| CLTV TABLE | | |
|---|-----------|-------------|
| (Countrywide only purchases the first lien) | | |
| Credit Score | ≤ 80% LTV | > 80% LTV |
| 660 | 100% | 90% |
| 640 | 95% | 90% |
| 620 | 90% | 90% |
| 600 | 90% | Not Allowed |

SFRs, PUDs and condos. Owner occupied, primary residence only.
Secondary financing not allowed with LTV greater than 90%.

INTEREST-ONLY

| Guideline | Restriction |
|-------------------|---------------------|
| Risk Grades | AA+, AA and A only. |
| Eligible | Not Applicable |
| Min. Credit Score | 660 |

FIRST-TIME HOMEBUYERS WITHOUT 12 MONTHS RENTAL VERIFICATION

| 2 Units | < 620 | ≥ 620 |
|----------|--|-------------|
| 2nd Home | 90% LTVCLTV | 90% LTVCLTV |
| 3-4 Unit | 80% LTVCLTV | 80% LTVCLTV |
| DTI | LTVCLTV ≤ 95%; 90% LTVCLTV > 95%; 45% (90% w/ 2nd lien reserved) | 90% |

| 80/20 Program | |
|-------------------------|---|
| Options | 80/15%, 80/10%, 75/25 options also available. |
| Terms | 10-year term not allowed. |
| Geographic Restrictions | Not eligible in Arkansas. Other states may be subject to additional restrictions. |

Refer to Sections 20.1, Subprime 80/20 Program for details.

*** If 130 mortgage rate is not rolling, AA+ guidelines may be used, however, AA pricing still applies.

| STATED DOC: Non-Self Employed / W2 | | | | | | | Owner-Occupied Primary Residence: SFR, PUD, Low/High-Rise Condo, 2 Units (For other Occupancy and Property types please see Occupancy/Property LTV Adjustment Matrix.) | | | | | | | | | | | |
|------------------------------------|--|------------|-------------------------|----------------|------------------|--------|---|--------|--------|--------|--------|--------|--------|-------------------|--------|--------|------|------|
| Risk Grade | Mortgage Rating | Bankruptcy | | NOIFC Released | Minimum Score | LTV | | | | | | | | | | | | |
| | | Discharged | Dismissed | | | 65% | 70% | 75% | 80% | 85% | 90% | 95% | 100% | Combined 2nd lien | | | | |
| AA+ | 0x30x12 | 1 day | 2 yrs | 3 yrs | 650 ¹ | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M |
| | | | | | 630 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M |
| | | | | | 610 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M |
| AA | 1-3/20x12 (See footnote) Rolling 30s 6x30 = 1 ¹ | 1 day | 2 yrs | 3 yrs | 650 ¹ | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 630 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 610 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| A- | 2x30x12 Rolling 30s 6x30 = 1 ¹ | 1 day | 2 yrs | 3 yrs | 620 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 610 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 600 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 590 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 580 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| B | 1-6/20x12 Unlimited 30s No rolling 50s ² | 1 day | 1 yr Bk 13 Buyout OK | 2 yrs | 650 ¹ | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 640 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 630 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 620 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| | | | | | 610 | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | \$1M | |
| C | 1-6/20x12 Unlimited 30s/50s No rolling 50s | 1 day | 1 yr Bk 13 Buyout OK | 1 yr | 600 | \$400K | \$350K | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 |
| | | | | | 590 | \$350K | \$300K | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 |
| | | | | | 580 | \$300K | \$250K | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 |
| | | | | | 570 | \$250K | \$200K | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 |
| | | | | | 560 | \$200K | \$150K | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 | \$3 |
| DTI Ratios | | | | | 55% | 55% | 55% | 55% | 55% | 55% | 55% | 55% | 55% | 55% | 55% | 55% | | |
| Max Cash Out ¹ | | | | | | \$250K | \$250K | \$250K | \$250K | \$250K | \$250K | \$250K | \$250K | \$250K | \$250K | \$100K | | |

OCCUPANCY / PROPERTY LTV ADJUSTMENTS

| Property Type | Risk Grade | Owner-Occupied | 2nd Home | Non-Owner-Occupied |
|---------------------------------|------------|----------------|----------|--------------------|
| SFR (attached and detached) | All | 0 | -10% | -10% |
| PUD | All | 0 | -10% | -10% |
| Low & High-rise Condo/Townhomes | All | 0 | N/A | N/A |
| 2 Units | All | -10% | N/A | N/A |
| 3-4 Units | All | -10% | N/A | N/A |
| Rural Housing | All | -10% | N/A | N/A |

Maximum 55% DTI. Borrower cannot own any other real estate in whole or in part.
¹ Except as noted, all properties are subject to the following restrictions:
 - AA+ risk grade only.
 - 620 minimum credit score.
 - Interest-only option is not allowed.
 - Properties with more than 12 months of delinquency are not allowed.
 - Borrowers who own five or more properties, including subject property, are not allowed.

DTI Ratio: Borrowers must have twice the required disposable income.
 Non-owner occupied properties eligible to maximum 30%.

² Chapter 13 BK Buyouts: Maximum \$2,000 cash out after bankruptcy payoff.
³ If a mortgage shows serious delinquency (120 days or more past due in the last 36 months), the file should contain evidence that no foreclosure activity has taken place.

Misc. Notes:
 - Credit Comeback program is available for 40-, 30-, or 15-year fixed-rate loan only.

| 80/20 PROGRAM | |
|-------------------------|--|
| Options | 80/15/5, 80/10/10, 75/25 options also available. |
| Terms | 10-, 20-, 25- year terms not allowed. |
| Geographic Restrictions | Ineligible in Arkansas. Some eligible states are subject to additional restrictions. |

Refer to Sections 20.3, Subprime 80/20 Program for details.

| CLTV TABLE | |
|---|------------------------|
| (Countrywide only purchases the first lien) | |
| Credit Score | Max CLTV ² |
| ≤ 80% LTV | > 80% LTV ² |
| 560 | 100% ¹ |
| 540 | 95% |
| 520 | 90% |
| 500 | 90% |
| Not Allowed | Not Allowed |

¹ SFRs, PUDs, and condos. Owner-occupied, primary residences only.
² Secondary financing not allowed with LTVs greater than 50%.

| INTEREST-ONLY | |
|-------------------|--|
| Guideline | Restriction |
| Risk Grades | AA+ and AA only |
| Ineligible | - Rural Properties - Investment Properties - 10, 20, 25, and 40/40 terms - 3-4 units - Credit Comeback program |
| Min. Credit Score | 620 for all borrowers |
| Max. LTV/CLTV | 90% (80/20 program: 100% CLTV) |
| DTI | 80/20 program: 45% |
| Property Types | SFR, PUD, and low-rise condo only |
| Occupancy | Owner-occupied primary residences only |

FIRST-TIME HOMEBUYERS WITHOUT 12 MONTHS' RENTAL VERIFICATION

| | < 660 | ≥ 660 |
|--------------------------------------|--|--------------|
| 2 Units | 90% LTV/CLTV | 95% LTV/CLTV |
| Non-Owner-Occupied 2nd Home 3-4 Unit | 80% LTV/CLTV | 85% LTV/CLTV |
| DTI | LTV/CLTV ≤ 95%; 50% LTV/CLTV > 95%; 45% (50% w/2 mo. reserves) | 50% |

Figure A.4: Countrywide Wholesale Mortgage Rate Sheet (Stated Documentation / W2)

A.7. Additional Results

Table A6: Relationship Between Low-doc, Employment Type, and Mortgage Performance (OLS)

| | [1] | | [2] | |
|--|------------|-----------|------------|-----------|
| Dependent Variable: Default | Coeff. | Std. Err. | Coeff. | Std. Err. |
| Employment Type | | | | |
| W2 | -0.0075*** | (0.0017) | -0.0068*** | (0.0017) |
| Documentation Type | | | | |
| Low-Doc | 0.0015 | (0.0020) | 0.0017 | (0.0020) |
| Low-Doc \times W2 | 0.0064*** | (0.0021) | 0.0058*** | (0.0021) |
| Loan Characteristics | Yes | | Yes | |
| Property Characteristics | Yes | | Yes | |
| Borrower Characteristics | Yes | | Yes | |
| Interest rate environment | Yes | | Yes | |
| Area Characteristics | Yes | | Yes | |
| Origination Year Fixed Effects | Yes | | Yes | |
| MSA Fixed Effects | No | | Yes | |
| N | 455,546 | | 455,546 | |
| Mean Default Rate (Full-doc Self-Employed) | 0.0512 | | 0.0512 | |
| Mean Default Rate (Full-doc W2) | 0.0478 | | 0.0478 | |
| Adj. R^2 | 0.05 | | 0.06 | |

Note: The coefficient estimates are derived from a linear probability model of mortgage performance on income documentation, employment type, an interaction term between income documentation and employment type, loan characteristics, borrower characteristics, property characteristics, and area characteristics for the funded loans from the New Century database. Heteroskedasticity-robust standard errors adjusted for clustering at the MSA level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table A7: Relationship Between Low-doc, Employment Type, and Mortgage Performance

| | [1] | [2] |
|---------------------------------------|---|----------------------------------|
| | Primary Residences and Second Homes M.E. | Investment Properties M.E. |
| Dependent Variable: Default | | |
| Marginal Effects of Low-Doc | | |
| Self-Employed (Lowdoc) | 0.0059*** (0.0021) | -0.0008 (0.0056) |
| W2 (Lowdoc) | 0.0144*** (0.0013) | 0.0113*** (0.0033) |
| Loan Characteristics | Yes | Yes |
| Property Characteristics | Yes | Yes |
| Borrower Characteristics | Yes | Yes |
| Interest rate environment | Yes | Yes |
| Area Characteristics | Yes | Yes |
| Origination Year Fixed Effects | Yes | Yes |
| MSA Fixed Effects | Yes | Yes |
| N | 419,796 | 33,767 |
| Log Likelihood | -70,555 | -5,821 |

Note: This table presents the marginal effects of low-doc loan status on default by employment type. Columns [1] includes primary residences and second homes. Column [2] includes investment properties. The marginal effects are derived from a probit model of mortgage performance on income documentation, employment type, an interaction term between income documentation and employment type, loan characteristics, borrower characteristics, property characteristics, and area characteristics for the funded loans from the New Century database. Heteroskedasticity-robust standard errors adjusted for clustering at the MSA level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table A8: Relationship Between Low-doc, Employment Type, and Mortgage Performance Over Different Time Windows

| | [1] | | [2] | |
|--|-------------------|-----------|-------------------|-----------|
| Dependent Variable: Default | 12 months M.E. | Std. Err. | 36 Months M.E. | Std. Err. |
| Marginal Effects of Low-Doc | | | | |
| Self-Employed (<i>Lowdoc</i>) | 0.0048*** | (0.0015) | 0.0057*** | (0.0019) |
| W2 (<i>Lowdoc</i>) | 0.0094*** | (0.0010) | 0.0129*** | (0.0013) |
| Loan Characteristics | Yes | | Yes | |
| Property Characteristics | Yes | | Yes | |
| Borrower Characteristics | Yes | | Yes | |
| Interest rate environment | Yes | | Yes | |
| Area Characteristics | Yes | | Yes | |
| Origination Year Fixed Effects | Yes | | Yes | |
| MSA Fixed Effects | No | | Yes | |
| N | 454,326 | | 455,058 | |
| Mean Default Rate (Full-doc Self-Employed) | 0.0291 | | 0.0571 | |
| Mean Default Rate (Full-doc W2) | 0.0279 | | 0.0526 | |
| Log Likelihood | -52,979 | | -81,052 | |

Note: This table presents marginal effects of *Lowdoc* on default by employment type. The marginal effects are derived from a probit model of mortgage performance on income documentation, employment type, an interaction term between income documentation and employment type, loan characteristics, borrower characteristics, property characteristics, and area characteristics for the funded loans from the New Century database. In Column [1], a loan is defined as in default if it becomes 60 plus days delinquent within the first 12 months after origination. In Column [2], a loan is defined as in default if it becomes 60 plus days delinquent within the first 36 months after origination. Heteroskedasticity-robust standard errors adjusted for clustering at the MSA level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table A9: Probit Model of Extreme Income Exaggeration

| | [1] | | [2] | |
|------------------------------------|----------------|-----------|----------------|-----------|
| | INC_EXTREME_75 | | INC_EXTREME_90 | |
| Dependent Variable: INC_EXTREME | Coeff. | Std. Err. | Coeff. | Std. Err. |
| Marginal Effects of Low-Doc | | | | |
| Self-Employed (<i>Lowdoc</i>) | -0.0346*** | (0.0109) | -0.0367*** | (0.0049) |
| W2 (<i>Lowdoc</i>) | 0.0333*** | (0.0054) | 0.0152*** | (0.0038) |
| Loan Characteristics | Yes | | Yes | |
| Property Characteristics | Yes | | Yes | |
| Borrower Characteristics | Yes | | Yes | |
| Interest rate environment | Yes | | Yes | |
| Area Characteristics | Yes | | Yes | |
| Origination Year Fixed Effects | Yes | | Yes | |
| MSA Fixed Effects | Yes | | Yes | |
| N | 449,916 | | 449,916 | |
| Log Likelihood | -246,687 | | -139,277 | |

Note: This table presents marginal effects estimates from a probit model of *INC_EXTREME* on type of income documentation, loan characteristics, borrower characteristics, property characteristics, and area characteristics for the funded loans. In Column [1], *INC_EXTREME* takes a value of one if *INC_EXAG* falls in the top quartile for the borrower's employment type (e.g. W2 or self-employed). In Column [2], *INC_EXTREME* takes a value of one if *INC_EXAG* falls in the top decile for the borrower's employment type (e.g. W2 or self-employed). Heteroskedasticity-robust standard errors adjusted for clustering at the MSA level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table A10: Probability Model of Extreme Income Exaggeration (OLS)

| | [1] | | [2] | |
|---------------------------------------|----------------|-----------|----------------|-----------|
| | INC_EXTREME_75 | | INC_EXTREME_90 | |
| Dependent Variable: INC_EXTREME | Coeff. | Std. Err. | Coeff. | Std. Err. |
| Employment Type | | | | |
| W2 | -0.0355*** | (0.0024) | -0.0355*** | (0.0024) |
| Income Documentation | | | | |
| Low-Doc | -0.0333*** | (0.0106) | -0.0347*** | (0.0043) |
| Low-Doc x W2 | 0.0674*** | (0.0098) | 0.0506*** | (0.0048) |
| Loan Characteristics | Yes | | Yes | |
| Property Characteristics | Yes | | Yes | |
| Borrower Characteristics | Yes | | Yes | |
| Interest rate environment | Yes | | Yes | |
| Area Characteristics | Yes | | Yes | |
| Origination Year Fixed Effects | Yes | | Yes | |
| MSA Fixed Effects | Yes | | Yes | |
| Constant | 0.1649*** | (0.0185) | 0.1185***** | (0.0143) |
| N | 449,916 | | 449,916 | |
| Adj. R^2 | 0.01 | | 0.01 | |

Note: This table presents coefficient estimates from a linear probability model of *INC_EXTREME* on type of income documentation, loan characteristics, borrower characteristics, property characteristics, and area characteristics for the funded loans. In Column [1], *INC_EXTREME* takes a value of one if *INC_EXAG* falls in the top quartile for the borrower's employment type (e.g. W2 or self-employed). In Column [2], *INC_EXTREME* takes a value of one if *INC_EXAG* falls in the top decile for the borrower's employment type (e.g. W2 or self-employed). Heteroskedasticity-robust standard errors adjusted for clustering at the MSA level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table A11: Results from Figure 4 in Tabular Form

| Dependent Variable: Default | M.E. | Std. Err. |
|---------------------------------------|-----------|-----------|
| Marginal Effects of Low-Doc | | |
| Self-Employed | | |
| INC_EXAG = -0.530 (<i>Lowdoc</i>) | 0.0092*** | (0.0030) |
| INC_EXAG = -0.296 (<i>Lowdoc</i>) | 0.0076*** | (0.0022) |
| INC_EXAG = -0.062 (<i>Lowdoc</i>) | 0.0060*** | (0.0018) |
| INC_EXAG = 0.172 (<i>Lowdoc</i>) | 0.0045** | (0.0019) |
| INC_EXAG = 0.406 (<i>Lowdoc</i>) | 0.0030 | (0.0024) |
| INC_EXAG = 0.640 (<i>Lowdoc</i>) | 0.0016 | (0.0030) |
| W2 | | |
| INC_EXAG = -0.530 (<i>Lowdoc</i>) | 0.0031* | (0.0018) |
| INC_EXAG = -0.296 (<i>Lowdoc</i>) | 0.0071*** | (0.0013) |
| INC_EXAG = -0.062 (<i>Lowdoc</i>) | 0.0107*** | (0.0010) |
| INC_EXAG = 0.172 (<i>Lowdoc</i>) | 0.0140*** | (0.0009) |
| INC_EXAG = 0.406 (<i>Lowdoc</i>) | 0.0170*** | (0.0012) |
| INC_EXAG = 0.640 (<i>Lowdoc</i>) | 0.0197*** | (0.0016) |
| Loan Characteristics | Yes | |
| Property Characteristics | Yes | |
| Borrower Characteristics | Yes | |
| Interest rate environment | Yes | |
| Area Characteristics | Yes | |
| Origination Year Fixed Effects | Yes | |
| N | 449,917 | |

Note: This table presents marginal marginal effects of low-doc at different levels of estimated income exaggeration by employment type. -0.57 and 1.02 are the 5th and 95th percentiles of income exaggeration, respectively. The marginal effects are derived from the probit model of mortgage default described in equation (10) for the funded loans from the New Century database. Bootstrap standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table A12: Job-Specific Overstatement by Employment Type within the California and Florida

| Panel A | [1] | [2] |
|---|--------|---------------|
| Borrower Business Types that have at least 10 full- and 10 low-doc observations within California | W2 | Self-employed |
| Job-Specific Overstatement | 14.22% | -8.59% |
| % of Borrower Business Types with Job-Specific Overstatement > 0 | 77.00% | 22.22% |
| % of Borrower Business Types with Job-Specific Overstatement Significantly > 0 | 44.00% | 0.00% |
| N | 100 | 18 |
| Panel B | [1] | [2] |
| Borrower Business Types that have at least 10 full- and 10 low-doc observations within Florida | W2 | Self-employed |
| Job-Specific Overstatement | 23.39% | 0.45% |
| % of Borrower Business Types with Job-Specific Overstatement > 0 | 97.62% | 75.00% |
| % of Borrower Business Types with Job-Specific Overstatement Significantly > 0 | 61.90% | 0.00% |
| N | 42 | 4 |

Note: This table presents summary statistics by employment type for *Job-Specific Overstatement*. Column [1] in Panel A includes borrower business types that had at least 10 full-doc/W2 and 10 low-doc/W2 observations in California. Column [2] in Panel A includes borrower business types that had at least 10 full-doc/self-employed and 10 low-doc/self-employed observations in California. Column [3] reports mean differences between columns [1] and [2]. We perform a one tail mean difference test with the null hypothesis that the low-doc average income is less than or equal to the full-doc income for each of the borrower business types. *% of Borrower Business Types with Job-Specific Overstatement Significantly > 0* reports the percentage of borrower business types for which we were able to reject the null hypothesis. There are 8,639 (6,300) observations in the 100 (18) different W2 (self-employed) borrower business types within California in Panel A. Panel B includes borrower business types that have at least 10 low-doc/W2 (self-employed) and 10 full-doc/W2 (self-employed) observations in Florida. There are 3,099 (1,516) observations in the 42 (4) different W2 (self-employed) borrower business types within Florida in Panel B.

Table A13: MSA House Price Changes and Low-Doc Share of Originations

| Dependent Variable: Δ House Price | [1] Δ HPI (2006-2007) | | [2] Δ HPI (2006-2008) | | [3] Δ HPI (2006-2009) | |
|---|---------------------------------|-----------|---------------------------------|-----------|---------------------------------|-----------|
| | Coeff. | Std. Err. | Coeff. | Std. Err. | Coeff. | Std. Err. |
| % Low-Doc (2004 - 2005) | 0.3236 | (0.2753) | 0.4837 | (0.3318) | 0.0771 | (0.3844) |
| % of Low-Doc that are W2 | 0.1323 | (0.1341) | 0.3486** | (0.1557) | 0.1552 | (0.1884) |
| % Low-Doc \times % of Low-Doc that are W2 | -0.3161 | (0.4313) | -0.7075 | (0.5273) | -0.2495 | (0.6036) |
| Δ HPI (2000-2005) | -0.1250*** | (0.0408) | -0.3339*** | (0.0489) | -0.3760*** | (0.0438) |
| Inverse of Supply Elasticity | 0.7675*** | (0.2462) | 0.8457*** | (0.2675) | 0.4502 | (0.3279) |
| % Low-Doc \times Inverse of Supply Elasticity | -1.3565*** | (0.4557) | -1.4681*** | (0.5123) | -0.5994 | (0.6153) |
| % of Low-Doc that are W2 \times Inverse of Supply Elasticity | -0.8130* | (0.4390) | -1.2087** | (0.4830) | -0.7849 | (0.5408) |
| % Low-Doc \times % of Low-Doc that are W2 \times Inverse of Supply Elasticity | 1.3385 | (0.8223) | 1.9908** | (0.9564) | 1.1941 | (1.1059) |
| Δ HPI (2000-2005) \times Inverse of Supply Elasticity | 0.0660 | (0.0590) | 0.1277* | (0.0685) | 0.0956 | (0.0620) |
| Δ Unemployment (2006 - 2007) | -0.1791 | (0.1142) | | | | |
| Δ Per Capita Income (2006 - 2007) | 1.0537* | (0.5693) | | | | |
| Δ Population (2006 - 2007) | 3.1809*** | (0.7471) | | | | |
| Δ Unemployment (2006 - 2007) \times Inverse of Supply Elasticity | 0.0125 | (0.1716) | | | | |
| Δ Per Capita Income (2006 - 2007) \times Inverse of Supply Elasticity | -0.7398 | (1.0167) | | | | |
| Δ Population (2006 - 2007) \times Inverse of Supply Elasticity | -2.6778*** | (0.9904) | | | | |
| Δ Unemployment (2006 - 2008) | | | 0.1337** | (0.0545) | | |
| Δ Per Capita Income (2006 - 2008) | | | 0.8239*** | (0.2725) | | |
| Δ Population (2006 - 2008) | | | 2.2314*** | (0.4425) | | |
| Δ Unemployment (2006 - 2008) \times Inverse of Supply Elasticity | | | -0.2281*** | (0.0774) | | |
| Δ Per Capita Income (2006 - 2008) \times Inverse of Supply Elasticity | | | 0.8966 | (0.6883) | | |
| Δ Population (2006 - 2008) \times Inverse of Supply Elasticity | | | -2.2173*** | (0.5536) | | |
| Δ Unemployment (2006 - 2009) | | | | | 0.0213 | (0.0253) |
| Δ Per Capita Income (2006 - 2009) | | | | | 0.8809*** | (0.2874) |
| Δ Population (2006 - 2009) | | | | | 1.5920*** | (0.3803) |
| Δ Unemployment (2006 - 2009) \times Inverse of Supply Elasticity | | | | | -0.0298 | (0.0433) |
| Δ Per Capita Income (2006 - 2009) \times Inverse of Supply Elasticity | | | | | 0.6451 | (0.6141) |
| Δ Population (2006 - 2009) \times Inverse of Supply Elasticity | | | | | -1.1789** | (0.4951) |
| Constant | -0.1305 | (0.0838) | -0.2441** | (0.0958) | -0.0593 | (0.1289) |
| Observations | 266 | | 266 | | 266 | |
| Adjusted R-squared | 0.48 | | 0.75 | | 0.79 | |

Note: This table reports the coefficient estimates from an OLS regression of house price changes on the share of low-doc loans and the proportion of low-doc loans to that are to W2 borrowers as defined by Equations ((15)) through ((16)). White's heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Table A14: Results from Figure 4 in Tabular Form

| Default | | |
|---------------------------------------|------------|-----------|
| Dependent Variable: Default | M.E. | Std. Err. |
| Marginal Effects of Low-Doc | | |
| Self-Employed | | |
| FICO = 520 (<i>Lowdoc</i>) | -0.0009 | (0.0059) |
| FICO = 570 (<i>Lowdoc</i>) | 0.0036 | (0.0031) |
| FICO = 620 (<i>Lowdoc</i>) | 0.0061*** | (0.0020) |
| FICO = 670 (<i>Lowdoc</i>) | 0.0070*** | (0.0016) |
| FICO = 720 (<i>Lowdoc</i>) | 0.0069*** | (0.0016) |
| FICO = 750 (<i>Lowdoc</i>) | 0.0062*** | (0.0015) |
| W2 | | |
| FICO = 520 (<i>Lowdoc</i>) | 0.0140**** | (0.0025) |
| FICO = 570 (<i>Lowdoc</i>) | 0.0135*** | (0.0016) |
| FICO = 620 (<i>Lowdoc</i>) | 0.0123*** | (0.0012) |
| FICO = 670 (<i>Lowdoc</i>) | 0.0107*** | (0.0011) |
| FICO = 720 (<i>Lowdoc</i>) | 0.0090*** | (0.0011) |
| FICO = 750 (<i>Lowdoc</i>) | 0.0073*** | (0.0011) |
| Loan Characteristics | Yes | |
| Property Characteristics | Yes | |
| Borrower Characteristics | Yes | |
| Interest rate environment | Yes | |
| Area Characteristics | Yes | |
| Origination Year Fixed Effects | Yes | |
| N | 449,917 | |

Note: This table presents marginal marginal effects of low-doc at different levels of FICO score by employment type. The marginal effects are derived from the probit model of mortgage default described in equation (12) for the funded loans from the New Century database. Heteroskedasticity-robust standard errors adjusted for clustering at the MSA level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

References

Demyanyk, Yuliya, and Otto Van Hemert, 2011, Understanding the Subprime Mortgage Crisis, *Review of Financial Studies* 24, 1848–1880.