



Yale SCHOOL OF MANAGEMENT
Program on Financial Stability

EliScholar – A Digital Platform for
Scholarly Publishing at Yale

YPFS Resource Library

9-1-2010

Default Rates on Prime and Subprime Mortgages: Differences & Similarities

Federal Reserve System: Federal Reserve Bank of Chicago

<https://elischolar.library.yale.edu/ypfs-documents/8438>

This resource is brought to you for free and open access by the Yale Program on Financial Stability and [EliScholar](#), a digital platform for scholarly publishing provided by Yale University Library. For more information, please contact ypfs@yale.edu.

Profitwise

News and Views

Published by the Consumer and Community Affairs Division

September 2010



Default Rates on Prime and Subprime Mortgages: Differences & Similarities

Profitwise

News and Views

Profitwise News and Views welcomes article proposals and comments from bankers, community organizations, and other readers. It is mailed (either electronically or via U.S. mail) at no charge to state member banks, financial holding companies, bank holding companies, government agencies, nonprofit organizations, academics, and community economic development professionals.

You may submit comments, proposals, or request a subscription by writing to:

Profitwise News and Views
Consumer and Community Affairs Division
Federal Reserve Bank of Chicago
230 South LaSalle Street
Chicago, IL 60604-1413
or CCA-PUBS@chi.frb.org

The material in *Profitwise News and Views* is not necessarily endorsed by and does not necessarily represent views of the Board of Governors of the Federal Reserve System or the Federal Reserve Bank of Chicago.

© 2010 Federal Reserve Bank of Chicago
Profitwise News and Views articles may be reproduced in whole or in part, provided the articles are not reproduced or distributed for commercial gain and provided the source is appropriately credited. Prior written permission must be obtained for any other reproduction, distribution, republication, or creation of derivative works of *Profitwise News and Views* articles. To request permission, please e-mail or write to the address indicated above.

Advisor

Alicia Williams

Managing Editor

Michael V. Berry

Assistant Editor/Production Manager

Mary Jo Cannistra

Contributing Editor

Jeremiah Boyle

Compliance Editor

Steven W. Kuehl

Economic Research Editor

Robin Newberger

Economic Development Editor

Harry Pestine

Designer

Katherine Theoharopoulos

Production Specialist

Edwina Davis

Default rates on prime and subprime mortgages: differences and similarities

by Gene Amromin and Anna L. Paulson

Introduction and summary

For the past several years, the news media have carried countless stories about soaring defaults among subprime mortgage borrowers. Although concern over this segment of the mortgage market is certainly justified, subprime mortgages only account for about one-quarter of the total outstanding mortgages in the United States. The remaining 75 percent are prime loans that are made to borrowers with good credit, who fully document their income and make traditional down payments. While default rates on prime loans are significantly lower than those on subprime loans, they are also increasing rapidly. For example, among prime loans made in 2005, 2.2 percent were 60 days or more overdue 12 months after the loan was made (our definition of default). For loans made in 2006, this percentage nearly doubled to 4.2 percent, and for loans made in 2007 it rose by another 20 percent, reaching 4.8 percent. By comparison, the percentage of subprime loans that had defaulted after 12 months was 14.6 percent for loans made in 2005, 20.5 percent for loans made in 2006, and 21.9 percent for loans made in 2007. To put these figures in perspective, only 1.4 percent of prime loans and less than 7 percent of subprime originated in 2002 defaulted within their first 12 months.¹ How do we account for these

historically high default rates? How have recent trends in home prices and economic conditions affected mortgage markets? One of the things we want to consider, specifically, is whether prime and subprime loans responded similarly to home price dynamics.

Figure 1, panel A summarizes default patterns for prime loans; panel B reports similar trends for subprime loans using loan-level data from LPS Applied Analytics. Each line in the figure shows the cumulative default experience for loans originated in a given year as a function of how many months it has been since the loan was made. Several patterns are worth noting. First, the performance of both prime and subprime loans has gotten substantially worse, with loans made in 2006 and 2007 defaulting at much higher rates. The default experience among subprime loans started deteriorating earlier, with rates being higher for loans made in 2005 than in 2004. Defaults among subprime loans are, of course, much higher than defaults among prime loans – note the difference in scales of the two panels. However, the deterioration in the performance of prime loans happened more rapidly than it did for subprime loans. For example, the percentage of prime loans in default during their first 12 months grew by 95 percent between 2005 and 2006. Among subprime loans it grew by a relatively modest 53 percent.

Home prices clearly play a key role in households' ability and desire to honor their mortgage commitments. One of the things we consider in this article is whether performance of prime and subprime loans responded similarly to rapid home price appreciation from 2002 to 2005, and the sharp reversal in home prices beginning in 2006.

In this article, we make use of loan-level data on individual prime and subprime loans made between January 1, 2004, and December 31, 2007, to do two things: 1) analyze loan (and borrower) characteristics and the default experience for prime and subprime loans; and 2) estimate empirical relationships between home price appreciation, loan and borrower characteristics, and the likelihood of default. These estimates allow us to quantify which factors make default more or less likely and to examine how default sensitivity varies over time and across prime and subprime loans.

By looking at prime and subprime loans together, we hope to refine the possible explanations for the ongoing mortgage crisis.² Both prime and subprime loans have seen rising defaults in recent years, as well as very similar patterns of defaults, with loans made in more recent years defaulting at higher rates. Because of these similarities, it seems reasonable to expect that a successful explanation of the subprime crisis – the focus of most research to

date – should also explain the patterns of defaults we observe in prime mortgages.

Loan and borrower characteristics

In this section, we discuss trends in loan and borrower characteristics, as well as the default experience for prime and subprime loans for each year from 2004 through 2007.

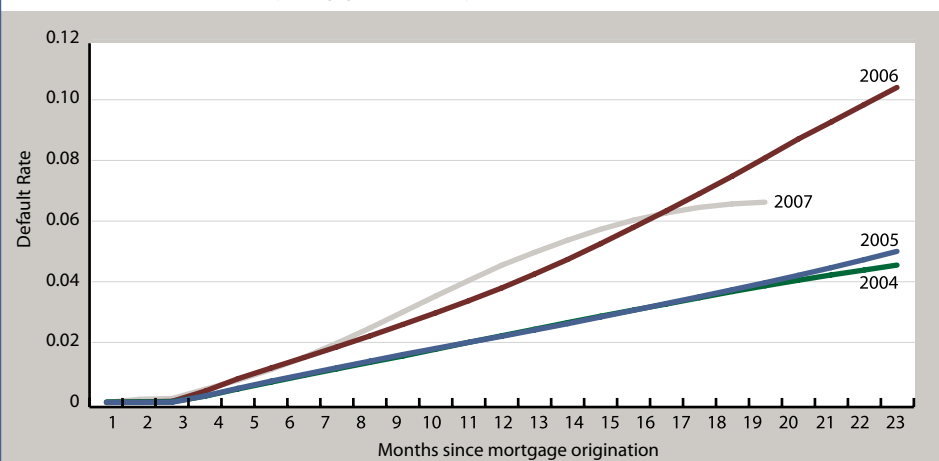
Data

The loan-level data we use come from LPS Applied Analytics (LPS), which gathers information from a number of loan servicing companies.³ The most recent data include information on 30 million loans, with smaller (but still very large) numbers of loans going back in time. The data cover prime, subprime, and Alt-A loans,⁴ and include loans that are privately securitized, loans that are sold to the GSEs, and loans that banks hold on their balance sheets.

The total number of loans originated in the LPS data in each year of the period we study ranges from a high of 6.2 million in 2005 to a low of 4.3 million in 2007. The mortgage servicers reporting to LPS Applied Analytics give each loan a grade of A, B, or C, based on the servicer's assessment of whether the loan is prime or subprime. We treat A loans as prime loans, and B and C loans as subprime. To make the analysis tractable, we work with a 1 percent random sample of prime loans made between January 1, 2004, and December 31, 2007, for a total of 68,000 prime loans, and a 10 percent random sample of subprime loans made during the same time period, for a total of 62,000 subprime loans.

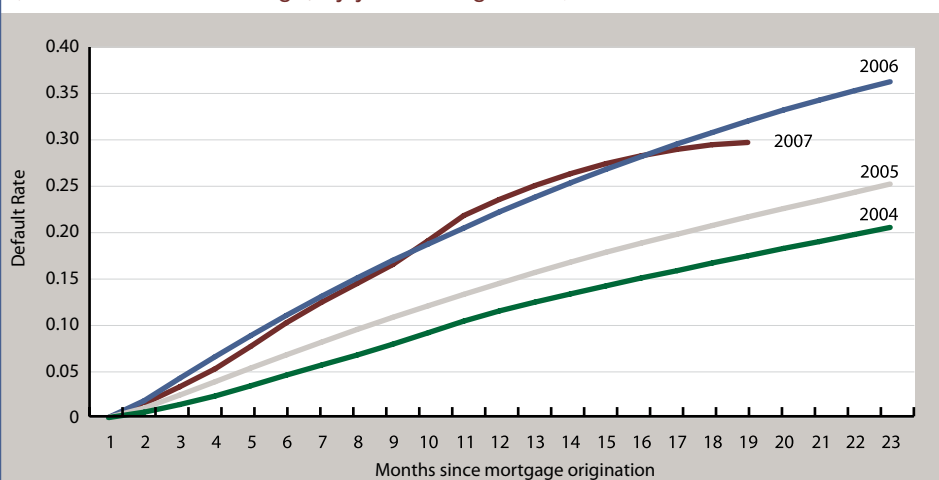
The LPS data include a wide array of variables that capture borrower and loan characteristics, as well as monthly loan performance status. In terms of borrower characteristics, important variables include the debt-to-income ratio of the borrower (DTI) and the borrower's creditworthiness, measured by their FICO (Fair Isaac Corporation)

Figure 1.A: Cumulative mortgage default rate of prime first-lien loans
(as a function of loan age, by year of origination)



SOURCE: LPS Applied Analytics.

Figure 1.B: Cumulative mortgage default rate of subprime first-lien loans
(as a function of loan age, by year of origination)



SOURCE: LPS Applied Analytics.

score.⁵ Some of the loan characteristics that we analyze include the loan amount; whether the loan is a fixed-rate or variable-rate mortgage; whether the loan was fully documented; the ratio of the loan amount to the value of the home at origination (LTV); whether the loan was intended for home purchase or refinancing and, in case of the latter, whether it involved equity extraction (a “cash-out refinance”); and whether the loan was held on the originating bank’s portfolio, sold to one of the GSEs, or privately securitized. The outcome variable that we focus on is whether the loan becomes 60 days or more past due

in the 12 months following origination. We focus on the first 12 months, rather than a longer period, so that loans made in 2007 can be analyzed the same way as earlier loans, as our data are complete through the end of 2008.⁶

We augment the loan-level data with information on local economic trends and trends in local home prices. The economic variable we focus on is the local unemployment rate that comes from the U.S. Bureau of Labor Statistics monthly zip-code-level statistics. Quarterly data on home prices is available by metropolitan statistical area

(MSA) from the Federal Housing Finance Agency (FHFA)—an independent federal agency that is the successor to the Office of Federal Housing Enterprise Oversight (OFHEO) and other government entities.⁷ We use the FHFA all transactions House Price Index (HPI) that is based on repeat sales information.

Trends in loan and borrower characteristics

Many commentators (see, for example, Demyanyk and Van Hemert, 2009) have noted that *subprime* lending standards became more lax during the period we study, meaning that the typical borrower may have received less scrutiny over time and it became easier for borrowers to get loans overall, as well as to get larger loans. Table 1 summarizes loan characteristics for each year from 2004 through 2007 for both prime and subprime mortgages.

Consistent with prior work, we also document declining borrower quality over time in the subprime sector. For example, whereas the average FICO score for subprime borrowers in 2004 was 617, it had declined to 597 by 2007.⁸ By contrast, when we look at prime loans, the decline in lending standards is less obvious. The average FICO score among prime borrowers was 710 in 2004 and 706 in 2007, a decline of less than 1 percent.

Our data also allow us to look at the prevalence of different mortgage transactions, such as purchases or refinancings. We are particularly interested in refinancings that extract home equity (a cash-out refinance). By taking out equity in a refinancing, a household may end up being more vulnerable to future home price declines, especially if its new mortgage has a high loan-to-value ratio. To the extent that the practice of cash-out refinancing was common over the period in our study, the increases in home prices may be associated with constant or even increasing leverage rather than with safer loans and a

bigger cushion against future price declines. In this way, greater prevalence of cash-out refinancing transactions may be indicative of the increasing risk in the universe of existing loans.

As indicated in table 1, mortgage servicers assign many refinancing transactions to the ambiguous category of “refinancing with unknown cash-out.” Nevertheless, among prime loans made in 2004, 12 percent were known to involve cash-outs. By 2005, this percentage had risen to about 21 percent, and it remained at this level through 2007. For subprime loans made in 2004, 35 percent involved cash-outs; for those made in 2005, 43 percent; for those made in 2006, 47 percent; and for those made in 2007, a staggering 57 percent. Put differently, cash-out loans accounted for at *least* 82 percent (0.575/0.7) of all subprime refinancing transactions in 2007! Another loan characteristic that might be an important determinant of subsequent defaults is whether the interest rate is fixed for the life of the contract or allowed to adjust periodically (as in adjustable-rate mortgages, or ARMs). When an ARM resets after the initial defined period (which may be as short as one year or as long as seven), the interest rate and, consequently, the monthly mortgage payment, may go up substantially. Higher payments may put enough stress on some families that they fall behind on their mortgages. While these loans seem attractive at first because of low introductory interest rates (and low initial payments), they expose borrowers to additional risk if interest rates go up or if credit becomes less available in general.

Among subprime mortgages, ARMs accounted for 73 percent in 2004, 69 percent in 2005, and 62 percent in 2006. By 2007, the ARM share had fallen to 39 percent, since the availability of these types of loans declined in the second half of the year. Importantly, nearly all subprime ARMs have introductory periods of three years or less, which makes borrowers with these

loans very dependent on the ability to refinance.⁹ In contrast, loans to prime borrowers are predominantly made as fixed-rate contracts (about 75 percent of all prime loans), and the majority of prime ARMs have introductory periods of five to seven years.

One oft-mentioned culprit for the subprime crisis is the growth of lenders who followed the “originate-to-distribute model” (see, for example, Keys et al., 2010, and Calomiris, 2008). These lenders sold virtually all of the mortgages they made, typically to private securitizers. Because such lenders do not face a financial loss if these mortgages eventually default, they have relatively little incentive to screen and monitor borrowers. In addition to selling loans to private securitizers, the lenders can hold loans on their own portfolios or sell them to one of the GSEs. However, only loans that meet certain criteria (borrower with a FICO score of at least 620, loan value of less than \$417,000, and a loan-to-value ratio [LTV] of 80 percent or less) can generally be sold to the GSEs. Most subprime loans cannot be sold to GSEs and must be either privately securitized or held in portfolio.

The extent of loan securitization is one of the striking facts in table 1. Recall that the LPS data comprised loans serviced by the large mortgage servicers. As a result, LPS overstates the actual extent of securitization somewhat, as it is more common for smaller banks to hold loans in portfolio and also to service them internally. That being said, the LPS data indicate that within the first month of origination, about half of prime mortgages made in 2004 remained in their originators' portfolios. This figure declined to about 40 percent in each of the subsequent years in our data. By comparison, many fewer subprime loans were retained by their originators even for the first month: just over 40 percent of loans made in 2004 and less than 30 percent made in the following years. However, by the end of the first year since origination, the share of originated

Table 1: Loan characteristics at origination

	Prime Loans				Subprime Loans			
	2004	2005	2006	2007	2004	2005	2006	2007
% default in first 12 months	2.43%	2.39%	4.33%	4.93%	11.19%	16.22%	23.79%	25.48%
% default in first 18 months	3.90%	3.74%	7.67%	6.86%	15.92%	23.35%	34.91%	33.87%
% default in first 21 months	5.11%	4.91%	10.51%	6.40%	23.35%	31.72%	43.75%	32.15%
HPI growth (12 months since origination)	13.44%	9.10%	1.94%	-4.19%	13.99%	9.70%	1.52%	-3.94%
HPI growth (21 months since origination)	20.98%	10.89%	-1.39%		18.85%	11.06%	-2.80%	
Unemployment rate (12 months following orig.)	5.15%	4.70%	4.45%	4.80%	5.28%	4.83%	4.55%	4.81%
Median income in zip code (in \$100,000)	\$50,065	\$49,486	\$48,417	\$48,221	\$45,980	\$44,965	\$43,790	\$43,817
Origination amount	\$173,702	\$200,383	\$211,052	\$205,881	\$167,742	\$172,316	\$179,003	\$172,667
FICO	710	715	708	706	617	611	607	597
Loan to value ratio	75.92%	74.89%	75.99%	77.75%	79.63%	80.69%	80.40%	80.56%
Debt to income ratio (if available)	35.95%	37.87%	37.25%	38.74%	39.55%	38.35%	39.78%	40.72%
Debt to income not available (fraction of loans)	52.8%	32.1%	27.6%	20.8%	41.0%	30.9%	27.2%	8.0%
Interest rate at origination	5.6%	6.0%	6.7%	6.5%	7.1%	7.5%	8.5%	8.4%
Margin rate (rate increase at reset for ARMs)	2.3%	2.4%	2.9%	2.7%	5.2%	5.4%	5.5%	5.3%
Fraction of loans that are:								
Adjustable rate mortgages (ARMs)	26.45%	26.04%	23.16%	12.93%	73.31%	69.49%	61.78%	38.92%
reset > 3 yrs	14.52%	13.32%	12.11%	10.38%	1.05%	0.96%	1.93%	6.63%
reset <= 3 yrs	11.93%	12.71%	11.05%	2.55%	72.26%	68.53%	59.85%	32.28%
Prepayment penalty	2.67%	9.82%	10.91%	5.56%	70.98%	75.42%	73.70%	48.52%
Purchase loans	44.89%	50.12%	53.33%	49.68%	41.12%	43.47%	40.21%	29.46%
Refinancing loans	40.51%	41.92%	40.70%	45.44%	53.83%	53.65%	57.34%	70.04%
Cash out refinancing loans	12.19%	20.65%	20.85%	20.97%	35.03%	42.95%	46.59%	57.47%
Refinancing without cashout	6.69%	1.93%	1.26%	2.14%	0.27%	0.65%	0.80%	0.16%
Refinancing with unknown cashout	21.63%	19.35%	18.59%	22.32%	18.53%	10.05%	9.95%	12.41%
Investment property loans	4.90%	7.31%	7.72%	7.15%	2.82%	3.82%	4.24%	3.17%
Conforming loan	60.68%	66.50%	66.18%	57.82%	28.89%	24.47%	23.67%	13.40%
As recorded at origination								
Loan sold to GSE	31.10%	34.75%	34.42%	45.76%	3.34%	4.22%	5.96%	32.52%
Loan sold to private securitizer	18.20%	27.63%	28.25%	12.84%	53.65%	66.51%	64.07%	42.60%
Loan held in portfolio	50.44%	37.61%	37.32%	40.66%	43.01%	29.27%	29.96%	24.88%
As recorded at 12 months since origination								
Loan sold to GSE	74.17%	70.72%	72.30%	82.83%	4.09%	5.76%	8.63%	40.12%
Loan sold to private securitizer	19.08%	23.73%	23.08%	10.56%	90.92%	91.89%	88.59%	55.06%
Loan held on portfolio	6.75%	5.55%	4.56%	6.40%	4.99%	2.35%	2.78%	4.81%
Number of loans in the sample	11,604	18,388	15,992	15,039	6,889	20,778	18,189	8,562

SOURCE: FHFA for HPI growth, BLS for unemployment rate and median income, LPS for all other variables.

loans kept on portfolio drops to low single digits for both prime and subprime mortgages. Not surprisingly, nearly all subprime mortgages are securitized by private investors, whereas GSEs dominate the securitization of prime mortgages. However, by the second half of 2007, the private securitization market had all but disappeared. The GSEs took up much of the slack, accounting for about 40 percent of all subprime securitizations in that year.¹⁰

Estimates of default

In this section, we estimate empirical models of the likelihood that a loan will default in its first 12 months. This allows us to quantify which factors make default more or less likely and to examine how the sensitivity to default varies over time and across prime and subprime loans.

Econometric model

Mortgages can have multiple sources of risk—for example, low credit quality, high loan-to-value ratios, and adjustable rates with short introductory periods and high spreads to the reference rate. To take into account these and other factors that might influence default rates, we estimate a number of multivariate regression models that allow us to examine the effect of varying one risk factor while holding others fixed.

The analysis sample includes loans that do not default and are observed for 12 months after origination and loans that default (become 60 or more days past due) within 12 months of origination. We drop loans that get refinanced or transferred within their first 12 months. While this may bias our results, keeping early refinanced and transferred loans in the sample would understate the share of actual defaults, since by definition these loans are current for the duration of their (short) presence in the sample.

Our goal is to evaluate the relative strength of associations between loan default and observable borrower, loan, and macroeconomic characteristics in

different market segments and different years. To that end, we estimate the following regressions:

$$\text{Prob}(\text{default within 12 months})_{i,j,k} = \Phi(\beta_1 \text{Loan}_{i,j,k}, \beta_2 \text{Borrower}_{i,j,k}, \beta_3 \text{Econ}_{j,k}, \beta_4 D_k), \quad (1)$$

where the dependent variable is an indicator of whether a loan to borrower i , originated in an MSA j in state k defaulted within the first 12 months. We model this probability as a function of loan and borrower characteristics, MSA-level economic variables (unemployment, home price appreciation, and income), and a set of state dummy variables (D_k) that capture additional aspects of the economic and regulatory environment. We estimate the model as a standard maximum likelihood probit with state fixed effects.

To retain maximum flexibility in evaluating the importance of covariates for prime and subprime defaults, we carry out separate estimations of equation (1) for prime and subprime loans. To achieve similar flexibility over time, we further subdivide each of the prime and subprime samples by year of origination (2004 through 2007). Finally, we attempt to account for unobserved heterogeneity at the state level by incorporating state fixed effects in our econometric specification.

The economic variables include both the realized growth in the FHFA HPI and the average realized unemployment rate. Both of these variables are measured at the MSA level, and both are computed over the first 12 months *since* loan origination. Consequently, they match the period over which we are tracking loan performance. In contrast to all of the other regressors, this information would clearly not be available to the analyst at the time of loan origination. We can think of the model described in equation 1 as the sort of analysis one would be able to do at the end of 2005, after all loans originated in 2004 had gone through their first 12 months, and one is able to observe what happened to home prices

and unemployment rates over the same period. The same exercise can be performed for loans originated in 2005 at the end of 2006, for loans originated in 2006 at the end of 2007, and so on.

Results

The results of the estimation are summarized in table 2. The first four columns of data depict estimates for prime loans originated in each of the four sample years, and the next four columns contain the estimates for subprime loans. The juxtaposition of the data for the two market segments allows us to easily compare the importance of certain factors. The table presents estimates of the marginal effects of the explanatory variables, rather than the coefficients themselves. The marginal effects tell us how a one unit change in each explanatory variable changes the probability that a loan defaults in its first 12 months, holding fixed the impact of the other explanatory variables.

The defaults of both prime and subprime loans are strongly associated with the FICO score, the LTV, and the interest rate in every estimation year for each loan type. For instance, an increase of 100 points in the FICO score of prime borrowers in 2004 and 2005 is associated with about a 1.2 percentage point decrease in default likelihood (the estimated marginal effect of -0.00012 multiplied by 100). To gauge the strength of this effect, note that in those years the baseline rate of default was about 2.2 percent. The point estimates of marginal effects for 2006 and 2007 increase about twofold for prime loans, but so does the baseline sample default rate. For subprime loans, the estimated marginal effects are a full order of magnitude higher, implying that an improvement in FICO scores generates a greater decline in subprime defaults, at least in absolute terms.

Similarly, higher LTV values have a strong positive association with defaults for both loan types originated in 2005, 2006, and 2007. For subprime loans, a

Table 2: Probability of defaulting within 12 months of loan origination (probit regressions with state fixed effects)

VARIABLES	Prime Loans				Subprime Loans			
	2004 (1)	2005 (2)	2006 (3)	2007 (4)	2004 (5)	2005 (6)	2006 (7)	2007 (8)
Estimation sample mean	0.0221	0.0217	0.0423	0.0483	0.1076	0.1572	0.2399	0.2539
HPI growth	-0.00166 (0.0139)	-0.00494 (0.0109)	-0.137*** (0.0294)	-0.00356 (0.0243)	-0.183* (0.0981)	-0.168*** (0.0500)	-0.447*** (0.0934)	-0.0105 (0.121)
Unemployment rate	-0.0104 (0.0507)	0.222*** (0.0393)	-0.0370 (0.115)	0.131 (0.0968)	0.218 (0.324)	0.743*** (0.239)	-0.749** (0.346)	-0.476 (0.503)
Median income in zipcode	-0.00149 (0.00428)	-0.00253 (0.00388)	-0.00689 (0.00772)	-0.0231*** (0.00880)	-0.0398 (0.0281)	-0.0572*** (0.0215)	-0.0942*** (0.0299)	-0.0672 (0.0412)
Origination amount	-0.000122 (0.000387)	0.000176 (0.000425)	0.000830 (0.000806)	0.00190** (0.000758)	0.0135*** (0.00436)	0.0160*** (0.00341)	0.0247*** (0.00598)	0.0331*** (0.00627)
FICO score	-0.000120*** (1.64e-05)	-0.000120*** (1.16e-05)	-0.000262*** (1.97e-05)	-0.000318*** (2.26e-05)	-0.000733*** (9.12e-05)	-0.00122*** (6.84e-05)	-0.00131*** (9.10e-05)	-0.00116*** (0.000136)
Loan to value ratio (LTV)	0.00433 (0.00528)	0.0144*** (0.00500)	0.0636*** (0.0109)	0.0814*** (0.0123)	0.0523 (0.0368)	0.0820*** (0.0255)	0.193*** (0.0330)	0.193*** -0.0477
Debt to income ratio (0 if missing)	0.000502 (0.00409)	-0.00160 (0.00350)	0.00841 (0.00859)	0.0343*** (0.00845)	0.0876** (0.0399)	0.143*** (0.0302)	0.0900** (0.0388)	0.106** (0.0446)
Missing DTI dummy	0.00248 (0.00218)	0.00148 (0.00187)	0.00974** (0.00491)	0.0119** (0.00586)	0.0265 (0.0191)	0.0593*** (0.0148)	0.0183 (0.0180)	0.000879 (0.0258)
Interest rate at origination	0.337*** (0.103)	0.257** (0.107)	1.351*** (0.186)	1.653*** (0.218)	2.487*** (0.388)	3.092*** (0.282)	4.692*** (0.345)	5.384*** (0.476)
ARM w/ reset > 3 yrs dummy	0.00151 (0.00685)	-0.00366 (0.00228)	-0.00112 (0.00485)	0.0358** (0.0183)	0.0288 (0.0609)	-0.0328 (0.0313)	-0.0956*** (0.0294)	0.187 (0.133)
ARM w/reset < 3 yrs dummy	0.00180 (0.00687)	-0.00566*** (0.00204)	-0.0140*** (0.00364)	0.0462 (0.0317)	-0.0345 (0.0321)	0.00391 (0.0200)	-0.0197 (0.0325)	0.203* (0.121)
Margin rate (0 if FRM)	-0.192 (0.245)	0.150 (0.118)	0.322** (0.147)	-0.165 (0.340)	1.235** (0.521)	0.776** (0.363)	1.841*** (0.568)	-2.483 (2.014)
Prepayment penalty dummy	0.00286 (0.00572)	0.00374 (0.00325)	0.00757 (0.00467)	-0.00390 (0.00476)	0.00369 (0.00894)	0.0109 (0.00753)	-0.0189* (0.0111)	0.00180 (0.0159)
Cash out refinancing dummy	0.00274 (0.00229)	0.00445** (0.00222)	0.000601 (0.00318)	-0.00157 (0.00340)	-0.00985 (0.0110)	-0.0186** (0.00915)	-0.0284** (0.0122)	-0.0117 (0.0164)
Purchase loan dummy	0.00290* (0.00151)	0.00222* (0.00131)	0.00552** (0.00244)	0.00604** (0.00295)	0.0243*** (0.00863)	0.0415*** (0.00602)	0.0856*** (0.00815)	0.0729*** (0.0132)
Investment property dummy	-0.000422 (0.00305)	0.00468 (0.00304)	0.000339 (0.00378)	0.00159 (0.00486)	-0.00612 (0.0216)	-0.00102 (0.0143)	-0.00164 (0.0163)	0.0446 (0.0301)
Conforming loan dummy	-0.00290 (0.00190)	-0.00667*** (0.00184)	-4.45e-05 (0.00288)	0.00166 (0.00344)	0.0154 (0.0120)	0.0226*** (0.00864)	0.0196* (0.0107)	0.0119 (0.0184)
GSE-securitized loan dummy	-0.0113*** (0.00268)	-0.00623*** (0.00225)	-0.0190*** (0.00417)	-0.00352 (0.00530)	0.0255 (0.0271)	-0.0312 (0.0194)	-0.138*** (0.0284)	-0.00455 (0.0294)
Private label securitized loan	-0.00578** (0.00269)	-0.000475 (0.00207)	-0.00930** (0.00424)	-0.000801 (0.00635)	0.00680 (0.0183)	-0.0860*** (0.0148)	-0.168*** (0.0228)	-0.0619** (0.0241)
Observations	8,887	15,653	13,941	12,932	5,825	19,356	17,359	8,349
R-squared	0.2587	0.2364	0.1997	0.1962	0.1138	0.0934	0.0926	0.0745

SOURCE: FHFA for HPI growth, BLS for unemployment rate and median income, LPS for all other variables.

NOTES: ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Table 3.A: Average marginal effects from changes in key explanatory variables

VARIABLES	2004 - 2007		CHANGE (+)	Prime			
	Mean	Std. deviation		2004	2005	2006	2007
				(1)	(2)	(3)	(4)
			default_in12	default_in12	default_in12	default_in12	
Baseline predicted default rate				0.0220	0.0217	0.0422	0.0482
HPI growth	4.8	10.3	10 ppt	-0.0003 -1%	-0.0010 -5%	-0.0178*** -42%	-0.0006 -1%
FICO score	710	62	50 points	-0.0116*** -53%	-0.01*** -46%	-0.0172*** -41%	-0.0204*** -42%
Loan to value ratio (LTV)	76.1	16.8	10 ppt	0.0009 4%	0.0031*** 14%	0.0113*** 27%	0.0141*** 29%
Debt to income ratio (if not missing)	37.7	14.9	10 ppt	-0.0001 0%	-0.0002 -1%	0.0009 2%	0.0049*** 10%
Interest rate at origination	6.25%	0.81%	1%	0.0105*** 48%	0.0062** 29%	0.027*** 64%	0.032*** 66%
Margin rate (0 if FRM)	2.58%	1.14%	1%	-0.0007 -3%	0.0008 4%	0.0018** 4%	-0.0004 -1%

SOURCE: FHFA for HPI growth, BLS for unemployment rate and median income, LPS for all other variables.

NOTES: ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

rise in LTV generates a stronger absolute increase in loan defaults. It must be noted that the effect of the leverage on the likelihood of default may be understated by the LTV measure that we have. A better measure of how leveraged a borrower is on a given property would be the combined loan-to-value ratio (CLTV) that also takes into account second-lien loans on the property. This variable is not available in the LPS data, however. If the practice of obtaining such “piggyback loans” is more prevalent in the subprime market, then the estimated coefficient for LTV for subprime loans may be lower than its true value.

At first glance, the interest rate at origination is similar to LTV and FICO score in having a strong statistical and economic effect on both prime and subprime loan defaults in each

origination year. What stands out is the sheer magnitude of the estimated effects. However, one must be cautious in interpreting hypothetical marginal effects of the interest rate. While LTV and FICO score cover fairly wide ranges for both prime and subprime loans, interest rate values are relatively tightly distributed.¹¹ This means that a difference of even 1 percent in loan interest rate makes it look quite different from loans with otherwise identical characteristics (e.g., FICO score, LTV, DTI). In such cases, a likely explanation is that the lender has additional information about the credit quality of the borrower and is charging a higher interest rate to take into account additional risk factors – hence, the strong positive association with eventual default rates.

There are also a number of notable differences between the prime and subprime samples. Perhaps the most interesting finding is the different sensitivity of defaults to changes in home prices. For subprime loans, defaults are much lower when home price growth is higher for three out of the four sample years. This relationship is particularly striking for 2006 loan originations, many of which experienced home price declines over their first 12 months. For prime loans, 2006 is notable as the *only* year of origination in which changes in home prices are significantly correlated with loan defaults. These results suggest that, relative to subprime defaults, prime defaults have a weaker relationship with home prices, once key borrower and loan characteristics (LTV, FICO score, and so on) are taken into account.

Table 3.B: Average marginal effects from changes in key explanatory variables

VARIABLES	2004 - 2007		CHANGE (+)	Subprime			
	Mean	Std. deviation		2004	2005	2006	2007
				(1)	(2)	(3)	(4)
baseline predicted default rate				default_in12	default_in12	default_in12	default_in12
				0.1075	0.1571	0.2396	0.2538
HPI growth	5.4	9.6	10 ppt	-0.0189*	-0.0163***	-0.0406***	-0.0010
				-18%	-10%	-17%	0%
FICO score	608	55	50 points	-0.0351***	-0.0532***	-0.0581***	-0.0519***
				-33%	-34%	-24%	-20%
Loan to value ratio (LTV)	80.4	12.6	10 ppt	0.0059	0.0084***	0.0189***	0.0189***
				5%	5%	8%	7%
Debt to income ratio (if not missing)	39.4	10.7	10 ppt	0.0069**	0.0108***	0.0066**	0.0095**
				6%	7%	3%	4%
Interest rate at origination	7.93%	1.31%	1%	0.0302***	0.0331***	0.0471***	0.0542***
				28%	21%	20%	21%
Margin rate (0 if FRM)	5.39%	0.72%	1%	0.0112**	0.0059**	0.0125***	-0.0101
				10%	4%	5%	-4%

SOURCE: FHFA for HPI growth, BLS for unemployment rate and median income, LPS for all other variables.

NOTES: ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The contrast between prime and subprime loans is even sharper in the estimated marginal effects on the debt-to-income ratio (DTI) and loan margin rate. The DTI is widely considered to be one of the main determinants of loan affordability, since it relates household monthly income to debt service flows. The DTI for prime loans is not significantly correlated with defaults, except for loans originated in 2007, but it matters consistently for subprime loans. The absence of any measurable effects of DTI even on defaults of prime loans originated in 2006 can be interpreted as a sign of the resilience of prime borrowers who experienced severe changes in the prices of their homes.

The loan margin rate is one of the key terms in an ARM contract. It defines the spread to a reference rate (usually the

London interbank offered rate, or Libor). At reset, the ARM rate goes up to the sum of Libor and the loan margin. The margin is set by the lender, and is often thought to capture additional aspects of a borrower's creditworthiness. This is consistent with the fact that the margin rate is, on average, substantially higher for subprime borrowers (see table 1). We find that this variable has no association with defaults among prime loans, with the exception of loans originated in 2006. In contrast, defaults on subprime loans originated in every year except 2007 are significantly higher for loans with higher margin rates, all else being equal. This suggests that, for the subprime borrower, the margin rate contains additional information on borrower quality not reflected in FICO scores and other loan characteristics. It is also interesting that the coefficients on ARMs with

introductory periods of less than three years – the most common mortgage contract in the subprime market – are not significantly different from zero. This means that they have the same correlation with subprime defaults as fixed-rate mortgages. Put differently, once loan and borrower characteristics are accounted for, the choice of a hybrid ARM is not associated with higher subprime defaults.

Comparisons across years and across loan types

Since table 2 contains regression estimates from multiple non-overlapping samples, the comparison of the relative importance of the explanatory variables may be tricky. The distribution of loan characteristics varies from year to year and across prime and subprime loans. In addition, the baseline rates of actual defaults are quite different across

samples. Because of this, one cannot simply compare two point estimates and conclude that a bigger one indicates a stronger correspondence with defaults.

To compare the economic and relative importance of the explanatory variables across the subsamples, we conduct the following exercise. For each independent variable, we change its value for each observation by a specified increment. Then, we compute the predicted subsample default rate using estimated coefficients for each year of origination and loan type. We compare the new predicted default to the original one. The difference between the original prediction and the new one tells us the marginal contribution of that variable to the overall default rate.¹² We compare these figures across years and across prime loans (table 3, panel A) and subprime loans (table 3, panel B). For example, for 2004 prime loans we increase all FICO scores by 50 points, predict a new default rate, and compare it to the old default rate. The difference is -0.0116 percentage points, or a 53 percent decrease in the likelihood of default for loans originated in 2004 (column 4, row 2 of table 3, panel A). For brevity, we look at just six key explanatory variables: HPI growth, FICO score, LTV, DTI, interest rate, and loan margin rate.¹³ The table also reports the means of the relevant variable, its standard deviation, and the absolute change that we impose. We tried to keep the magnitude of the absolute changes reasonably close to the standard deviations.

A 10 percentage point increase in home price appreciation (HPI growth) substantially lowers default probabilities (first row of each panel in table 3). This effect is more consistent for subprime loans originated in various years, where it translates to decreases of between 10 percent and 18 percent relative to the baseline default rate in 2004, 2005, and 2006. For prime loans, the 10 percentage point increase in the HPI has a big effect only for loans originated in 2006, where the estimates imply that

defaults would have been 1.78 percentage points, or 42 percent, lower. The effect of FICO score stands out. A 50-point uniform increase in FICO scores (row 2 of each panel) is associated with a 41 percent to 53 percent decline in predicted default rates relative to the baseline for prime loans, and a 20 percent to 34 percent relative decline for subprime loans. The average marginal effects of the LTV are greater (in a relative sense) for prime loans than for subprime loans.¹⁴ Finally, higher interest rates appear to generate incredible increases in defaults for both market segments. For instance, a 1 percentage point increase in interest rates translates into a jump in defaults on 2007 prime loans of more than 3 percentage points—a rise of 66 percent relative to the actual default rate. Increasing everyone's interest rates by 1 percentage point is equivalent to a substantial deterioration in the quality of the borrower pool, and thus translates into much higher predicted defaults. As mentioned earlier, DTI and the margin rate do not have strong associations with prime mortgage defaults. In contrast, higher values of these variables consistently indicate higher default rates for subprime mortgages. However, the economic magnitude of marginal effects of DTI and the margin rate on defaults (rows 4 and 6 of each panel) is somewhat muted.

What if market observers foresaw the decline in home prices?

We turn our attention now to the role of home prices. We know that home prices were increasing very rapidly in 2004 and 2005 and began to fall quite dramatically beginning in 2006. But would it have been possible to quantify the effect of this reversal on defaults of both prime and subprime mortgages in real time? It is also important to be clear about what information would have been available to analysts at different points in time. This will allow us to get a rough sense of the extent to which market participants were “surprised” by the performance of prime and subprime loans originated in 2006 and 2007.

To do this, let's conduct the following thought experiment. Suppose that it is June 2006 and we are trying to forecast defaults on prime mortgages originated earlier that year. The most up-to-date model of defaults available to us at this point in time is that of defaults on 2004 originations. (Recall that to estimate this model, one needs to observe mortgages for 12 months since origination.) Further suppose that as astute analysts, we get a definite sense that house price growth is slowing down, even though available data are not picking this up strongly yet. And so in a fit of pessimism, we conclude that prices may even decline a touch this year after growing at 9 percent, on average, in 2005. What would our models tell us about the default outlook?

The answer is “not much.” In 2004 (and 2005), the models of prime mortgage performance detected almost no relationship between house price growth and defaults. The coefficients on HPI growth were effectively zero, and so no forecast of HPI, however dire, would have rung the alarm bells regarding prime mortgage defaults.

What an analyst would have had to realize was that in 2006 prime borrowers will start reacting to HPI in the same way as subprime ones. What was needed then was not a better forecast of housing prices, but an understanding that the statistical relationships from the boom years no longer applied. Detecting the turning points is never easy, and in this instance most observers failed abjectly.

Conclusion

We have analyzed the default experience of prime and subprime loans originated over the period 2004–07. Like other studies, we document some decline in underwriting standards during this period for both prime and subprime loans. We also find that characteristics such as the LTV, FICO score, and interest rate are important predictors of defaults for both prime and subprime loans. However, changes in loan and borrower

characteristics are not enough to have predicted the incredible increase we have seen in prime and subprime mortgage defaults. While changes in borrower and loan characteristics can get us closer to observed default rates for subprime loans than they can for prime loans, for both market segments there were other factors at work.

Home prices play a very important role in determining mortgage outcomes; this became particularly evident for subprime loans by the end of 2005. For prime loans, it is only when we analyze data through the end of 2007 (that is, evaluate the performance of loans originated in 2006) that we are able to document this sensitivity. Even very pessimistic assumptions about the future path of home prices would not have been enough to substantially improve contemporaneous forecasts of prime mortgage defaults for loans made in 2006 and 2007. In hindsight, of course, it appears self-evident that the relationships between HPI growth and defaults on prime loans might be different in periods with declining home prices. Coming up with such revised estimates in real time would not have been possible using the available data from the recent past. It could, perhaps, have been done by analyzing data that included earlier episodes of substantial regional price declines.

Biographies

Gene Amromin is a senior financial economist in the financial markets group at the Federal Reserve Bank of Chicago.

Anna Paulson is a vice president of the financial economics team in the economic research department of the Federal Reserve Bank of Chicago.

Notes

- 1 These numbers are based on authors' calculations using data from LPS Applied Analytics, described later in text.
- 2 By including prime loans in the analysis, our intention is to complement the very informative and extensive literature on subprime loans that includes, among others, Bajari, Chu, and Park (2008); Demyanyk and Van Hemert (2009); Gerardi, Shapiro, and Willen (2008); and Mian and Sufi (2009).
- 3 The servicers included in the data set are those that participate in the HOPE NOW Alliance (www.hopenow.com/members.html#mortgage). This includes some of the country's largest home lenders: Bank of America, Citibank, JPMorgan Chase, and Wells Fargo.
- 4 Alt-A loans are a middle category of loans – more risky than prime and less risky than subprime. They are generally made to borrowers with good credit ratings, but the loans have characteristics that make them ineligible to be sold to the GSEs – for example, limited documentation of the income or assets of the borrower or higher loan-to-value ratios than those specified by GSE limits.
- 5 As Bajari, Chu, and Park (2008) emphasize, an important feature of the FICO score is that it measures a borrower's creditworthiness prior to taking out the mortgage. FICO scores range between 300 and 850. Typically, a FICO score above 800 is considered very good, while a score below 620 is considered poor. As reported on the Fair Isaac Corporation website (www.myfico.com), borrowers with FICO scores above 760 are able to take out 30-year fixed rate mortgages at interest rates that are 160 basis points lower, on average, than those available for borrowers with scores in the 620–639 range.
- 6 If we repeat the analysis using alternative outcome variables and different time periods (in default after 18 months, in foreclosure, 30 days or more past, and so on), the results are very similar.
- 7 As part of the Housing and Economic Recovery Act of 2008 (HERA), the Federal Housing Finance Regulatory Reform Act of 2008 established a single regulator, the FHFA, for GSEs involved in the home mortgage market, namely, Fannie Mae, Freddie Mac, and the 12 Federal Home Loan Banks (see www.fhfa.gov for additional details).
- 8 Note that we are looking at a relatively short period, and other authors document changes in underwriting criteria that occurred prior to 2004 (see, for example, Gerardi et al., 2008).
- 9 Such mortgages were known as “hybrid ARMs.” They were also commonly identified as “2/28” and “3/27” loans, referring to 30-year ARMs that reset after two and three years, respectively.
- 10 In September of 2007 when the private securitization market had all but shut down, the GSEs were encouraged by members of Congress to expand their portfolios to support the market (see this correspondence between Senator Charles E. Schumer (D-NY) and Dennis Lockhart, the director of OFHEO, at www.ofheo.gov/newsroom.aspx?ID=383&q1=0&q2=9).
- 11 Keep in mind that for simplicity, the analysis uses the actual interest rate at loan origination and not the difference between this rate and some reference risk free rate.
- 12 Note that this exercise amounts to computing the average of marginal effects for individual loans, instead of the marginal effect at the mean, which is obtained by multiplying a hypothetical change in an explanatory variable by its regression coefficient.
- 13 In this exercise, the loan margin is increased only for ARMs, since fixed rate loans by definition have a zero margin under all circumstances. Similarly, we incremented DTI only for those loans that had non-missing DTI values.
- 14 As discussed earlier, this may be due to our inability to accurately account for piggyback loans.

Alternative small dollar loans: Creating sound financial products through innovation and regulation

by Chris Giangreco, Andrea Kovach, and Matt Unrath

Introduction

Low- to moderate-income borrowers need alternatives to payday loans to meet their short-term credit needs. This article provides an overview of consumer demand for smaller loans, and discusses how and why mainstream financial institutions should offer less costly alternatives to traditional payday loans. A two-year FDIC pilot, a small-dollar loan pool in Baltimore, and individual case studies suggest that such lending can be viable and profitable. The article concludes with recommendations for how financial institutions and regulators should support this effort

Many consumers struggling to make ends meet need small, short-term loans. Illinois residents received nearly 1.2 million payday loans¹ from 2006 to 2008; however, debate about the utility of this loan product continues. Payday lenders claim that they provide a needed service to those underserved by mainstream financial institutions. Consumer advocates cite the predatory pricing of payday loans, and call for stringent regulation, especially with respect to pricing. In an effort to move beyond this debate and meet consumer demand (with a less costly product), advocates, regulators, and financial institutions should explore the viability of alternative small-dollar loan products from both a consumer and business perspective.

Review of existing literature

There has been a great deal of research on the payday loan industry. Various regional banks of the Federal Reserve System have published papers examining the nature of payday loan borrowers and products, and weighed the effectiveness of industry regulation (see the Federal Reserve Bank of Philadelphia's "Restricting Consumer Credit Access" and New York's "Defining and Detecting Predatory Lending"). The New America Foundation's Asset Building program has written extensively on the issue, including an often cited paper on how behavioral sciences can inform financial services regulation. Consumer advocacy groups, like the Center for Responsible Lending and National Consumer Law Center, have authored reports on payday lenders (see "Quantifying the Economic Cost of Predatory Payday Lending"). The Woodstock Institute has exposed regulatory loopholes and published various reports that highlight the need for stricter regulation (see "Illinois Payday Loan Loophole"). Much of this research has focused on questions about payday lending regulations; officials, researchers, and advocates have only recently begun advocating for alternative products, and there is likewise little lending data from which to draw evidence about effectiveness and profitability.

Payday lenders, represented by the Consumer Financial Services

Association of America, defend their product and service to low- and moderate-income borrowers. Their argument, published in reports and testimonials, is that payday loan terms compare favorably with alternative options, like overdraft or late fees. The Center for Responsible Lending has encouraged the OCC and other bank regulators to prohibit banks from offering products similar to payday loans. Some larger banks have recently introduced products such as paycheck advances, but the charges can amount to a 120 percent APR or higher. The National Consumer Law Center authored a recent report warning that one should not assume that "alternatives" to payday loans are inherently less costly. The authors of this paper support responsible alternatives to payday lending with interest rates capped at 36 percent APR and amortized loan payments based on an individual's ability to repay.

Current landscape of payday lending

The majority of small-dollar loans currently available to consumers across the country are payday loans. Payday loans are essentially quick cash advances, usually of \$500 or less, targeted to low- and moderate-income individuals with limited credit history or low credit ratings. Payday loan businesses operate outside of the

mainstream financial sector, often relying on a network of retail storefronts, where customers can walk in, provide minimal personal information, and leave with enough cash to meet their immediate financial needs. The “underwriting process” comprises documenting information from a pay stub, and the “collateral” is a postdated check or automatic debit authorization, which covers the principal borrowed and interest; the loans often require borrowers to have a checking account. Because payday lenders operate with very little underwriting, they rationalize high interest rates as necessary to ensure profit.

The payday loan industry has seen enormous growth. In the three years between 2000 and 2003, national sales volumes quadrupled from \$10 billion in 2000 to \$40 billion in 2003; researchers put the total costs to consumers for using a payday loan at \$4.2 billion annually (King, Parrish and Tanik 2006). According to the Illinois Department of Financial and Professional Regulation (IDFPR), there are 403 licensed payday lenders operating under the Payday Loan Reform Act in Illinois. IDFPR found that during the three-year period between February 2006 and December 2008, 1,194,582 payday loans were taken out by 204,205 consumers in Illinois—an average of 5.9 loans per consumer at an average annual percentage rate (APR) of 341 percent (IDFPR 2009).

Alternative small-dollar loan efforts

Consumer advocates, financial institutions, and regulators have begun working together to promote and develop responsible, alternative small-dollar loan products that meet consumers' needs and protect them from usurious lending practices. The following examples highlight some of the innovative current strategies in this market segment.

1. Small-dollar loan pool pilot

One model for extending small-dollar loans involves financial institutions providing capital to a community-based organization, which uses existing relationships within a targeted market to offer loans.

With support from the FDIC and grants from six financial institutions and one credit union, Neighborhood Housing Services of Baltimore (NHS–Baltimore) created a small-dollar loan pool. NHS–Baltimore made 80 loans between August 2009 and February 2010, totaling \$60,400. The majority of these 12-month term loans are \$1,000, though some as small as \$500. All of the loans have a competitive APR of 7.99 percent. A typical consumer in this pilot is an African-American woman between 40 and 50 years old, earning about \$30,000 annually, who has filed for bankruptcy in the past but currently holds a bank account, and plans to use the loan to pay bills. Joan Lok, Community Affairs Specialist with the FDIC in Baltimore, stated that while financial institutions contributing to the pool were originally skeptical of the program, many have come to embrace and support it. One goal associated with the pilot is the program to earn enough to be self-sustaining. The FDIC's Alliance for Economic Inclusion, in conjunction with local financial institutions, is developing similar loan pools in Kansas City and Seattle.

2. Innovative financial institutions

Banks and credit unions have also begun developing their own alternative small-dollar loan programs. In 2002, North Side Community Federal Credit Union (North Side CFCU), recognizing the preponderance of predatory payday lenders in its community and the impact high interest debt had on its members, decided to develop its Payday Alternative Loan (PAL) program. Loans in the PAL program are \$500, repaid during a six-month term, and have an annual percentage rate of 16.5 percent. If a first-time borrower has a credit score below

600, he or she is required to attend a free financial education workshop on understanding credit and meet with a financial counselor to prepare a personal budget. In the past seven years, North Side CFCU has made over 5,000 PALs, disbursing over \$2.5 million in PAL loans and saving community residents over \$3 million in fees and interest from traditional payday loans.

In July 2008, North Side CFCU launched its newest alternative loan product, the “Step-Up” loan, a payday alternative loan of \$1,000 available to members that have paid off at least five PALs. No credit check is required and borrowers can pay back the loan in six months or one year. Since the launch of Step-up, North Side has made 527 loans for a total of \$527,000. Ed Jacob, North Side CFCU's manager (at the time) stated, “Our goal isn't to be just a cheaper payday lender. We want to give people a path that will help them reach their financial goals. We want them to think longer term, and go beyond needing a \$500 loan.”

3. FDIC's small-dollar loan pilot

The Federal Deposit Insurance Corporation (FDIC) began a two-year pilot program for alternative small-dollar loans in February 2008. At the program's conclusion in December 2010, 28 banks with assets from \$28 million to \$10 billion and offices in 27 states participated. The program aimed to assess the business practices of the banks in developing and offering profitable small-dollar loan programs alongside other mainstream services.

The FDIC developed the following guidelines for financial institutions participating in the pilot:

- Loan amounts of up to \$2,500;
- Amortization loan periods of at least 90 days with minimum payments that reduce the loan principal;
- Annual percentage rates (APR) below 36 percent;

- No prepayment penalties;
- Origination and/or maintenance fees limited to the amount necessary to cover actual costs; and
- An automatic savings component.

The FDIC released final results of the program in late June 2010 on the impact and effectiveness on banks' profitability² and long-term customer relations. In the first year of the program, banks made over 16,000 loans, for an aggregate principal balance of \$18.5 million. The total amount of loans charged off in the first year was \$187,378, or 3.4 percent of loans of all loans originated (Burhouse, Miller, and Sampson 2009). Banks reported that job losses and other economic problems in their market areas led to increased delinquencies across loan categories and to a reduction in the pool of acceptable borrowers. Common factors cited for operating successful loan programs included strong senior management and board support; an engaged and empowered "champion" in charge of the program; proximity to large consumer populations with demand for small-dollar loans; and, in rural markets, limited competition.

Benefits of small-dollar loans for financial institutions

Mainstream financial institutions can benefit from alternative small-dollar lending by serving as the pacesetter of sound and competitive financial practices for low- and moderate-income clients.

Image improvement – Participation in initiatives to develop alternative small-dollar loans can help re-position banks and other mainstream financial institutions amid the current economic situation. Luis Ubiñas, president of the Ford Foundation, said at a meeting in Brooklyn, New York, in June 2009, "The economic downturn has tarnished bank brands; offering innovations and providing new opportunities to non-traditional customers can help repair the

damage done to the banking industry brand" (Benjamin 2009).

New customer base – Because of high demand, financial institutions can attract new customers by offering an alternative loan product at competitive prices. Through such loans, banks and credit unions can build the financial skills and knowledge of their customers, graduating them to more sophisticated financial products. More than half of the banks in the FDIC's small-dollar loan pilot reported that customers moved to other bank services after using a small-dollar loan. Most pilot banks opened deposit accounts for customers who successfully used a small-dollar loan product, and some banks transitioned customers into more sophisticated products. One participating bank found that auto loans were a "next step" in building the lending relations with small-dollar loan customers who successfully paid off their loan (Burhouse, Miller, and Sampson 2008).

Leverage advantage in the market – Banks and credit unions have two inherent advantages over the payday loan industry in successfully offering small-dollar loan programs – infrastructure and relationships. While payday loan stores must spend capital on space, staff, advertising, and more, banks and credit unions already have qualified staff, a large network of physical facilities, and functioning collection processes. Their ability to advertise through bank statements and existing marketing materials helps bring attention to the product and quickly draw a market. Banks and credit unions can build on their relationship with clients to help determine the type of loan best suited for a borrower, as well as streamline the underwriting process—a necessary step if banks and credit unions wish to compete with the present payday loan industry (Burhouse, Miller, and Sampson 2008). This underwriting process will help mitigate delinquency risks. Research from the Woodstock Institute found that

borrowers who belonged to a financial institution for more than one year reported lower delinquency rates (Williams 2007).

CRA credit – The Federal Financial Institutions Examination Council recognizes that small-dollar loans meet an important credit need of underserved communities and low- and moderate-income borrowers. By offering these types of loans or supporting the development of a small-dollar loan pool, banks can earn Community Reinvestment Act (CRA) credit. Such loan products allow borrowers to avoid high cost credit, and ostensibly serve the purpose and mission of the CRA.

Recommendations

The case for offering alternative small-dollar loans through mainstream financial institutions does not negate the need for regulation of the industry. Borrowers and lenders do not enter into lending contracts on equal footing, in either financial understanding or bargaining power (Saunders and Cohen 2004). Regulation must aim to narrow this divide and protect consumers from predatory practices and their own behavior tendencies (Barr, Mullainathan, and Sharif 2008).

Regulators at the state and federal level play an important role in developing alternative small-dollar loans and assuring proper consumer protections. The following are recommendations that state and federal government offices should follow to support this effort:

- Support efforts to develop small-dollar lending pool pilots and study their effectiveness;
- Support efforts to develop informed policy on unregulated payday and consumer installment loans and provide guidance on features for small-dollar loan products;
- Encourage responsible alternative small-dollar loan products;

- Build partnerships with alternative small-dollar lenders – such as credit unions – to support use of sound, alternative small-dollar products; and
- Include the offering of responsible small-dollar loans in CRA examinations and other regulatory ratings.

In order to meet a recognized consumer need and provide a beneficial community service, financial institutions should begin offering or expand existing small-dollar credit programs to low- and moderate-income borrowers. As demonstrated, these programs can be profitable and serve an important need. Community organizations, consumer advocates, regulatory agencies, and especially financial institutions each have an important role to play in expanding the market of small-dollar loan products. Lending institutions should work to foster closer relationships with borrowers. They are well positioned to serve these consumers by encouraging savings and helping to develop important financial skills. A strong banking relationship will help decrease the borrower's assessed risk and need for small-dollar loans.

Additional, innovative pilots would help to expand the availability of small-dollar lending products. Pilots should follow guidelines to protect consumers from predatory features and, include measures aimed at improving individual financial skills. Lessons from pilot programs will help additional financial institutions to create and expand their own alternative small-dollar loan programs. The combination of adequate regulation and innovation will help create new opportunities for the development of sound financial products that meet the ongoing financial needs of low- and moderate-income consumers.

Works cited:

Barr, Michael S., Sendhil Mullainathan, and Eldar Shafir. 2008. *Behaviorally Informed Financial Services Regulation*. Washington, DC: New America Foundation, October.

Benjamin, Blair. 2009. *Children's Youth Savings: Opening Plenary*. CFED blog June 15. Retrieved from http://cfed.org/childrens_youth_savings/2009/06/opening-plenary.html on October 14.

Burhouse, Susan, Rae-Ann Miller, and Aileen G. Sampson. 2009. The FDIC's Small-Dollar, Loan Pilot Program. Federal Deposit Insurance Corporation, *FDIC Quarterly*, Vol. 3, No. 2.

Burhouse, Susan, Rae-Ann Miller, and Aileen G. Sampson. 2008. An introduction to the FDIC Small-Dollar Loan Pilot Program. Federal Deposit Insurance Corporation, *FDIC Quarterly*, Vol. 2, No. 3.

Illinois Department of Financial and Professional Regulation. 2009. *Illinois Payday Loan Reform Act: Three Year Report*. Springfield, Illinois: Illinois Department of Financial and Professional Regulation, March.

King, Uriah, Leslie Parrish and Ozlem Tanik. 2006. *Financial quicksand: payday lending sinks borrowers in debt with \$4.2 billion in predatory fees every year*. Center for Responsible Lending, November 30.

Saunders, Margot and Alys Cohen. 2004. *Federal Regulation of Consumer Credit: The Cause or the Cure for Predatory Lending?* Boston, Massachusetts: Harvard University, Joint Center for Housing Studies, March.

Williams, Marva. 2007. *Cooperative Credit: How Community Development Credit Unions are Meeting the Need for Affordable, Short-Term Credit.* Chicago, Illinois: Woodstock Institute, May.

Notes:

- 1 It is important to note that the data from the Illinois Department of Financial and Professional Regulation only includes those loans regulated under the Payday Loan Reform Act of 2005 – defined as loans less than 120 days in length. There is no information for loans over 120 days. Loans longer than 120 days in length are often considered payday loans, but are not regulated with the same requirements in Illinois, thus no data is collected on these type of loans.
- 2 A more in-depth report about the question of profitability for financial institutions is forthcoming from the Illinois Asset Building Group in third quarter 2010.

Biographies

Chris Giangreco is a policy associate at Heartland Alliance for Human Needs and Human Rights, where he manages the Illinois Asset Building Group and advocates for the promotion of local, state, and federal policy supporting economic stability for families and individuals of all incomes. Giangreco received his PhD from Loyola University Chicago.

Andrea Kovach is a staff attorney at Sargent Shriver National Center on Poverty Law, where she works in the Community Investment Unit and the Health Care Unit. Andrea graduated with honors from Wellesley College and the University of Illinois College of Law.

Matt Unrath is a policy and advocacy intern at Heartland Alliance for Human Needs and Human Rights, where he assists in policy analysis for the Illinois Asset Building Group and helps to administer matched-savings programs and conducts financial education for low-income individuals and families. Matt received his BA in international studies from Boston College.



Around the District

Illinois

Illinois launches small business job creation tax credit

On July 1, 2010, Illinois' (new \$2,500 per job) Small Business Job Creation Tax Credit became effective. The program is designed to create jobs at small businesses across the state. The new tax credit is part of Illinois' initiatives to help employers retain and generate jobs in Illinois during the current high unemployment period.

"Small businesses are essential to the Illinois economy and it's crucial that state government find fresh and creative ways of working with entrepreneurs who will lead the charge toward economic recovery," said Governor Quinn. "This tax credit will help our small business owners and operators to grow by creating 20,000 jobs over the next year."

The \$2,500 credit is available to businesses with 50 or fewer employees that hire new, full-time Illinois employees during a 12-month period that began July 1, 2010. Ninety-five percent of Illinois businesses have fewer than 50 employees.

To qualify for the credit, a new job must be sustained for at least one year and pay at least \$25,000 annually. Eligible companies can apply for the credit online and will be issued a tax credit certificate

beginning July 1, 2011. Applications for the credit may be submitted as soon as a new, full-time Illinois employee is hired and begins providing services. The total amount of credits to be issued is capped at \$50 million.

Calculation of the net increase in the number of Illinois employees is based on the employer's number of Illinois employees as of June 30, 2010. The determination of whether an employer has 50 or fewer employees will include all employees in any location, including those outside Illinois. Related businesses will be treated as one business for the determination.

The legislation passed the General Assembly unanimously and was signed by the governor at an event in Chicago on April 13, 2010. Governor Quinn was joined at the event by eight small business owners.

To review the April 13, 2010, press release, the statute, or frequently asked questions, visit www.ildceo.net/dceo/JobTaxCredit/default.htm.

For a discussion on other programs, processes, and resources that could support small businesses and economic development in your community, contact the Federal Reserve Bank of Chicago, Consumer and Community Affairs Unit, at (312) 322-8232 or via e-mail at CEDRIC@chi.frb.org.

Indiana

Interagency workshop on CRA

On April 27, 2010, the Federal Reserve Bank of Chicago's Community Affairs Division co-sponsored an Indiana Interagency Community Reinvestment Act (CRA) workshop. This event was held in partnership with the Federal Deposits Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision.

This workshop offered CRA officers up-to-date information about developing a CRA Plan; forming meaningful partnerships; determining qualified community development lending, services, and investments; assessing community needs; and creating the bank's personal CRA Performance Context. Participants in this event included CRA Officers representing small, intermediate, and large financial institutions from Indiana, Ohio, and Kentucky.

The Community Reinvestment Act (CRA) of 1977 (12 USC 2901), as amended, encourages each insured depository institution covered by the act to help meet the credit needs of the communities in which it operates. The CRA requires that each federal financial supervisory agency assess the record of each covered depository institution in

helping to meet the credit needs of its entire community, including low- and moderate-income neighborhoods, consistent with safe and sound operations; an agency will take that record into account when deciding whether to approve an institution's application for a deposit facility.

For more information on the CRA, visit www.federalreserve.gov/bankinfo/reglisting.htm.

Iowa

Des Moines neighborhood Finance Corp. (NFC) reaches \$200 million milestone in lending on 20th anniversary

Celebrating 20 years of service in Des Moines making loans and home improvement grants in the city's low- and moderate-income neighborhoods, NFC also celebrated reaching the \$200 million milestone in total lending in 2010. NFC is a member of NeighborWorks® America, a national organization whose mission is to revitalize communities. NeighborWorks® has hailed NFC as a top generator of loans among its 235 community-based charter members.

NFC's long-standing goal has been to preserve neighborhoods. As an effective intermediary supported by local government, banks, and neighborhood associations, NFC serves as a model for other, similarly oriented organizations around the country. Aside from purchase and rehabilitation financing, NFC helps borrowers qualify for loans to make home improvements, replace furnaces, windows, roofs, wiring, and other needed repairs.

The work of NFC and the lending that results helps stabilize older neighborhoods and increase property values. Other services include a "tool lending library," for home owners who wish to make (some) improvements on their own. Home buyer counseling – pre- and post-purchase – is also a key service provided by NFC.

Michigan

Re-imagining Detroit

At a recent Detroit community development forum, Warren Palmer, director of Detroit's Planning and Development Department, discussed the "Re-imagining" of Detroit. He outlined the key ingredients to a resilient Detroit and sustainable region, as well as the mayor's priorities. Following are paraphrased excerpts from Palmer's remarks.

He stated that the Federal government will need to be a partner in recovery and revitalization, tailoring resources specific to the needs of Detroit and the automotive industry. The philanthropic and nonprofit sector must take a more active role, and not work only at the margins. The leadership of regional municipalities must look past historic racial and economic tensions, find common ground to support regional policies aimed at sustainability, and cooperate on strategies and investments that promote the growth of the metropolitan area. Municipal governments have been transferred to an accountable set of public leaders. He expressed confidence that they will work to change the city's and the region's circumstances for the next generation.

Palmer outlined the mayor's priorities:

- Removal of blight throughout the city and alignment with planned community priorities.
- Focused, near-term investments in neighborhoods aimed at stabilization and improvement.
- Strategies to promote job creation in conjunction with other efforts.
- Coordination of all plans and strategies into one clear vision for the city through a public planning process.

Wisconsin

Addressing the Credit Needs of Wisconsin's Small Businesses

On May 27, 2010, the Federal Reserve Bank of Chicago hosted a roundtable discussion on meeting the needs of Wisconsin's small businesses.

Daryll Lund, CEO of Community Bankers of Wisconsin, helped set the stage for the discussion. "When you look at small business lending as a percentage of assets in Wisconsin banks, it represents 12 percent of the assets of community banks but only 4.5 percent of large banks' assets. Small business lending at community banks is a huge portion of our portfolios as we try to serve our main streets and our local businesses."

Eric Ness, Wisconsin district director of the U.S. Small Business Administration emphasized community banks' role in helping to channel Federal Recovery Act funds to local businesses as a unique strength in Wisconsin. Describing the "American Recovery Capital (ARC)" loan program, Mr. Ness said, "Community banks have signed up (as SBA lenders) just to use this program. Last year, I had about 154 lenders in this state making loans to small businesses in the state, and now I am over 200 lenders making loans to small businesses in the state."

The Federal Reserve has held 40 meetings around the country as part of the "Addressing the Credit Needs of Small Businesses: A Federal Reserve System Series." The Series culminated with a national meeting at the Federal Reserve Board of Governors on July 12.

Watch for an upcoming issue of Profitwise News and Views that will summarize the series, focusing on the meetings held in Illinois, Indiana, Iowa, Michigan and Wisconsin.

Calendar of Events

Interagency Community Development Conference

Cleveland, OH
September 16, 2010

Community bankers will convene at the Cleveland Fed for a daylong discussion of the outlook for residential and small business lending and the business opportunities afforded by community development credit enhancements. Sponsored by the Federal Reserve Bank of Cleveland, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, and Office of Thrift Supervision.

For more information, visit: www.clevelandfed.org/Community_Development/events/20100816_interagency/SavetheDate.pdf.

Innovations in the disabilities market

Richmond, VA
September 28, 2010

The Federal Reserve Bank of Richmond and The Disability Opportunity Fund will collaborate on a one day forum to discuss innovative community development finance opportunities in the disabilities market. Experts from the disabilities and community development industries will present successful finance models and explore new capital solutions to meet the tremendous need for asset development and affordable disability housing.

To register, visit The Disability Opportunity Fund Web site at www.thedof.org. For questions or more information about the event, call (516) 465-3741. For more information, visit: www.richmondfed.org/conferences_and_events/community_development/2010/innovations_disabilities_market_20100928.cfm.

Reclaiming vacant properties

Cleveland, OH
October 13-15, 2010

National Vacant Properties Campaign with its principal planning partner, Neighborhood Progress, Inc., will be sponsoring this conference to teach policies, tools, and strategies to catalyze long-term, sustainable revitalization, and allow peers to share experiences and insights, and become a part of the only national network focused on building the knowledge, leadership, and momentum to reclaim vacant and abandoned properties to foster thriving neighborhoods.

Contact Jennifer Leonard with questions about the 2010 Conference, including sponsorship opportunities at (202) 207-3355, extension 123, or jleonard@smartgrowthamerica.org.

Call for papers: Business, Entrepreneurship, and Economic Recovery

Atlanta, GA – October 26-27, 2010

The Ewing Marion Kauffman Foundation; the Community and Economic Development division of the Research department and the Labor, Education, and Health Policy Center at the Federal Reserve Bank of Atlanta; and the Federal Reserve Bank of Dallas will co-host “Small Business, Entrepreneurship, and Economic Recovery: A Focus on Job Creation and Economic Stabilization,” a conference that will take place at the Federal Reserve Bank of Atlanta.

The goal of the conference is to provide a multidisciplinary approach to understanding the relationship between small business and entrepreneurship with economic recovery. For details on the abstract submission guidelines and conference details, go to www.kauffman.org/sbe.

Call for papers: 2011 Community Affairs Research Conference

Arlington, VA – April 28-29, 2011

The Community Affairs Officers of the Federal Reserve System invite paper submissions for the seventh annual Federal Reserve Community Affairs Research Conference. The goal of the conference is to highlight new research that can directly inform community development policy and practice in the wake of the deepest recession since the pre-War period. Visit www.frbsf.org/community/2011ResearchConference for more information on submission guidelines.



CONSUMER AND ECONOMIC DEVELOPMENT
RESEARCH AND INFORMATION CENTER

www.chicagofed.org/cedric

CEDRIC's principal mission is to foster research related to consumer and economic development issues such as consumer and small business financial behavior, access to credit, affordable housing, and community development and reinvestment.

CEDRIC:

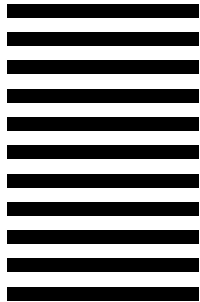
- Upcoming Events, Community & Economic Development Research,
- Data Resources on the Web, Federal Reserve Publication,
- Financial Education Research Center, Household & Small Business Data,
- Additional Resources

LESLE:

- Lessons Learned (LesLe) Community & Economic Development Case Studies,
- Community Development Institutions, Community Development,
- Finance & General Education, Housing Development,
- Public Infrastructure, Small Business Lending



NO POSTAGE
NECESSARY IF
MAILED IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 24422 CHICAGO, IL

POSTAGE WILL BE PAID BY ADDRESSEE

ATTN: PNV - CCA 12TH FLOOR
FEDERAL RESERVE BANK OF CHICAGO
PO BOX 834
CHICAGO IL 60690-9975



Profitwise

News and Views

Published by the Consumer and Community Affairs Division

Subscription is FREE. To subscribe or view current and past editions, please visit the Web site of the Federal Reserve Bank of Chicago at: www.chicagofed.org/profitwise or fill out this form and send it back to us, and we will add you to our mail list.

Name: _____

Company: _____

Address: _____

Phone: _____

E-mail: _____

Address Change

Please check your subscription preferences:

Print only

E-mail only

Print & E-mail

Subscribe!

Visit the Web site of the Federal Reserve Bank of Chicago at: www.chicagofed.org



FEDERAL RESERVE BANK
OF CHICAGO

Consumer and Community Affairs Division

P.O. BOX 834
CHICAGO, IL 60690-0834

RETURN SERVICE REQUESTED

Attention:
Executive Officers
Board of Directors
CRA Officers
Community Lenders
Community Representatives

Profitwise News and Views is published by the
Consumer and Community Affairs Division of the
Federal Reserve Bank of Chicago
230 S. LaSalle Street
Chicago, IL 60604-1413

PRESORTED
STANDARD
U.S. POSTAGE PAID
CHICAGO, IL
PERMIT NO. 1942