



Abt Associates Inc.

Cambridge, MA
Lexington, MA
Hadley, MA
Bethesda, MD
Chicago, IL

Second Report

Evaluation of 601 Accelerated Claims Disposition Demonstration

Contract C-OPC-21895
Task Order CHI-T0010

December 30, 2004

Prepared for
Judith V. May, GTM
William J. Reeder, GTR
U.S. Department of Housing and
Urban Development
Washington, DC 20410-3000

Prepared by
David T. Rodda
Satyendra Patrabansh
Abt Associates Inc.
55 Wheeler Street
Cambridge, MA 02138

Table of Contents

Executive Summary	ii
Glossary of Terms and Abbreviations	vi
Background on the ACD Demonstration Design and JV Processing.....	1
How ACD Works	2
Outcomes	5
Homeownership Retention	13
Costs and Recoveries	15
Bloom Correction for Eligibles Not Getting ACD Treatment.....	22
Description and Comparison of Loan Characteristics	26
Selection Model	33
Claims Model and Breakeven Analysis.....	37
Claims Model	37
References.....	49
Appendix.....	50

Executive Summary

The Accelerated Claims Disposition (ACD) Demonstration, enacted as Section 601 of the Appropriations Act for Fiscal Year 1999, gives the Department of Housing and Urban Development (HUD) the authority to experiment with a more flexible method of paying claims for FHA-insured loans and disposing of foreclosed, single-family properties. The legislation permits the Federal Housing Administration (FHA) to take assignment of mortgage notes and transfer them to private partners for servicing, property management, and asset disposition. JV processing entails the sale of FHA notes to a public/private joint venture at a discounted price. The private partner then manages the restructuring of notes for securitization and sale or the foreclosure and property sale of non-performing loans. FHA retains an equity interest in the partnership undertaking asset disposition.

This is the Second Report of the Evaluation of the 601 ACD Demonstration, reporting progress on the first two Joint Ventures (JVs) between HUD and private partners, JV2002 and JV2003. The purpose of the evaluation is to determine whether JV processing of seriously delinquent mortgages is cost effective under existing conditions or feasible alternatives. The evaluation also considers whether JV processing enhances HUD's ability to achieve policy objectives, including homeownership retention. In order to determine the cost effectiveness and policy impacts of JV processing, the evaluation compares the outcomes of JV loans to a 10 percent holdout sample of loans that met the eligibility criteria for JV processing. The holdout loans receive standard FHA processing—that is, servicing by a participating servicer (p-servicer) using standard FHA techniques of loss mitigation or foreclosure and then disposition of foreclosed properties by management and marketing contractors. The evaluation compares the claim rates and loss rates between the JV loans and the holdout sample and also compares the extent to which JV and standard FHA processing result in homeownership retention.

Substantial progress has been made in reaching final status for JV2002 loans, following a securitization sale in August 2004. As of August 31, 2004, 66 percent of the JV2002 ACD loans had been liquidated (either sold or paid off), as have 36 percent of the 2003 ACD loans. During the same period, substantial portions of the comparison loans have resolved through reinstatement. Even with this broader measure of resolution, a higher percentage of ACD loans have reached final resolution than comparison loans. Results are evolving as more loans reach final resolution and the pattern becomes clearer.

The difference in resolution rates may represent a difference in timing. Loans in the control groups appear to be going to foreclosure more slowly than JV loans. While more JV loans than control group loans have been resolved as REO sold, there are fewer JV loans with the status of foreclosure in process. The totals for the three categories, REO sold, REO inventory and foreclosure in process, are about the same for JV and the control groups in percentage terms. This finding suggests that eventually the foreclosures in process for the control groups will resolve into REO sales at about the same or higher rate than JV. Similarly, the control groups show a slightly larger homeownership retention rate, but this appears to reflect the more rapid resolution of JV loans.

For those notes and properties that have been liquidated, the recovery rate (the ratio of the sales price less net expenses to the claim amount) for JV2002 is 73 percent, compared to the recovery rate on claims for the holdout loans of 69 percent. However, when the comparison is broadened to include all resolutions of both ACD and holdout loans (paid in full, reinstatements, partial claims, and conveyance claims), the loss rate relative to unpaid principal balance (UPB) is higher for JV2002 loans, 29 percent, than for holdout loans, which had a loss rate of only 7 percent. The loss rate is the ratio of claims less net recovery to unpaid principal balance. The lower loss rate for holdout loans is due to the inclusion of resolutions with zero or very low claims.

Another factor contributing to the higher loss rates for JV relative to control groups is the fact that JV loans are further advanced in the foreclosure process when they enter JV processing. JV loans generally have been in foreclosure for a longer period than the holdout or eligible loans when they are submitted to ACD. This difference of days in foreclosure not only affects the timing of resolutions, but also may affect the comparability of the JV and holdout groups. The holdout loans met the same eligibility criteria as the ACD loans at provisional approval. However, the loans ultimately selected for ACD had more days in foreclosure and, to a lesser extent some other characteristics, that indicate the ACD loans have higher risk of foreclosure than holdout loans.

The underlying assumption for the ACD Demonstration, that all loans provisionally approved for sale to the Joint Venture would have a high likelihood of claim, turned out not to be true. One of the criteria for accelerated claim eligibility is that FHA's participating servicers (p-servicers) make a determination that loss mitigation techniques would not prevent the loans from foreclosure and conveyance claim. However, the evidence from what has actually happened to the holdout loans is that many loans granted approval for sale to the JV can avoid claim under standard FHA processing. As of August 31, 2004, 24 percent of the 2002 holdout loans had reinstated, and another 19 percent had paid in full.

The lower than expected loss rate for standard FHA processing can be explained by three factors.

First, the eligibility criterion that requires a p-servicer to predict the likely success of loss mitigation is difficult to enforce. HUD has to rely on the judgment of p-servicers as to whether loss mitigation would fail. Since it is very difficult to predict which delinquent loans will ultimately claim, p-servicers may have an incentive to send all high risk loans to the ACD.

Second, all ACD loans have a full claim and are sold at a discount to the Joint Venture. Determined in the bid accepted by HUD, the discount relative to UPB averaged 38 percent for JV2002, 29 percent for JV2003 and 19 percent for JV2004. Citigroup submitted the only bid for JV2002, when the concept was new and the outcome highly uncertain. There were six bids for JV2003, and Lehman won the competition with the lowest proposed discount. Citigroup won the bid for JV2004 with a discount that was half its bid for JV2002 and an ownership share for FHA that increased from 30 to 40 percent. As competition improves, the smaller discounts on every ACD loan will reduce the loss rate for ACD.

The third factor driving the loss rates is the strong housing market during the demonstration period to date. The strong market had a similar result for sales prices, providing high prices for note sales for the JV and for property sales for both the JV and holdout loans. However, the ACD advantages of quick and flexible disposition are more cost saving in a weak or declining market than in a strong market. In the current, favorable housing market, property value appreciation makes it possible for many borrowers with delinquent loans to prepay, refinance or restructure their loans and avoid conveyance claims. Furthermore, historically low interest rates have made it possible for loss mitigation by FHA servicers to be as effective as loan restructuring by the JV servicer. Thus, the JV advantage of shortening the disposition cycle in order to avoid further loss, important in a declining housing market, is less important in a strong market. In sum, the housing market may be appreciating too fast, and interest rates may be too low, for high note sale prices by ACD to offset the advantages of zero claims on reinstatements and prepayments under standard FHA processing in a strong market.

For FHA to reduce losses through the ACD approach compared to standard processing, three things must happen:

- 1) Eligibility requirements must be tightened to ensure only the loans most likely to claim are selected for the ACD.
- 2) The discount for FHA loans sold to the JV must be reduced.
- 3) The sales prices on JV notes and properties must be substantially higher than the FHA sales prices on REO sales.

More competitive discounts offered by JV partners under JV2003 and JV2004 will undoubtedly reduce the losses to FHA from those joint ventures, and a higher ownership share for FHA under those partnerships will allow FHA to recoup a larger portion of the JV profits. However, the strong market that has buoyed the JV sales prices has also continued to improve FHA REO sales prices and to allow more FHA defaults to prepay or reinstate. Under current market conditions of low interest rates and growing house prices, it may be difficult for JV processing to provide lower loss rates than occur under standard FHA processing.

In an effort to compare outcomes under the ACD approach and standard FHA processing, a model of the predicted probability of claims was developed, based on 1997 FHA defaults. The coefficients of this claims model were applied to ACD loans to predict the counterfactual outcomes for ACD loans under standard FHA processing. This alternative method of measuring the ACD treatment effect shows (1) that the ACD portfolio has a higher average predicted probability of claims than the full set of defaulted loans; and (2) that the ACD loss rates were greater than what would be expected if the same selection of ACD had received standard FHA processing. The comparison of recovery rates or loss rates between ACD and holdout loans may be biased by higher risk loans being selected for ACD. Adjustment for the selection effect decreases the difference in loss rates between ACD and holdout loans, but only by 4 percentage points. If there had been no difference in the risk distribution of loans, ACD loans would still have loss rates that were 18 percentage points higher than under standard FHA processing.

The model analysis also indicates that the more competitive discounts offered by JV partners under JV2003 and JV2004 will undoubtedly reduce the losses to FHA from these joint ventures, and also that a higher ownership share for FHA under these partnerships will allow FHA to recoup a larger portion of the JV profits. The claims model shows that applying JV2004 parameters of a 19 percent discount rate and a 40 percent FHA ownership share in the JV partnership could lower the JV loss rate to the point that 80 percent of the JV2002 loans could be handled more cost effectively by JV processing. While JV processing is not cost effective for the parameters in JV2002, the combination of better targeting to high-risk loans and the parameters in JV2004 show that ACD could be cost effective.

The following sections provide more detail on each of these results. The first section describes in more detail the background on the ACD Demonstration and the design of the evaluation for comparing JV processing to standard FHA processing. The next section reports the loan outcomes, including both interim and final status for loans in each of three groups: ACD loans, holdout loans, and the remaining eligible loans provisionally approved for the ACD. Costs and profits are reported in the next section, featuring the recovery rates in terms of claims and the loss rates in terms of UPB for each group. A description of the loan characteristics for each loan group is followed by a selection model that estimates the factors driving the selection process. The final section is a breakeven analysis that considers what combination of loan selection and claim rates would make the ACD program cost effective.

A Glossary of Terms and Abbreviations follows the Executive Summary. The Appendix contains the complete regression results for the selection models.

Glossary of Terms and Abbreviations

601 Program – refers to Section 601 of the Department of Veterans Affairs and Housing and Urban Development, and Independent Agencies Act, 1999. Section 601(d) amends Section 204(g) of the National Housing Act to allow for structured financing such that FHA retains an equity interest in a partnership and the private partner manages the asset disposition. The 601 Program is also called ACD or the JV Program.

ACD – Accelerated Claims Disposition Demonstration (also called 601 Program or JV Program). ACD represents the alternative of delinquent loans being selected for prompt claim payment by FHA and the loan being transferred to a joint venture in which the private partner sells the loan without FHA insurance for the best available price.

BPO – Broker’s Price Opinion, the report that values properties at the time a loan is submitted for ACD claim.

Eligible loans – remaining set of provisionally approved loans after holdout loans and ACD loans have been selected out. Delinquent loans cycle through eligibility with new delinquent loans becoming provisionally approved and older delinquent loans losing eligibility. Provisional approval status only lasts for 60 days. In any month, eligible loans could be drawn into the set of holdout loans or selected for ACD treatment. More information on the eligibility criteria is found in the entry for Provisional Approval.

FMV – Fair Market Value, the value of the loan as determined by the private partner in the Joint Venture. The fair market value is the discounted amount relative to the unpaid principal balance.

Holdout loans – a set of comparison loans that are similar to the set of eligible loans from which ACD loans are drawn. A 10 percent random sample of provisionally approved loans is set aside each month before the participating servicer selects loans for ACD treatment. The holdout loans cannot be submitted for ACD under the current or subsequent joint ventures.

Homeownership Retention – loan restructuring or loss mitigation such that the borrower remains in his or her home. In standard FHA processing, the loss mitigation techniques of special forbearance, loan modification and partial claim are the three versions of loss mitigation homeownership retention. Non-homeownership retention means the loan is terminated – for example, through a preforeclosure sale or deed-in-lieu. In JV processing, homeownership retention is more difficult to track because the loan is often sold in a note sale. It is assumed that the borrower retains her home in a note sale, particularly in securitization sales because the loans are performing, but there is no information available on the retention after the sale.

JV – Joint Venture. FHA enters a public/private joint venture in which the private partner is responsible for managing the asset disposition of delinquent loans. The Joint Ventures are distinguished by the year in which the auction was conducted.

JV2002 – The Joint Venture begun in 2002 and managed by Citigroup. FHA’s ownership share is 30 percent. To arrive at the fair market value, the average discount on loans relative to unpaid principal balance was 37.7 percent.

JV2003 – Joint Venture begun in 2003 and managed by Lehman. FHA’s ownership share is 30 percent. To arrive at the fair market value, the average discount on loans relative to UPB was 29.3 percent.

JV processing – The alternative to standard FHA processing is JV processing, in which the joint venture services the original loan, restructures the loan or forecloses on the loan and sells the property. The joint venture is not restricted by the same servicing rules as standard processing, which means the loan can be sold as a discounted note, with or without restructuring.

Liquidation – the final termination of a loan, either as a sale (note sale or property sale) or as Paid in Full (PIF).

Loss Mitigation – techniques used by FHA servicers to help delinquent loans cure their default or reinstate. The homeownership retention loss mitigation tools are: special forbearance, loan modification, and partial claim. The non-homeownership retention loss mitigation tools are: preforeclosure sale and deed-in-lieu of foreclosure. JV servicers have a wider range of loss mitigation techniques, often referred to as loan restructuring.

Loss Rate – The ratio of claims less net recovery to unpaid principal balance. Claims are the total accelerated claim, including participation fee, paid to the participating servicer in order for FHA to obtain the loan. For JV2002 and JV2003, net recovery is 70 percent of the Fair Market Value plus 30 percent of the note or property sale plus other income less other expenses. In JV2004, the ownership share for FHA increased to 40 percent, so the net recovery is 60 percent of the Fair Market Value plus 40 percent of the note or property sale plus other income less other expenses.

LTV - Loan-to-Value is the ratio of unpaid principal balance to property value, based on either the BPO or the original appraisal.

Non-Foreclosure Final Status – Loans that reached a final status but did not complete foreclosure. For ACD loans, the loans in this category are note sales sold below the unpaid principal balance. For non-ACD loans, this category includes preforeclosure sales, deed-in-lieu of foreclosure dispositions and any other termination involving a partial claim.

Note Sale – the Joint Ventures have the option of selling loans either at full value or at a discount relative to the unpaid principal balance. The note sale could be a pool sale or a securitization sale. Only the Joint Ventures have done note sales during the ACD Demonstration. FHA has done single family note sales in the past, but has not done any note sales during the ACD Demonstration.

P-servicers – Participating Servicers, mortgage servicers who agreed to participate in the Accelerated Claims Disposition Demonstration. The p-servicers send delinquent loans for provisional approval and select which loans are ultimately submitted for accelerated claim. The p-servicers also collect a participation fee to offset the added costs of participation in the ACD Demonstration.

PIF – Paid in Full, loans that are terminated with full payment, usually by the borrower. In terms of evaluating final status, PIF loans also include JV loans in which the price paid in the note sale was at least as much as the unpaid principal balance.

Property Sale – sale of foreclosed properties after the title has been conveyed to HUD or the Joint Venture.

Provisional Approval – the criteria used to determine which delinquent loans are eligible for accelerated claims and joint venture processing. To be provisionally approved a loan must meet the following criteria:

- Serviced by a Participating Servicer
- Unpaid principal balance no less than \$20,000
- Loan must be four full payments past due
- Loan-to-value (LTV) ratio of 85 percent or higher
- P-servicer used reasonable judgment to conclude loss mitigation would not be successful
- Freddie Mac EarlyIndicator Risk Grade of D, E or F
- Mortgaged property not subject to Department of Justice seizure order or in an Asset Control Area
- Mortgaged property has not sustained more than 10 percent damage regardless of insurance
- Loan not subject to partial claim or special forbearance relief
- Loan not accepted for preforeclosure sale or deed-in-lieu of foreclosure
- No contested foreclosure and no foreclosure sale has been scheduled within 60 days

There is also a maximum number of missed payments that varies by state, ranging from 5 to 13 months. For ACD loans, the participating servicer must order a Broker's Price Opinion (BPO) report and submit the Monthly Supplemental Defaulted Loan Payment History. The provisional approval lasts 60 days.

Recovery Rate – the ratio of the sale price less net expenses to the claim amount. In this report, the recovery rate is the net recovery rate relative to claims. FHA recovery rates are the loss amount subtracted from the acquisition cost divided by the acquisition cost. The recovery rate differs from the loss rate in two ways. The recovery rate is net recovery relative to claims, whereas the loss rate is relative to UPB. Also, the recovery rate is calculated for sales, either property sales or note sales. Loss rates are calculated as claims minus net recovery and includes all resolutions, even cases with zero claims.

Reinstatement – sufficient payment by the borrower to bring a delinquent loan current. There is no presumption that reinstatement loans will not default again.

REO inventory – Real Estate Owned, property owned by either FHA or the Joint Venture and waiting to be sold. REO Sale is the loan category for REO properties after the sale.

Standard processing (or standard FHA processing) – Under current FHA rules, the servicer collects payments and forwards the premium to FHA. Delinquent loans are given loss mitigation

treatment, either using retention tools (special forbearance, loan modification or partial claim) or non-retention tools (preforeclosure sale or deed-in-lieu of foreclosure). If loss mitigation fails, the servicer proceeds with foreclosure. Upon completion of foreclosure, the title is delivered to FHA in exchange for a claim payment and the property is sold by Management and Marketing (M&M) contractors for HUD.

UPB – unpaid principal balance, the amount of principal owed on the loan. For ACD cases, the UPB is recorded when the loan enters the Joint Venture. For non-ACD loans, the UPB is updated monthly and represents the amount at the cutoff date, or August 31, 2004, used in the analysis for this report.

Background on the ACD Demonstration Design and JV Processing

The Accelerated Claims Disposition Demonstration comes from Section 601 of the Department of Veterans Affairs and Housing and Urban Development, and Independent Agencies Act, 1999. The Act allows the Federal Housing Administration (FHA) additional flexibility to choose the most cost effective methods for paying claims and disposing of foreclosed, single-family properties. It specifically authorizes FHA to take assignment of mortgage notes and transfer them to private partners for servicing, property management and asset disposition. Section 601(d) amends Section 204(g) of the National Housing Act to allow for structured financing such that FHA retains an equity interest in the partnership undertaking the asset disposition.

The purpose of the 601 Evaluation is to answer the following questions:

- What is the return to HUD from the JV structure compared to standard HUD processing? What explains the difference in cost? How have the increased use of loss mitigation and evolving performance of Management & Marketing (M&M) contractors affected the differences?
- How has the design of the ACD Demonstration affected the outcomes? Which incentive systems were productive? Which were counterproductive?
- Are the outcomes compatible with FHA's policy objectives?
- Are there alternative structures that would have improved the outcomes?
- What are the implications of the ACD Demonstration outcomes for expansion of the program?
- To what extent are the results seen in the Demonstration predictive of servicer behavior on a larger-scale?
- What should be the next steps? Should the ACD Demonstration be expanded, changed or rejected altogether?

Not all of these questions are addressed definitively in this report because the final outcomes for many ACD loans and most FHA comparison loans have not happened yet. Nevertheless, the major patterns are becoming clearer. For ACD to reduce costs to FHA, the p-servicers will have to improve targeting to high-risk loans and reduce the discount on loans sold to the JV. Even under those conditions, a strong housing market could make the FHA claims rate from delinquencies so low that it is extremely difficult for ACD loss rates to fall below FHA loss rates. The focus of this report is to present the facts based on data through August 31, 2004. The implications of those facts remain tentative while we await final loan outcomes and more complete analysis.

How ACD Works

The selection of loans under the ACD Demonstration starts with the participating servicers (p-servicers) of FHA loans who have agreed to submit their delinquent loans to FHA for provisional approval. There are a number of eligibility criteria, including:

- Serviced by a Participating Servicer
- Unpaid principal balance (UPB) no less than \$20,000
- Loan must be four full payments past due
- Loan-to-value (LTV) ratio of 85 percent or higher
- P-servicer used reasonable judgment to conclude loss mitigation would not be successful
- Freddie Mac EarlyIndicator Risk Grade of D, E or F
- Mortgaged property not subject to Dept. of Justice seizure order or in Asset Control Area
- Mortgaged property has not sustained more than 10 percent damage regardless of insurance
- Loan not subject to partial claim or special forbearance relief
- Loan not accepted for preforeclosure sale or deed-in-lieu of foreclosure
- No contested foreclosure and no foreclosure sale has been scheduled within 60 days.

Loans that meet the eligibility requirements are divided into two groups, the holdout loans and the eligible loans. The holdout loans are a 10 percent random sample of the provisionally approved loans. The holdout loans are set aside to create a comparison cohort for the evaluation of the ACD loans selected by p-servicers from the provisionally approved loans. From an experimental design point of view, it would have been better to draw the random set of holdout loans from the set of loans the p-servicers selected for ACD. If the holdouts had been a random subset of the loans selected for ACD treatment but not given JV processing, then it would be clear that the differences in outcomes between holdouts and ACD were due to the JV processing. However, that would have required larger sampling rates from the provisionally approved loans to reach statistically meaningful sample sizes of ACD and holdouts. Instead, HUD chose a sequential design whereby the p-servicer first selected loans for provisional approval, a 10 percent random sample of the approved loans was set aside as the holdout sample, then the p-servicers selected the loans for ACD from the remaining approved loans.

All three groups, ACD, holdouts and eligibles, have passed through the provisional approval screen, but the order of selection after that screening is potentially important. The holdouts are the first to be drawn from the provisionally approved, so the distribution of characteristics for holdouts should be most representative of the larger set of provisionally approved loans. The ACD loans are then selected from the provisionally approved excluding the holdouts. The assumption is that foreclosure is expensive for the p-servicers as well as for FHA, so the p-servicers have an incentive to select the high-risk loans from the approved cases. The approval lasts for 60 days and it is certainly possible that new information becomes available to the p-servicer that was not known at provisional approval. It is also likely that the p-servicer has more information, such as credit scores or the borrower's employment history, which is used in the selection process but not revealed to HUD. Unfortunately,

we know relatively little about how the p-servicers select loans for ACD. Selection models estimated on the results (reported below) suggest substantial differences among the p-servicers.

After the holdouts and ACD are selected, the remaining set of provisionally approved loans are the eligible loans. If the high-risk loans are selected for ACD, we would expect the eligible loans to be lower risk than the ACD loans on average. However, the pool of eligible loans is quite dynamic with new approvals being added each month and continuing eligibles being drawn off to holdouts, JV2002 or subsequent JVs. In that respect, the eligible loans are not a well-defined cohort of loans and yet, the characteristics and outcomes of the eligible loans are not that different from ACD or holdouts. Given our limited knowledge about the selection process for ACD and to get a more complete view of all the provisionally approved loans, we report results for all three loan groups.

From the set of eligible loans, the p-servicers select a subset of loans for accelerated claim paid by FHA. The loans submitted for ACD claim must have a Broker's Price Opinion (BPO), but the holdouts do not. At settlement, the ACD loans are transferred from the p-servicers to the Joint Venture. The value of the loan as it enters the JV is based on the accepted bid for the risk category containing the loan. The risk categories are based on UPB or BPO, LTV and days in foreclosure. High-risk loans are discounted more than low-risk loans, though ACD loans as a group are relatively high risk because they are all at least 90-day delinquent loans (4 payments past due) and many have defaulted more than once.

JV2002 was the first joint venture, and there was considerable uncertainty about how the process would work and how successful the JV partner, Citigroup, would be. The average discount rate, measured as the ratio of UPB minus the fair market value (FMV) relative to UPB, was 37.7 percent, though the discount rate for any particular risk category could be much higher or lower than that average. JV2002 began taking in loans in October 2002 and now contains 6,656 loans from the Philadelphia and Atlanta Homeownership Centers (HOC). By the second Joint Venture, there were several competitive bids and the winning bid to Lehman resulted in a discount rate of 29.3 percent. JV2003 began in August 2003 and has 5,847 loans from all four HOC regions as of August 31, 2004. The final month of settlement for JV2003 was September 2004. In both JVs, HUD has a 30 percent ownership share and the private partner has a 70 percent share. When the loan is transferred to the JV, the private partner pays FHA 70 percent of the FMV.

The Demonstration continues with JV2004, won by Citigroup again. The major change in the latest joint venture is that the discount, or rate at which JV buys the loans from FHA, has declined substantially to 19 percent. The smaller discounts show that private partners recognize the value contained in FHA delinquent loans and have overcome their uncertainty about the ACD Program. Another sign of confidence in the profitability of the joint ventures is that FHA has increased its ownership share from 30 percent in JV2002 and JV2003 to 40 percent in JV2004. The reduction in discounts and increase in ownership share should increase the recovery rate that FHA obtains from the latest joint venture.

Loans transferred from p-servicer to JV are evaluated by the private partner to determine how best to maximize the return on the loan. Some loans are restructured with new terms, some loans pay in full, and some loans go to foreclosure and then REO status. In most cases, the JV attempts to bring the loan back to performing status and then sell the note either in a pool sale or securitization sale. Loans liquidated through note sales generally earn a higher return than property sales, so the JV has an incentive to maximize the share of note sales relative to property sales. When the note or property is sold, FHA receives 30 percent of the sales price less 30 percent of the expenses for servicing and selling the asset. The net recovery is the amount remaining after adjusting for income and expenses. In this report, the recovery rate is the net recovery amount divided by the claims amount. The loss rate is measured as the total costs less recoveries divided by the UPB. The UPB is the unpaid principal balance reported by the p-servicer when the loan is submitted for provisional approval.

Outcomes

The loan status for ACD, eligible and holdout loans is presented in Exhibit 1 (numbers of loans), Exhibit 2 (dollar values in terms of unpaid principal balance, UPB) and Exhibit 3 (average UPB). There are three groups of loans corresponding to each joint venture designated by the beginning year of the JV. The first column for each year contains the ACD loans followed by eligible loans and holdout loans. Eligible loans are provisionally approved loans that did not get selected for either ACD or holdout. Eligible loans retain their approval status for 60 days, but they can be re-submitted for approval or submitted for subsequent joint ventures. Holdout loans do not have such a flexible status. Once a loan is designated as a holdout loan, it cannot be submitted for accelerated claim or any joint venture. The sample sizes for the holdout loans by status category are small, especially the holdouts in final resolution, but the holdout results tend to be similar to the eligible loans, so both results are shown.

The loan status for each loan is classified into one of eleven categories arranged with the three final status categories at the top followed by various grades of interim categories. The rules used for loan status assignment follow Exhibit 1. The ordering follows the programming code, which gives preference to final status categories over interim status categories.

The three final status categories are:

- Paid In Full (PIF),
- REO Sold and,
- Non-foreclosure Final Status.

The Paid in Full (PIF) category includes not only the loans in which the borrower paid the outstanding balance (prepays), but also the note sales for which the amount received was greater than or equal to the UPB. For JV2002, 43 percent of the PIF loans are prepays and the remaining are note sales. The purpose of broadening this category is to encompass all the terminations that did not entail a claim under standard FHA processing.¹ Under standard FHA processing, if a borrower or buyer pays the entire unpaid balance, there would be no claim. Similarly under JV processing, if a loan is prepaid or sold for at least the UPB, the loans are classified as PIF.

¹ All the ACD loans entail a claim. The accelerated claim is paid by FHA to the p-servicer before the loan is transferred to the JV.

Exhibit 1: Loan Status by Numbers of Loans
(Data as of 8/31/2004)

Loan Status	2002			2003		
	ACD	Eligible	Holdout	ACD	Eligible	Holdout
Paid in Full (PIF)	2,013 30%	1,915 19%	666 19%	452 8%	1,245 7%	203 8%
REO Sold	615 9%	472 5%	373 10%	314 5%	490 3%	88 3%
Non-foreclosure Final Status	1,775 27%	67 1%	31 1%	1,320 23%	223 1%	19 1%
Reinstatements		3,000 30%	843 24%		3,424 19%	452 18%
Total Resolutions	4,403 66%	5,454 54%	1,913 54%	2,086 36%	5,382 30%	762 30%
REO Inventory	691 10%	415 4%	165 5%	709 12%	797 4%	141 6%
Non-retention Loss Mitigation	25 0.4%	12 0.1%	0 0.0%	38 0.6%	66 0.4%	6 0.2%
Foreclosure in Process	480 7%	1,216 12%	493 14%	710 12%	2,764 15%	453 18%
Reinstatements Pending Sale	161 2%			232 4%		
Retention Loss Mitigation Action Taken	271 4%	1,749 17%	580 16%	696 12%	5,232 29%	739 29%
Bankruptcy	252 4%	234 2%	126 4%	544 9%	578 3%	86 3%
Unresolved Delinquency	288 4%	532 5%	163 5%	183 3%	1,470 8%	168 7%
Unknown	85 1%	497 5%	117 3%	649 11%	1,641 9%	203 8%
Total Loans	6,656	10,109	3,557	5,847	17,930	2,558

Note: We consider the standard that PIF, reinstated loans or loans with "3 payments in 3 months" are performing loans. Among the 2002 loans, 51% of ACD/601 loans, 49% of eligible loans and 42% of holdouts are performing and among the 2003 loans, 13% percent of ACD/601 loans, 26% of eligible loans and 26% of holdout loans are performing as of 8/31/2004. Moreover, 35% of bankruptcies in JV2002 and 25% of bankruptcies in JV2003 are also performing as of 8/31/2004. Among JV2002 PIFs, 47% are prepaids.

Exhibit 1: Loan Status by Numbers of Loans (Continued)
(Data as of 8/31/2004)

Rules Used in Loan Status Assignment

JV Processing (in the order of preference)

- 1 Paid in Full if the ratio of sales price to UPB is 1 or greater, includes interim PIFs.
- 2 REO Sold if property sale.
- 3 Non-foreclosure Final Status if note sale, PFR17, SAL9A, SAL9B, SAL9C or TPS30.
- 4 REO Inventory if FOR46, DIL47, PST01, PST06 or PST08.
- 5 Non-retention Loss Mit if PFR15 or DIL44.
- 6 Foreclosure if FOR43, FOR45, FOR68, OCC02 or OCC03.
- 7 Reinstatement if REI20.
- 8 Retention Loss Mit Action Taken if FGV9E, FRB09, FRB12, LNM28, NWB01, NWR01 or NWT01.
- 9 Bankruptcy if BK07S, BK11S, BK12S or BK13S.
- 10 Unresolved Delinquency if DEL42, BK07E, BK11E, BK12E or BK13E.
- 11 Unknown if not a property sale, note sale or no non financial transaction code.

Standard Processing (in the order of preference)

- 1 Paid in Full if default status code is 13, 22, 25 or 30 or termination code is 11, 13, 22 or 23.
- 2 REO Sold if termination code is 15 and disposition date exists.
- 3 Non-foreclosure Final Status if default status code is 17, 48 or 49 or termination code is 25
- 4 REO Inventory if default status code is 24, 46 or 47 or termination code is 15 and disposition date is missing.
- 5 Non-retention Loss Mit if default status code is 15 or 44.
- 6 Foreclosure if default status code is 43, 45 or 68.
- 7 Reinstatement if default status code is 14, 20 or 21.
- 8 Retention Loss Mit Action Taken if a) default status codes is 09, 10, 12, 19, 26, 28, 32, 39 or 41, b) loss mitigation claim prepared date is after the default status date, or c) loss mitigation record exists but current default record does not.
- 9 Bankruptcy if bankruptcy code is 1, 2, 3 or 4 and bankruptcy date is after the default status date.
- 10 Unresolved Delinquency if default status code is 42 or 99.
- 11 Unknown if default status codes is 77 or current default record does not exist.

Exhibit 2: Loan Status by Amount of Unpaid Principal Balance
(Data as of 8/31/2004)

Loan Status	2002			2003		
	ACD	Eligible	Holdout	ACD	Eligible	Holdout
Paid in Full (PIF)	\$202,043,879 33%	\$189,775,283 21%	\$68,324,861 21%	\$48,313,884 8%	\$141,497,982 7%	\$22,843,277 8%
REO Sold	\$49,846,624 8%	\$39,578,142 4%	\$30,591,262 10%	\$31,091,860 5%	\$48,908,163 3%	\$8,509,404 3%
Non-foreclosure Final Status	\$161,792,297 27%	\$7,612,094 1%	\$3,143,076 1%	\$127,151,305 22%	\$25,554,464 1%	\$2,433,344 1%
Reinstatements		\$264,025,262 29%	\$71,718,481 22%		\$355,683,245 19%	\$47,432,101 18%
Total Resolutions	\$413,682,799 68%	\$500,990,781 55%	\$173,777,680 54%	\$206,557,048 36%	\$571,643,854 30%	\$81,218,127 30%
REO Inventory	\$54,884,991 9%	\$33,514,018 4%	\$13,432,493 4%	\$64,412,098 11%	\$79,445,977 4%	\$13,851,577 5%
Non-retention Loss Mitigation	\$2,842,740 0.5%	\$1,303,673 0.1%	\$0 0.0%	\$4,054,274 0.7%	\$7,818,880 0.4%	\$778,530 0.3%
Foreclosure in Process	\$40,703,440 7%	\$103,697,077 11%	\$43,691,667 14%	\$69,418,406 12%	\$288,964,070 15%	\$47,211,974 17%
Reinstatements Pending Sale	\$13,345,701 2%			\$22,812,229 4%		
Retention Loss Mitigation Action Taken	\$26,426,397 4%	\$161,102,381 18%	\$54,133,463 17%	\$74,662,961 13%	\$564,044,136 30%	\$79,094,363 29%
Bankruptcy	\$22,659,760 4%	\$21,211,099 2%	\$11,513,473 4%	\$52,831,790 9%	\$57,683,092 3%	\$8,700,497 3%
Unresolved Delinquency	\$26,426,594 4%	\$44,887,263 5%	\$13,836,683 4%	\$17,411,347 3%	\$151,841,361 8%	\$18,077,009 7%
Unknown	\$7,620,604 1%	\$42,646,232 5%	\$10,248,227 3%	\$64,957,281 11%	\$167,306,636 9%	\$21,672,535 8%
Total Loans	\$608,593,026	\$909,352,523	\$320,633,686	\$577,117,434	\$1,888,748,005	\$270,604,611

Note: Unpaid principal balance (UPB) amounts were obtained from the Accelerated Claim Criteria Report Application (ACCRA) data. When UPB was not available in ACCRA (0.4% of 2002 eligible and holdout loans and 1.4% of 2003 eligible and holdout loans), UPB from the Single Family Data Warehouse (SFDW) was used.

Exhibit 3: Loan Status in Average Unpaid Principal Balance
(Data as of 8/31/2004)

Loan Status	2002			2003		
	ACD	Eligible	Holdout	ACD	Eligible	Holdout
Paid in Full (PIF)	\$100,370	\$99,099	\$102,590	\$106,889	\$113,653	\$112,528
REO Sold	\$81,051	\$83,852	\$82,014	\$99,019	\$99,813	\$96,698
Non-foreclosure Final Status	\$91,151	\$113,613	\$101,390	\$96,327	\$114,594	\$128,071
Reinstatements		\$88,008	\$85,075		\$103,879	\$104,938
Total Resolutions	\$93,955	\$91,857	\$90,840	\$99,021	\$106,214	\$106,585
REO Inventory	\$79,428	\$80,757	\$81,409	\$90,849	\$99,681	\$98,238
Non-retention Loss Mitigation	\$113,710	\$108,639	NA	\$106,691	\$118,468	\$129,755
Foreclosure in Process	\$84,799	\$85,277	\$88,624	\$97,772	\$104,546	\$104,221
Reinstatements Pending Sale	\$97,514			\$107,274		
Retention Loss Mitigation Action Taken	\$97,514	\$92,111	\$93,334	\$107,274	\$107,807	\$107,029
Bankruptcy	\$89,920	\$90,646	\$91,377	\$97,117	\$99,798	\$101,169
Unresolved Delinquency	\$91,759	\$84,375	\$84,888	\$95,144	\$103,293	\$107,601
Unknown	\$89,654	\$85,807	\$87,592	\$100,088	\$101,954	\$106,761
Total Loans	\$91,435	\$89,955	\$90,142	\$98,703	\$105,340	\$105,788

Note: Unpaid principal balance (UPB) amounts were obtained from the Accelerated Claim Criteria Report Application (ACCRA) data. When UPB was not available in ACCRA (0.4% of 2002 eligible and holdout loans and 1.4% of 2003 eligible and holdout loans), UPB from the Single Family Data Warehouse (SFDW) was used.

To date, the predominant difference in disposition strategies between JV processing² and standard FHA processing is the option by the JV to conduct note sales and securitizations. The disposition strategy for the standard FHA processing is foreclosure and subsequent sale by HUD's M&M contractors. Note sales are commonly done in ACD, but not done by FHA servicers. In particular, the JV can write down or forgive a portion of the principal as part of the loan restructuring, which FHA servicers cannot do. JV2002 has not forgiven principal so far, but notes have been sold for values below the UPB. Notes sold below UPB are classified as non-foreclosure final status.

The resolutions are sorted into four categories, either by size of claim for standard FHA processing or by size of discount for JV processing. Loans with no claim for FHA or no discount for JV are categorized as PIF, if terminated, or reinstatements, if still active. REO sales correspond to large claims for FHA and usually large discounts for JV processing. Claims smaller than conveyance claims for FHA are categorized as non-foreclosure final status. Similarly, discount note sales in which the amount recovered from the note sale is less than the UPB are categorized as non-foreclosure final status.

The sum of the final status categories is total resolutions. Considering first the 2002 loans, Exhibit 1 shows that 66 percent of ACD loans have been resolved as of August 31, 2004 compared to only 54 percent of holdout loans. The share of REO is quite similar between ACD and holdouts. The largest difference between ACD and holdouts is in the non-foreclosure final status outcome in which 27 percent of ACD loans were sold as discounted notes compared to only 1 percent of holdout or eligible loans. The second largest difference is that 30 percent of JV2002 loans were Paid in Full compared to only 19 percent of holdout or eligible loans. For 2003, the major difference is in the discounted note sales with 23 percent of ACD loans in non-foreclosure final status compared to only 1 percent for holdouts or eligibles. Clearly, ACD loans are reaching final resolution at a higher rate than standard processing and the difference is not due to more property sales, but rather due to note sales.

Reinstatements of eligible and holdout loans are included as resolutions because they continue as active FHA loans making regular payments. ACD reinstatements are listed with the other non-final categories because all ACD loans eventually are sold as notes or properties. Therefore, ACD reinstatements are waiting for the next note sale either as a pool sale or a securitization sale.

The non-final status categories are listed below the Total Resolutions in Exhibit 1. REO inventory and non-retention loss mitigation, are properties waiting to be sold. The distinction is that REO inventory completed foreclosure, while non-retention loss mitigation means the borrower has started a preforeclosure sale or deed-in-lieu transfer. The REO inventory is twice as large for ACD loans compared to the holdouts (10 percent for JV2002 vs. 5 percent for holdouts, 12 percent for JV2003 vs. 6 percent for holdouts).

All the loans in the remaining non-final status categories could recover so that the borrower could retain the ownership of his or her home. Under the foreclosure in process category, we see the reverse pattern from the REO inventory in that there is a higher percentage of holdouts than ACD loans. It is likely that this reflects a difference in timing. Standard FHA servicing appears to give the borrower

² The term "processing" is used in place of "servicing" because processing encompasses a broader range of activities including loan servicing, note sales and property sales.

more time as they attempt to reinstate the loan through loss mitigation strategies. The JV servicer has a broader set of loss mitigation options, including restructuring the loan with a loan amount below the original UPB. If the JV servicer determines that the borrower will not be able to make payments, the appropriate loss mitigation alternatives are explored with the borrower including, but not limited to, short sales or deed-in-lieu of foreclosure. Moving promptly to foreclosure should only be considered after all non-foreclosure alternatives have been considered. In this financial snapshot, ACD is ahead in REO inventory, but in time the holdouts in foreclosure could reach REO inventory and close the percentage gap between ACD and holdouts. Also, part of the apparent ACD lead in processing may be due to the ACD selection of loans that are more advanced toward restructuring or completing foreclosure.

The bright spot for standard FHA processing is that a substantial portion of their loans are reinstating, 24 percent of holdouts and 30 percent of eligible loans compared to only 2 percent for JV2002. Most of the ACD loans that reinstate have already been sold in the note sales and thus grouped in the PIF or non-foreclosure final status. The same pattern appears in 2003 though fewer note sales have occurred. The low rate of ACD reinstatement is offset by the high rate of PIF and discounted note sales relative to standard FHA processing. In fact, many of the ACD note sales may be reinstated loans such that the only difference from the borrower's point of view is the termination of FHA mortgage insurance on the note. For example, using the standard of "3 payments in 3 months," we found that 35 percent of the JV2002 loans were performing in the 3 months prior to August 2004. Those loans were sold in a securitization sale in August. It suggests that the rate of reinstatement may be as high among ACD loans as standard FHA processing, though the reinstatement status is preempted by the note sales (non-foreclosure final status).

The high rate of reinstatement for both ACD and FHA is notable because all of these loans were considered a high risk of claim by the p-servicers. Favorable housing market conditions with rising house values and low interest rates get credit for much of this success. However, the housing market did not get dramatically better from 2002 to 2004. Another factor in the high rate of reinstatement is the apparent difficulty for p-servicers in selecting high-risk cases. At the time of provisional approval, all of the loans had Early Indicator grades of D, E or F, which means they are likely to foreclose and claim without aggressive intervention. The fact that so many loans re-performed under ACD could be a testament to the superior servicing under JV. Yet, a large share of holdout and eligible loans also reinstated without JV processing. There appears to be a "trough" phenomenon, whereby loans are selected at provisional approval when borrower income and payments have dropped to a low point. Many of those loans will recover under standard FHA servicing as borrower income and payments are restored. The challenge is to determine which loans will not recover. The high rate of reperformance under JV processing or reinstatement under FHA processing shows that it is quite difficult to predict ultimate foreclosure and claims.

The next category, retention loss mitigation action taken, shows that standard processing is much more likely to be engaged in retention loss mitigation (special forbearance, loan modification, partial claim) than ACD processing, though the difference may be in reporting. For 2002, the difference is 4 percent for ACD and 16 percent for holdouts. For 2003, the difference is 12 percent for ACD and 29 percent for holdouts. It is important to note that this category only includes the cases currently receiving loss mitigation. All of the securitization sale loans were reperforming and may have benefited from some form of loss mitigation. For JV2002, 2,656 loans or 39.9 percent received some kind of loss mitigation (retention and non-retention) after provisional approval compared to 594 or 16.7 percent of holdouts.

As noted in the list of eligibility criteria, the p-servicers determined for all provisionally approved loans that loss mitigation would not be appropriate or successful. It is possible that the JV servicer sees the situation differently than the p-servicer, or the borrower's situation has improved so that loss mitigation becomes worthwhile. Also, reporting errors in the dates for timing of default episode and corresponding loss mitigation make it difficult to be certain that the loss mitigation claim is for the same default that led to the provisional approval. However, another possibility is that the success of loss mitigation is hard to judge, and the eligibility criteria on loss mitigation are very difficult for the provisional approval process to enforce.

The bankruptcy category is essentially a holding pattern in that servicers cannot proceed to make arrangements for loan payment or foreclosure until a plan is court approved for handling all the borrower's debts. The higher rate of bankruptcy cases for JV2003 may reflect the generally higher risk of ACD loans. As the cohort ages, the bankruptcies will end and those loans will move toward final resolution.

Unresolved delinquencies are the small set of loans that appear to have not progressed beyond the delinquency status at provisional approval. A few of the loans in the eligible column have a code that indicates they will be entering into JV2003 in September, but their status as of August 31, 2004 is still an eligible loan. One of the motivations for the ACD program is that subservicing specialists would be more proactive and aggressive at dealing with delinquent loans. From the reporting in the data it does appear that the joint ventures are better at moving along the unresolved delinquencies.

The final category is "Unknown." Loan status is essentially based on default status codes and termination codes in the Single Family Data Warehouse (SFDW) and nonfinancial status codes in the 601 Support System. For a few loans there is no status reported. Eventually this problem attenuates (11 percent for JV2003 vs. 1 percent for JV2002) and many of them may be properly classified as unresolved delinquencies.

The Loan Status by amount of UPB is shown in Exhibit 2. The results are quite similar to the percentages of numbers of loans in Exhibit 1. The percentage of loans with Paid In Full (PIF) status is larger in terms of UPB suggesting that loans with above average UPB are more likely to pay off or prepay. On the other hand, the share reinstating under standard processing is smaller for UPB than for numbers of loans, suggesting the smaller value loans are more likely to reinstate.

Loan Status in average UPB is presented in Exhibit 3. Overall, the 2003 averages are larger in part because the loans originated more recently. Another reason the 2003 loan values are higher is that they are drawn from all four Homeownership Centers, including the West Coast where house values are substantially higher. A consistent pattern for both loan cohorts is that average UPB for REO sales is about 80 to 90 percent of the UPB for PIF. Similarly, REO inventory and, to a lesser extent, foreclosure in process loans tend to be below average of UPB.

Homeownership Retention

Homeownership retention is an important goal for FHA and one concern about the ACD program is that faster processing could push more borrowers out of their homes. Unfortunately, the data is truncated because we do not know the homeownership retention status after the note sale. In the short run, every note sale counts as homeownership retention. The JV2002 securitization sale in August included 2,599 performing loans.³ The holder of the note changed hands, but the borrower kept her home and continues with monthly payments. All those note sales should count as homeownership retention. For loans in the securitization sale, the status of the loan can be tracked through the trust monitoring the security. For whole loan sales, the servicing is transferred and no further information is available. The problem is that we are more likely to track the reinstated holdout loans, because they continue as FHA insured loans, than the ACD notes sold. Even if ACD and holdout loans are equally likely to foreclose a year later, the FHA data only reports the non-retention of FHA conveyances and not the outcomes for ACD loans. Therefore, a comparison of retention between ACD and standard processing is limited by a difference in the duration and completeness of the records.

A simple approach is to count all the cases that are not REO (either REO sold or REO inventory) as possible homeownership retentions, as shown in Exhibit 4. By that measure in 2002, 80 percent of ACD and 85 percent of the holdouts could retain their homes. The same pattern holds for 2003, 83 percent retention for ACD vs. 91 percent retention for holdouts. The sample sizes for eligible loans are considerably larger and support the finding that standard FHA processing is better at avoiding REO, at least in the short run.

If we include foreclosure with REO, on the presumption that most foreclosures end in REO inventory, ACD has higher homeownership retention than holdouts in 2002 (73 percent vs. 71 percent). However, the comparison of ACD with holdouts in 2003 or with eligibles for either year shows higher retention for standard processing. However, eligibles are not a good comparison group for homeownership retention because the more advanced foreclosure cases have been selected out of the eligibles for ACD. Given the limited data, it appears that standard FHA processing has a small advantage in homeownership retention, at least in the short run.

Some ACD loans are further advanced in the foreclosure process when they are sold to the JV and JV processing through note sales is faster at reaching final resolution than standard FHA processing through REO sales. Therefore, much of the short run difference in homeownership retention may simply be due to faster processing by JV than FHA. After another year or two, the final resolution rates should converge and the long run homeownership retention can be more reliably measured at that time.

³ Of the 2,599 loans in the securitization sale, 1,582 loans are classified as PIF and 1,017 loans as non-foreclosure final status.

Exhibit 4: Homeownership Retention Rates
(Data as of 8/31/2004)

Loan Status	ACD	Eligible	Holdout
2002			
Loans not in REO sold, nor REO inventory	80.4%	91.2%	84.9%
Not in REO sold , REO inventory, nor Foreclosure	73.2%	79.2%	71.0%
2003			
Loans not in REO sold, nor REO inventory	82.5%	92.8%	91.0%
Not in REO sold , REO inventory, nor Foreclosure	70.4%	77.4%	73.3%

Costs and Recoveries

The financial outcomes for the 2002 loan groups are presented in Exhibit 5 and for 2003 loan groups in Exhibit 6. The values are as of August 31, 2004. As shown in the ACD column of Exhibit 5, JV2002 has 6,656 loans with a total value of \$609 million and total claims cost to HUD of \$643 million. Loans entered JV2002 from November 2002 until August 2003. After that date, new ACD loans entered JV2003 till September 2004.

By comparison in Exhibit 6, JV2003 accumulated 5,847 loans for a total value of \$577 million and total claims to HUD of \$608 million. As the more recent partnership, JV2003 has sold fewer notes and properties, but it has managed more sales in its first year than JV2002 did. Undoubtedly, JV2002 faced more challenges as the ACD Demonstration established new systems and routines. Moreover, JV2002 pursued a strategy of a large securitization sale for performing loans, while JV2003 conducted a series of smaller pool sales. Two-thirds of the 3,786 JV2002 note sales were completed in the August 2004 securitization sale. For both JVs, there have been far fewer REO sales, 615 for JV2002 and 314 for JV2003.

The share of REO sales for eligibles (5 percent) is lower than ACD (9 percent) or holdouts (10 percent). Using REO resolutions as a measure of claim risk, it appears that eligibles are less risky than ACD or holdouts. This view is corroborated by the 30 percent share of reinstatements for eligibles relative to 24 percent for holdouts. However, the lower risk of eligibles relative to ACD may be a function of timing (FHA processing slower than JV processing) and small samples.

The third sections of Exhibits 5 and 6 report the claims paid by FHA. The claims include the unpaid principal and accrued interest during default as well as p-servicer expenses and a participation fee. The ratio of claims to UPB for JV2002 is 106 percent and nearly the same (105 percent) for JV2003. Relative to REO cases in FHA, the ACD claims costs are much lower. For holdouts, the claims cost ratio is 113 percent for 2002 and 109 percent for 2003. However, the claims for non-REO cases in FHA are much lower. The accelerated claims are paid for all loans in ACD before they begin JV processing whereas with standard FHA processing most claims are paid after conveyance. Loss mitigation claims and partial claims on short sales are included in the claims amounts, but they are much smaller than the conveyance claims. Once the partial claims and non-claims are averaged with the conveyance claims, the claims ratio for holdout resolutions drops to 20 percent. Ultimately this difference in claims costs is key to the comparison of loss rates between ACD and holdouts. The fact that many resolutions under standard FHA processing are for non-claims greatly lowers the claims costs relative to JV processing in which all loans start with about the same claim cost ratio. The claims cost ratio for ACD of 106 percent is lower than for REO holdouts in 2002 (113 percent), but much higher than the overall claims cost ratio for holdout resolutions (20 percent). As more holdouts reach final resolution, the claims will probably increase, but it is highly unlikely that they will exceed half of the claims costs for ACD.

Exhibit 5: Financial Outcomes of the 2002 Loans
(Data as of 8/31/2004)

Accounting Measure	ACD		Eligibles		Holdouts	
	Value	Percent	Value	Percent	Value	Percent
Outcomes						
PIF	2,013	30%	1,915	19%	666	19%
REO*	615	9%	472	5%	371	10%
Nonforeclosure Resolution*	1,773	27%	67	1%	31	1%
Reinstatements			3,000	30%	843	24%
Resolutions	4,401	66%	5,454	54%	1,911	54%
Interim Status*	2,255	34%	4,655	46%	1,646	46%
Total Loans	6,656	100%	10,109	100%	3,557	100%
Unpaid Principal Balance						
PIF	\$202,043,879	33%	\$189,775,283	21%	\$68,324,861	21%
REO	\$49,846,624	8%	\$39,578,142	4%	\$30,230,682	9%
Nonforeclosure Resolution	\$161,639,385	27%	\$7,612,094	1%	\$3,143,076	1%
Reinstatements			\$264,025,262	29%	\$71,718,481	22%
Resolutions	\$413,529,888	68%	\$500,990,781	55%	\$173,417,100	54%
Interim Status	\$195,063,138	32%	\$408,361,742	45%	\$147,216,586	46%
Total Loans	\$608,593,025	100%	\$909,352,523	100%	\$320,633,686	100%
Claims Cost to HUD						
		<u>% of UPB</u>		<u>% of UPB</u>		<u>% of UPB</u>
PIF	\$214,534,226	106%	\$443,713	0.2%	\$176,257	0.3%
REO	\$52,860,523	106%	\$43,531,752	110%	\$34,034,833	113%
Nonforeclosure Resolution	\$169,763,743	105%	\$1,893,442	25%	\$416,789	13%
Reinstatements			\$1,116,475	0.4%	\$337,844	0.5%
Resolutions	\$437,158,492	106%	\$46,985,382	9%	\$34,965,723	20%
Interim Status	\$206,103,026	106%				
Total Loans	\$643,261,518	106%	\$46,985,382	5%	\$34,965,723	11%
Net Recovery						
		<u>% of Claim</u>		<u>% of Claim</u>		<u>% of Claim</u>
PIF	\$164,739,955	77%				
REO	\$31,493,414	60%	\$30,739,479	71%	\$23,582,342	69%
Nonforeclosure Resolution	\$122,388,637	72%				
Resolutions	\$318,622,006	73%	\$30,739,479	65%	\$23,582,342	67%
Loss						
		<u>% of UPB</u>		<u>% of UPB</u>		<u>% of UPB</u>
PIF	\$49,794,271	25%	\$443,713	0.2%	\$176,257	0.3%
REO	\$21,367,109	43%	\$12,792,273	32%	\$10,452,491	35%
Nonforeclosure Resolution	\$47,375,106	29%	\$1,893,442	25%	\$416,789	13%
Reinstatements			\$1,116,475	0.4%	\$337,844	0.5%
Resolutions	\$118,536,486	29%	\$16,245,903	3%	\$11,383,381	7%
Interim Status	\$206,103,026	106%				
Total Loans	\$324,639,512	53%				

Note: These numbers are likely to change when all cases have been resolved.

* In 2002, ACD had 1,775 nonforeclosure resolutions and Holdouts had 373 REOs. However, recovery amounts could not be calculated for 2 nonforeclosure resolutions among ACDs and 2 REOs among Holdouts because they had missing or zero sales price. Hence in this table, those 4 loans are treated as loans in interim status.

Exhibit 6: Financial Outcomes of the 2003 Loans
(Data as of 8/31/2004)

Accounting Measure	ACD		Eligible		Holdout	
	Value	Percent	Value	Percent	Value	Percent
Outcomes						
PIF	452	8%	1,245	7%	203	8%
REO*	314	5%	489	3%	88	3%
Nonforeclosure Resolution*	1,317	23%	223	1%	19	1%
Reinstatements			3,424	19%	452	18%
Resolutions	2,083	36%	5,381	30%	762	30%
Interim Status*	3,764	64%	12,549	70%	1,796	70%
Total Loans	5,847	100%	17,930	100%	2,558	100%
Unpaid Principal Balance						
PIF	\$48,313,884	8%	\$141,497,982	7%	\$22,843,277	8%
REO	\$31,091,860	5%	\$48,742,223	3%	\$8,509,404	3%
Nonforeclosure Resolution	\$126,828,364	22%	\$25,554,464	1%	\$2,433,344	1%
Reinstatements			\$355,683,245	19%	\$47,432,101	18%
Resolutions	\$206,234,107	36%	\$571,477,915	30%	\$81,218,127	30%
Interim Status	\$370,883,327	64%	\$1,317,270,090	70%	\$189,386,484	70%
Total Loans	\$577,117,434	100%	\$1,888,748,005	100%	\$270,604,611	100%
Claims Cost to HUD						
		<u>% of UPB</u>		<u>% of UPB</u>		<u>% of UPB</u>
PIF	\$50,896,277	105%	\$803,647	1%	\$172,041	1%
REO	\$32,760,048	105%	\$52,918,614	109%	\$9,279,571	109%
Nonforeclosure Resolution	\$134,075,568	106%	\$14,007,042	55%	\$375,218	15%
Reinstatements			\$2,274,490	1%	\$225,836	0.5%
Resolutions	\$217,731,893	106%	\$70,003,792	12%	\$10,052,666	12%
Interim Status	\$390,213,397	105%				
Total Loans	\$607,945,290	105%	\$70,003,792	4%	\$10,052,666	4%
Net Recovery						
		<u>% of Claim</u>		<u>% of Claim</u>		<u>% of Claim</u>
PIF	\$42,948,545	84%				
REO	\$23,015,586	70%	\$37,037,823	70%	\$6,834,524	74%
Nonforeclosure Resolution	\$102,341,370	76%				
Resolutions	\$168,305,501	77%	\$37,037,823	53%	\$6,834,524	68%
Loss						
		<u>% of UPB</u>		<u>% of UPB</u>		<u>% of UPB</u>
PIF	\$7,947,732	16%	\$803,647	1%	\$172,041	1%
REO	\$9,744,462	31%	\$15,880,791	33%	\$2,445,047	29%
Nonforeclosure Resolution	\$31,734,198	25%	\$14,007,042	55%	\$375,218	15%
Reinstatements			\$2,274,490	1%	\$225,836	0.5%
Resolutions	\$49,426,392	24%	\$32,965,969	6%	\$3,218,142	4%
Interim Status	\$390,213,397	105%				
Total Loans	\$439,639,789	76%				

Note: These numbers are likely to change when all cases have been resolved.

* In 2003, ACD had 1,320 nonforeclosure resolutions and Eligibles had 490 REOs. However, recovery amounts could not be calculated for 3 nonforeclosure resolutions among ACDs and 1 REOs among Eligibles because they had missing or zero sales price. Hence in this table, those 4 loans are treated as loans in interim status.

The net recovery amounts shown in Exhibits 5 and 6 are calculated as 70 percent of the Fair Market Value (not shown) plus 30 percent of the sum of sale amount, other income and other expenses. The FMV is the discounted note value at which the JV buys the loan from FHA. Given that FHA retains a 30 percent ownership share, the private partner pays FHA for 70 percent of the discounted note value. In addition, FHA gets 30 percent of the net sale amount, that is, note or property sale amount net of income and expenses incurred while JV held the loan. The category “other income” is primarily interest payments from reperforming notes and other expenses include servicing fees, maintenance and sales expenses. The recovery rates are from HUD’s point of view, not from the JV perspective.

The JV2002 combined recovery rate is 73 percent, which is the weighted average of 77 percent for PIF, 60 percent for REO and 72 percent for discount notes in Non-foreclosure resolutions. Recoveries come from sales, so the analogous recovery rates for the holdout loans are the recovery rates for REO sales of 69 percent. With only 371 or 10 percent of the holdout loans in this category, it is likely that the recovery rate will change with additional resolutions. However, the official FHA recovery rate for 46,967 REO sales in the eastern two HOCs is also 69 percent, suggesting that the initial holdout property sales are fairly representative of FHA sales.

For eligibles and holdouts, REO sales are the only source of recoveries, and the recovery rate for REO sales equals the recovery amount divided by the claims paid on these loans. But for total resolutions, while the recoveries remain the same, claims costs increase to include the partial claims and other loss mitigation incentives paid on loans that reinstate or pay in full. When the total recoveries are divided by total claims on resolutions, the recovery rate goes down. Thus, the net recovery rate for holdouts is 69 percent for REO properties and 67 percent for all resolutions.

The JV2003 combined recovery rate is 77 percent, which is a mix of 84 percent for PIF, 70 percent for REO and 76 percent for non-foreclosure resolutions. With only 36 percent of assets sold under JV2003 compared to 66 percent for JV2002, it is certainly possible that the higher recovery rates for JV2003 may decline as underperforming notes or difficult properties are brought to market. However, at this point the 4 percentage point advantage for JV2003 compared with JV2002 is supported by its much higher recovery rate for properties (70 percent for JV2003 vs. 60 percent for JV2002).

The lower property recovery rates under the JVs are related to the discounts assigned by the JV partners. In the bidding process, potential private partners determine the fair market value (FMV) of each loan in a hypothetical portfolio arranged by risk category. FHA determines the winning bid in conjunction with its ownership share of the joint venture. For both JV2002 and JV2003, the HUD ownership share has been 30 percent. FHA receives 70 percent of each loan’s fair market value (discounted from unpaid principal balance) plus 30 percent of the property sale price less net expenses. A larger discount means that even if the property sells for an average market price, the deep discount on the note lowers the property recovery rate to HUD under JV processing. One reason recovery rates are lower for JV2002 than JV2003 is that the average discount rate for loans sold to JV2002 (37.7 percent) is larger than for JV2003 (29.3 percent). If we assume the JV2002 loans had the same discount as the JV2003 loans, the projected recovery rate would be 78.5 percent or 5.6 percentage points higher. As the bids for JV partnership have become more competitive, the recovery rates received by HUD have improved.

The bottom panel in Exhibits 5 and 6 shows the losses and loss rates, again from FHA's point of view. The loss rate is a more comprehensive measure because it includes the losses from all resolutions, not just the property and note sales. The loss rate is calculated as the claims less net recovery divided by the UPB (measured at the time of provisional approval). For REO sales, the loss rate is almost 1 minus the recovery rate except the denominator in the rate is UPB instead of claims. For other resolutions in eligibles and holdouts, the net recovery is zero so the loss rate is the claims relative to UPB.

The most important distinction between the recovery rates and loss rates is the inclusion of non-REO resolutions with zero or low claims. Reinstatements are included because they are resolutions for eligibles and holdouts.⁴ ACD reinstatements do not become resolutions until they are sold as notes. An examination of 1997 reinstatements showed that 85 percent of those loans terminated without claim, so it is fair to expect most of those reinstatements to eventually terminate without claim. When the low claims of non-REO resolutions are averaged with the high claims from REO, the average loss rate for holdouts is 7 percent.⁵ In comparison, ACD loans have nearly the same claims relative to UPB for all of its loans with higher recoveries for note sales than property sales. The average ACD loss rate for resolutions is 29 percent. ACD loss rates are much higher than holdouts because the share of holdout resolutions that conveyance claim is only 19 percent (371 / 1911) compared to 100 percent for ACD. The low share of losses from the non-claim resolutions lowers the loss rate for holdouts (or eligibles) far below the loss rate for ACD.

Focusing on just the REO sales, Exhibit 7 compares the property sales for ACD with eligibles and holdouts. The sample sizes per loan group are all less than 615 and particularly small for 2003 holdouts, so the results should be treated with caution as they are likely to change over time. The results for eligibles and holdouts in 2002 are fairly consistent with one another. The recovery rate relative to numbers of claims is about 70 percent compared to a property recovery rate for JV2002 of 60 percent. In 2003, the holdout recovery rates (73.7 percent) are higher than eligible recovery rates (70.0 percent), but the sample sizes are small (only 88 holdout loans). There is almost no difference between eligible recovery rates and JV2003 property recovery rates. Both are 70 percent.

JV2003 includes loans from all four Homeownership Centers (HOC), whereas JV2002 only covers the two eastern HOCs (Atlanta and Philadelphia). This difference in geography matters particularly for the Santa Ana HOC, which has higher recovery rates for both ACD and FHA, as shown in Exhibit 8. The ACD recovery rates in Exhibit 8 are only for properties. The average national FHA recovery rate, based on the 12 months ending August 2004, is 70.5 percent. Eleven percent of those properties are in the Santa Ana district, which has an average recovery rate of 85.5 percent. The highest recovery rate for JV2003 also occurs in Santa Ana, 74.8 percent.

⁴ A small percentage of reinstatements could claim within a short time, either for ACD or comparison group loans. However, most eligible or holdout loans that reinstate continue as active, paying loans and most ACD reinstatements are sold as re-performing notes.

⁵ The loss rate for holdouts excluding the reinstatements is 11 percent.

Exhibit 7: Costs and Recoveries to HUD from REO Sales
(Data as of 8/31/2004)

Accounting Measure	ACD				Eligibles				Holdouts			
	N	Total Value	Loan Average	Ratio of Totals	N	Total Value	Loan Average	Ratio of Totals	N	Total Value	Loan Average	Ratio of Totals
2002												
Unpaid Principal Balance	615	\$49,846,624	\$81,051		472	\$39,578,142	\$83,852		371	\$30,230,682	\$81,484	
Claims Costs to HUD	615	\$52,860,523	\$85,952		472	\$43,531,752	\$92,228		371	\$34,034,833	\$91,738	
Net Recovery from Property Sales	615	\$31,493,414	\$51,209		472	\$30,739,479	\$65,126		371	\$23,582,342	\$63,564	
Recovery Rate from Properties (Relative to UPB)	615			63.2%	472			77.7%	371			78.0%
Recovery Rate from Properties (Relative to Claims)	615			59.6%	472			70.6%	371			69.3%
2003												
Unpaid Principal Balance	314	\$31,091,860	\$99,019		489	\$48,742,223	\$99,677		88	\$8,509,404	\$96,698	
Claims Costs to HUD	314	\$32,760,048	\$104,331		489	\$52,918,614	\$108,218		88	\$9,279,571	\$105,450	
Net Recovery from Property Sales	314	\$23,015,586	\$73,298		489	\$37,037,823	\$75,742		88	\$6,834,524	\$77,665	
Recovery Rate from Properties (Relative to UPB)	314			74.0%	489			76.0%	88			80.3%
Recovery Rate from Properties (Relative to Claims)	314			70.3%	489			70.0%	88			73.7%

Note: This table does not include 3 eligible or holdout loans for which sales price was missing. Unpaid principal balance (UPB) amounts were obtained from the Accelerated Claim Criteria Report Application (ACCRA) data. When UPB was not available in ACCRA (0.4% of 2002 eligible and holdout loans and 1.4% of 2003 eligible and holdout loans), UPB from the Single Family Data Warehouse (SFDW) was used.

Exhibit 8: HUD's REO Sale Net Recovery Rates Relative to Claims by Homeownership Center
(Data as of 8/31/2004)

HOC	2002				2003				FHA	
	ACD		Holdouts		ACD		Holdouts		N	Recovery Rate
	N	Recovery Rate	N	Recovery Rate	N	Recovery Rate	N	Recovery Rate		
Atlanta	363	60.3%	246	70.5%	58	71.9%	23	74.5%	26,999	69.0%
Denver					176	68.2%	49	70.3%	23,235	66.3%
Philadelphia*	252	58.6%	125	67.0%	20	68.5%	1	131.4%	19,968	69.6%
Santa Ana					60	74.8%	15	78.5%	8,339	85.5%
National	615	59.6%	371	69.3%	314	70.3%	88	73.7%	78,541	70.5%

Note: * There is only 1 Holdout property sale in Philadelphia HOC in 2003.

Bloom Correction for Eligibles Not Getting ACD Treatment

While it is tempting to compare the ACD recovery rate to the holdout recovery rate, there is reason to be cautious. The assumption underlying such a comparison is that the loans selected to be submitted to ACD are just like the loans that foreclosed and sold as properties in the holdout sample. If the loans selected for ACD are different from the loans included in the holdout recovery rate, then the difference in recovery rates is a combination of selection and treatment effects. It is because we do not know which holdout loans would have been selected for ACD that we have to be cautious in the comparison.

The design of the ACD Demonstration can be represented as in Exhibit 9.

Exhibit 9: Experimental Design for ACD Treatment

	Holdouts	Treatment
Would have been selected for ACD if not in holdout	~ 1,412 (40%)	ACD (6,656 or 40%)
Would NOT have been selected for ACD	~2,145 (60%)	Eligibles (10,109 or 60%)
Total Counts	3,557	16,765
Overall Recovery Rate	RR _h	RR _{δ+e}

We know the holdouts are a 10% random sample of the provisionally approved loans, but we do not know how many of them would have been selected for ACD treatment had they been available. Suppose we assume the ratio of ACD to Eligibles is the same as the ratio of holdouts that would have been selected to those that would NOT have been selected. Then we estimate that about 40 percent would have gotten treatment had they been available.

The key problem is that we do not know which holdout loans are in the 40 percent that would have the same selection as the ACD treatment group. In an ideal arrangement, the 40 percent would reveal themselves by foreclosing and becoming claims under FHA standard servicing. If those foreclosures in the holdout group were just like the ACD loans at provisional approval, then the difference in recovery rates would be due to the ACD treatment. However, if a substantial set of ACD loans are less risky than the holdout foreclosures, the higher recovery rate by ACD could be due to selection. From days in foreclosure, we have evidence that some of the ACD loans are more risky by being further along in foreclosure. But from the high rate of Paid in Full and re-performing loans in ACD, there arises the possibility that many ACD loans are not as risky as the holdout (or FHA) foreclosures.

Alternative 1: One solution is to measure carefully the selection process and loan risk, so that we can select a subset of ACD loans that match the loans in holdout foreclosure. Then we can compare the recovery rate of the holdout foreclosures to the subset of equally risky ACD loans. The difference in recovery rates or loss rates would be the treatment effect controlling for risk. Without better information on the selection process, especially credit score and property appraisal for holdouts at the

time of approval, it is impossible to model the selection process. However, we can estimate a historical model of claims using 1997 defaults screened for ACD eligibility and track them to final outcome. The claims model can be used to predict the ACD portfolio of loans as if they were given standard FHA processing. The treatment effect is then the difference between the ACD loss rate and the FHA loss rate for the same set of loans. The results of this approach are presented in the final section on Breakeven Analysis.

Alternative 2: Another solution would be to include all the holdouts (not just foreclosures) and compare that recovery rate to the combined recovery rate for ACD and eligibles. The selection effect is not controlled for as much as avoided. The holdouts are a 10% random sample of the combined set of ACD and eligibles. The difference is that none of the holdouts received ACD treatment. After combining ACD and eligibles, the selection effect becomes internal to the combined set of loans. The treatment effect is diluted by the fact that only the ACD loans (40% of the total) received the treatment. Therefore, the full treatment effect is the difference between the holdout recovery rate and the combined (ACD + eligibles) recovery rate divided by the share of ACD loans in the combination (40%). This second approach is conceptually stronger (Bloom, 1984; Angrist, Imbens and Rubin, 1996), and avoids the difficulty of modeling the selection strategy of p-servicers.

Based on Exhibit 5, there are 4,401 ACD resolutions and 5,454 eligible resolutions (including reinstatements) to make a total of 9,855. We focus on the resolutions because those are the loans for which we have a recovery rate or loss rate. Some reinstatement will ultimately claim. Based on the 1997 defaults, only 15 percent of the reinstatements claimed within 6 years. Assume for simplicity that all the reinstatements that end as REO sales have a recovery rate of 71 percent (same as the recovery rate of the eligible REO properties already sold). Then the recovery rate for the combination of ACD and eligibles is:

$$\frac{(4,401 * 73\% + 5,454 * 71\%)}{(4,401 + 5,454)} = 71.6\%$$

The difference between the recovery rate for the combination, 71.6 percent and the recovery rate for the holdout loans, 69 percent, is divided by the share of ACD loans in the combination $4,401/(4,401+5,454)=0.447$. The Bloom corrected treatment effect in terms of the recovery rate for REO claims is:

$$\frac{71.6\% - 69.3\%}{0.447} = 5.2\%$$

The Bloom correction increases the difference in recovery rates. Previously, the ACD recovery rate of 73 percent was compared to a holdout recovery rate of 69 percent. However, this comparison underestimates the ACD treatment effect, which is 5.2 percent. In other words controlling for the difference in selection, the ACD treatment is responsible for a 5.2 percentage point increase in recovery rates.

The key assumption when comparing the recovery rates between ACD and holdouts is the exclusion of the zero claims for prepaids and reinstatements (that do not eventually claim). The Bloom correction calculations are similar for loss rates that include all the resolutions as for recovery rates.

The loss rate for the combination is the weighted average of loss rates for ACD and loss rates for eligibles:

$$\frac{(4,401 * 29\% + 5,454 * 3\%)}{(4,401 + 5,454)} = 14.6\%$$

The Bloom corrected loss rate is:

$$\frac{14.7\% - 6.8\%}{0.447} = 18.0\%$$

The comparison of ACD loss rate of 29 percent and holdout loss rate of 7 percent suggests that the ACD treatment effect is 22 percentage points increase in the loss rate. The Bloom corrected measure shows the ACD loss rate is only 18 percentage points greater. The 22 percentage point difference can be divided into 18 percentage points treatment effect and 4 percentage points selection effect. The moderate change in results (22 percent to 18 percent) suggests the selection effect is not a strong factor, especially compared to the importance of including all the non-claims, which overturn the higher ACD recovery rate. Selection accounts for about 20 percent of the higher loss rate by ACD. That also means the ACD treatment accounts for 80 percent of the higher loss rates. Even after adjustment for higher risk loans going to ACD, the more comprehensive measure of outcomes that includes prepays (PIF) and reinstatements indicates that standard FHA processing is more cost effective than current versions of JV processing.

The Bloom correction technique can be applied by type of resolution outcome to determine what would have happened to the ACD loans without the ACD treatment. The percentages in column 1 of Exhibit 10 are the final resolutions from Exhibit 1 relative to total resolutions (2,013/4,403 = 45.7%). Most of the ACD sales are note sales, which are reported as either PIF (payment received is at least the UPB) or non-foreclosure final status (payment received is a discount relative to UPB). Column 2 gives the resolutions for the eligible loans. Most eligible loans resolve as reinstatements or PIF. Column 3 gives the distribution of resolutions for the combination of ACD and eligibles. When the distribution of holdouts (column 4) is subtracted from the combined distribution (column 3), we get the difference in column 5. Clearly, the ACD+Eligibles combination has more PIF and non-foreclosure final status resolutions, but fewer REO sold and reinstatements than holdouts.

Exhibit 10: ACD Effect with Bloom Correction by Resolution Type

	(1) ACD	(2) Elig.	(3) Combined	(4) Holdout	(5) Difference	(6) ACD Effect	(7) ACD Base
Paid in Full	45.7%	35.1%	39.9%	34.9%	5.0 pts	11.2 pts	34.5%
REO Sold	14.0%	8.7%	11.0%	19.4%	-8.4 pts	-18.8 pts	32.8%
Non-Foreclose Final Status	40.3%	1.2%	18.7%	1.6%	17.1 pts	38.3 pts	2.0%
Reinstated	0.0%	55.0%	30.4%	44.1%	-13.9 pts	-31.2 pts	31.2%

Applying the Bloom correction to each of those differences produces the estimates for the ACD treatment effect in column 6. ACD increases the share of loans resolving as paid in full by 11.2 percentage points, in part by lowering the share of REO sales by 18.8 percentage points. A less favorable trade-off is that ACD treatment increases the non-foreclosure final status (discount note sales) by reducing reinstatements by 31.2 percentage points. This result is the crux of the matter. Reinstatements generate very low claims, primarily loss mitigation claims. ACD converts very low claims in the form of reinstatements into quite sizable claims in the form of accelerated claims and discount note sales. FHA's 30 percent share of the note sales profits does not offset the large initial discount when the FHA loans are sold to the JV. Therefore, when the FHA outcomes would have contained a large share of reinstatements or prepaids, the ACD effect is not cost effective.

The final column (7) presents the counterfactual, that is, what would have happened to the ACD loans absent the ACD treatment. Column 7 is calculated by subtracting the ACD effect (column 6) from ACD (column 1). The counterfactual result, labeled ACD Base, shows that more ACD loans would have ended as REO sales under standard FHA processing, but most ACD loans would have resolved as PIF or reinstatements. As long as the non-claim outcomes are so prevalent among the FHA outcomes, it will be extremely difficult for JV loss rates to fall below standard FHA processing loss rates.

Description and Comparison of Loan Characteristics

This section provides the characteristics of the ACD loans and the control loans in both the eligible and holdout groups. The issue is whether the ACD loans are “riskier” than the other groups such that the comparison of outcomes is misleading. A higher loss rate for ACD relative to holdouts might be explained by higher risk and claims for the loans selected into ACD. A related issue is whether the p-servicers are able to identify the high-risk loans for submission to ACD. Exhibits 11 and 12 provide a six-way comparison of various loan and borrower characteristics between ACD, eligible and holdout loans for 2002 and 2003. Variables reported by distribution are in Exhibit 11, whereas the average and standard errors for continuous variables are reported in Exhibit 12. Below, we describe some salient differences and similarities.

The loans selected for the first JV were a mix of existing defaulted loans (the Designated Mortgage Lending Pool or DMLP) and a pipeline of new defaults (Pipeline Mortgage Lending Pool or PMLP) from the eastern states. The second JV contains only pipeline defaults and they are drawn from the entire country. All 2003 loan groups have higher unpaid principal balance and more recent originations than 2002. For example, ACD loans in 2002 have an average UPB of \$91,435 while ACD loans in 2003 have a higher average UPB of \$98,703. Certainly part of the higher UPB in 2003 is the inclusion of high-cost states such as California, though by share of loan counts California is not in the top 10 states listed. The average loan age at the time of provisional approval for JV2002 is 48 months (see Exhibit 12) compared to 39 months for JV2003. Assuming that future joint ventures will select from a pipeline of nationally representative defaults, then it is likely their portfolios will look like JV2003.

Comparing ACD loans to the control loan groups, ACD loans have a higher average loan age than eligibles or holdouts. In 2003, the gap in average loan age between ACD (39.3 months) and holdouts (27.6 months) is nearly a year. The distribution of loan age shown in Exhibit 11 shows a high percentage in the most recent years and a long tail of diminishing percentages into past years.

One of the clearest examples of p-servicer selection is shown in Days in Foreclosure in Exhibit 11. In both 2002 and 2003, the ACD loans have a much larger share of loans above 120 days in foreclosure. For example, 2002 ACD has 28 percent of loans above 120 days compared to only 10 percent of the eligible and 7 percent of the holdout loans. Another 20 percent of 2002 ACD loans have days in foreclosure between 1 and 120 days bringing the total ACD loans in foreclosure to 48 percent. Certainly days in foreclosure is a strong signal of foreclosure risk and p-servicers submit to ACD most of the foreclosure cases that are not set aside by the holdouts. After the p-servicers selected the foreclosure cases for ACD, there was only 16 percent of the eligible pool with positive days in foreclosure.

One ramification of selecting loans further along in the foreclosure process is that JV processing can complete the foreclosure and dispose of the property faster than standard FHA processing. However, loans well advanced in the foreclosure process are less likely to be restructured and sold as notes. Note sales are the more profitable disposition strategy relative to property sales.

Freddie Mac Early Indicator Risk grades—or alpha grades—are used to select eligible loans. Only loans with grades D, E or F qualify as eligible for the ACD Demonstration. There are mixed results in the comparison of alpha grades among the ACD, eligible and holdout loans. In 2002, more eligible or holdout loans had grade D than the ACD loans in terms of percentage and fewer had grade F. But in 2003, that pattern is reversed. Fewer eligible or holdout loans had grade D than the ACD loans in terms of percentage and more had grade F. On the other hand, there were almost no ACD loans with alpha grades A, B or C in either year but 2 to 8 percent of holdout or eligible loans had grades A, B or C. Given that loans would not be eligible with grades A, B or C, it is likely those grades reflect improvements after the time when the loan was provisionally approved.

Number of default episodes and months in default are other signals of risk. ACD loans are somewhat more likely to have multiple defaults and much more likely to have more months in default. However, the most noticeable issue in both these measures is that the percent with missing information is disproportionately in the control groups. Apparently, the p-servicers select defaults with more complete default data.

Often loan-to-value (LTV) ratios are a good measure of risk because borrowers with equity in their house would rather refinance or go without in other ways than lose that investment. ACD loans in 2002 have higher LTV than eligible or holdout loans, though the distributions are quite similar in 2003.

The average debenture rates are slightly higher for 2002 loans than for 2003 and in 2003, ACD loans have a slightly higher average debenture rate than eligible or holdout loans. The debenture spread, which is the spread between the debenture rate and the three-month commercial paper rate, is comparable between JV2002 and eligible or holdout loans in 2002. In 2003, ACD loans have a marginally higher debenture rate than eligible or holdout loans. These numbers provide no evidence to support the hypothesis that p-servicers hold back the loans with higher debenture spread from the ACD Program.

The loans in ACD are slightly more likely to have adjustable mortgage rates and slightly less likely to have refinanced than eligible or holdout loans in 2002 and 2003. First time borrowers are also slightly more likely to be in ACD than eligible or holdout. Refinancing is slightly higher for 2003 than 2002, but there are fewer first time buyers in 2003 than 2002.

Regardless of the JV year or status, there are more married borrowers than single borrowers and more white borrowers than black borrowers. There are slightly more Hispanic borrowers in 2003 than in 2002 as the Demonstration became nationally representative. In 2002, Illinois, Florida and Ohio have the highest proportion of loans but in 2003 Texas overtakes all states. FHA loans in Texas had claims at the rate of 1.9 percent of insurance in force as of August 2004, which is above the national average of 1.4 percent, but 9 states have claim rates higher than Texas.

In terms of p-servicers, Countrywide submitted few loans to JV2002 and did not participate at all in JV2003. Cendant is the smallest p-servicer. Wells Fargo is the largest contributor of loans by far. In most loan groups, Wells Fargo has the majority of loans followed by Chase Manhattan. Wells is also the servicer for JV2002 and JV2003.

The difference in distributions by p-servicer gives some indication of how selective each p-servicer is. Cendant is the smallest servicer by size of loan portfolio and, historically, has the lowest default rate

of the four p-servicers. Based on size of portfolios and default rates reported in Interim Report 1, Cendant selected about 14 percent of its defaults for provisional approval and 20 percent of the approved for ACD. At the other extreme, Chase submitted about 4 percent of its defaults for provisional approval, but then selected 74 percent of the approved for ACD. Apparently, Chase was the most active in pre-screening its defaults before approval and then submitting for accelerated claim most of the loans granted approval. Countrywide and Wells each submitted about 9 percent of their defaults for approval, but Countrywide only claimed 3 percent of approvals whereas Wells submitted to accelerated claim 41 percent of its approvals. As a result of these varying selection rates, Countrywide had the largest share of holdouts but the smallest share of JV2002. Wells had about one-third of the holdouts, but 53 percent of JV2002. By JV2003, Wells increased its submissions for approval and claim, so that it clearly dominates ACD, eligibles and holdouts.

Exhibit 11: Distributions of Characteristics at the Time of Provisional Approval
(Used in the Selection Models)

Characteristics	2002						2003					
	ACD		Eligibles		Holdouts		ACD		Eligibles		Holdouts	
	N	%	N	%	N	%	N	%	N	%	N	%
Total Number of Loans	6,656		10,109		3,557		5,847		17,930		2,558	
Year of Origination												
1982-1992	56	1%	100	1%	25	1%	32	1%	31	0%	4	0%
1993	126	2%	104	1%	39	1%	78	1%	64	0%	3	0%
1994	147	2%	161	2%	65	2%	92	2%	94	1%	20	1%
1995	273	4%	275	3%	107	3%	133	2%	163	1%	34	1%
1996	503	8%	583	6%	200	6%	226	4%	275	2%	49	2%
1997	689	10%	653	6%	293	8%	283	5%	392	2%	55	2%
1998	984	15%	1,330	13%	448	13%	482	8%	658	4%	115	4%
1999	1,273	19%	1,701	17%	677	19%	628	11%	974	5%	167	7%
2000	1,172	18%	1,848	18%	681	19%	574	10%	1,216	7%	171	7%
2001	1,377	21%	2,896	29%	923	26%	943	16%	2,505	14%	362	14%
2002	56	1%	458	5%	99	3%	1,455	25%	5,230	29%	755	30%
2003	0	0%	0	0%	0	0%	918	16%	5,959	33%	779	30%
2004	0	0%	0	0%	0	0%	3	0%	369	2%	44	2%
Days in Foreclosure												
0	3,482	52%	8,446	84%	3,053	86%	3,604	62%	15,041	84%	2,357	92%
1 - 120	1,306	20%	636	6%	257	7%	1,191	20%	1,452	8%	121	5%
> 120	1,868	28%	1,027	10%	247	7%	1,052	18%	1,437	8%	80	3%
Loan to Value												
< 90	657	10%	1,161	11%	322	9%	641	11%	1,528	9%	192	8%
90 - 94	1,959	29%	2,980	29%	1,053	30%	1,604	27%	4,078	23%	583	23%
95 - 97	2,077	31%	3,460	34%	1,190	33%	2,047	35%	6,820	38%	995	39%
> 97	1,884	28%	2,182	22%	885	25%	1,499	26%	4,651	26%	673	26%
Unknown	79	1%	326	3%	107	3%	56	1%	853	5%	115	4%
Unpaid Balance												
< 50	686	10%	891	9%	326	9%	463	8%	1,018	6%	140	5%
50 - 80	2,303	35%	3,692	37%	1,326	37%	1,726	30%	4,352	24%	635	25%
> 80	3,667	55%	5,526	55%	1,905	54%	3,658	63%	12,560	70%	1,783	70%

Exhibit 11: Distributions of Characteristics at the Time of Provisional Approval (Continued)
(Used in the Selection Models)

Characteristics	2002						2003					
	ACD		Eligibles		Holdouts		ACD		Eligibles		Holdouts	
	N	%	N	%	N	%	N	%	N	%	N	%
Total Number of Loans	6,656		10,109		3,557		5,847		17,930		2,558	
Alpha Grades												
A	0	0%	1	0%	0	0%	0	0%	6	0%	1	0%
B	0	0%	66	1%	12	0%	0	0%	182	1%	21	1%
C	6	0%	358	4%	74	2%	0	0%	1,263	7%	139	5%
D	2,865	43%	6,268	62%	1,885	53%	2,569	44%	6,141	34%	865	34%
E	1,766	27%	2,218	22%	916	26%	1,658	28%	3,926	22%	524	20%
F	1,978	30%	1,105	11%	639	18%	1,620	28%	6,407	36%	1,008	39%
Unknown	41	1%	93	1%	31	1%	0	0%	5	0%	0	0%
ARMs	967	15%	545	5%	259	7%	678	12%	1,384	8%	204	8%
Purchase	6,044	91%	8,862	88%	3,139	88%	4,966	85%	14,085	79%	2,000	78%
Borrower's Marital Status												
Married	3,488	52%	5,516	55%	1,893	53%	3,038	52%	9,415	53%	1,352	53%
Separated	102	2%	137	1%	62	2%	66	1%	186	1%	33	1%
Single	3,032	46%	4,389	43%	1,584	45%	2,716	46%	8,304	46%	1,170	46%
Unknown	34	1%	67	1%	18	1%	27	0%	25	0%	3	0%
Borrower's Race												
White	3,678	55%	5,293	52%	1,908	54%	3,316	57%	8,818	49%	1,313	51%
Black	1,946	29%	2,920	29%	1,040	29%	1,184	20%	3,481	19%	489	19%
Hispanic	520	8%	645	6%	243	7%	782	13%	2,845	16%	393	15%
Asian	47	1%	52	1%	17	0%	83	1%	197	1%	28	1%
Native American	21	0%	39	0%	7	0%	33	1%	89	0%	15	1%
Others and Undisclosed	444	7%	1,160	11%	342	10%	449	8%	2,500	14%	320	13%
First Time Home Buyer	4,995	75%	7,143	71%	2,553	72%	3,997	68%	11,119	62%	1,600	63%
P-Servicers												
Wells Fargo	3,500	53%	3,741	37%	1,211	34%	3,435	59%	14,853	83%	1,964	77%
Chase Manhattan	2,684	40%	487	5%	475	13%	2,197	38%	1,651	9%	412	16%
Countrywide	196	3%	4,955	49%	1,613	45%	0	0%	0	0%	0	0%
Cendant	276	4%	842	8%	235	7%	214	4%	1,297	7%	163	6%
Others	0	0%	84	1%	23	1%	1	0%	129	1%	19	1%

Exhibit 11: Distributions of Characteristics at the Time of Provisional Approval (Continued)
(Used in the Selection Models)

Characteristics	2002						2003					
	ACD		Eligibles		Holdouts		ACD		Eligibles		Holdouts	
	N	%	N	%	N	%	N	%	N	%	N	%
Total Number of Loans	6,656		10,109		3,557		5,847		17,930		2,558	
State of Origination (Top 10)												
Texas	0	0%	1	0%	0	0%	645	11%	4,413	25%	491	19%
Florida	705	11%	1,085	11%	364	10%	389	7%	789	4%	140	5%
Illinois	798	12%	813	8%	380	11%	320	5%	717	4%	101	4%
Ohio	663	10%	706	7%	306	9%	293	5%	597	3%	107	4%
Pennsylvania	661	10%	720	7%	302	8%	266	5%	571	3%	86	3%
Georgia	336	5%	840	8%	250	7%	244	4%	820	5%	108	4%
New York	645	10%	572	6%	254	7%	258	4%	361	2%	61	2%
New Jersey	610	9%	544	5%	228	6%	272	5%	406	2%	80	3%
Michigan	197	3%	1,010	10%	265	7%	101	2%	361	2%	59	2%
Maryland	339	5%	573	6%	196	6%	140	2%	479	3%	86	3%
Other States	1,702	26%	3,245	32%	1,012	28%	2,919	50%	8,416	47%	1,239	48%

Note: When chi-squared tests are conducted, all differences between ACD and Holdout loans are significant at the 5% level.

Exhibit 12: Averages of Characteristics at the Time of Provisional Approval
(Used in the Selection Models)

Characteristics	2002						2003					
	ACD		Eligibles		Holdouts		ACD		Eligibles		Holdouts	
	Avg	Std Err	Avg	Std Err	Avg	Std Err	Avg	Std Err	Avg	Std Err	Avg	Std Err
Loan Age in Months	48.0	0.31	43.3	0.25	42.4	0.41	39.3	0.39	26.4	0.17	27.6	0.47
Original Mortgage Amount	\$93,211	\$473	\$91,673	\$343	\$91,852	\$607	\$100,445	\$536	\$106,730	\$311	\$107,176	\$831
Debenture Rate in %	6.3	0.01	6.2	0.01	6.2	0.01	5.9	0.01	5.5	0.01	5.6	0.01
Debenture Spread in %	5.0	0.01	5.0	0.01	4.9	0.01	4.8	0.01	4.4	0.01	4.4	0.02
Note Less Debenture Spread in %	1.3	0.01	1.4	0.01	1.5	0.02	1.2	0.01	1.2	0.01	1.2	0.02
Days in Foreclosure	203.2	4.96	81.0	2.89	45.5	3.37	145.2	4.77	52.8	1.71	23.6	2.79
% in Foreclosure	47.7%	0.61%	16.5%	0.37%	14.2%	0.58%	38.4%	0.64%	16.1%	0.27%	7.9%	0.53%
Loan to Value Ratio in %	108.8	4.18	96.0	1.00	95.3	0.08	106.2	4.06	97.2	0.78	99.6	3.64
Unpaid Balance	\$91,435	\$473	\$89,955	\$347	\$90,142	\$609	\$98,703	\$541	\$105,346	\$311	\$105,788	\$831
Payment to Income Ratio in %	33.9	0.41	37.2	0.38	36.4	0.62	40.2	0.53	48.6	0.36	48.0	0.96
Number of Defaults	1.8	0.01	1.7	0.01	1.7	0.02	1.6	0.01	1.3	0.01	1.4	0.01
% Missing Number of Defaults	12.0%	0.40%	38.9%	0.48%	26.3%	0.74%	15.8%	0.48%	47.9%	0.37%	41.0%	0.97%
Months to First Default	27.8	0.26	28.9	0.19	27.2	0.33	23.6	0.28	18.0	0.12	18.3	0.34
% Missing Months to First Default	0.1%	0.05%	22.1%	0.41%	13.6%	0.57%	0.1%	0.05%	17.6%	0.28%	14.4%	0.69%
Months in Default	14.4	0.19	12.4	0.13	14.9	0.24	10.2	0.19	8.1	0.07	8.7	0.19
% Missing Months in Default	0.1%	0.05%	7.5%	0.26%	5.5%	0.38%	0.1%	0.05%	10.8%	0.23%	9.0%	0.57%
Borrower's Age	34.2	0.12	33.9	0.09	33.9	0.15	34.2	0.13	33.6	0.07	33.6	0.20
Servicer Score by Jurisdiction	3.5	0.02	4.7	0.03	4.7	0.04	2.6	0.02	2.4	0.01	2.5	0.03
% Missing Servicer Score	0.8%	0.11%	0.8%	0.09%	0.5%	0.12%	0.6%	0.10%	0.5%	0.06%	1.0%	0.19%
MSA Default Rate in %	5.7	0.04	5.1	0.03	6.2	0.06	3.2	0.04	2.6	0.02	2.7	0.05

Note: When t-tests are conducted, all differences between ACD and Holdout loans are significant at the 5% level except Note Less Debenture Spread in 2003 and Missing Servicer Score in both 2002 and 2003.

Selection Model

The ACD Demonstration is designed to channel the loans at highest risk of foreclosure away from standard FHA servicing and into a joint venture specifically formed to dispose of problem loans. Eligibility requirements are set to focus on the high-risk loans, but many more delinquent loans are eligible than get selected for ACD treatment. The selection is made by the p-servicers after a 10 percent random sample of eligible loans has been held out. Even after the holdout loans are withdrawn from the eligible pool, there are two to three times more delinquent loans than those that are selected by the p-servicers. This section discusses the factors that appear to drive the selection process.

We assume that p-servicers are motivated to select the loans that would be the most costly to service and most likely to end in foreclosure. Servicing fees are derived from monthly borrower payments. Therefore servicers want the borrowers to keep the loans current for as long as possible. Late fees offset the cost of minor delinquency. The cost of a foreclosure is largely, but not completely, reimbursed by FHA, which should create an incentive for servicers to submit to ACD the loans at greatest risk of foreclosure. The p-servicer would get an accelerated claim payment for the loans and transfer the risk to the joint venture. HUD reduces its own default losses when the accelerated claim less recovery from the joint venture is smaller than a foreclosure claim less recovery from property sale by management and marketing contractors. In general, both the p-servicers and HUD are better off when the worst loans are selected for the ACD treatment.

High reimbursement interest rates could complicate the selection process by motivating p-servicers to retain the delinquent loans with the highest debenture rates. HUD reimburses servicers for all but one missed interest payment at the debenture rate, not at the note rate. HUD sets the debenture rate at the time of origination and it approximates the cost of funds for the lender at the time of origination. If the debenture rate is high relative to the current cost of funds, such as the 90-day commercial paper rate, then it is possible for the servicer to make more money by holding a delinquent loan than submitting it for accelerated claim. If reimbursement rates were the only consideration, loans with high debenture spreads would be retained in the servicing portfolio and loans with low debenture spreads would be submitted for accelerated claim payment. Instead of submitting the loans with the highest risk of foreclosure, p-servicers could maximize their own return by holding back risky loans with high reimbursement spreads and this would undercut the savings to HUD of the ACD Program.

To test whether loans with high debenture spreads are withheld or loans with the highest risk are submitted to the ACD program, we estimated logistic regression models on the probability of loan selection into ACD. The regression models help analyze the effects of many loan characteristics that may influence the selection process. But the analysis is complicated by correlation between seasoning and interest rates of loans. During the last decade when ACD and holdout loans originated, note rates and debenture rates have been steadily declining. The more seasoned loans nearly always have higher interest rates and higher debenture rates.

We have run four separate sets of regressions. The first is between ACD and eligible loans in 2002, the second between ACD and holdout loans in 2002, the third between ACD and eligible loans in 2003 and the last between ACD and holdout loans in 2003. For each set of regressions, we ran four different models. In addition to the control variables that are the same across all the models, Model A includes loan age, Model B includes debenture spread, Model C includes both variables, and Model D

includes both variables as well as the state fixed effects. The dependent variable is 1 for loans selected into JV2002 or JV2003 and 0 for eligible or holdout loans.

The large number of covariates used in the regressions minimizes the possibility of omitted variable bias in the regressions. Some of the control variables in the models are drawn from the risk stratifiers in the bid matrix: days in foreclosure, LTV and UPB. Other variables are loan and borrower characteristics that could affect selection into ACD. Key covariates are presented in Exhibit 13 and the complete regressions are presented in the Appendix.

The evidence for the hypothesis that loans with lower debenture spread are sent to ACD can be found in the negative coefficient on the debenture spread variable. Models B, C and D for JV2002 versus eligibles show negative and significant debenture spread coefficients, but the same models for JV2002 versus holdouts, JV2003 versus eligibles and JV2003 versus holdouts show positive and significant debenture spread coefficients. Thus there is little consistent evidence to support the hypothesis that p-servicers retain loans with high debenture spreads.

On the other hand, Model A, a robust model that excludes the debenture spread, consistently shows that the most seasoned loans that default are most likely to be selected for the ACD program. The preference for submitting old loans in danger of foreclosure seems to more than offset any gain from holding the loan and collecting the FHA claim reimbursement at the debenture rate. Models C and D for JV2002 versus eligibles retain the positive and significant coefficient of loan age, but the same models for JV2002 versus holdouts show positive and insignificant coefficient of loan age. However, models C and D for JV2003 versus eligibles or holdouts show small negative coefficients for loan age, most of which are significant. In these regressions, the correlation between loan age and debenture spread comes into effect. The coefficient for debenture spread picks up some of the positive effects of seasoning and detracts that effect from the loan age variable.

All models support the theory that riskier loans are selected into ACD to some extent. Loans with more days in foreclosure are more likely to be selected into the ACD Program. This result is significant across all models. All models for JV2002 versus eligibles also show that loans with alpha grades E or F are significantly more likely to go to the 601 program than loans with grade D. But all models for JV2002 versus holdouts and JV2003 versus eligibles or holdouts show insignificant results when grade E is compared to grade D. And when grade F is compared to grade D, loans with grade F are significantly less likely to go into the ACD Program.

The regressions of JV2002 or JV2003 versus eligibles show that loans with the lowest LTV are less likely to be selected for JV2002 with negative and often significant coefficient on the indicator variable for LTV less than 90 percent. But the regressions of JV2002 or JV2003 versus holdouts do not show such a clear relationship.⁶ Borrowers with higher payment-to-income (PTI) ratio are also less likely to be selected into the ACD Program, though that effect is often insignificant after controlling for loan age. Except for the regressions between JV2002 versus holdouts where coefficient of MSA default rate have negative and significant coefficients, in the other three sets of regression models the higher the default rate of the MSA the higher the likelihood that the loan is selected into the ACD Program. Overall, these regression results indicate that the preference of p-

⁶ Although the most important selection is the set of ACD loans relative to the eligibles, many comparisons in this report are between ACD and holdouts. If they are similar portfolios, we would expect to see few significant differences between ACD and holdouts. In fact, that does appear to be the case.

servicers for submitting old loans in danger of foreclosure more than offsets any gain from holding the loan and collecting the FHA claim reimbursement at the debenture rate.

Nearly all the other demographic and loan type variables are insignificant (p-value greater than 0.005). However, each of the p-servicers is distinct from Wells Fargo (the reference servicer in the models) based on the servicer indicator variables. Chase Manhattan selects higher percentage of loans into the ACD Program than Wells Fargo, but Countrywide and Cendant select a lower percentage than Wells Fargo. A full set of state indicators is also included in Model D, most of which are not significant. The insignificance of most of these control variables is reassuring because it means that the holdouts and the eligible sample pools provide a representative comparison for the JV2002 and JV2003 loans.

The regression models, however, are significant overall. Even the weakest of the models can classify loans correctly at a higher percent than possible by always selecting either ACD or the comparison. For example, in the regression of JV2002 versus the holdouts, two-thirds of the sample is in JV2002 and Model A can classify 82.5 percent of the loans correctly.

The regressions we ran can be improved with the inclusion of other variables that indicate riskiness of loans such the number of days before the first default, number of default episodes and total time in default. For this report, we were not able to use these control variables because complete information on default episodes were difficult to gather for many loans. In fact, the missing were disproportionately from the non-ACD loan groups as shown in Exhibit 12. In addition, there could be other considerations for picking loans for ACD. It is possible that p-servicers pick for ACD the properties with negative equity that are more likely to foreclose regardless of the income or creditworthiness of the borrower. But since the BPO data is only available for the ACD loans and not for eligibles or holdouts, we cannot determine the amount of equity for non-ACD properties.

Alternatively, p-servicers may use contemporaneous FICO scores to identify high-risk cases. If a borrower is falling behind on other credit payments, as indicated by FICO scores, she is more likely to go into bankruptcy or foreclose. We therefore lack the necessary data that servicers typically use to determine relative risks of loans for a more powerful selection model. Even with the additional data that we presume servicers use in their selection, servicers apparently have difficulty identifying the highest risks based on the relatively low rate of REO sales in all three loan groups.

Exhibit 13: Logistical Regressions of Loan Selection into ACD

	Model A		Model B		Model C		Model D	
	Coef.	Pr > ?2						
Selection into JV2002 versus Eligibles								
1 if in JV2003	6,655		6,655		6,655		6,655	
0 if in Eligible Sample	10,109		10,109		10,109		10,109	
Percent Concordant	87.3		87.3		87.7		88	
Explanatory Variables								
Loan Age	0.0057	<.0001			0.0159	<.0001	0.0157	<.0001
Debenture Spread			-0.2763	<.0001	-0.6525	<.0001	-0.6351	<.0001
Days in Foreclosure: 1 - 120	0.9039	<.0001	0.9931	<.0001	0.8898	<.0001	0.8167	<.0001
Days in Foreclosure: > 120	0.8083	<.0001	0.9469	<.0001	0.7903	<.0001	0.7637	<.0001
Alpha Grades: A, B and C	-3.7951	<.0001	-3.7590	<.0001	-3.7797	<.0001	-3.8194	<.0001
Alpha Grade E	0.3546	<.0001	0.3054	<.0001	0.3754	<.0001	0.3684	<.0001
Alpha Grade F	0.1580	0.0058	0.1377	0.0164	0.1574	0.0064	0.1207	0.0387
Alpha Grade Unknown	-0.8676	<.0001	-0.8803	<.0001	-0.8477	<.0001	-0.8889	<.0001
MSA Default Rate	0.0838	<.0001	0.0736	<.0001	0.0747	<.0001	0.0951	<.0001
Selection into JV2002 versus Holdouts								
1 if in JV2002	6,655		6,655		6,655		6,655	
0 if in Holdout Sample	3,557		3,557		3,557		3,557	
Percent Concordant	82.5		82.5		82.5		83.1	
Explanatory Variables								
Loan Age	0.0035	0.0070			0.0011	0.4656	0.0015	0.3179
Debenture Spread			0.1714	<.0001	0.1573	0.0002	0.1496	0.0005
Days in Foreclosure: 1 - 120	1.0516	<.0001	1.0743	<.0001	1.0684	<.0001	1.1086	<.0001
Days in Foreclosure: > 120	1.3702	<.0001	1.3912	<.0001	1.3804	<.0001	1.4336	<.0001
Alpha Grades: A, B and C	-3.3905	<.0001	-3.3393	<.0001	-3.3495	<.0001	-3.2936	<.0001
Alpha Grade E	0.0925	0.1576	0.0753	0.2465	0.0815	0.2137	0.0700	0.2890
Alpha Grade F	-0.3174	<.0001	-0.3153	<.0001	-0.3130	<.0001	-0.3081	<.0001
Alpha Grade Unknown	-0.7381	0.0034	-0.7382	0.0034	-0.7453	0.0031	-0.7170	0.0048
MSA Default Rate	-0.0391	<.0001	-0.0352	<.0001	-0.0350	<.0001	-0.0471	<.0001
Selection into JV2003 versus Eligibles								
1 if in JV2003	5,846		5,846		5,846		5,846	
0 if in Eligible Sample	17,930		17,930		17,930		17,930	
Percent Concordant	78.1		79.3		79.2		80.5	
Explanatory Variables								
Loan Age	0.0124	<.0001			-0.0071	<.0001	-0.0066	<.0001
Debenture Spread			0.7278	<.0001	0.8887	<.0001	0.8625	<.0001
Days in Foreclosure: 1 - 120	1.1404	<.0001	1.1041	<.0001	1.1423	<.0001	0.9843	<.0001
Days in Foreclosure: > 120	0.8428	<.0001	0.7012	<.0001	0.7789	<.0001	0.6878	<.0001
Alpha Grades: A, B and C	-15.2267	0.8775	-16.3107	0.9192	-16.3054	0.9195	-16.3209	0.9186
Alpha Grade E	0.0451	0.2896	0.0595	0.1678	0.0354	0.4140	0.0922	0.0383
Alpha Grade F	-0.4791	<.0001	-0.5174	<.0001	-0.5637	<.0001	-0.5707	<.0001
Alpha Grade Unknown	-14.9387	0.9932	-15.1631	0.9958	-15.0823	0.9958	-14.6411	0.9959
MSA Default Rate	0.1141	<.0001	0.0845	<.0001	0.0772	<.0001	0.1116	<.0001
Selection into JV2003 versus Holdouts								
1 if in JV2003	5,846		5,846		5,846		5,846	
0 if in Holdout Sample	2,558		2,558		2,558		2,558	
Percent Concordant	74.0		74.6		74.5		75.6	
Explanatory Variables								
Loan Age	0.0048	0.0005			-0.0098	<.0001	-0.0090	<.0001
Debenture Spread			0.4535	<.0001	0.6690	<.0001	0.6574	<.0001
Days in Foreclosure: 1 - 120	1.8973	<.0001	1.8392	<.0001	1.8852	<.0001	1.8322	<.0001
Days in Foreclosure: > 120	2.0370	<.0001	1.8921	<.0001	2.0184	<.0001	2.0160	<.0001
Alpha Grades: A, B and C	-16.1235	0.9315	-16.1669	0.9308	-16.1773	0.9309	-16.1917	0.9302
Alpha Grade E	-0.0032	0.9634	0.0227	0.7449	-0.0167	0.8122	0.0087	0.9032
Alpha Grade F	-0.8489	<.0001	-0.8297	<.0001	-0.8982	<.0001	-0.9057	<.0001
Alpha Grade Unknown	NA	NA	NA	NA	NA	NA	NA	NA
MSA Default Rate	0.0996	<.0001	0.0800	<.0001	0.0701	<.0001	0.0873	<.0001

Note: The other covariates in the regression models are UPB, LTV, PTI, demographic variables, loan type, servicer scores, servicer dummies and, in the case of Model D, state dummies. The complete regressions are in the Appendix.

Claims Model and Breakeven Analysis

As described in the section on Bloom Correction, an ideal measure of the ACD treatment would be to compare the actual ACD loss rate to the counterfactual loss rate of ACD loans under standard FHA processing. What would have happened to the loans selected for ACD if they had received the standard servicing and property disposition of other FHA-insured loans? The main advantage of this approach is that it removes the selection effect because the very same loans are “given” different processing. The challenge is that too few of the control group loans (eligible or holdout) have reached final resolution. To attain more complete resolution, we have selected a set of 1997 defaults and tracked their outcomes to March 2004. A claims model is estimated according to those outcomes and then that model is used to predict the counterfactual standard FHA outcomes for the ACD loans.

Another valuable use of the claims model is in the breakeven analysis. The main assumption is that the claims model can approximately order the ACD loans from lowest to highest risk based on the predicted probability of claim. The sorted list is subdivided by decile (1 for lowest risk to 10 for highest risk) to see if better targeting to the highest risk cases would generate more cost saving for JV relative to FHA. If the main driver in the loss rate comparisons is the claim rate for FHA, the high-risk cases may have such a high rate of claims that JV processing would be less costly than standard FHA processing. In which case, more stringent eligibility criteria might increase the savings from ACD. Other parameters, such as the discount rate and FHA ownership share, can be modified to determine which combinations would make ACD cost effective.

Claims Model

The first step in estimating the claims model is to select a set of delinquent loans from a previous year so that a high percentage of loans reached final resolution by 2004, yet not so long ago that the processing is different from what current FHA loans experience. We selected 69,795 delinquencies from 1997 that would have met ACD eligibility requirements with the exception of the loss mitigation criteria. In 1997, the assignment era had ended and was being replaced by loss mitigation. We could have excluded the 8.9 percent of loans that eventually received loss mitigation as a sign that loss mitigation would have worked for them. However, only 4.8 percent of the terminations received loss mitigation and we did not exclude such cases from the holdouts. Many loans in the holdout and eligible sample received loss mitigation treatment after provisional approval, so we decided to leave loans receiving loss mitigation in the historical sample.

The distribution of final status for the delinquent loans deemed eligible in 1997 are shown in Exhibit 14. As of March 2004, 76.6 percent of the delinquent loans had terminated with 63 percent of the terminations as claims. Although disposition took longer before M&M contractors were generally used for REO sales by FHA, it is instructive to see that six years after the default 23 percent of loans were still active and 28 percent ended without claim. Given that there has been only 2 years for most defaults to reach final resolution in the ACD Demonstration, it is remarkable that 66 percent of the ACD loans have already resolved. It may take several more years for eligibles and holdouts to surpass that level of resolution. Moreover as of August 31, 2004, 62 percent of the 1,070 resolutions among holdout loans have been paid in full, a non-claim termination. It is likely that non-claim resolutions occur before claim resolutions, which have to complete foreclosure and property disposition. In which case, the claim rate for holdouts would be expected to rise over time. The recovery rate for holdouts, 69 percent, matches the official recovery rate for FHA in the two eastern

HOC regions. If, however, the holdout loans are higher risk due to the selection for ACD eligibility than the FHA average overall, it is possible that the recovery rates for holdout loans will decline over time as the claim rate rises to historical levels. The point is simply that the low claim rate and average recovery rate for the holdout loans may reflect the strong housing market conditions in 2004. As the more difficult properties reach final disposition, it is quite possible that the loss rate for the holdouts will increase toward the historical average.

Another finding shown in Exhibit 14 is that only about 15 percent of reinstatements eventually terminate in claim. Of the 69,795 delinquent loans, 48.9 percent reinstate at some point, but of those reinstatements less than 15 percent end in claim. One caveat to this finding is that reinstatements seem to be under-reported. Presumably all the 1997 defaults that are still active should be counted as reinstatements. However, according to the default status codes as reported by servicers, there are 16,356 actives and only 14,016 reinstatements. The under-reporting of reinstatements does not necessarily change the share of reinstatements that terminate with claims, but there is uncertainty about that percentage. The main point is that a relatively small share of reinstatements ultimately claim. An assumption that most reinstatements will claim is less likely to be true than an assumption that most reinstatements will not claim.

Given the 69,795 delinquent loans that theoretically would be provisionally approved in 1997, a claims model is estimated on the three primary outcomes: terminate with claim, terminate without claim or continue active. The variables used in the model are essentially the same ones used in the selection model. The most important variables, such as credit score and current appraisal, are not available in the 1997 FHA data. Exhibit 15 shows the results for the variables in the claims outcome of the multinomial logit model. The largest positive coefficient is for “LTV Unknown,” which is probably capturing refinances because their value is not recorded, and may be partially offset by the purchase indicator. High LTV does indicate higher probability of claim, but number of defaults and total months in default reduce the likelihood of claim in this model. A more parsimonious model might give more coefficients with the expected signs, but our main goal was to improve the fit of the model.

The claims model can be used to predict the probability of claim for the three portfolios: ACD, eligibles and holdouts. Exhibit 16 shows the average predicted probabilities for each loan group and each outcome. The first row shows the historical claims for the 1997 cohort, 48 percent, which is higher than the predictions for the 2002 loan groups, 44 to 45 percent. The variation across loan groups in the predicted probability of claim is quite modest. The low variation in predicted claims implies the portfolios are not so different in risk, at least on average. ACD does have a higher average than the eligibles, but the eligibles have a higher average than the holdouts. Given our expectation that the worst cases are taken from the eligibles and put into ACD, it is reasonable to expect the average risk for the eligibles to be lower than for holdouts.

Cendant has the “riskiest” loans in all three loan groups, but Cendant’s share in eligibles is nearly the same as in the holdouts. It is Chase, with the lowest probability of claim and the smallest share of eligibles (5 percent), that is most responsible for the average predicted claim in eligibles being higher than in the holdouts. If the ACD distribution of loans by p-servicer is applied to all three loan groups, the average predicted claim rate is virtually the same for all three groups (45.2 for ACD, 46.0 for eligibles, 45.4 for holdouts). Based on the average predicted claims rate, there does not appear to be much difference in risk among the three loan groups. This result may be because the claims model does a poor job of discriminating high-risk from low-risk loans, exacerbated by the limited data.

Alternatively, the p-servicers may do relatively little to put the highest-risk loans into ACD or it may be extremely difficult to select the highest risk loans. Even though claim is the most likely outcome (the probability of claim is higher than the probability of terminating without claim or reinstatement), more than half of the loans do not claim.

The next step is to sort the ACD loans by predicted probability of claim and organize them by decile, 1 for lowest predicted probability of claim to 10 for highest predicted probability of claim. We expect the loans with a high predicted claim rate to be more likely to terminate in property sale than note sale. Exhibit 17 shows the actual property sale rate for each decile, that is the share of property sale resolutions out of the total resolutions for each decile. Indeed, decile 1 has the lowest property sale rate with a generally rising trend to decile 10 with the highest property sale rate. The dotted line on Exhibit 17 shows the counterfactual claims rate using the claims model on the ACD loans to predict their claims rate under standard FHA processing. The claims model predicts what share of loans would terminate with claim if the loans experienced standard FHA processing. The gap between the two curves is a measure of the ACD treatment effect because it shows the lower probability of property sale for the same set of loans under JV vs. FHA processing.

If the highest risk loans (decile 10) were selected for JV processing, would the loss rate for that select group be lower than if the same loans were given standard FHA processing? Exhibit 18 shows that the loss rate for the highest risk loans would be higher for JV processing than FHA processing. Decile 9 shows the results from pooling together the loans in deciles 9 and 10. Decile 8 shows the results from pooling together the loans in deciles 8, 9 and 10, etc. Ideally, there would be a crossover point such that JV processing would be lower cost for high-risk loans and FHA processing would be lower cost for low-risk loans. However, for the loans and parameters for JV2002, there appears to be no degree of targeting that would be sufficient for ACD to be cost effective.

The gap for the first decile shows the ACD treatment effect for all the JV2002 loans. The ACD loss rate is 29 percent and the FHA counterfactual is 13 percent. The difference of 16 percentage points shows that JV processing would increase loss rates by 16 percentage points compared to the same loans getting standard FHA processing. This carries out Alternative 1 described in the section on Bloom correction. Take the same set of loans and compare the loss rates under JV processing vs. standard FHA processing. The difference in loss rates, an increase of 16 percentage points, is a measure of the ACD treatment effect.

The loss rates for the FHA curve in Exhibit 18 might be low because the strong housing market in 2004 is keeping FHA claims rates low. Exhibit 19 shows the effect of assuming the claims rates for the 1997 cohort. The ACD benchmark stays the same, but the counterfactual FHA curve shifts up in response to higher claim rates. Now there is a breakeven point in the 9th decile. If market conditions declined such that FHA claim rates reached 1997 levels, then it would be less costly to process the highest risk loans in the ACD Program. However, most loans with lower risk are still handled more cost effectively under standard FHA processing.

Another experiment is to see if certain p-servicers have selection strategies that are more likely to pick out the high-risk loans and, therefore, more likely to be cost effective. We already noted in the section on loan characteristics that the degree of selectivity seems to vary significantly by p-servicer. Exhibit 20 shows the share of property sales relative to total ACD sales ordered by the predicted claim deciles. Cendant stands out as the p-servicer with the highest share of property sales for deciles 3 to 9. Wells Fargo and Chase Manhattan have the medium share of property sales and their large

share of ACD loans drive the overall trend for ACD. Countrywide has a very small share of ACD loans so its downward trend for the lowest deciles may not be meaningful. The main point from Exhibit 20 is that if all the p-servicers could be persuaded to select ACD loans like Cendant, there is a greater likelihood that JV processing would be cost effective because Cendant loans are much more likely to claim under standard FHA processing. On the other hand, the high rate of REO sales from Cendant loans would likely lower the average recovery rate for the JV.

The final experiment is the most revealing of all. What share of ACD loans would become cost effective under JV processing if the parameters for discount rate or ownership share were adjusted to mimic JV2004? Suppose the discount rate were 19 percent (as it is for JV2004) instead of 38 percent (as it is for JV2002). Would that reduction in discount be enough to make ACD cost effective? Exhibit 21 shows the results for three alternatives. The top line shows the benchmark for ACD using the parameters for JV2002, namely a discount factor of 62 percent (1 minus the discount rate) and an FHA ownership share of 30 percent. The dotted line shows the FHA counterfactual, that is, the predicted loss rates for ACD loans under standard FHA processing, which does not change between scenarios. Increasing the FHA ownership share from 30 percent to 40 percent shifts the ACD line from a loss rate of 30 percent down to about 24 percent. Only the top decile of highest risk loans would be handled cost effectively by JV. Cutting the discount rate from 38 percent to 19 percent (that is, raising the discount factor from 62 percent to 81 percent) would lower the JV loss rate to 17 percent. In this scenario, loans in deciles 5 and above would be handled more cost effectively by JV. The third scenario combines the lower discount rate (19 percent) with a higher FHA ownership share of 40 percent. The combined effect is to lower JV loss rates to 14 percent such that the breakeven point is in decile 2. In this scenario, 80 percent of the ACD loans are handled more cost effectively under JV processing than under standard FHA processing. While JV processing is not cost effective for the parameters in JV2002, the combination of better targeting to high-risk loans and the parameters in JV2004 show that ACD could be cost effective.

Exhibit 14: Final Status of Eligible Loans in 1997 as of March 2004

	All	Active ¹	Terminations		
			All Terminations	Non-claims ²	Claims ³
Number of Loans	69,795	16,356	53,439	19,785	33,654
% of All	100.0%	23.4%	76.6%	28.3%	48.2%
% of All Terminations			100.0%	37.0%	63.0%
Reinstatements	34,113	14,016	20,097	15,136	4,971
% of All Reinstatements	100.0%	41.1%	58.9%	44.4%	14.6%
% of Final Status	48.9%	85.7%	37.6%	76.5%	14.8%
Loss Mitigation	6,188	3,624	2,564	1,578	986
% of All Loss Mitigation	100.0%	58.6%	41.4%	25.5%	15.9%
% of Final Status	8.9%	22.2%	4.8%	8.0%	2.9%

Notes:

1. Active loans have not been terminated and they do not have claims.

2. Non-claims are terminated loans without claims. They include the following Single Family Data Warehouse termination types: 93% paid in full, 2% nonconveyance foreclosure, 0.1% voluntary termination of insurance by lender and 5% netting refinance.

3. Claims are terminated loans with all claims including partial claims. They include the following Single Family Data Warehouse termination types: 95% conveyance of title for insurance benefits, 0.1% assignment of note for insurance benefits, 0.01% conversion title or assigned note and 5% nonconveyance claims.

Exhibit 15: Claims Model Using Eligible Loans in 1997

Dependent Variable:										
Outcome	Non Claim Terminations					Claim Terminations				
Explanatory Variables	Coef.	Std. Err.	RRR	Std. Err.	P> z	Coef.	Std. Err.	RRR	Std. Err.	P> z
Number of Defaults	0.083	0.014	1.087	0.016	0.000	-0.179	0.015	0.836	0.013	0.000
Total Months in Default	-0.033	0.001	0.968	0.001	0.000	-0.046	0.001	0.953	0.001	0.000
Months till First Default	-0.001	0.001	0.999	0.001	0.131	-0.013	0.001	0.968	0.001	0.000
Foreclosure	-0.331	0.366	0.710	0.262	0.366	-0.248	0.311	0.780	0.243	0.426
LTV: < 90%	0.156	0.042	1.160	0.049	0.000	-0.230	0.041	0.769	0.032	0.000
LTV: 90 - 94%	0.118	0.029	1.125	0.032	0.000	-0.084	0.027	0.938	0.026	0.018
LTV: > 97%	-0.153	0.030	0.856	0.026	0.000	0.113	0.026	1.120	0.028	0.000
LTV Unknown	3.269	0.153	26.278	4.027	0.000	4.052	0.152	57.520	8.757	0.000
UPB: \$50,000 - \$80,000	0.165	0.031	1.179	0.036	0.000	-0.075	0.028	0.828	0.026	0.007
UPB: > \$80,000	0.498	0.036	1.642	0.060	0.000	-0.071	0.032	0.932	0.030	0.028
PTI	-0.001	0.000	0.999	0.000	0.001	-0.001	0.000	0.999	0.000	0.002
ARM	-0.081	0.028	0.922	0.027	0.005	0.027	0.026	1.027	0.027	0.311
Purchase	0.343	0.053	1.410	0.075	0.000	0.781	0.051	2.184	0.112	0.000
Borrower's Age	-0.008	0.001	0.981	0.001	0.000	-0.001	0.001	0.989	0.001	0.195
Separated Borrower	0.020	0.004	1.020	0.005	0.032	0.175	0.000	1.191	0.096	0.029
Unmarried Borrower	0.004	0.026	1.004	0.026	0.990	0.184	0.023	1.178	0.027	0.000
Marital Status Unknown	0.228	0.052	1.256	0.066	0.000	0.456	0.050	1.576	0.078	0.000
Black Borrower	-0.508	0.026	0.602	0.016	0.000	-0.484	0.023	0.829	0.015	0.000
Hispanic Borrower	0.103	0.046	1.108	0.050	0.023	0.112	0.042	1.118	0.047	0.007
Asian Borrower	-0.024	0.141	0.976	0.138	0.883	0.186	0.128	1.181	0.151	0.195
Native American Borrower	-0.123	0.189	0.884	0.149	0.488	0.037	0.148	1.037	0.153	0.804
Other or Undisclosed Race	0.004	0.084	1.004	0.084	0.966	-0.209	0.075	0.811	0.061	0.005
First Time Homebuyer	-0.118	0.027	0.909	0.024	0.000	-0.089	0.025	0.907	0.023	0.000
Chase Manhattan	-0.151	0.047	0.860	0.041	0.001	-0.177	0.042	0.838	0.036	0.000
Countywide	0.137	0.283	1.147	0.324	0.628	0.180	0.244	1.174	0.286	0.511
Cendant	-0.125	0.043	0.882	0.039	0.004	-0.458	0.039	0.832	0.026	0.000
Other P-Service	-0.080	0.033	0.914	0.030	0.006	-0.233	0.028	0.792	0.023	0.000
AL	-0.760	0.084	0.468	0.039	0.000	-0.889	0.078	0.487	0.038	0.000
CT	-0.904	0.118	0.405	0.048	0.000	0.589	0.099	1.767	0.174	0.000
DC	-0.486	0.162	0.616	0.089	0.003	-0.108	0.147	0.897	0.132	0.462
DE	-1.258	0.184	0.285	0.047	0.000	-0.858	0.137	0.518	0.071	0.000
FL	-0.431	0.046	0.650	0.030	0.000	-0.172	0.043	0.842	0.036	0.000
GA	-0.344	0.054	0.709	0.039	0.000	-0.886	0.053	0.514	0.027	0.000
IN	-0.318	0.087	0.728	0.049	0.000	-0.411	0.083	0.683	0.042	0.000
KY	-0.009	0.111	0.991	0.110	0.939	-0.762	0.116	0.467	0.054	0.000
MA	0.128	0.106	1.134	0.120	0.232	0.146	0.103	1.157	0.120	0.157
MD	-0.907	0.058	0.404	0.022	0.000	-0.088	0.049	0.806	0.044	0.044
ME	-0.494	0.204	0.610	0.124	0.015	0.042	0.184	1.043	0.192	0.817
MI	0.482	0.085	1.588	0.104	0.000	-0.832	0.089	0.435	0.030	0.000
MS	-0.931	0.115	0.394	0.046	0.000	-1.105	0.107	0.331	0.036	0.000
NC	-0.445	0.076	0.641	0.049	0.000	-0.797	0.078	0.451	0.034	0.000
NH	-0.009	0.242	0.991	0.240	0.970	-0.019	0.238	0.981	0.234	0.935
NJ	-0.628	0.058	0.533	0.031	0.000	-0.103	0.053	0.902	0.048	0.052
NY	-0.852	0.055	0.521	0.029	0.000	0.120	0.049	1.127	0.055	0.014
OH	-0.048	0.056	0.952	0.064	0.388	-0.422	0.055	0.666	0.036	0.000
PA	-1.018	0.080	0.381	0.022	0.000	-0.417	0.052	0.669	0.034	0.000
PR	-3.045	1.051	0.029	0.030	0.001	-1.578	0.458	0.288	0.096	0.001
RI	-0.193	0.229	0.824	0.188	0.399	0.447	0.213	1.564	0.333	0.036
SC	-0.532	0.094	0.597	0.055	0.000	-0.508	0.088	0.602	0.053	0.000
TN	-0.484	0.060	0.617	0.037	0.000	-0.820	0.058	0.388	0.023	0.000
VA	-0.451	0.082	0.637	0.039	0.000	0.078	0.056	1.061	0.061	0.183
VI	-2.319	1.144	0.098	0.113	0.043	-0.524	0.726	0.592	0.430	0.471
YT	0.245	0.527	1.278	0.674	0.642	0.928	0.495	2.528	1.251	0.061
WV	-0.908	0.288	0.403	0.116	0.002	-1.178	0.294	0.368	0.091	0.000
Intercept	0.705	0.097				1.427	0.091			

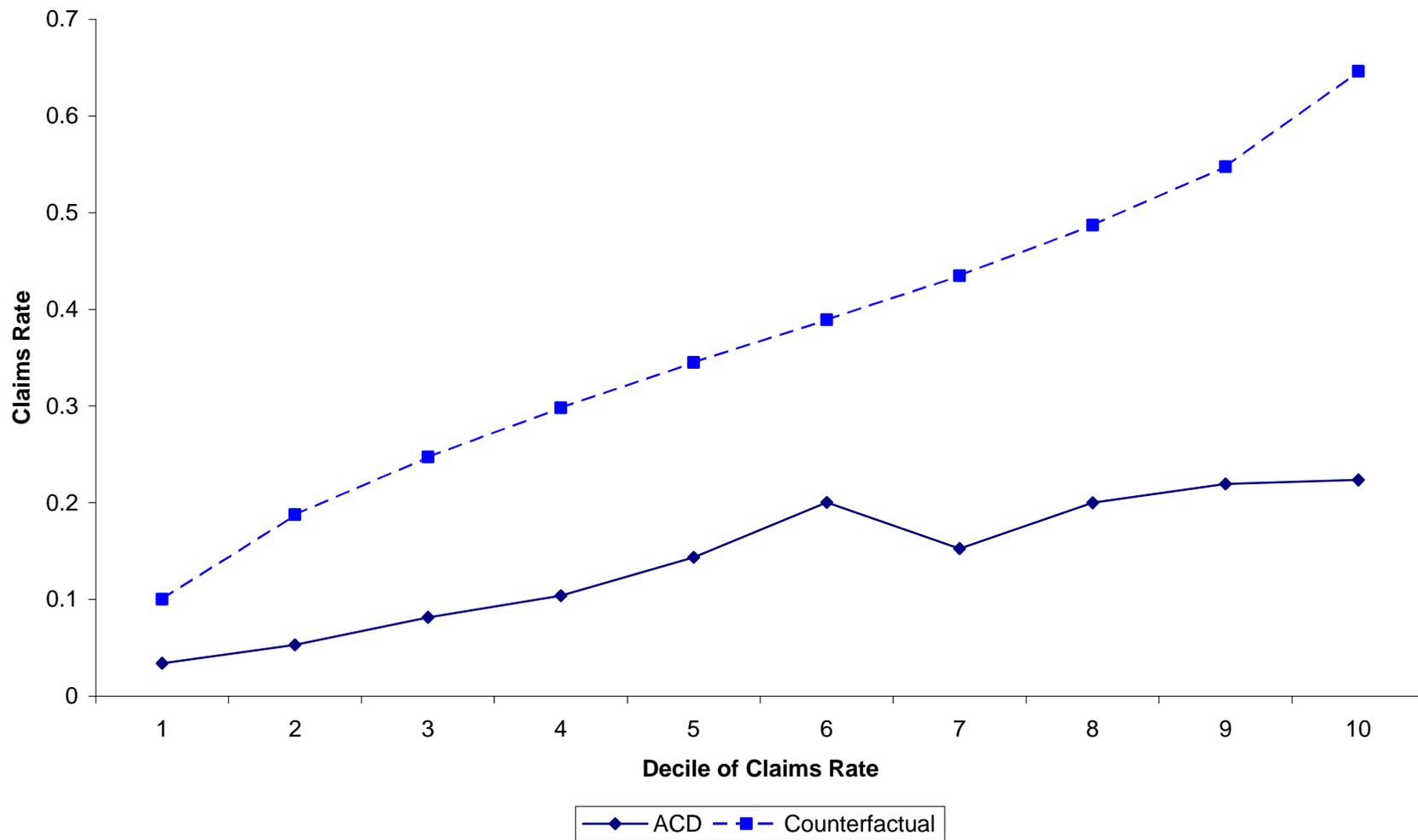
Number of Observations	89,794
Log-likelihood with only Intercept	-73220.7
Log-likelihood for the Full Model	-87058.6
Pseudo R-squared	0.084

Note: Active Loans is the outcome relative to which Non Claim and Claim Terminations are estimated.

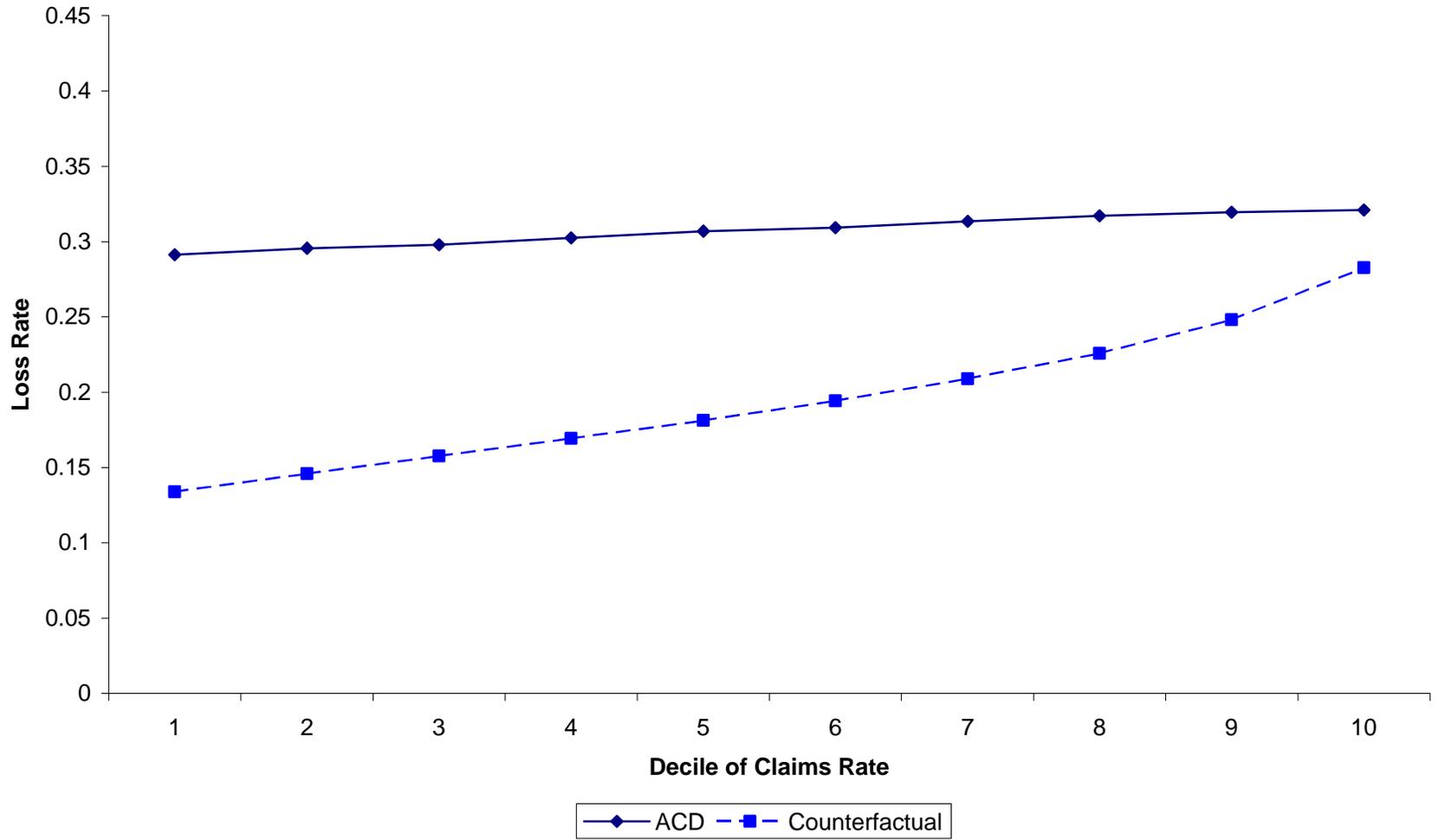
**Exhibit 16: Average Predicted Outcomes by Loan Groups and P-Servicers
Using Claims Model Estimated on Historical Data**

Loan Types by Servicers	N	Active	Average Predicted Outcomes	
			Terminations	
			Non-Claims	Claims
Historical (1997 Eligible Loans) 2002	69,794	23.4%	28.3%	48.2%
ACD	6,655	26.8%	28.0%	45.2%
Eligible	10,107	25.8%	29.3%	44.9%
Holdout	3,557	28.0%	28.4%	43.7%
By Loan Group and P-Servicer: 2002				
ACD	6,655	26.8%	28.0%	45.2%
Wells Fargo	3,500	24.3%	29.3%	46.4%
Chase Manhattan	2,683	31.2%	26.5%	42.3%
Cendant	276	18.0%	25.0%	56.9%
Countrywide	196	22.6%	29.0%	48.4%
Eligible	10,107	25.8%	29.3%	44.9%
Wells Fargo	3,739	21.8%	27.9%	50.3%
Chase Manhattan	487	33.6%	26.5%	39.9%
Cendant	842	19.3%	25.9%	54.8%
Countrywide	4,955	29.2%	31.3%	39.5%
Holdout	3,557	28.0%	28.4%	43.7%
Wells Fargo	1,211	24.6%	27.6%	47.8%
Chase Manhattan	475	33.3%	24.7%	42.0%
Cendant	235	21.2%	25.6%	53.2%
Countrywide	1,613	30.0%	30.4%	39.5%
By P-Servicer:				
Wells Fargo	8,498	23.3%	28.4%	48.3%
Chase Manhattan	3,662	31.8%	26.3%	41.9%
Cendant	1,371	19.4%	25.7%	54.9%
Countrywide	6,778	29.2%	31.0%	39.8%

Exhibit 17: Actual Property Sale Rate and Counterfactual Claims Rate of ACD by Claims Rate Decile



**Exhibit 18: Loss Rate by Reverse Cumulative Decile of Claims Rate
(Adjusted to Current Average Loss Rate)**



**Exhibit 19: Loss Rate by Reverse Cumulative Decile of Claims Rate
(Historical)**

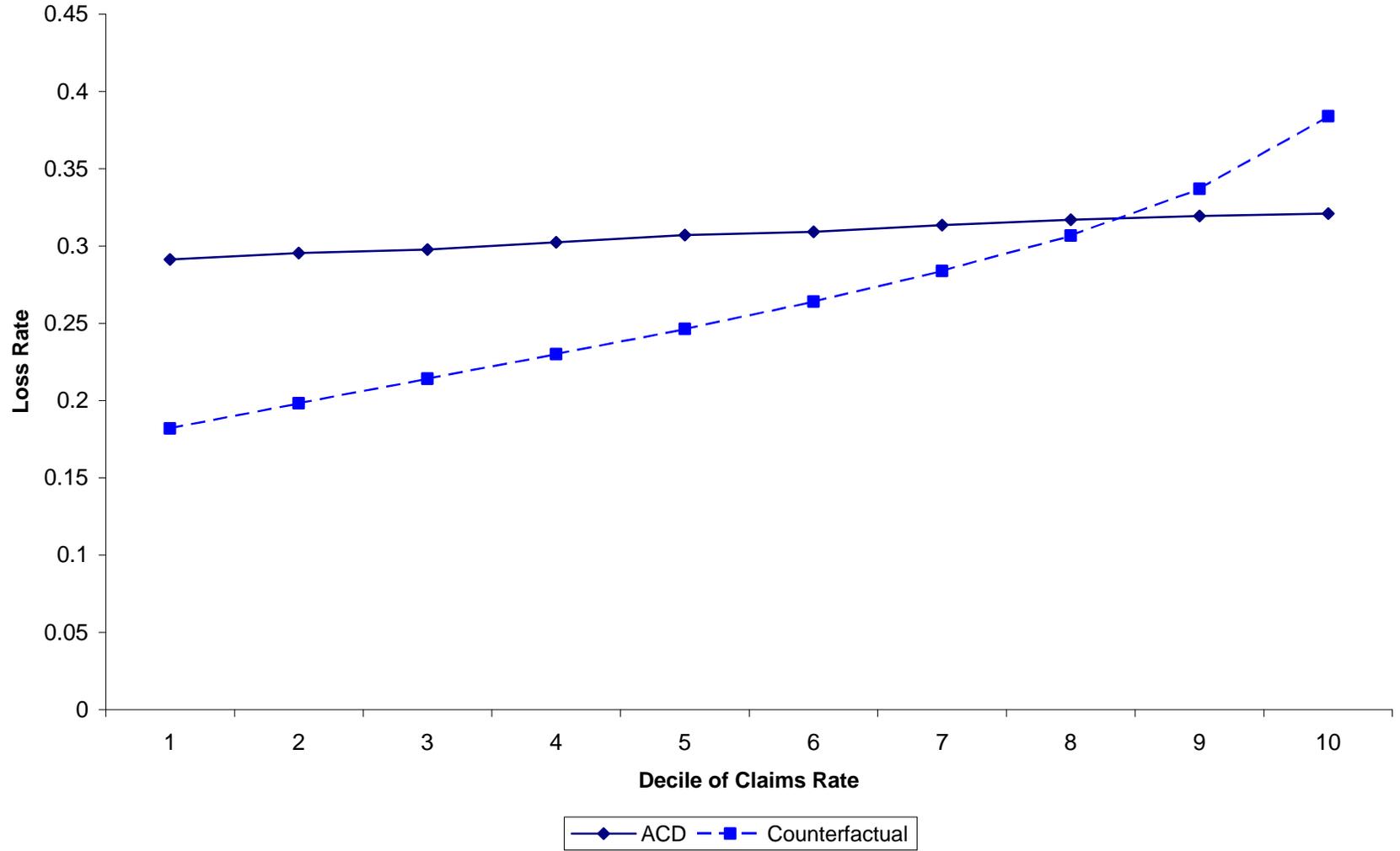
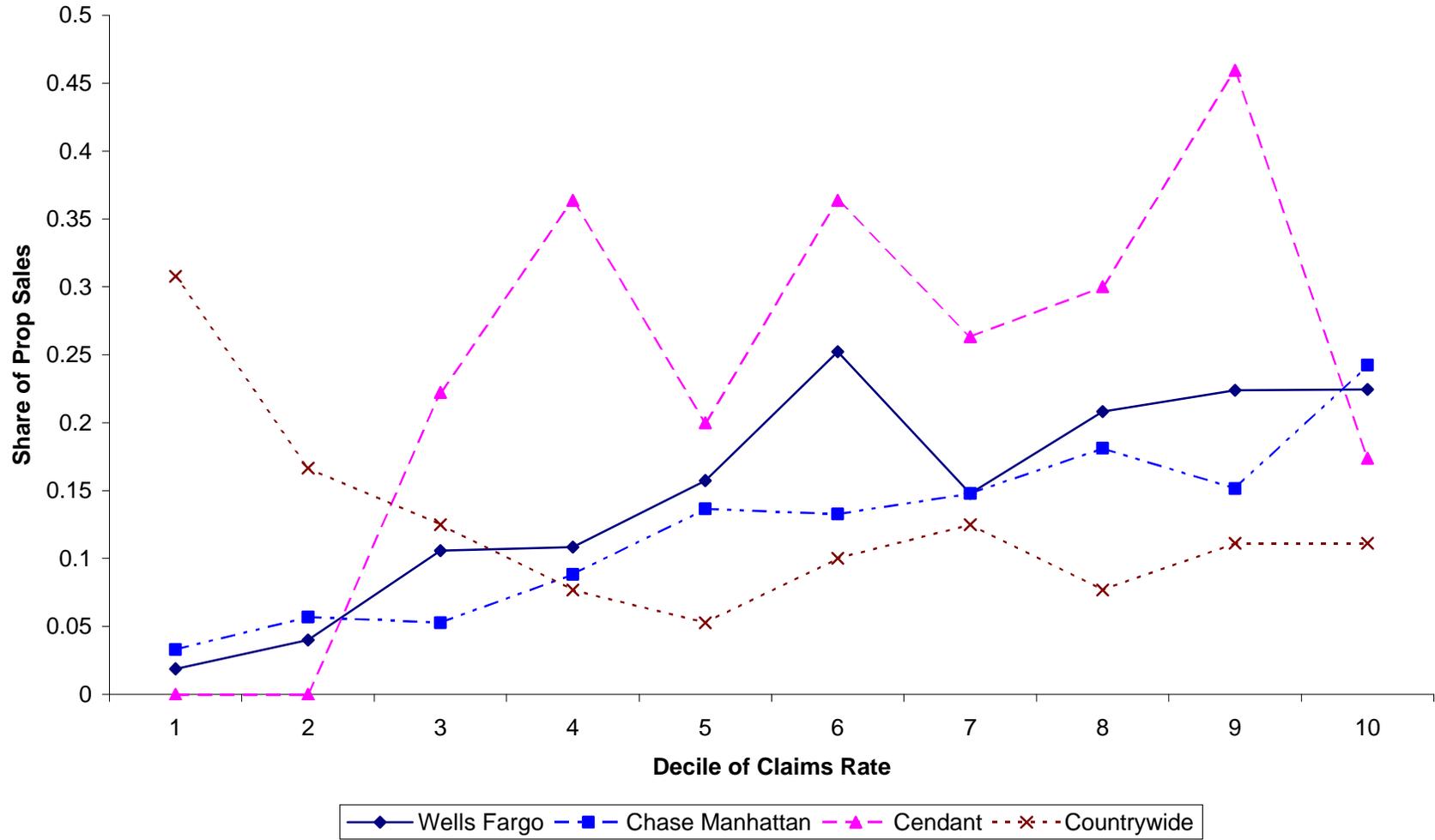
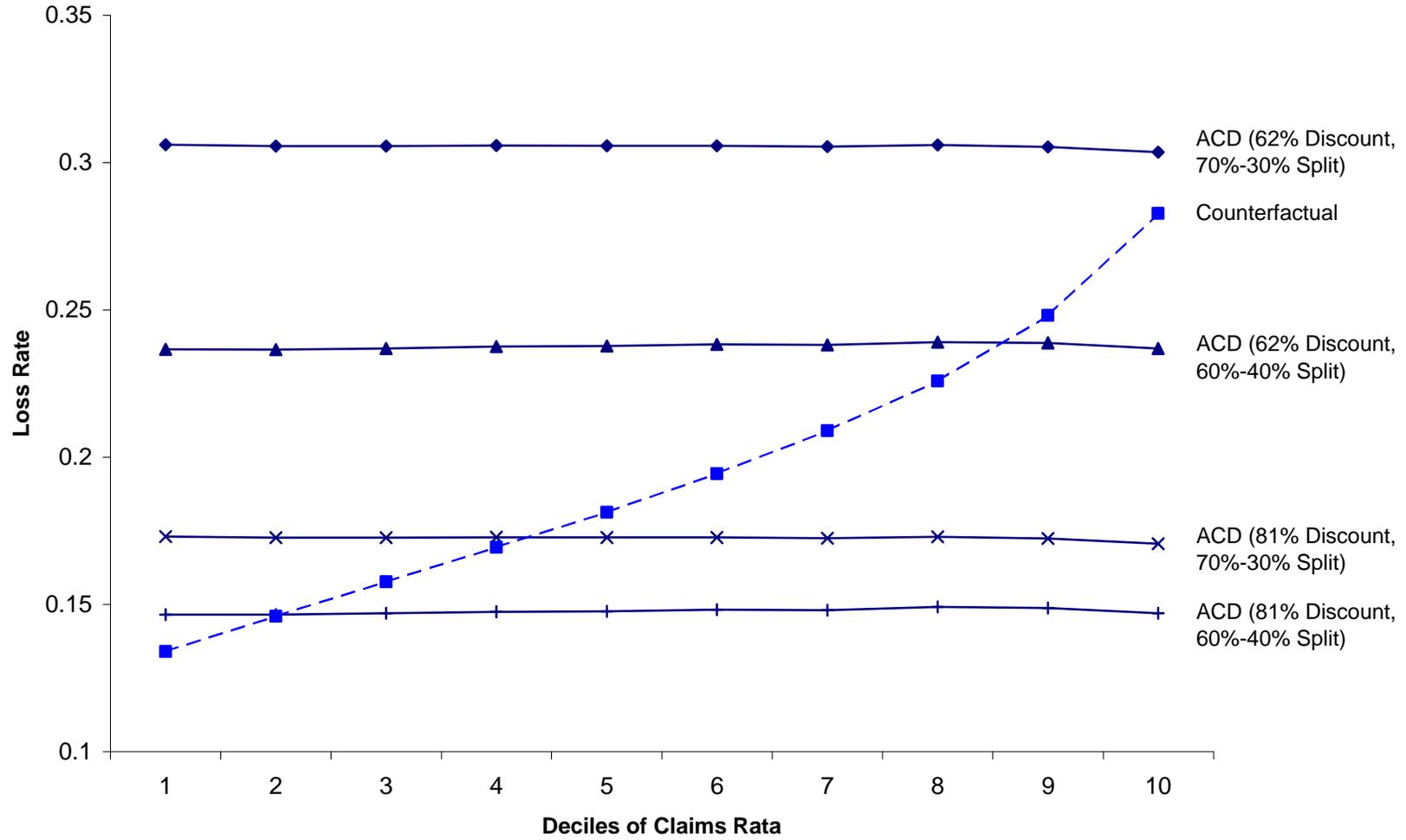


Exhibit 20: Share of Property Sales to ACD Total Sales by P-Servicer and Claims Decile



**Exhibit 21: Loss Rate by Reverse Cumulative Decile of Claims Rate
(Adjusted to Current Average Loss Rate)**



References

Angrist, Joshua D., Guido W. Imbens and Donald B. Rubin (1996) "Identification of Causal Effects Using Instrumental Variables," *Journal of the American Statistical Association*, 91(434): 444-455.

Bloom, Harold (1984) "Accounting for No-Shows in Experimental Evaluation Designs," *Evaluation Review*, 8(2): 225-246.

Appendix

Appendix A-1: Logistical Regression of Loan Selection into JV2002 versus Eligibles

	Model A		Model B		Model C		Model D	
1 if in JV2002	6,655		6,655		6,655		6,655	
0 if in Eligible Sample	10,109		10,109		10,109		10,109	
	Intercept	Full Model						
-2 Log L	22523.1	14460.8	22523.1	14443.3	22523.1	14287.1	22523.1	14168.3
Percent Concordant	87.3		87.3		87.7		88.0	
Explanatory Variables	Coef.	Pr > ?2						
Loan Age	0.0057	<.0001			0.0159	<.0001	0.0157	<.0001
Debenture Spread			-0.2763	<.0001	-0.6525	<.0001	-0.6351	<.0001
Days in Foreclosure: 1 - 120	0.9039	<.0001	0.9931	<.0001	0.8898	<.0001	0.8167	<.0001
Days in Foreclosure: > 120	0.8083	<.0001	0.9469	<.0001	0.7903	<.0001	0.7637	<.0001
LTV: < 90%	-0.2241	0.0060	-0.0255	0.7493	-0.2374	0.0039	-0.2240	0.0070
LTV: 90 - 94%	0.1181	0.0399	0.2503	<.0001	0.0987	0.0887	0.1101	0.0593
LTV: > 97%	-0.1347	0.0116	-0.0742	0.1657	-0.0876	0.1042	-0.1057	0.0521
LTV Unknown	-0.1257	0.5080	0.0128	0.9456	-0.0915	0.6311	-0.1303	0.4994
UPB: \$50,000 - \$80,000	-0.0956	0.2068	-0.1542	0.0411	-0.1190	0.1180	-0.0809	0.2936
UPB: > \$80,000	-0.2507	0.0009	-0.3930	<.0001	-0.2969	<.0001	-0.2236	0.0042
Alpha Grades: A, B and C	-3.7951	<.0001	-3.7590	<.0001	-3.7797	<.0001	-3.8194	<.0001
Alpha Grade E	0.3546	<.0001	0.3054	<.0001	0.3754	<.0001	0.3684	<.0001
Alpha Grade F	0.1580	0.0058	0.1377	0.0164	0.1574	0.0064	0.1207	0.0387
Alpha Grade Unknown	-0.8676	<.0001	-0.8803	<.0001	-0.8477	<.0001	-0.8889	<.0001
PTI	0.0002	0.8571	0.0002	0.8093	-0.0001	0.8800	-0.0002	0.8623
ARM	0.1962	0.0042	0.4222	<.0001	0.3203	<.0001	0.3069	<.0001
Purchase	-0.0832	0.4768	0.0947	0.4169	-0.0133	0.9099	-0.0187	0.8749
Borrower's Age	0.0046	0.0433	0.0048	0.0346	0.0046	0.0452	0.0041	0.0727
Separated Borrower	0.0291	0.8633	-0.0259	0.8782	0.0032	0.9849	-0.0170	0.9211
Unmarried Borrower	0.0641	0.1334	0.0177	0.6784	0.0637	0.1392	0.0724	0.0956
Marital Status Unknown	-0.4558	0.1659	0.3765	0.2537	-0.1102	0.7397	-0.1390	0.6759
Black Borrower	-0.2971	<.0001	-0.2695	<.0001	-0.2761	<.0001	-0.2283	<.0001
Hispanic Borrower	-0.0269	0.7529	-0.0395	0.6434	-0.0208	0.8089	-0.0240	0.7845
Asian Borrower	0.0001	0.9998	0.0093	0.9725	0.0349	0.8968	0.0724	0.7893
Native American Borrower	-0.0757	0.8346	-0.0318	0.9300	0.0018	0.9961	0.0860	0.8148
Other or Undisclosed Race	-0.2028	0.0284	-0.2605	0.0050	-0.1785	0.0554	-0.1515	0.1067
First Time Homebuyer	-0.0007	0.9899	-0.0250	0.6638	-0.0167	0.7724	-0.0283	0.6271
Chase Manhattan	1.4800	<.0001	1.4575	<.0001	1.5060	<.0001	1.5472	<.0001
Countrywide	-3.3401	<.0001	-3.3313	<.0001	-3.2770	<.0001	-3.1164	<.0001
Cendant	-1.1473	<.0001	-1.2471	<.0001	-1.1285	<.0001	-1.1004	<.0001
Other P-Servicer	-14.6935	0.9108	-14.7923	0.9099	-14.6080	0.9108	-14.6015	0.9101
Servicer Score by Jurisdiction	0.0557	<.0001	0.0724	<.0001	0.0528	<.0001	0.0264	0.0889
Servicer Score Unknown	0.5811	0.0116	0.6435	0.0051	0.6541	0.0046	0.5960	0.0132
MSA Default Rate	0.0838	<.0001	0.0736	<.0001	0.0747	<.0001	0.0951	<.0001
AK								
AL							-0.0908	0.5316
AR								
AZ								

Appendix A-1: Logistical Regression of Loan Selection into JV2002 versus Eligibles (Continued)

	Model A		Model B		Model C		Model D	
CA								
CO								
CT							0.3845	0.1162
DC							-0.9319	0.1072
DE							0.1062	0.6432
GA							-0.4395	<.0001
IA								
ID								
IL							0.2278	0.0237
IN							0.1722	0.1312
KS								
KY							0.1706	0.3306
LA								
MA							0.4062	0.0353
MD							0.1815	0.1029
ME							0.3732	0.1811
MI							-0.4828	0.0002
MN								
MO								
MS							0.0310	0.8651
MT								
NC							-0.3228	0.0066
ND								
NE								
NH							-0.4224	0.3516
NJ							0.2146	0.0425
NM								
NV								
NY							0.0429	0.6881
OH							0.2447	0.0164
OK								
OR								
PA							0.2971	0.0022
PR							-11.9641	0.9797
RI							-0.2255	0.6636
SC							0.0985	0.5483
SD								
TN							0.0544	0.6548
TX							-13.5684	0.9914
UT								
VA							0.0800	0.5535
VI								
VT							0.9329	0.1762
WA								
WI								
WV							-0.1046	0.8179
WY								
Intercept	-1.0465	<.0001	0.4431	0.0840	1.7717	<.0001	1.5741	<.0001

Appendix A-2: Logistical Regression of Loan Selection into JV2002 versus Holdouts

	Model A		Model B		Model C		Model D	
1 if in JV2002	6,655		6,655		6,655		6,655	
0 if in Eligible Sample	3,557		3,557		3,557		3,557	
	Intercept	Full Model						
-2 Log L	13202.0	9367.5	13202.0	9354.4	13202.0	9353.8	13202.0	9304.4
Percent Concordant	82.5		82.4		82.5		82.7	
Explanatory Variables	Coef.	Pr > ?2						
Loan Age	0.0035	0.0070			0.0011	0.4656	0.0015	0.3179
Debenture Spread			0.1714	<.0001	0.1573	0.0002	0.1496	0.0005
Days in Foreclosure: 1 - 120	1.0516	<.0001	1.0743	<.0001	1.0684	<.0001	1.1086	<.0001
Days in Foreclosure: > 120	1.3702	<.0001	1.3912	<.0001	1.3804	<.0001	1.4336	<.0001
LTV: < 90%	-0.1704	0.1037	-0.1512	0.1391	-0.1680	0.1088	-0.1520	0.1492
LTV: 90 - 94%	-0.0531	0.4581	-0.0410	0.5565	-0.0527	0.4614	-0.0566	0.4312
LTV: > 97%	-0.1472	0.0300	-0.1669	0.0143	-0.1665	0.0145	-0.1457	0.0339
LTV Unknown	0.0776	0.7456	0.0802	0.7370	0.0711	0.7663	0.0877	0.7141
UPB: \$50,000 - \$80,000	-0.0061	0.9479	0.0048	0.9588	0.0081	0.9303	0.0017	0.9860
UPB: > \$80,000	-0.0503	0.5882	-0.0437	0.6354	-0.0346	0.7103	-0.0273	0.7753
Alpha Grades: A, B and C	-3.3905	<.0001	-3.3393	<.0001	-3.3495	<.0001	-3.2936	<.0001
Alpha Grade E	0.0925	0.1576	0.0753	0.2465	0.0815	0.2137	0.0700	0.2890
Alpha Grade F	-0.3174	<.0001	-0.3153	<.0001	-0.3130	<.0001	-0.3081	<.0001
Alpha Grade Unknown	-0.7381	0.0034	-0.7382	0.0034	-0.7453	0.0031	-0.7170	0.0048
PTI	-0.0006	0.6350	-0.0005	0.6595	-0.0005	0.6598	-0.0002	0.8412
ARM	-0.0502	0.5578	-0.0708	0.4042	-0.0815	0.3440	-0.0810	0.3543
Purchase	-0.1140	0.4360	-0.1314	0.3694	-0.1398	0.3410	-0.1242	0.4006
Borrower's Age	0.0016	0.5678	0.0017	0.5589	0.0016	0.5638	0.0026	0.3743
Separated Borrower	-0.1779	0.3781	-0.1865	0.3547	-0.1850	0.3589	-0.1748	0.3903
Unmarried Borrower	-0.0096	0.8587	-0.0145	0.7878	-0.0104	0.8469	-0.0027	0.9609
Marital Status Unknown	-0.6515	0.0981	-0.6855	0.0774	-0.7359	0.0618	-0.7434	0.0614
Black Borrower	-0.0725	0.2431	-0.0789	0.2040	-0.0798	0.1990	-0.0469	0.4660
Hispanic Borrower	-0.1438	0.1676	-0.1491	0.1529	-0.1474	0.1578	-0.0762	0.4748
Asian Borrower	0.3183	0.3722	0.2914	0.4161	0.2947	0.4107	0.3338	0.3528
Native American Borrower	0.5818	0.2891	0.5583	0.3106	0.5585	0.3100	0.6041	0.2697
Other or Undisclosed Race	-0.0436	0.7228	-0.0693	0.5715	-0.0618	0.6156	-0.0377	0.7597
First Time Homebuyer	0.0293	0.6862	0.0338	0.6411	0.0341	0.6378	0.0483	0.5080
Chase Manhattan	0.4246	<.0001	0.4011	<.0001	0.4066	<.0001	0.4213	<.0001
Countrywide	-3.0455	<.0001	-3.0756	<.0001	-3.0694	<.0001	-3.0548	<.0001
Cendant	-0.9929	<.0001	-0.9962	<.0001	-0.9879	<.0001	-0.9999	<.0001
Other P-Servicer	-14.6424	0.9284	-14.6755	0.9282	-14.6663	0.9282	-14.7729	0.9271
Servicer Score by Jurisdiction	0.0023	0.8842	0.0045	0.7750	0.0033	0.8353	-0.0069	0.7098
Servicer Score Unknown	0.4428	0.1586	0.4436	0.1606	0.4434	0.1604	0.5256	0.1098
MSA Default Rate	-0.0391	<.0001	-0.0352	<.0001	-0.0350	<.0001	-0.0471	<.0001
AK								
AL							0.1538	0.3858
AR								
AZ								

Appendix A-2: Logistical Regression of Loan Selection into JV2002 versus Holdouts (Continued)

	Model A		Model B		Model C		Model D	
CA								
CO								
CT							-0.0528	0.8650
DC							-0.3570	0.6195
DE							0.3881	0.2285
GA							0.1346	0.3360
IA								
ID								
IL							-0.0547	0.6613
IN							0.5337	0.0003
KS								
KY							0.0719	0.7493
LA								
MA							0.3676	0.1724
MD							0.0004	0.9977
ME							0.1648	0.6870
MI							0.2565	0.1168
MN								
MO								
MS							0.0385	0.8703
MT								
NC							0.1895	0.2524
ND								
NE								
NH							-0.8122	0.1383
NJ							-0.0061	0.9640
NM								
NV								
NY							-0.0785	0.5417
OH							0.2832	0.0282
OK								
OR								
PA							0.0353	0.7696
PR							-11.6431	0.9886
RI							-0.5772	0.4083
SC							0.3162	0.1324
SD								
TN							0.4882	0.0024
TX								
UT								
VA							-0.1433	0.4092
VI								
VT							-0.1517	0.8414
WA								
WI								
WV							0.2920	0.6012
WY								
Intercept	1.0925	<.0001	0.3962	0.1686	0.4249	0.1431	0.3383	0.2661

Appendix A-3: Logistical Regression of Loan Selection into JV2003 versus Eligibles

	Model A		Model B		Model C		Model D	
1 if in JV2002	5,846		5,846		5,846		5,846	
0 if in Eligible Sample	17,930		17,930		17,930		17,930	
	Intercept	Full Model						
-2 Log L	26522.7	21438.9	26522.7	20888.9	26522.7	20851.2	26522.7	20336.1
Percent Concordant	78.8		80.3		80.3		81.6	
Explanatory Variables	Coef.	Pr > ?2						
Loan Age	0.0124	<.0001			-0.0071	<.0001	-0.0066	<.0001
Debenture Spread			0.7278	<.0001	0.8887	<.0001	0.8625	<.0001
Days in Foreclosure: 1 - 120	1.1404	<.0001	1.1041	<.0001	1.1423	<.0001	0.9843	<.0001
Days in Foreclosure: > 120	0.8428	<.0001	0.7012	<.0001	0.7789	<.0001	0.6878	<.0001
LTV: < 90%	-0.1848	0.0052	-0.2048	0.0018	-0.1195	0.0737	-0.0842	0.2148
LTV: 90 - 94%	-0.0487	0.2850	-0.0535	0.2382	-0.0016	0.9730	0.0319	0.4967
LTV: > 97%	-0.0709	0.1062	-0.0584	0.1910	-0.0462	0.3026	-0.0681	0.1363
LTV Unknown	-1.3318	<.0001	-1.3018	<.0001	-1.2403	<.0001	-1.2137	<.0001
UPB: \$50,000 - \$80,000	0.0550	0.4545	0.0777	0.2949	0.0504	0.4960	0.1248	0.0995
UPB: > \$80,000	-0.0844	0.2409	-0.0307	0.6703	-0.0934	0.1978	0.0178	0.8145
Alpha Grades: A, B and C	-15.2267	0.8775	-16.3107	0.9192	-16.3054	0.9195	-16.3209	0.9186
Alpha Grade E	0.0451	0.2896	0.0595	0.1678	0.0354	0.4140	0.0922	0.0383
Alpha Grade F	-0.4791	<.0001	-0.5174	<.0001	-0.5637	<.0001	-0.5707	<.0001
Alpha Grade Unknown	-14.9387	0.9932	-15.1631	0.9958	-15.0823	0.9958	-14.6411	0.9959
PTI	-0.0005	0.4445	-0.0001	0.8796	-0.0001	0.9013	-0.0001	0.8484
ARM	0.1353	0.0213	0.0104	0.8626	0.0437	0.4687	-0.0291	0.6376
Purchase	-0.1755	0.0501	-0.2571	0.0044	-0.2264	0.0123	-0.1953	0.0337
Borrower's Age	0.0034	0.0544	0.0022	0.2315	0.0023	0.1939	0.0029	0.1162
Separated Borrower	-0.0424	0.7954	-0.0372	0.8237	-0.0434	0.7948	-0.0946	0.5750
Unmarried Borrower	0.0593	0.0907	0.0843	0.0175	0.0694	0.0513	0.0585	0.1075
Marital Status Unknown	-0.4772	0.1817	-0.7078	0.0538	-0.3749	0.3163	-0.2958	0.4517
Black Borrower	-0.3135	<.0001	-0.3163	<.0001	-0.3111	<.0001	-0.1829	0.0002
Hispanic Borrower	-0.2922	<.0001	-0.2936	<.0001	-0.2988	<.0001	-0.1080	0.0512
Asian Borrower	0.1762	0.2291	0.1680	0.2594	0.1669	0.2634	0.1809	0.2306
Native American Borrower	-0.0333	0.8871	-0.1152	0.6266	-0.1216	0.6055	-0.1153	0.6309
Other or Undisclosed Race	-0.2755	<.0001	-0.2731	<.0001	-0.2943	<.0001	-0.2248	0.0015
First Time Homebuyer	0.0120	0.8030	-0.0048	0.9225	-0.0014	0.9768	0.0039	0.9373
Chase Manhattan	1.5443	<.0001	1.6392	<.0001	1.6618	<.0001	1.6325	<.0001
Countrywide								
Cendant	-0.6399	<.0001	-0.7349	<.0001	-0.7704	<.0001	-0.8169	<.0001
Other P-Servicer	-4.1720	<.0001	-4.0906	<.0001	-4.1415	<.0001	-4.2077	<.0001
Servicer Score by Jurisdiction	0.0319	0.0106	0.0337	0.0078	0.0422	0.0009	-0.0001	0.9978
Servicer Score Unknown	0.0686	0.7703	0.0050	0.9831	0.0069	0.9768	-0.1585	0.5173
MSA Default Rate	0.1141	<.0001	0.0845	<.0001	0.0772	<.0001	0.1116	<.0001
AK							0.4910	0.1301
AL							-0.5245	0.0018
AR							0.1646	0.3630
AZ							-0.4135	0.0063

Appendix A-3: Logistical Regression of Loan Selection into JV2003 versus Eligibles (Continued)

	Model A		Model B		Model C		Model D	
CA							-0.2029	0.1116
CO							0.0140	0.9064
CT							0.1556	0.5808
DC							-0.8535	0.1975
DE							0.4437	0.1422
GA							-0.4363	0.0001
IA							0.7934	<.0001
ID							-0.2092	0.3162
IL							0.0352	0.7550
IN							0.1072	0.4050
KS							0.2244	0.3015
KY							0.2512	0.1800
LA							-0.1306	0.3649
MA							0.2059	0.4574
MD							-0.0137	0.9199
ME							0.0291	0.9532
MI							-0.7587	<.0001
MN							0.2430	0.1523
MO							-0.0038	0.9806
MS							-0.5256	0.0182
MT							0.9245	0.0156
NC							-0.1746	0.1595
ND							0.4096	0.5519
NE							0.7095	0.0096
NH							-0.8503	0.2713
NJ							0.4517	0.0004
NM							-0.3718	0.0513
NV							-0.4578	0.0163
NY							0.2381	0.0749
OH							0.3206	0.0069
OK							0.5978	<.0001
OR							0.0791	0.6326
PA							0.1750	0.1339
PR							-15.6548	0.9981
RI							-0.5490	0.3994
SC							-0.1913	0.2569
SD							0.5958	0.4824
TN							-0.1935	0.1535
TX							-0.7746	<.0001
UT							0.2021	0.1103
VA							-0.2291	0.1767
VI							-16.0952	0.9980
VT							0.4691	0.6964
WA							0.0844	0.4670
WI							0.7428	<.0001
WV							-15.7728	0.9893
WY							0.6673	0.2164
Intercept	-1.9955	<.0001	-4.7655	<.0001	-5.2770	<.0001	-5.2145	<.0001

Appendix A-4: Logistical Regression of Loan Selection into JV2003 versus Holdouts

	Model A		Model B		Model C		Model D	
1 if in JV2002	5,846		5,846		5,846		5,846	
0 if in Eligible Sample	2,558		2,558		2,558		2,558	
	Intercept	Full Model						
-2 Log L	10329.0	8323.7	10329.0	8230.5	10329.0	8204.7	10329.0	8094.6
Percent Concordant	79.1		79.7		79.9		80.5	
Explanatory Variables	Coef.	Pr > ?2						
Loan Age	0.0048	0.0005			-0.0098	<.0001	-0.0090	<.0001
Debenture Spread			0.4535	<.0001	0.6690	<.0001	0.6574	<.0001
Days in Foreclosure: 1 - 120	1.8973	<.0001	1.8392	<.0001	1.8852	<.0001	1.8322	<.0001
Days in Foreclosure: > 120	2.0370	<.0001	1.8921	<.0001	2.0184	<.0001	2.0160	<.0001
LTV: < 90%	0.0865	0.4317	0.0423	0.6978	0.1500	0.1766	0.1727	0.1233
LTV: 90 - 94%	0.0065	0.9287	-0.0231	0.7463	0.0588	0.4230	0.0731	0.3246
LTV: > 97%	-0.0205	0.7651	-0.0080	0.9082	-0.0004	0.9954	-0.0030	0.9661
LTV Unknown	-1.4589	<.0001	-1.4518	<.0001	-1.3800	<.0001	-1.3134	<.0001
UPB: \$50,000 - \$80,000	0.0431	0.7235	0.0743	0.5431	0.0436	0.7209	0.0752	0.5449
UPB: > \$80,000	-0.1170	0.3261	-0.0352	0.7666	-0.1082	0.3647	-0.0331	0.7896
Alpha Grades: A, B and C	-16.1235	0.9315	-16.1669	0.9308	-16.1773	0.9309	-16.1917	0.9302
Alpha Grade E	-0.0032	0.9634	0.0227	0.7449	-0.0167	0.8122	0.0087	0.9032
Alpha Grade F	-0.8489	<.0001	-0.8297	<.0001	-0.8982	<.0001	-0.9057	<.0001
Alpha Grade Unknown								
PTI	0.0003	0.7898	0.0005	0.6833	0.0005	0.6465	0.0005	0.6525
ARM	0.1450	0.1342	0.0505	0.6056	0.0859	0.3812	0.0350	0.7277
Purchase	0.0090	0.9486	-0.0765	0.5867	-0.0273	0.8472	-0.0151	0.9162
Borrower's Age	0.0023	0.4089	0.0008	0.7585	0.0010	0.7297	0.0022	0.4296
Separated Borrower	-0.1899	0.4415	-0.1761	0.4801	-0.1800	0.4727	-0.1910	0.4520
Unmarried Borrower	0.0417	0.4524	0.0630	0.2581	0.0371	0.5075	0.0316	0.5793
Marital Status Unknown	-0.1248	0.8543	-0.5613	0.3991	-0.1081	0.8717	-0.0529	0.9374
Black Borrower	-0.1913	0.0088	-0.1904	0.0096	-0.1819	0.0136	-0.1470	0.0612
Hispanic Borrower	-0.1971	0.0133	-0.1938	0.0155	-0.2007	0.0124	-0.0432	0.6141
Asian Borrower	0.2224	0.3570	0.2029	0.4036	0.1932	0.4276	0.2684	0.2749
Native American Borrower	-0.2450	0.4761	-0.2624	0.4488	-0.3068	0.3758	-0.1687	0.6343
Other or Undisclosed Race	-0.2063	0.0462	-0.2028	0.0509	-0.2277	0.0293	-0.1714	0.1080
First Time Homebuyer	-0.0444	0.5625	-0.0564	0.4650	-0.0605	0.4338	-0.0387	0.6211
Chase Manhattan	0.7884	<.0001	0.8324	<.0001	0.8421	<.0001	0.8380	<.0001
Countrywide								
Cendant	-0.4316	0.0035	-0.4421	0.0028	-0.4635	0.0018	-0.5000	0.0012
Other P-Servicer	-3.1587	0.0023	-3.2109	0.0019	-3.2642	0.0016	-3.5276	0.0008
Servicer Score by Jurisdiction	0.0226	0.2681	0.0167	0.4156	0.0259	0.2088	0.0091	0.7454
Servicer Score Unknown	-0.1581	0.6278	-0.2204	0.5000	-0.2337	0.4738	-0.3125	0.3531
MSA Default Rate	0.0996	<.0001	0.0800	<.0001	0.0701	<.0001	0.0873	<.0001
AK							2.4053	0.0109
AL							0.0491	0.8446
AR							0.2801	0.3004
AZ							0.2160	0.3905

Appendix A-4: Logistical Regression of Loan Selection into JV2003 versus Holdouts (Continued)

	Model A		Model B		Model C		Model D	
CA							-0.2382	0.2289
CO							0.3585	0.0571
CT							0.4454	0.3730
DC							-0.7353	0.3735
DE							0.4191	0.3661
GA							0.2590	0.1489
IA							0.5095	0.0544
ID							0.2737	0.4207
IL							0.2812	0.1259
IN							0.5154	0.0159
KS							0.2555	0.4281
KY							0.3089	0.2855
LA							0.0765	0.7379
MA							0.7584	0.1020
MD							0.1391	0.4981
ME							-0.0083	0.9910
MI							-0.2478	0.2960
MN							0.8925	0.0019
MO							0.8967	0.0012
MS							0.2501	0.4913
MT							0.5884	0.2957
NC							0.3854	0.0445
ND							0.6935	0.5538
NE							0.9969	0.0252
NH							-0.8475	0.3984
NJ							0.2987	0.1361
NM							-0.2975	0.2870
NV							-0.0644	0.8297
NY							0.4228	0.0504
OH							0.4490	0.0155
OK							0.3315	0.1390
OR							-0.0228	0.9266
PA							0.3708	0.0485
PR								
RI							0.1574	0.8746
SC							0.2891	0.2862
SD							-0.2595	0.7853
TN							0.5547	0.0131
TX							-0.1472	0.2943
UT							0.2608	0.1914
VA							0.3352	0.2031
VI								
VT							15.2927	0.9945
WA							0.0078	0.9653
WI							0.6428	0.0156
WV							-14.9144	0.9890
WY							1.2515	0.2863
Intercept	0.1689	0.4611	-1.6302	<.0001	-2.2963	<.0001	-2.6325	<.0001