Affordable Homeownership: The Incidence and Effect of Downpayment Assistance

By Allison Freeman and Jeffrey J. Harden

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Abstract

Using data from a panel study of low- and moderate-income homeowners, the authors
assess the determinants of the use of several types of downpayment assistance and the
effect of using assistance on mortgage performance. They find no difference in
mortgage performance between those who did and did not use assistance, though they
do find differences in reliance on types of assistance. Based on their findings, the
authors urge caution about imposing highly restrictive downpayment requirements that
would disproportionately restrict access to mortgage credit.

Introduction

In the wake of the financial crisis that began in 2008, mortgage policies and practices have shifted toward lending with caution. One hotly debated issue concerns the establishment of downpayment requirements that would give borrowers sufficient "skin in the game" to deter them from defaulting on their home loans. The issue of downpayment size is important because it relates directly to access to homeownership: as Engelhardt and Mayer (1995) put it, "the downpayment requirement associated with home purchase can be thought of as an important, well-defined borrowing constraint that most U.S. households face."

As downpayment requirements increase, the pool of those who might be eligible for mortgages shrinks, unless, of course, borrowers have access to additional funds to put down on their homes. However, it is unlikely that access to additional financial resources is equal across the population of would-be homeowners: research has shown that lower-income households benefit in particular from affordable lending programs, because these programs address what is especially difficult for lower-income owners, namely, accumulating the full amount that must be applied to home purchase (Quercia, McCarthy, & Wachter, 2003). As downpayment requirements increase, access to homeownership will be determined by who has access to the funds required for higher downpayments.

This paper focuses on the use of downpayment assistance by lower-income participants in the Community Advantage Panel Study (CAPS), a longitudinal study of low- and moderate-income (LMI) homeowners. It is written to examine the use of downpayment assistance by LMI homeowners, and it addresses two questions: first, what factors affect the use of downpayment assistance by this sample of lower-income homeowners; second, how does the use of downpayment assistance affect mortgage performance?

The paper is structured as follows. First, we present a review of the current literature on downpayment assistance and home purchase. Next, we introduce the Community Advantage Program (CAP) and provide an overview of the data underpinning the analysis. We then move on to the analysis itself, focusing first on which factors determine who uses different types of downpayment assistance, and then moving on to consider how the use of assistance

affects mortgage performance. We conclude by considering the implications of our analysis for the prospects of affordable homeownership.

Review of the Literature

While there is extensive research into the issue of downpayment and home purchase, less has been written on *downpayment assistance* and home purchase. We review what has been written on the interrelationship between the use of downpayment assistance and homeownership, narrowing in on three topics: first, we focus on the broader literature concerning the role of downpayment assistance in getting people into homes; second, we look at what the literature tells us about who relies most heavily on what types of downpayment assistance; finally, we provide an overview of what prior research has found about the relationship between the use of downpayment assistance and subsequent mortgage performance.

There is no doubt that access to liquid wealth – either savings or additional sources of money – affects access to homeownership. Herbert and Tsen (2007) examine the relationship between liquid financial wealth and the transition to homeownership, using SIPP data from 1997-2000. They find evidence that liquid financial assets are statistically significant predictors of home purchase. The authors were surprised to discover that savings of around $1,000 are the strongest factor in predicting a transition from renting to owning: savings of between $1,000 and $5,000 only increased the probability moderately, with a similarly small effect for savings between $5,000 and $20,000. In their research, Herbert and Tsen look specifically at the effect of downpayment assistance programs on home purchase and conclude that such programs can be effective in helping people get into homes.[i]

Not only does access to liquid wealth improve one's ability to get into a home, but reducing or eliminating the obstacle of the downpayment can allow first-time homebuyers to get into their houses more quickly. It can also lead to their being able to purchase higher value homes than otherwise would have been available. For example, Engelhardt and Mayer (1995) use household-level data from 1988-1993 from the Chicago Title and Trust Company to examine the effects of intergenerational wealth transfers on first-time home purchases. They find that while transfer recipients save at lower rates, they purchase sooner than non-

recipients, put down larger downpayments, and have higher home values (see also Guiso & Jappelli, 2002; Luea, 2008).

Less is known about the factors that affect access to different types of assistance, though some studies reveal racial differences in the use of assistance. For example, Charles and Hurst (2002) assess differences in the likelihood that black and white families become homeowners. The authors use Panel Survey of Income Dynamics (PSID) data from 1991-1996 in their analysis, and descriptive analyses of these data reveal stark differences in the reliance on outside assistance toward meeting the downpayment: while 90% of blacks relied solely on their own savings to make their downpayments, only 54% of whites did the same, and over 90% of the whites who received assistance toward meeting their downpayment cited family as the source of that assistance. When the researchers conducted multivariate analysis of these data, they found that the primary factors in the gap between the white and black transition to homeownership were differences in income, differences in family structure, and differences in the ability and willingness of parents to provide downpayment assistance. These researchers conclude that,

> The strong results we find that blacks have difficulty generating a downpayment, either from drawing upon their own or their parents' wealth, suggests that developing policies aimed at helping to relax these constraints may help close both the black-white homeownership gap and, to the extent that homeownership is important in generating or maintaining savings, the black-white wealth gap. (Charles & Hurst, 2002, p. 296)

Mayer and Engelhardt (1996) use survey data from 1988-1993 from the Chicago Title and Trust Company to examine the role of gifts in facilitating first-time home purchase. They find that income-constrained buyers and those living in areas with higher median house prices are more likely to rely on gifts to meet their downpayment requirements. They further find that married applicants are more likely to use gifts toward home purchase, as are credit-constrained households (which they define as those with delinquent credit). More highly educated households also rely more heavily on gifts, though the authors acknowledge that educational level may be a proxy for applicants' family wealth.

Even less had been written on the relationship between the use of downpayment assistance and mortgage performance, though much research has been done on the relationship between downpayment size and mortgage performance (Foster & Van Order, 1984; Kau, Keenan, & Kim, 1994; Deng, Quigley, Van Order, & Freddie Mac, 1996). The research on downpayment size and mortgage performance finds an inverse relationship between downpayment size and default. Deng et al. (1996) determine that "default rates for loans with LTV above 95% are three or four times higher than default rates for 90-95% LTV loans. The default rates for these latter loans are, in turn, about five times as high as for those with an LTV below 80%." (p. 270) Why is this the case? A minimal downpayment makes it more likely that one will end up in a situation of having negative equity in the home (that is, a situation in which one owes more than the house is worth), and greater levels of negative equity lead to a greater likelihood of default. However, this body of research, which ultimately assesses the relationship between negative equity and default, strongly suggests that the relationship between downpayment size and default is spurious: it can instead be explained by the correlation between downpayment size and negative equity.

Very little analysis has been done on the relationship between the actual use of downpayment assistance and mortgage performance. The most notorious evidence that there might be a relationship between the two comes from analysis of Federal Housing Administration (FHA) insured loans. Research has found that FHA-insured loans with downpayment assistance, and in particular those with downpayment assistance provided by seller-funded nonprofits, do not perform as well as loans without such assistance (GAO, 2005). The findings are startling: "assistance from a seller-funded nonprofit raised the probability that [a] loan had gone to claim by 76% relative to similar loans with no assistance" (p. 29). Part of the explanation for this has to do with the way that seller-funded downpayment assistance programs circumvented FHA's lending requirements: FHA did "not limit the amount of assistance from seller-funded nonprofits" (GAO, 2005, p. 20), so sellers could circumvent the standard 6% contribution limit by giving money to a buyer indirectly, through a nonprofit set up for that purpose.[ii] Recognizing the disastrous effect of seller-funded nonprofit assistance, FHA banned the use of funds from these types of programs in 2007.

In conclusion, there has been much research into the issue of downpayment and home purchase and into the issue of downpayment size and mortgage performance. Less work has been done on the relationship between the use of downpayment assistance and either home purchase or mortgage performance. Our research aims to fill this gap.

The Data

The data underlying our analysis come from the Community Advantage Panel Study (CAPS), a longitudinal survey of low- and moderate-income homeowners and renters in the United States. The study concerns the Community Advantage Program (CAP), a secondary mortgage market program that began in 1998 as a collaborative effort between Self-Help, Fannie Mae, and the Ford Foundation. Under CAP, Self-Help purchased community reinvestment loans from originating banks and sold them to Fannie Mae, using a $50 million grant from the Ford Foundation to retain the associated risk.

Between 1998 and 2009, over 46,000 loans made to LMI households[iii] were brought into the CAP portfolio. CAP borrowers received fixed-rate, 30 year loans, carefully underwritten for borrowers' ability to repay. Because of their financial profiles, these borrowers would have been unlikely to receive similar loans in the private mortgage market: 90% of CAP's homeowners had either a loan-to-value ratio greater than 90%, a debt-to-income ratio greater than 38%, or a credit score less than or equal to 640. Since 2003, a subset of CAP homeowners has been interviewed annually on a range of topics, including savings, assets, debt, mortgage refinance, neighborhood amenities, and health, among others. This group of owners is the focus of the current study.

CAPS was structured to allow for a deep understanding of the housing experiences of LMI Americans. Analysis of the CAPS dataset has determined that CAP participants are comparable to the Current Population Survey (CPS) respondents who would have met CAP's lending requirements, although CAP respondents are slightly more educated, are more likely to be employed, and are more concentrated in the Southern United States than their CPS counterparts (Riley, Ru, & Quercia, 2009). The findings in this paper are, therefore, generalizeable to LMI Americans who might be eligible for Community Reinvestment Act lending programs. Despite their low income levels, CAP loans have performed very well

through the housing crisis: through the third quarter of 2011 (the end period for the current analysis), the CAP portfolio had a serious delinquency rate of 9%, which was better than the default rate for all mortgage types except prime, fixed rate.[iv]

The Analysis

Our analysis focuses on two questions. First, what factors affect the use of downpayment assistance in our sample of lower-income homeowners? Second, how does the use of downpayment assistance affect mortgage performance? We address each question in turn, but first present a descriptive overview of the use of downpayment assistance by CAP's owners.

Of the 3,684 original CAP owners in the panel study, 38% (1,414 borrowers) relied on some form of assistance beyond their own savings and assets to get into their homes. Reliance on assistance varied by race/ethnicity: while 40% of white and 42% of black households used some form of assistance to help meet their downpayments and closing costs, only 28% of Hispanic borrowers did the same. From what sources did borrowers obtain financial help? Sellers and real estate agents[v] were the source of assistance most frequently cited by CAP's owners: 20% of all owners received a contribution from these sources. Some 13% of owners received help from family and friends, while 8% relied on a grant from a community group, government agency, or other organization. Two percent of owners used a second mortgage to help meet their downpayment and closing costs. While 84% of those using external assistance relied on only one source of help, 15% combined two types of help and the final 1% used three types of help.

A breakdown of just those owners who used extra assistance to get into their homes reveals some interesting findings. First, black and white owners were more likely than Hispanic owners to receive assistance toward their downpayment and closing costs from the seller or a real estate agent: 56% of blacks and 54% of whites who received assistance got it from this source, while only 44% of Hispanics receiving assistance did the same. Second, blacks were the least likely to get help from family or friends toward their downpayment and closing costs: while 37% of whites and 32% of Hispanics receiving assistance relied on help from family or friends, only 21% of black buyers who had extra help reported receiving the same. Third, blacks

were the most likely to report using a grant toward downpayment and closing costs: 32% of black owners who received help relied on grants, as opposed to 25% of Hispanics and 18% of whites. Blacks were also the most likely to obtain a second mortgage to meet their downpayment and closing costs: 11% of blacks who used extra assistance relied on a second mortgage, compared to 4% of Hispanics and only 3% of whites.

Access to Downpayment Assistance

We begin our multivariate analysis by considering the determinants of using downpayment assistance, focusing on the sources of that assistance. We estimate logistic regression models on the use of downpayment assistance using CAPS data from 2003, the first year of data collection and the year in which information on the use of downpayment assistance was gathered. The dependent variables, all measured in 2003, include whether a respondent: 1. received assistance in any form; 2. received family assistance; 3. took out a second mortgage; 4. received assistance from a community grant; and 5. received assistance from a seller or real estate agent.[vi] The independent variables, also measured in 2003, include respondent race, gender, age, education, marital status, number of minors living in the home, employment status, and income (scaled by MSA-level median income). We also include financial literacy variables: whether respondents' parents had a checking account, whether respondents' parents taught financial skills, and whether respondents prefer to save or spend. Finally, we control for loan-to-value ratio at origination, respondents' credit scores at origination, and debt-to-income ratio at origination.

Table 1 displays results from the five models. Cell entries report unstandardized multilevel logistic regression coefficients with state-level random intercepts to account for unobserved state-level heterogeneity. The dependent variable is listed at the top of each column.

The results show some evidence of racial differences in the use of certain types of downpayment assistance. While blacks are no more or less likely than whites to use downpayment assistance overall (Model 1), they are less likely to use assistance from their parents and are more likely to apply a community grant to their downpayment. Model 2 indicates that blacks are 14 percentage points less likely than whites to receive help from their

parents,[vii] while Model 4 reveals a 10 percentage point increase in the predicted probability of blacks receiving assistance from a community grant (compared to whites). Models 3 and 5, which assess the use of second mortgages and assistance from sellers or real estate agents, indicate no significant racial differences.

Patterns among the other variables are generally less consistent across Models 1-5, though there is some evidence that older respondents and those who learned financial skills from parents are less likely to receive assistance. Model 1 produces a positive and significant estimate on the indicator for women ($p < 0.05$), which corresponds to an eight percentage point increase in the predicted probability of receiving assistance compared to men. The positive coefficient on female respondents in Model 2 indicates that the predominant source of assistance for women is help from family.

Effect of Assistance on Mortgage Performance

The second step in our analysis is a model of mortgage delinquency among CAP participants. There is strong theoretical justification for two competing hypotheses: first, that use of assistance might be expected to weaken mortgage performance; second, that use of assistance might actually strengthen mortgage performance.

Regarding the first possibility, a key feature of the response to the housing crisis has been the claim that homeowners must have a large financial stake in their homes, or there will be little incentive for them to keep repaying their mortgages. People who receive downpayment assistance – who have little "skin in the game" – may be less committed to their homes than those who used their own savings to cover the entire downpayment. Thus, those who use downpayment assistance may be more likely to become delinquent or to default compared to those whose downpayments were met solely through savings.

However, the opposing explanation – that those who use assistance should perform *better* in repaying their home loans – is also possible. Under this scenario, the financial assistance not only allows the homeowner access to the home, but also alleviates the financial burden associated with being a first-time homebuyer. If a homeowner's savings are not completely depleted by the downpayment and closing costs, he or she has access to those funds after purchase, and can use them if needed to stay current on the mortgage.

Here we use CAPS data from 2003-2011[viii] to construct a 3-category dependent variable: whether the respondent had never been delinquent, had ever been 30-90 days delinquent (but never more than 90 days), or had ever been more than 90 days delinquent or in foreclosure.[ix] We use the same independent variables as in the assistance models: respondent race, gender, age, education, marital status, number of minors living in the home, employment status, and income (scaled by MSA-level median income), whether respondents' parents had a checking account, whether respondents' parents taught financial skills, whether respondents prefer to save or spend, loan-to-value ratio at origination, respondents' credit scores at origination, and debt-to-income ratio at origination. We also add the following: whether the respondent got married between 2003 and 2011, whether the respondent got divorced between 2003 and 2011, and whether the respondent went through a period of unemployment between 2003 and 2011. Before estimating this model, we matched respondents between those receiving and not receiving assistance via coarsened exact matching (CEM) by race, gender, age, income, number of minors in the home, marital status, and education (see Iacus, King, & Porro, 2012).[x]

The analysis reveals that that the financial assistance variable has no significant effect on mortgage performance. Table 2 reports results from the model of delinquency. Cell entries report unstandardized multinomial logistic regression coefficients with standard errors clustered by state to account for unobserved state-level heterogeneity.[xi] There is no evidence from this model that mortgage performance improves or declines for those who receive assistance compared to those who do not.[xii] Our analysis leads us to reject both of the hypotheses concerning a relationship between use of downpayment assistance and mortgage performance: in our analysis, the use of assistance had no effect whatsoever on mortgage performance.

Conclusions

This paper examined two things about the use of downpayment assistance by a group of lower-income homebuyers: first, what factors affect the use of different types of assistance; and second, what effect, if any, does the use of downpayment assistance have on mortgage performance.

The most important finding from our research is the lack of a statistical and substantive difference in the mortgage performance of those who do and those who do not use any form of downpayment assistance. This null finding is remarkable given the presence of strong theoretical justification for two rival expectations concerning this process. On one hand, those who receive assistance might be more likely to fall behind on their payments because they lack sufficient "skin in the game," i.e. because they do not have significant financial investment in their homes, they lack sufficient incentive to repay their loans. On the other hand, it is possible that homeowners who used downpayment assistance should be better able to maintain a mortgage because they preserved more of their own money for meeting housing and other expenses. We found no evidence from our analysis to support either hypothesis.

Interestingly, our findings are in opposition to analysis of the performance of FHA loans, which found that loans that incorporated downpayment assistance, and in particular assistance provided by seller-funded nonprofits, do not perform as well as loans without such assistance (GAO, 2005).[xiii] The difference in performance between FHA and CAP loans could be due to any number of factors, including: that seller-funded assistance resulted in over-inflated home prices for FHA-insured loans; and, importantly, that FHA did "not limit the amount of assistance from seller-funded nonprofits" (GAO, 2005, p. 20), so sellers could circumvent the 6% contribution limit by giving money to a buyer indirectly, through a nonprofit set up for that purpose.

Given the similarity of the CAP owners in the size of their downpayments – some 72% of CAP owners put down less than 5% on their homes, and the median loan-to-value ratio of was 97% – we were unable to test for the effects of downpayment *size* on mortgage performance. Descriptive analysis of the CAP data reveals that low-downpayment mortgages can perform very well, though: through the third quarter of 2011, the CAP portfolio, with a serious delinquency rate of 9%, outperformed all but prime, fixed rate mortgages: in that quarter, 15% of prime adjustable rate mortgages were in default, as were 20% of subprime fixed rate and 36% of subprime adjustable rate mortgages.[xiv] The current analysis shows that downpayment assistance does not negatively affect mortgage performance, even for a group of owners who put down just a fraction of their home's purchase price. We conclude that small

downpayments can work, even when the entire amount does not come from the homeowner herself.

The issue of differences in reliance on downpayment assistance remains, however. Our analysis revealed evidence of racial differences in the use of different sources of downpayment assistance for home purchase. Within the CAP dataset, blacks are *less* likely than whites to receive help from their parents and are *more* likely than whites to use a community grant as part of their downpayment. If the hurdle for entry into homeownership is increased, lower-income homeowners will undoubtedly rely more heavily on sources of additional assistance. While whites tend to depend on a source of assistance that is immune to changes in public policy, blacks depend more heavily on sources of assistance that can be affected by public policy and political will. As legislators consider increasing the financial requirements for getting into a home, they should also undertake efforts to ensure that their actions do not result in a disparate impact on would-be homeowners. Changes that increase downpayment requirements must be coupled with support for programs that assist qualified owners in securing affordable loans.

Analysis has shown that many creditworthy LMI households could be shut out of the mortgage market if downpayment requirements are increased (Quercia, Ding, & Reid, 2012). The CAP portfolio demonstrates that properly underwritten affordable loans, even with low downpayments and some sort of downpayment assistance, are viable. On the basis of our results, we would urge caution about imposing highly restrictive downpayment requirements that would disproportionately restrict access to mortgage credit for groups of otherwise creditworthy borrowers. If downpayment requirements are increased, our analysis suggests that legislators and policymakers should also increase their support for community programs to help *all* qualified borrowers make their downpayments.

REFERENCES

Charles, K.K. & Hurst, E. (2002) The Transition to Homeownership and the Black-White Wealth Gap. *The Review of Economics and Statistics,* 84(2),281-297.

Deng, Y., Quigley, J.M., Van Order, R. & Freddie Mac (1996) Mortgage Default and Low Downpayment Loans: The Costs of Public Subsidy. *Regional Science and Urban Economics,* 26(3), 263-285.

Engelhardt, G.V. (1996) Consumption, Downpayments, and Liquidity Constraints. *Journal of Money, Credit and Banking,* 28(2), 255-271.

Engelhardt, G.V. & Mayer, C.J. (1995) *Intergenerational Transfers, Borrowing Constraints, and Saving Behavior: Evidence from the Housing Market*. Federal Reserve Bank of Boston Working Paper Series. Boston, MA.

Foster, C. & Van Order, R. (1984) An Option-Based Model of Mortgage Default. *Housing Finance Review,* 3(4), 351-372.

Government Accountability Office (GAO) (2005) *Mortgage Financing: Additional Action Needed to Manage Risks of FHA-Insured Loans with Downpayment Assistance*. Report Number GAO-06-24. Washington, DC.

Guiso, L. & Jappelli, T. (2002) Private Transfers, Borrowing Constraints and the Timing of Homeownership. *Journal of Money, Credit and Banking,* 34(2), 315-339.

Hao, L. (1996) Family Structure, Private Transfers, and the Economic Well-Being of Families with Children. *Social Forces,* 75(1), 269-292.

Herbert, C.E. & Tsen, W. (2007) The Potential of Downpayment Assistance for Increasing Homeownership Among Minority and Low-Income Households. *Cityscape: A Journal of Policy Development and Research,* 9(2), 153-183.

Ho, D., Imai, K., King, G. & Stuart, E. (2007) Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference. *Political Analysis,* 15(3), 199-236.

Iacus, S.M., King, G. & Porro, G. (2012) Causal Inference without Balance Checking: Coarsened Exact Matching. *Political Analysis,* 20(1), 1-24.

Kau, J.B., Keenan, D.C. & Kim, T. (1994) Default Probabilities for Mortgages. *Journal of Urban Economics,* 35(3), 278-296.

Luea, H.M. (2008) The Impact of Financial Help and Gifts on Housing Demand and Cost Burdens. *Contemporary Economic Policy,* 26(3), 420-432.

Mayer, C.J. & Engelhardt, G.V. (1996) Gifts, Downpayments, and Housing Affordability. *Journal of Housing Research,* 7(1), 59-77.

Quercia, R.G., McCarthy, G.W. & Wachter, S.M. (2003) The Impacts of Affordable Lending Efforts on Homeownership Rates. *Journal of Housing Economics,* 12(1), 29-59.

Quercia, R.G., Ding, L. & Reid, C. (2012) Balancing Risk and Access: Underwriting Standards for Qualified Residential Mortgages.   Working paper of the Center for Community Capital and the Center for Responsible Lending. Available at: http://www.responsiblelending.org/mortgage-lending/research-analysis/Underwriting-Standards-for-Qualified-Residential-Mortgages.pdf.

Riley, S.F., Ru, H.Y. & Quercia, R.G.   (2009) The Community Advantage Program Database: Overview and Comparison with the Current Population Survey. *Cityscape,* 11(3), 247-256.

Table 1. The Determinants of CAP Participants' Use of Downpayment Assistance

	Model 1: Any assistance	Model 2: Family/ friends	Model 3: Second mortgage	Model 4: Community grant	Model 5: Seller/ agent
Black	0.15	-0.75**	0.64	0.76**	0.01
	(0.13)	(0.23)	(0.48)	(0.24)	(0.20)
Hispanic	-0.25	-0.08	-0.53	0.49	-0.54**
	(0.16)	(0.28)	(0.86)	(0.32)	(0.27)
Female	0.31**	0.28*	-0.57	-0.15	0.07
	(0.10)	(0.16)	(0.41)	(0.20)	(0.15)
Age	-0.03**	-0.02**	-0.01	0.01	0.00
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Education	0.18**	0.16	0.45*	-0.03	-0.07
	(0.07)	(0.12)	(0.27)	(0.14)	(0.11)
Relative income	-0.32	0.78*	-1.75	-2.25**	1.17**
	(0.26)	(0.43)	(1.19)	(0.59)	(0.42)
Two-income household	-0.08	0.33	0.34	-0.47*	0.14
	(0.14)	(0.23)	(0.62)	(0.27)	(0.21)
Parents taught financial skills	-0.10**	0.01	-0.25	-0.24**	0.05
	(0.04)	(0.07)	(0.18)	(0.09)	(0.07)
Origination loan to value ratio	0.01	-0.02	-0.04**	-0.07**	0.06**
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Credit score at origination	0.00*	0.00**	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Debt-to-income ratio	-0.06	1.68*	-0.42	-1.50	0.75
	(0.51)	(0.90)	(2.45)	(1.10)	(0.85)
Intercept	1.64	1.54	2.09	7.69**	-7.19**
	(0.88)	(1.57)	(3.56)	(1.86)	(1.72)
Wald χ^2	86.89**	42.92**	14.80	90.77**	38.63**
N	2134	1003	1003	1002	1001

Cell entries report multilevel logistic regression coefficients with state-level random intercepts. ** $p < 0.05$; * $p < 0.10$ (two-tailed tests). Variables that were not significant have been left out of Table 1.

Table 2. The Determinants of CAP Participant Mortgage Payment Delinquency

	30-90 Days	90+ Days or Foreclosure
Used downpayment assistance	-0.14	0.15
	(0.15)	(0.19)
Black	0.65**	1.05**
	(0.17)	(0.19)
Female	0.29*	0.63**
	(0.17)	(0.20)
Age	-0.01	-0.03*
	(0.01)	(0.01)
Became married (2003-2010)	-0.28	-0.72**
	(0.24)	(0.34)
Became divorced (2003-2010)	-0.01	0.94**
	(0.26)	(0.33)
Number of minors in home	0.21**	0.31**
	(0.09)	(0.13)
Employed head of household	-0.40	-1.12**
	(0.48)	(0.38)
Household income/AMI	-0.28	-2.37**
	(0.55)	(0.87)
Ever unemployed (2003-2010)	0.52**	0.22
	(0.23)	(0.16)
Parents taught financial skills	-0.12*	-0.07
	(0.06)	(0.07)
Origination LTV	-0.02**	0.04**
	(0.01)	(0.01)
Credit score at origination	-0.01**	-0.02**
	(0.00)	(0.00)
Debt-to-income ratio at origination	-2.03**	-2.25**
	(0.95)	(1.04)
Intercept	7.28**	11.31**
	(1.35)	(2.28)
Pseudo R2	0.16	
N	1416	

Cell entries report multinomial logistic regression coefficients with robust standard errors in parentheses, clustered by state. The baseline category is never delinquent. Data are matched between those receiving and not receiving assistance via CEM by race, gender, age, income, number of minors in the home, marital status, and education. ** $p < 0.05$; * $p < 0.10$ (two-tailed tests). With the exception of "used downpayment assistance," all insignificant variables have been left out of Table 2.

Notes

[i] However, Herbert and Tsen conclude that the challenge for downpayment assistance programs is to identify potential home buyers for whom assistance would make a difference between buying and not buying a home. Because of the difficulty of making this judgment, they ultimately conclude that a more effective means for getting people into homes would be through the development of incentivized savings programs; through these, households could accumulate the modest amounts that correlate with the transition to homeownership.

[ii] It also bears mentioning that the 6% limit that was being surpassed was already twice that allowed for most conventional mortgages.

[iii] Loans were eligible for purchase if the borrowers: 1. had income less than or equal to 80% of the area median income (AMI); 2. were minority with income not in excess of 115% AMI; or 3. purchased a home in a high-minority (>30%) or low-income (median income <80% of AMI) census tract and had income not in excess of 115% of AMI.

[iv] In that quarter, 15% of prime adjustable rate mortgages were in default, as were 20% of subprime fixed rate mortgages and 36% of subprime adjustable rate. Rates come from the Mortgage Bankers Association National Delinquency Survey, which is available through Moody's Economy.com Databuffet.com.

[v] The data concerning the use of downpayment assistance come from the 2003 CAPS survey. Respondents who reported that their downpayment came, in part or full, from sources other than their own savings and assets were asked a series of questions to elicit information about the sources of that assistance. The four questions designed to gather this information asked whether any part of the downpayment was: 1. paid by parents, other family members or friends, who were not co-borrowers; 2. covered by a second mortgage; 3. covered by a grant from a community group, government agency, or other organization; 4. covered by the seller or real estate agent. Because the questions were worded in this way, it is not possible for us to disaggregate the sources of assistance beyond these four categories; for example, we can't determine whether grants came from a community group as opposed to a government agency, because the two sources are combined in one question.

[vi] We used separate logistic regression models because the outcomes are not mutually exclusive—some respondents received more than one form of assistance.

[vii] For this and all computations of predicted probabilities, we hold the other variables in the model constant at their means or modes.

[viii] The 2011 data were the most current data at the time we began our analysis; however, we have no reason to believe that extending our analysis beyond this year would change the results.

[ix] We also assessed the role of receiving financial assistance in a dynamic framework through a competing risks model. Using monthly mortgage performance data for the period 2003-2010, we modeled whether CAP participants prepaid or defaulted on their loans as a function of financial assistance as well as several control variables. Results indicate that respondents who received financial assistance were more likely to default and less likely to prepay, although neither of these effects was significant at the 0.05 level ($z = 1.23$ and $z = 1.69$, respectively).

[x] The goal with matching is to produce better balance on those key variables between respondents who received and did not receive assistance by removing observations such that marginal distributions of those variables look similar between the two groups. By improving balance in this way, this method produces a sample closer to the ideal sample that we could obtain if we could randomly assign some people to receive and some not to receive assistance (for more on matching, see Ho et al. 2007). CEM produces a multivariate imbalance statistic, with smaller values indicating more balance. In our data the procedure led to a drop in this value from 0.82 to 0.74, removing 1,288 observations from the sample and leaving 957 (1,113) respondents who did (did not) receive help.

[xi] Including state-level fixed effects does not change substantive conclusions.

[xii] We also tried several alternative specifications. First, we re-estimated the model using the variables for each unique source of financial assistance (i.e., the dependent variables in Models 2-5 of Table 1) instead of the variable for any assistance. Next we tried replacing the dichotomous indicator for whether a respondent received assistance with the proportion of the downpayment that was covered by the assistance. Results were substantively unchanged by both of these strategies and so we report only the model with the indicator for any assistance.

[xiii] Again, we re-estimated the model using the variables for each unique source of financial assistance (i.e., the dependent variables in Models 2-5 of Table 1) instead of the variable for any assistance. The results were substantively unchanged.

[xiv] Rates come from the Mortgage Bankers Association National Delinquency Survey, which is available through Moody's Economy.com Databuffet.com.