JOINT CENTER FOR HOUSING STUDIES
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A Little Knowledge Is a Good Thing: Empirical Evidence of the Effectiveness of Pre-Purchase Homeownership Counseling

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We are deeply indebted to Jim Carey for his invaluable consultation and for providing us with the opportunity to do this research, and to Oliver Zeng for his outstanding work in developing the loan-matching routine.

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This paper, along with others prepared for the Symposium, will be published as a forthcoming book by the Brookings Institution and its Center for Urban and Metropolitan Policy.

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I. Introduction and Overview

For the past three decades homeownership counseling has been an integral part of affordable lending in the United States. Myriad benefits have been attributed to these programs. Its advocates believe, for example, that counseling better prepares borrowers to recognize and accept the responsibilities of owning a home. By getting households into homes they can afford, and afford to keep, homeownership counseling is attributed with stabilizing families and neighborhoods and reducing default risk to lenders.

This study uses data on almost 40 thousand mortgages originated under Freddie Mac's Affordable Gold program to empirically assess the claim that pre-purchase homeownership counseling programs lower mortgage delinquency rates. We find statistical evidence that appropriate counseling does, in fact, effectively mitigate risk.

Homeownership counseling programs in the United States take an almost bewildering variety of forms. Lenders, non-profit organizations, government agencies, and others separately administer programs. The program themselves are delivered through many different avenues including classroom, home study, individual counseling, and the telephone. The content of programs also varies significantly across each of these administrative and delivery mechanisms, as does the timing of the counseling—pre- and post-purchase.[1]

Despite the prominence and diversity of homeownership counseling programs in affordable mortgage lending, there are few statistical studies of counseling's effectiveness at reducing borrowers' risk of becoming delinquent on their loans.[2] Counseling can, of course, be justified on grounds other than simple risk alleviation. It can, for example, provide consumer outreach in nontraditional markets, build trust in the mortgage-lending process, and provide lenders with mortgage-ready applicants. Nonetheless, the deficit of clear statistical evidence demonstrating homeownership counseling's effectiveness at reducing borrower delinquency rates is as troubling to counseling's advocates as it is to its critics.

The evidence provided by this study is a first step in addressing these concerns. Our analysis shows that borrowers who receive pre-purchase homeownership counseling under Freddie Mac's Affordable Gold program are, on average, 13 percent less likely ever to

[1] For an excellent historical overview and review of homeownership counseling programs, see George McCarthy and Roberto Quercia (May 2000).
[2] The empirical studies that have been conducted are 20 or more years old and generally are viewed as unconvincing. A review and critique of exiting statistical studies is provided in Roberto Quercia and Susan Wachter (1996).

become 60-day delinquent than borrowers with equivalent characteristics who do not undergo counseling. Counseling's effectiveness, moreover, substantially varies across methods of delivery. Borrowers who receive classroom and individual counseling are, respectively, 23 percent and 41 percent less likely ever to become 60-day delinquent than equivalent borrowers who do not undergo counseling. We find no statistical evidence that either home study or telephone counseling programs significantly mitigate risk.

Nor do we find evidence that counseling's effectiveness critically depends on the organization through which it is administered. Our data do show that pre-purchase counseling administered through government agencies is ineffective at mitigating delinquency rates, but this likely is explained by (unaccounted for) differences in the clientele served by these agencies. We also find evidence that non-profit organizations delivering counseling in a classroom setting are particularly effective. Overall, however, our data suggest that counseling's effectiveness is influenced far more by *how* it is delivered than by the organization that delivers it.

Our results, admittedly, are neither entirely definitive nor conclusive. We are limited, for example, by the data available to us. As a consequence we can say nothing about the efficacy of post-purchase counseling or the impact of differences in the content of counseling programs. Nor does our reliance on historical data allow us to assess the likely beneficial consequences of the recent maturation occurring within the counseling industry. Finally, the methodological approach we take is relatively simplistic, ignoring any impact that counseling may have on the timing of delinquency or the severity of any ultimately occurring loss.

Not withstanding these unresolved issues, any evidence of homeownership counseling's risk mitigation effectiveness is welcome news. Affordable lending programs historically have pushed the limits of underwriting in an effort to offer the benefits of homeownership to the greatest number of families. Pre-purchase counseling by no means eliminates the greater credit risk of these programs—even with counseling, affordable lending loans likely will be among the riskiest of mortgages originated by most prime lenders. The empirical evidence presented in this paper does demonstrate, however, that pre-purchase homeownership counseling can increase the success of affordable lending programs by helping families keep their homes, a substantial benefit to both borrowers and lenders.

II. Freddie Mac's Affordable Gold Loans

The primary source of data for this study is loans purchased by Freddie Mac under its Affordable Gold program. The Affordable Gold program is specifically designed to help open the doors of homeownership for borrowers who earn 100 percent or less of area median income. Starting in 1993, Freddie Mac has required that for each Affordable Gold loan it purchases at least one qualifying borrower must receive pre-purchase homeownership counseling. Lenders are free to determine the type of counseling borrowers receive, but when loans are submitted for Freddie Mac's purchase, lenders must record the organization that administered the counseling (lender, non-profit, government agency ,or "other") and how the counseling was delivered (classroom, home study, one-on-one counseling or "other").[3]

Thankfully for the purposes of our study, a natural quasi-control group is formed by the fact that roughly three percent of Affordable Gold loans have been exempted from Freddie Mac's homeownership counseling requirements. Mortgages qualify for this exemption on the basis of their perceived lower risk, specifically if (1) at least one co-borrower has previously owned a home, (2) the loan-to-value ratio of the mortgage is 95 percent or less, or (3) borrowers have cash reserves after closing equal to at least two monthly mortgage payments. For mortgages exempted from counseling, lenders record "education not required" into the administration and delivery fields described above.

Regardless of whether Affordable Gold borrowers do or do not receive counseling, Freddie Mac servicing records are appended to each loan. Servicing records are available through Q2, 2000, so only loans originated from Q1, 1993, through Q4, 1998, are included in the analysis in order to ensure that there is a minimum of 18 months of performance history for every loan. Borrowers are classified as experiencing repayment difficulties if, over the observation period, they are ever 60-days or more late on their scheduled loan payments.[4]

[3] Our investigations suggest that "other" in the administration field is largely mortgage insurers, while "other" in the delivery field is largely telephone counseling for mortgage insurers and a hybrid of classroom and individual counseling for lenders.

[4] Analyses conducted using ever 90-day delinquency provide similar qualitative results to those presented here. Because of the lower frequency of ever 90-day delinquency, however, confidence intervals of the estimates are larger and the statistical conclusions are therefore less definitive.

III. Methodology

The question posed by this study is whether homeownership counseling has a demonstrable effect in reducing borrower delinquency rates, and whether the size of the effect varies across any of the identified administrative and delivery mechanisms. The underlying conceptual experiment, therefore, is a comparison of outcomes between a "test" group that receives a treatment and a "control" group that does not. In this instance the outcome being compared is ever 60-day delinquency rates and the treatment is homeownership counseling. The data used for this study, however, do not come from a true experiment so there is no explicitly defined control group. We address this problem in two ways.

Comparison of Means

Our first approach is simply to use the Affordable Gold borrowers who are exempted from the homeownership-counseling requirement as the control group, and compare their mean delinquency rate to the mean delinquency rates of Affordable Gold borrowers receiving counseling through the identified administrative and delivery channels. This has a natural appeal because all borrowers in the analysis are placed into the Affordable Gold program. That is, at least from the point of view of lenders originating the loans, these borrowers have a similarity of characteristics that distinguish them from non-Affordable Gold borrowers.[5]

Using this approach, ever 60-day delinquency rates of Affordable Gold borrowers receiving homeownership counseling (the treatment group) are expressed as a percentage of the delinquency rates of Affordable Gold borrowers exempted from homeownership counseling (the control group). Homeownership counseling's mitigating effect on risk is expressed in percentage terms and measured by any observed reduction in delinquency rates. So, for example, if the delinquency rate for a group of Affordable Gold borrowers receiving counseling is 80 percent of the rate for those that did not (the control group), counseling for these borrowers is said to reduce delinquency rates by 20 percent.

While using this approach to assess the impact of homeownership counseling is simple and appealing, it suffers from a fundamental flaw. Although borrowers are not randomly assigned between the treatment and control groups, a simple comparison of means implicitly assumes that differences in delinquency rates between the two groups are entirely determined by whether or not borrowers receive counseling. In point of fact, however, risk characteristics of the two groups may vary significantly. This concern is particularly relevant because borrowers are exempted from homeownership counseling (i.e., assigned to the control group) precisely because they are perceived to be lower risk than borrowers in the treatment group. All things equal, therefore, we expect the control group to have lower ever 60-day delinquency rates than the treatment group. As a result, using a simple comparison of means to test the impact of homeownership counseling should underestimate any beneficial impact that homeownership counseling has on delinquency rates.

Matched-Pair Controls

Our second approach addresses the bias inherent in a simple comparison of means. We do this by using a two-step process to account for both observed and unobserved differences in borrower risk. Our strategy is first to match each Affordable Gold loan to a loan with similar observable risk characteristics from Freddie Mac's non-Affordable Gold purchases. Because few, if any, non-Affordable Gold borrowers receive homeownership counseling, differences in the delinquency performance between the Affordable Gold and the matched non-Affordable Gold loans are attributable to the mitigating effects of homeownership counseling plus any unobserved differences in risk characteristics common to Affordable Gold borrowers. Programs such as Affordable Gold historically have had higher delinquency rates than traditional prime lending. Not accounting for the possibility of such a residual effect in our matched-pairs comparison could therefore give a downward bias to our estimate of the mitigating effects of homeownership counseling.

We account for this possible downward bias by once again treating the Affordable Gold borrowers who do not receive counseling as a control group. Neither this subgroup of Affordable Gold borrowers nor their non-Affordable Gold matches receive counseling, so the difference in delinquency rates between these matched-pairs is attributable entirely to unobserved differences in risk characteristics common to Affordable Gold borrowers. By

5[5] Lenders generally perceive that they bear less repurchase risk on Affordable Gold mortgages (i.e., lenders believe that Freddie Mac is less likely to force them to repurchase Affordable Gold loans for violation of contract provisions). As a result, lenders have a significant incentive to funnel all qualifying higher risk borrowers through the Affordable Gold program.

comparing the relative performance of Affordable Gold borrowers who receive counseling to those who do not (i.e., by subtracting the percentage difference in ever 60-day delinquency rates of Affordable Gold borrowers receiving counseling compared to similar non-Affordable Gold borrowers from the percentage difference in ever 60-day delinquency rates of Affordable Gold borrowers not receiving counseling compared to similar non-Affordable Gold borrowers), we are able to isolate the impact of homeownership counseling on delinquency rates.[6] Thus, for example, homeownership counseling is predicted to reduce delinquency rates by 20 percent if Affordable Gold borrowers receiving counseling have 10 percent higher delinquency rates than similar borrowers from Freddie Mac's non-Affordable Gold purchases, but the delinquency rates of Affordable Gold borrowers who do not receive counseling are 30 percent higher than similar borrowers from Freddie Mac's non-Affordable Gold purchases.[7]

We include three sets of controls (a total of 13 variables) to account for observable differences in the risk characteristics of borrowers. First, we include variables often incorporated into standard underwriting models—loan-to-value ratio, FICO score, total-debt-to-income ratio, loan product, loan purpose, number of units, and loan amount. Second, we include variables to roughly account for the different economic environments experienced by borrowers—the census division the property is located in and the year and quarter the loan was originated. Third, we include other variables sometimes found to affect loan performance—borrower income as a percent of area median, borrower race/ethnicity, tract income as a percent of area median, and tract percent minority population.[8]

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[6] The Affordable Gold borrowers not receiving counseling are exempted because they are perceived to be lower risk. To the extent that this lower risk is not fully captured in our matching variables, we will tend to underestimate the beneficial impacts of counseling.

[7] We also conduct a third approach—the use of statistical controls—that is not reported here. Specifically, we use a logistic model to estimate the probability that Affordable Gold borrowers will become 60-day delinquent during our observation period as a function of the counseling they receive and the variables used in our matching.
Differences in the estimated coefficients associated with the counseling administrative and delivery mechanism variables are used to predict ever 60-day delinquency rates of borrowers with and without homeownership counseling, conditional on attributes of the other variables included in the estimation. Homeownership counseling is predicted to have a mitigating effect on risk if the predicted ever 60-day delinquency rate of Affordable Gold borrowers who receive counseling is less than the predicted delinquency rate of Affordable Gold borrowers who do not receive counseling. This analysis gives the same qualitative estimates as our matched-pair comparison.

[8] Seven of the matching variables are treated as categorical (number of units, loan product, loan purpose, census division, borrower race/ethnicity, borrower income as a percent of area median and tract income as a percent of area median) and six are treated as continuous (FICO score, loan-to-value ratio, loan amount, total-debt-to-income ratio, origination date, and tract percent minority population). Categorical variables are matched perfectly across each matched-pair (i.e., Affordable Gold loans are matched to non-Affordable Gold loans that have identical values of the categorical variables). Continuous variables with missing values for the Affordable Gold borrowers are matched with loans that also have missing values for the same variables. Non-missing values of continuous variables are compared across all possible loan pairs that match

IV. Empirical Results

Figure 1 below provides the distribution of the loans used in the study across the various homeownership counseling programs. A total of 39,233 Affordable Gold loans were originated between the first quarter of 1993 and the fourth quarter of 1998.[9] Of this number, 1,221 loans (roughly three percent of the total) were exempt from counseling.

The 38,012 remaining loans receiving counseling are far from uniformly distributed across the counseling administrative and delivery mechanisms. The distribution across counseling format, for example, is quite skewed—43 percent of the counseling is delivered through home study, 38 percent is delivered through "other" means (primarily a hybrid of classroom and individual counseling by lenders and mortgage insurers providing telephone counseling), and just 10 and nine percent are delivered through individual and classroom, respectively. All told, lenders administer 50 percent of the counseling, "others" (primarily mortgage insurers) administer 44 percent of the counseling and government agencies and non-profit organizations administer counseling to only two percent and three percent of the borrowers, respectively.

The uneven distribution of Affordable Gold loans across these categories is less than ideal from an experimental design perspective. In particular, ever 60-day delinquency rates will be measured with most precision for the administrative and delivery mechanisms that have the greatest number of observations, and with least precision for those that have the fewest observations. We are consequently more likely to find that counseling generates statistically significant risk mitigating benefits when it is provided by those alternatives that occur with the greatest frequency in our data, such as through lender-administered home study and mortgage insurer-administered telephone counseling. This concern not

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perfectly on the categorical variables (and any continuous variables with missing values) and the pair with the closest fit is chosen as a match with replacement (i.e., a loan from the non-Affordable Gold data can be matched with multiple Affordable Gold loans).

Closeness of fit is measured with a risk-doubling metric. For each possible matched-pair, a risk-doubling score is computed separately for each of the non-missing continuous variables. The scores for each variable are added together and the matched-pair with the lowest sum is considered the best fit. The risk-doubling score for each variable is calculated as 2^x, where x is the number of times risk is assumed to double between the two loans in the possible matched-pair. Risk is assumed to double for each 30-point difference in FICO score, for each 20-percentage point difference in total-debt-to-income ratio, for each 30-percentage point difference in tract percent minority population, and for each 45-day difference in origination date. Risk is assumed to double as loan-to-value ratios go from 10 percent to 80 percent, from 80 percent to 90 percent, from 90 percent to 95 percent and from 95 percent to 97 percent. Finally risk is assumed to double as loan amount goes from $100,000 to $250,000, from $100,000 to $50,000, from $50,000 to $40,000, from $40,000 to $30,000, from $30,000 to $20,000, and from $20,000 to $10,000.

withstanding, Figure 1 illustrates that there are sufficient data to assess the efficacy of counseling across alternative delivery mechanisms.

Distribution of Data Across Counseling Alternatives
(Figure 1: Counts and Means)

Affordable Gold Loans						**Matched Loans**	**Difference in % Ever 60-Day Delinquency[10]**
Counseling Format	**Counseling Administered by**	**Count**	**FICO Score**	**LTV at Origination**	**% Ever 60-Day Delinquent**	**% Ever 60-Day Delinquent**	
Classroom	Government agency	427	699	0.87	10.5	7.5	40.6
	Lender	2,317	695	0.91	9.0	7.9	14.3
	Non-profit organization	609	691	0.88	6.9	10.1	-31.2
	Other[2]	203	684	0.95	9.9	7.4	33.3
Home study	Government agency	332	699	0.93	7.2	5.7	26.36
	lLender	12,148	695	0.92	10.4	8.7	18.8
	Non-profit oOrganization	315	697	0.96	6.4	5.4	17.6
	Other[2]	3,470	689	0.93	11.2	8.4	33.2
Individual	Government agency	98	696	0.89	9.2	6.1	50.0
	lender	3,203	698	0.91	7.4	8.2	-9.6
	Non-profit organization	186	680	0.95	5.4	6.5	-16.7
	Other[2]	304	701	0.93	5.9	7.2	-18.2
Other[3]	Lender	1,489	703	0.88	6.7	7.8	-14.6
	Other[11]	12,911	686	0.92	12.2	9.6	27.1
All loans with counseling		38,012	692	0.91	10.4	8.8	18.2
Loans without counseling		1,221	702	0.87	8.5	6.5	31.7
All loans used in analysis		39,233	692	0.91	10.3	8.7	18.4
All Freddie Mac loans			721	0.72	3.2		

[9] A total of 85 loans that were provided "other" counseling by government agencies and non-profit organizations are excluded from the analysis because their small number raises concern about the representativeness of the sample.
[10] The delinquency rate of Affordable Gold loans divided by the delinquency rate of matched loans, minus one.
[11] Mostly mortgage insurers
[3] Mostly a hybrid of classroom and individual counseling for lenders, and telephone counseling for mortgage insurers

Comparison of Means

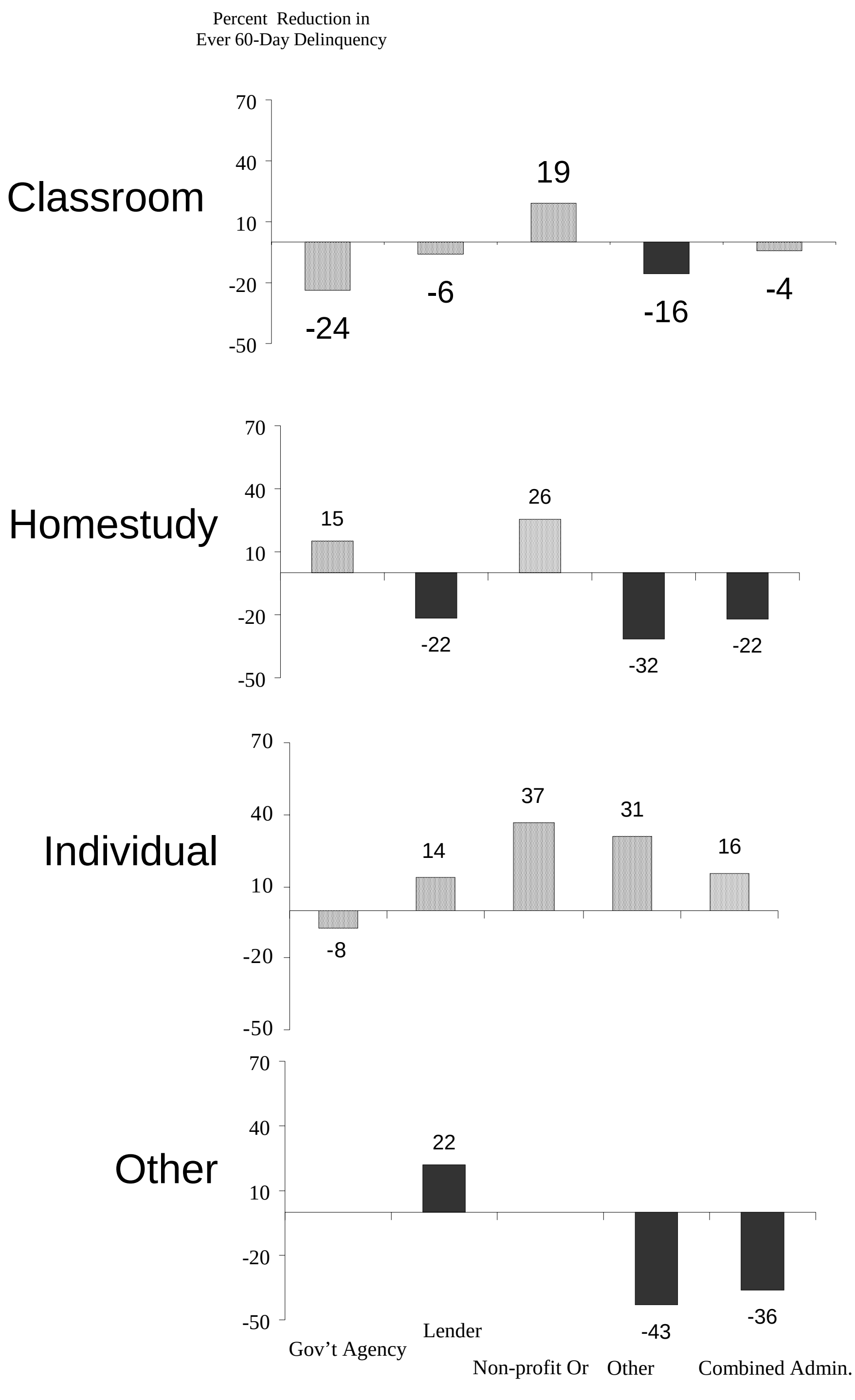
Delinquency rates of Affordable Gold loans are also shown in Figure 1 in the column under "Affordable Gold Loans" labeled "Percent ever 60-day delinquent." Looking first at the bottom of that column, Affordable Gold loans taken as a group clearly are higher risk than the average loan in Freddie Mac's portfolio—ever 60-day delinquency rates of Affordable Gold loans are 10.4 percent, relative to a portfolio average of 3.2 percent.[12] Nor do Affordable Gold borrowers receiving pre-purchase homeownership counseling out perform those that do not—10.4 percent of Affordable Gold borrowers receiving counseling end up going into 60-day delinquency while only 8.5 percent of the Affordable Gold borrowers who do not receive counseling perform as poorly. There are, however, substantial variations in ever 60-day delinquency rates among alternative counseling delivery mechanisms, with values ranging from a low of 5.4 percent (individual counseling administered by non-profit organizations) to a high of 12.2 percent (telephone counseling administered by mortgage insurers).

Figure 2 illustrates ever 60-day delinquency rates for alternative counseling delivery mechanisms, expressed relative to the delinquency rates of Affordable Gold loans not receiving counseling.[13] The values in Figure 2 provide a simple test of the hypothesis that pre-purchase counseling lowers ever 60-day delinquency rates. Positive values support the case that counseling mitigates risk, and occur when delinquency rates are lower for borrowers who receive counseling than for borrowers who do not. Negative values provide evidence rejecting the benefits of counseling, and occur when borrowers receiving counseling have higher delinquency rates. The dark-shaded bars in Figure 2 demarcate statistically significant values (i.e., values with 10 percent or lower probability of occurring by chance).

[12] The values for the Freddie Mac portfolio are computed for all loans purchased by Freddie Mac that are originated in 1993 through 1998, including those coming through the Affordable Gold program.
[13] The values in Figure 3 are calculated as 100 times one minus the ratio of the delinquency rate of borrowers receiving counseling divided by the delinquency rate of borrowers not receiving counseling.

Effectiveness of Counseling in Reducing Delinquency Rates

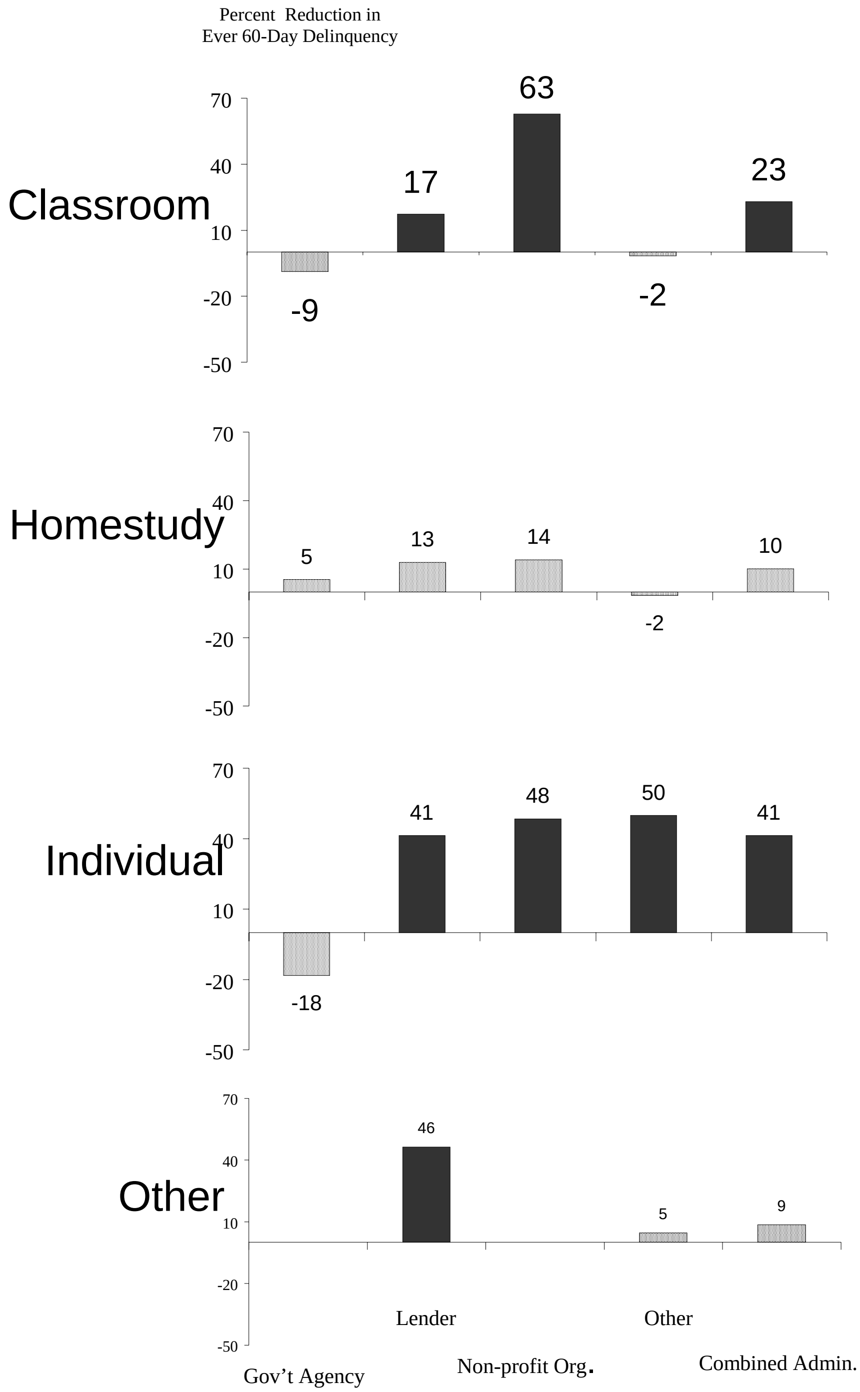
(Figure 2 - Simple Comparison of Means)



Note: Dark-shaded bars indicate differences from the control group of no homeownership counseling that are statistically significant at the 10 percent level

Effectiveness of Counseling in Reducing Delinquency Rates

(Figure 3 - Comparisons with Matched-Pair Controls)



Note: Dark-shaded bars indicate differences from the control group of no homeownership counseling that are statistically significant at the 10 percent level

Overall, the results presented in Figure 2 are not encouraging of the risk mitigating effects of homeownership counseling—most values are negative. Home study is statistically found to increase rather than decrease delinquency rates by, on average, 22 percent. “Other” delivery of counseling by “others” (primarily telephone counseling by mortgage insurers) also has a statistically significant negative impact. The few exceptions to this gloomy prognosis include a significantly positive impact from “other” programs administered by lenders (primarily a hybrid of classroom and individual counseling) and the generally positive impacts from individual counseling, which, however, are not statistically significant either separately or as a group.

As noted earlier, however, this simple comparison of means will be biased downward (i.e., tend to show no beneficial effect from counseling) because it does not account for the fact that borrowers are not randomly assigned between the control and treatment groups. Figure 3 illustrates that there are important differences in the risk characteristics of the loans. On average, for example, Affordable Gold borrowers have lower FICO scores and higher loan-to-value ratios than the overall Freddie Mac portfolio, all factors that increase risk and explain the higher delinquency rates seen among Affordable Gold borrowers. There is a similar relationship among Affordable Gold borrowers—those receiving counseling tend to have higher risk characteristics than those that do not. Finally, Figure 3 also shows that there are significant differences in the risk characteristics of borrowers across the various counseling programs.

Matched-Pair Controls

We now turn to the matched-pair controls that account for both observable and unobservable differences in risk characteristics. The Figure 1 column labeled “Percent ever 60-day delinquent.” under “Matched Loans” provides ever 60-day delinquency rates for the matched non-Affordable Gold loans from Freddie Mac purchases. The right-most column in Figure 3 expresses the difference in delinquency rates between Affordable Gold and non-Affordable Gold loans as a percentage of the delinquency rates of non-Affordable Gold loans.[14]

Controlling only for observed differences in risk makes quite a difference in the estimated impact of homeownership counseling and provides a somewhat more optimistic assessment. Borrowers receiving classroom counseling from non-profit organizations, for example, have ever 60-day delinquency rates that are 31.2 percent lower than non-Affordable Gold borrowers with similar observable characteristics. Borrowers receiving individual counseling from lenders, non-profits organizations and "others" (primarily mortgage insurers) also experience lower delinquency rates, as do borrowers receiving "other" counseling (primarily a hybrid of classroom and individual counseling) from lenders.

As expected, however, there are also substantial unobserved differences in borrowers' risk characteristics—in total, Affordable Gold loans have ever 60-day delinquency rates that are 18.4 percent higher than observationally similar non-Affordable Gold borrowers. Controlling for these unobserved differences in risk characteristics common to Affordable Gold borrowers, therefore, is critical to getting an unbiased estimate of the impact of homeownership counseling.

Our matched-pair control analysis takes into account both observable and unobservable differences in risk characteristics. Affordable Gold borrowers receiving counseling have delinquency rates, on average, that are 18.2 percent higher than similar non-Affordable Gold borrowers, while Affordable Gold borrowers not receiving counseling have delinquency rates that are 31.7 percent higher than similar non-Affordable Gold borrowers. Taking the difference between these two values implies that, on average, counseling reduces delinquency rates by a statistically significant 13.4 percent.[15]

Figure 3 mirrors Figure 2 and illustrates other comparisons of the effectiveness of homeownership counseling programs. Accounting for the downward bias inherent in the simple comparison of means used in Figure 3 leads to a dramatically different picture of pre-purchase homeownership counseling's ability to mitigate risk—counseling in almost any form is predicted to reduce ever 60-day delinquency rates, although the impact is not always statistically significant.

With matched-pair controls we find, for example, that classroom and individual homeownership counseling reduce delinquency rates on average by a statistically significant 23 and 41 percent, respectively. "Other" programs administered through lenders (primarily a hybrid of classroom and individual counseling) also have a statistically significant effect,

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[14] The values in the right-most column of Figure 3 are calculated as 100 times the ratio of the delinquency rate of Affordable Gold borrowers divided by the delinquency rate of non-Affordable Gold borrowers, minus one.
[15] The differences do not perfectly sum due to rounding.

reducing delinquency rates by 46 percent. On the other hand, we find no statistically significant effect from home study counseling, regardless of the group administering it. Nor is "other" counseling provided by "others" (primarily telephone counseling by mortgage insurers) statistically significant. These null results are somewhat surprising given the large number of borrowers who receive counseling in these ways, and therefore the relative precision with which their impacts are estimated.

Figure 3 also shows that the effectiveness of alternative counseling mechanisms varies little across administrative organizations. Government agencies are an exception to this rule—in no instance does the counseling they provide show any evidence of mitigating borrower delinquency rates. This negative finding likely is at least partially due to the fact that government agencies tend to serve as "counselors of last resort" and therefore deal with the highest risk class of Affordable Gold borrowers. In contrast, non-profit organizations appear particularly effective in delivering classroom counseling, reducing the ever 60-day delinquency rates of borrowers by 63 percent in this setting. Not withstanding these differences, counseling's effectiveness is seen to depend far more importantly on how it is delivered than on the organization that provides it.

V. Implications and Caveats

The results presented in this study provide the first empirical evidence of the past 20 years that pre-purchase homeownership counseling can significantly reduce the delinquency rates of borrowers. Our results also demonstrate, however, that not all counseling programs are equally effective. In particular, we find that counseling conducted in a classroom or individual setting is quite effective at reducing borrower delinquency rates, while neither home study nor telephone counseling is found to have a significant impact.

These empirical results are not unexpected, the counseling industry has "known" for years that classroom and individual counseling are by far the more effective tools. Validating this belief, however, is not without benefit. If nothing else, it confirms the crucial role that counseling can play in expanding affordable homeownership opportunities for America's families. It also raises implications for whether and how counseling should be provided. Over 75 percent of the borrowers in Freddie Mac's Affordable Gold program, for example, receive either home study or telephone counseling, delivery mechanisms with no demonstrable effectiveness in reducing delinquency rates. That this is the case is not surprising; classroom and individual counseling are much more expensive to provide and are available in only limited quantity in many locations. It does, however, question the necessity of requiring all borrowers in affordable lending programs to receive counseling. A more effective strategy, at least from the point of view of risk mitigation, might be to require counseling for only the highest risk borrowers in affordable lending programs, and to require that it be provided in a classroom or individual format.

Finally, although we are confident in our conclusions, it is important to close with a few caveats. First, the data used in this study do not come from a true experiment. In our analysis we attempt to control for both observed and unobserved differences in the risk characteristics of borrowers. We are unlikely to be entirely successful, however, and borrower self-selection may account for some of the benefits attributed to homeownership counseling (e.g., "motivated" borrowers disproportionately may choose classroom and individual counseling). Self-selection may cause our analysis to overestimate the benefits attributable to homeownership counseling.[16] On the other hand, there are reasons we may underestimate the benefits of counseling. In particular, our use as a control of Affordable Gold borrowers who are exempted from counseling assumes that observable characteristics fully account for the below average risk of these borrowers. If this is not the case then too little risk-mitigating benefit is attributed to homeownership counseling.

Second, the data for this study come from 1993 through 1998 originations. Our conclusions, consequently, pertain only to counseling conducted during that period. The counseling industry recently has undergone significant maturation, however, leading to more consistency in counseling efforts and course content. It is likely that these changes have improved counseling's effectiveness, and therefore our analysis likely underestimates the benefits of current counseling programs. Third, our data provide no information on post-purchase counseling or course content, so we can say nothing about their risk-mitigating effectiveness. Fourth, and finally, our focus on ever 60-day delinquency ignores any of counseling's possible beneficial impacts on the timing of delinquency or the severity of any ultimately occurring loss.

[16] It is our understanding that borrowers have very little impact in determining the type of counseling they receive. It is, instead, primarily determined by the lender/originator.

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