The Effects of Foreclosure Counseling for Distressed Homeowners

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Abstract

In the face of the housing market downturn of the late 2000s, policymakers promoted third-party mortgage default counseling as a way to help people at risk of losing their homes to avoid foreclosure. Using a unique data set of monthly loan payments remitted to investors combined with administrative data from a national counseling agency, this study estimates the effects of default counseling on the probability that troubled mortgage borrowers will lose their homes to foreclosure. Borrowers are actually more likely to miss loan payments after receiving counseling, but the probability of losing a home to foreclosure drops after counseling, suggesting that counseling policies may be beneficial during housing crises. © 2012 by the Association for Public Policy Analysis and Management.

BACKGROUND

Public policies promoting homeownership have been widespread. In the United States, policies that promote buying homes with a mortgage include the income tax deductibility of mortgage interest payments and the support of public agencies such as the Federal Housing Administration (FHA). In part, policy preferences reflect the fact that buying a home with a mortgage represents a leveraged investment in which owners can accumulate equity (Dietz & Haurin, 2003). For many families, owning a home has been part of the American dream and a means to develop wealth. This is particularly important in light of asset-based approaches to social mobility (Brandolini, Magri, & Smeeding, 2010). But the housing crisis has generated widespread critiques of homeownership, including the argument that policies that encourage homeownership have failed to protect borrowers from the risks of home mortgages (Ding et al., 2012; Mian & Sufi, 2009). This study examines one strategy with the potential to mitigate the risks of owning a home with a mortgage—default counseling. Using a unique data set of counseling records matched to the monthly loan payments of borrowers with a history of payment problems, we show that counseling may serve to help forestall foreclosure.

As the housing crisis escalated in the late 2000s, policymakers and lenders grew increasingly interested in the provision of mortgage default counseling as a means to curb foreclosures. Broadly, default counseling is part of a continuum of services that provide information, advice, and guidance on how to deal with debt problems (Pleasence & Balmer, 2007) and is a subset of financial counseling more broadly

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(Grable & Joo, 1999; Hunt, 2005). Legitimate counseling programs focus on a few key tasks: (1) diagnosing why the borrower is struggling to make payments, (2) reviewing income and expenditures to reduce budgeted spending items and identify income available for debt repayment, (3) prioritizing the order of payment of debts, (4) maximizing potential income through public programs and benefits, and (5) developing a strategy for loan repayment.

The foreclosure and default process is often not well understood, even by borrowers. Fundamentally, mortgages are contracts. The borrower promises to make payments over a set period of time under contracted terms in exchange for the loan balance provided by the lender. The lender has the right to sue the borrower for defaulting on the contract if the borrower fails to live up to the terms—typically by not making timely payments per the contract. In practice, the collection of mortgage payments is most often accomplished by a mortgage servicer, a specialized firm responsible for managing paperwork, transmitting payments, and working with borrowers when payments are delinquent. The process of remedying a defaulted mortgage contract varies by state; some states mandate a court-supervised process with a judicial hearing, while other states allow trustee oversight without the involvement of a judge. In either system, the legal and administrative costs of pursuing a foreclosure are substantial for the lender (Foote, Gerardi, & Willen, 2008). If the foreclosure process is successful, the lender repossesses the home and then either attempts to sell it immediately at auction or retains it as part of its real estate owned (commonly called REO) inventory. This process can be quite involved, with average foreclosure times ranging from nine months to over two years. During this period, servicers and lenders may pursue a number of strategies to collect payments, or even reinstate the loan with different payment terms (a process called a *loan modification*).[1] However, the majority of seriously distressed borrowers have no contact with their lenders, limiting their access to such options (Cutts & Merrill, 2008). Counseling provides a third-party means of connecting with borrowers, potentially leading to borrowers being more likely to make payments and stay in their homes.

In mid-2009, the federal government initiated the Home Affordable Mortgage Program (HAMP) to offer financial incentives for lenders to modify troubled mortgages. Counseling is often a part of mortgage modifications—it may even be required for borrowers with very high debt-to-income ratios under the HAMP program. In fact the HOPE Loan Port system links counseling to loan modification by allowing nonprofit mortgage-default counselors to submit loan modification packages directly to lenders using a common platform. In this context, counseling may lead more borrowers to seek modification and ultimately improve loan repayment rates. By explaining payment options and connecting borrowers to lenders and servicers, counseling sessions have the potential to facilitate payment alternatives that avoid foreclosure.

Borrowers might be willing to pay for a service like default counseling, much like they may pay for legal advice on financial matters. In practice, however, counseling is largely provided to borrowers free of charge by lenders or the public sector. Between 2008 and 2011, Congress appropriated $508 million for default counseling through the National Foreclosure Mitigation Counseling (NFMC) program, which was launched in December 2007.[2] The NFMC program awarded funds to about 1,700 nonprofit counseling agencies nationwide, who served almost 1.2 million borrowers between 2008 and June 2011. By comparison, prior to 2008 the largest

[1] For more on modifications, see Cordell et al. (2010), Quercia, Ding, and Ratchitte (2009), and Mayer, Morrison, and Piskorski (2009).
[2] NFMC program details are available at http:/www.nw.org/nfmc.

annual appropriation for all forms of mortgage counseling was $50 million (Herbert, Turnham, & Rodgers, 2008).

This raises the question, is counseling effective at improving borrower outcomes and worthy of the investment of scarce resources? Policymakers would benefit from clearer information about the benefits of counseling and about when in the foreclosure process counseling is most effective. Likewise, lenders would benefit from understanding the impact of counseling on the value of troubled mortgage loans. The fact that lenders do not overtly encourage distressed borrowers to seek counseling may be due to the lack of firm evidence for its effectiveness, or more fundamentally, it may be a signal that lenders do not perceive that counseling yields economic value.[3]

In the United States, there is a general literature on homeownership counseling that dates back to the early 1970s, during which time the FHA's mortgage insurance program struggled to manage its Section 235 program, which provided mortgages to high-risk, first-time borrowers (Cutts & Merrill, 2008; Quercia & Spader, 2008; Quercia & Wachter, 1996). A number of studies of default counseling undertaken in the following decades yielded mixed results (see Collins & O'Rourke, 2010, for a review). These studies offer a few insights. Collins (2007) analyzed data on a sample of 299 mortgage-default counseling clients in the city of Chicago who received counseling in the mid-2000s. The study lacked a comparison group, but suggested that each additional hour of counseling reduced the probability of foreclosure by 3.5 percent, using variations in counseling marketing as an instrumental variable. Quercia and Cowan (2008) analyzed another city-based program that provided case management, postpurchase counseling, and emergency loans. This study again lacked a comparison group, but estimated that on average each additional hour the program spent on a client's case increased the client's odds of avoiding foreclosure by 10 percent. Ding, Quercia, and Ratcliffe (2008) evaluated a program that offered counseling to borrowers in response to their making late payments, which contrasts with other programs that required borrowers to seek counseling on their own. This study used a nonrandomized comparison group but, using a variety of methods, researchers estimated the odds of curing the defaulted loan (in other words, getting caught up on payments) were 50 percent higher for borrowers who accepted and received counseling than for uncounseled borrowers. Collins, Herbert, and Lam (2011) analyzed the effect of state foreclosure policies on mortgage outcomes. Although they generally found weak effects for state-level legal protections, using a propensity score-matching method, they find that mortgage default counseling offered by one lender increased the probability of receiving a loan modification and decreased the initiation of foreclosures by the lender.

The closest prior study to this analysis, by Mayer et al. (2011), used data on 335,000 loans receiving counseling funded by the NFMC from 2008 to 2009, as well as a random sample of uncounseled mortgage loans. Using a propensity score methodology, the study estimates that counseled borrowers had lower relative odds of foreclosure and received loan modifications with monthly payments lower than those for uncounseled borrowers who also received modifications. Notably, the authors found counseled loans performed worse than uncounseled loans in some circumstances. Because borrowers voluntarily elect to attend counseling, and the decision to seek counseling is likely correlated with unobservable factors, the matching approach may be biased.

[3] Of course, lenders and investors may in fact realize the value of counseling, but prefer to promote public subsidies for its delivery to paying for it directly.

There exists some policy debate over the rationale for public investment in counseling. Counseling may just be a palliative approach that extends the foreclosure process, but does not prevent the loss of homes to repossession. One complaint is that counselors are inconsistent in availability and quality (Hagerty, 2008). A further critique is that counselors lack legal expertise to promote legal remedies (Quercia, Gorham, & Rohe, 2006). Another perspective argues it is more important to focus on stiffer legal protections than to provide ex-post borrower counseling (Willis, 2008). In the absence of clear evidence of the effects of counseling, these views are counterarguments to the continued federal support of default counseling.

DATA

The data for this study were drawn from the records of a large network of agencies providing default counseling, and from a publicly available database of home mortgage loans. The default counseling data included records from 12 large, national nonprofit programs to borrowers who called a telephone hotline. The average counseling session was 60 minutes in length. The telephonic nature of the sessions meant counseling could occur 24 hours a day, and counselors could conference in a loan servicer for a three-way conversation. Call volumes varied by time of the year and month, with a generally increasing trend during the study period as default rates increased because of the recession in 2008.

One factor that seemed to increase receipt of counseling was "Fix Your Mortgage" events held in about 80 different metropolitan areas during the study period. These events focused on one city and offered access to loan servicers and counselors at a large arena or convention center. Although we do not observe which borrowers actually attended these events, the advertising for the event and media attention it generated resulted in the general public being exposed to more intensified information about counseling, and the counseling hotline phone number tended to be frequently mentioned. This often resulted in more hotline calls and subsequent counseling sessions in targeted cities.

The loan performance data for this study were drawn from a nationwide database on home mortgage loans administered by Corporate Trust Services (CTS), a subsidiary of Wells Fargo Bank. The data are comprised of individual monthly loan payments collected by over 80 loan servicers for mortgage loans initiated by more than 100 different lenders. These lenders made the loans to the borrowers and then sold each mortgage contract to investors as part of large pools of loans bundled into mortgage-backed securities. CTS provides data to the trustees of mortgage-backed security so that the trustees can report to investors regarding the payments of principal and interest on each loan underlying the securities. The data allow investors to put a value on the securities; as the number of loans in the pool that are in default or lost to foreclosure increases, the expected value of the security falls.

Monthly remittance reports from loan servicers include the loan number, the loan servicer, a current Fair Isaac Corporation credit score (FICO), the loan's delinquency history over the past year, the property's zip code, the original and current loan balance, and information on whether the loan contract has been permanently modified. CTS captures only loans that are privately securitized, meaning they were not backed by government-sponsored agencies such as Freddie Mac and Fannie Mae (or Ginnie Mae). A majority of the loans in the CTS data set have characteristics consistent with industry standards for subprime mortgages, such as lower relative credit scores and a higher proportion of Adjustable Rate Mortgages (ARMs). The CTS extract analyzed in this study contains monthly records from January 2008 to May 2011.

White (2009) offers some analysis of the quality of these data, showing that they include loans from seven of the top 10 subprime mortgage lenders at the peak of that

Table 1. Comparison of CTS and LPS data.

LPS data	Mean	SD	Min	Max
Interest rate	6.343	1.127	1.00	17.25
LTV ratio	72.834	18.543	0.17	289.59
FICO	713.146	85.586	302.00	849.00
ARM	0.115	0.319	0.00	1.00
CTS data				
Interest rate	7.650	1.946	1.00	25.00
LTV ratio	80.716	15.249	0.20	202.50
FICO	673.008	70.024	356.00	850.00
ARM	0.661	0.473	0.00	1.00

Note: January 2008 means for national sample of each data set.

market in 2006. About half of the mortgages are for properties located in California, Florida, Texas, or Arizona, although all 50 states are represented in the data set to varying degrees. Quercia, Ding, and Ratcliffe (2009) also assess the CTS data quality, suggesting that the lenders and servicers of loans in the CTS data may have different incentives to modify loan terms than lenders who did not sell loans into the secondary market—namely that these firms have no skin in the game as they no longer retain the loans or any corresponding default risk on their balance sheets. This might result in less aggressive loss mitigation efforts and more foreclosures. In some ways, the characteristics of the loans in the CTS data are ideal for the study of third-party counseling, as these borrowers may not receive much aid from their lenders and hence may be more reliant on counselors. However, this also implies that results generated using these data are not necessarily instructive for the effectiveness of foreclosure counseling for all borrower and loan types.

Table 1 shows a comparison of the CTS data used in this study to a sample of loans pulled from another industry-based repository of mortgage payment data, the Lender Processing Services (LPS) data set. The LPS data differ in structure from the CTS. LPS covers about 70 percent of the mortgage market, including loans sold into mortgage securities issued by Fannie Mae and Freddie Mac. Like CTS, the LPS data are based on loan-level records provided by mortgage servicers. As shown in Table 1, the loans in the CTS data have higher average interest rates (1.3 percent) relative to those in the LPS data, higher loan amounts relative to property value, and lower credit scores. All of these factors are consistent with the CTS data set representing a riskier set of mortgages, with higher predicted default rates. The CTS data are more representative of subprime borrowers and the results in this study should be interpreted in the context of troubled borrowers with loans that were sold into private mortgage-backed securities (private meaning not backed by Fannie Mae and Freddie Mac).

Loans securitized by Fannie Mae and Freddie Mac—so-called government-sponsored enterprises (GSEs)—are systematically different from the privately securitized loans in the CTS. They generally have lower loan-to-value ratios (LTV—the common measure of borrower equity), better documentation, and higher FICO scores at origination (Agarwal et al., 2011). Moreover, the GSEs are controlled by the federal government and backed with taxpayer funds. This may mean that servicers of privately securitized loans have more flexibility to develop alternatives to foreclosure, as they need not navigate the complex bureaucracy and politics surrounding the GSEs.

Importantly, for each loan CTS data include details about the initial mortgage, the date when it was made (or originated), the zip code of the property, and other

variables such as initial loan amount and current interest rate. This allows the CTS data to be matched to administrative records from counseling providers that contain similar variables.[4] In the counseling agency records available from January 2008 through December 2010, the agencies collected a number of variables also included in the CTS. The agencies' administrative records also include unique loan identification numbers used for communicating with lenders; that number is also included in the CTS data. Thus, a matched data set permits tracking of loans from the first counseling session (or before) through postcounseling payment periods.

We were able to match about 25,100 CTS mortgage loan records to the counseling agency's administrative database, which contains about 834,000 uniquely identified borrowers. We estimate the CTS data represent about 8 percent of the universe of mortgage loans, and we were able to match about 3 percent of the counseling records to the CTS. Given that only a portion of borrowers—even in a pool of high-risk subprime mortgages—will take up counseling, we would predict a match rate lower than the market share. By comparison, the Mayer et al. (2011) study matched counseling records to the LPS loan database, which covers about 70 percent of the mortgage market, yielding a 22 percent match rate of counseling records to monthly loan records, a rate over seven times larger than the match rate found using CTS data; the market share of this data set was nearly nine times larger. The underlying distribution of counseling in each sample of loans is unknown, but our match rate might be consistent with a lower rate of counseling among distressed subprime borrowers with loans held in private mortgage-backed securities.[5]

The matched data set is supplemented with data on a comparison group of nearly 23,000 randomly selected uncounseled borrowers in the CTS data set who missed at least one payment in the study period. Given that our counseling data covers only one (albeit large) network of 12 agencies providing counseling services, it is likely that some borrowers in the comparison group received counseling through other agencies. Another challenge is that we do not observe all loans each borrower or property may have. Thus, borrowers may have gotten counseling designated for a loan outside the CTS data set. Due to these factors, some of the control group loans may have received counseling. The estimates presented in this study therefore could be interpreted as a lower bound on the effect of counseling for this study population.

The sample is restricted to loans that were current as of January 2008 and then experienced at least one delinquency between February 2008 and May 2011, the end of the study period. This leaves about 40,393 loans with complete data for all variables, 17,368 of which received counseling.

A direct comparison of the counseled and uncounseled loans may yield biased estimates of the effect of counseling, in part because matching on observables fails to capture important unobserved variation across borrowers that relates to both counseling take-up and mortgage outcomes. To minimize this variation in unobservable characteristics, we restricted both the counseled and uncounseled loans in several ways. All loans in the data set experienced at least one missed payment at some point, and all started current in January 2008. Additionally, a loan that defaulted late in the study period could not be observed post delinquency for as many months as a loan that defaults early. Therefore, for some specifications we restricted our sample to loans with 24 months of observations following their first delinquency.

[4] The detail of the CTS data is critical for this matching process; no other publicly available data set has the variables that make matching administrative data feasible for a broad sample of borrowers not involved in other programs.

[5] The match rate may also be reduced by inaccuracies in how loan numbers are recorded. However, both lenders and counselors have strong financial incentives to maintain accurate loan identifiers, because these numbers are essential for tracking and billing services rendered.

This allows for a more balanced comparison between counseled and uncounseled loans, with similar periods of observation from the first sign of trouble. We present estimates using both the "ever missed payment" definition and the "post default" definition.

We estimate three primary outcomes of interest: (1) missing a payment, (2) improving loan status, and (3) completing foreclosure (lender repossession of the home). Missing a payment is a general condition for a borrower and includes any delinquency of 30 days or more. Improving loan status includes moving from, for example, 60 days delinquent to 30 days, as well as any other movement from a worse delinquency status to a better one. Foreclosures include repossessions that are REO by the mortgage lender and homes that are sold at foreclosure auction. Foreclosures do not include deeds in lieu of foreclosure arrangements.[6]

The data provide no direct identification that a loan was involved in the HAMP loan modification program, but we do have an indicator that a loan received a formal, permanent change in the mortgage contract as reported by the servicer to the investor. We also do not have information on whether or not a loan has undergone a trial modification, common under HAMP. Therefore, we do not attempt to distinguish between loans in the HAMP and other types of loans in the analysis.[7]

Table 2 provides descriptive statistics for loans with at least one missed payment between January 2008 and May 2011, split between the first month and last month for counseled and uncounseled borrowers. Credit scores are in the 650 to 680 range, lower than the standards typical for *prime*, or higher quality, loans. Most loans were made between 2004 and 2007, with more than one-third from 2006 alone. About half of all loans refinanced existing loans, and most were recorded as owner occupied. Few loans were reported to be in a second lien position (i.e., junior to another mortgage that would take priority for repayment claims in the event of a default). In general, based on a simple comparison of means, it appears that borrowers who sought counseling at some point had slightly higher FICO credit scores, were more behind, and were more likely to be owner occupants than those who did not seek counseling.

Table 3 compares loans in the counseled and uncounseled groups as of the final month of the study.[8] Here it appears that counseled loans are more likely to be delinquent in making payments, more likely to have improved after being more seriously delinquent, and less likely to have a completed foreclosure. Modifications are more frequent among counseled borrowers. About two-thirds of counseled borrowers received counseling after missing a payment, and one-third received counseling while still current.

EMPIRICAL METHODS

We used several identification strategies to estimate the effects of counseling on missed payments, improved loan status, and foreclosure repossession. First, we include static and time-varying controls, as well as state, quarter,[9] and servicer

[6] A deed in lieu of foreclosure involves the homeowner turning over the deed to the home to the bank in exchange for being released from the mortgage obligation.

[7] About 82 percent of modified loans in the CTS sample have modified interest rates to the HAMP limit of 2 percent APR and are below the maximum HAMP loan amount of $729,750. About 97 percent of all modifications in the sample reduced interest rates, with a mean reduction of about 300 basis points. Fewer than 3 percent of modifications reduced the current balance.

[8] For most loans, the final period observed was May 2011, although some loans that were foreclosed and repossessed (a terminal status) were dropped from the sample by the final period, as were a small number (less than 1 percent) that were transferred, sold or refinanced, or otherwise paid off.

[9] Specifically, we use quarter, year interactions.

Table 2. Mortgage loan descriptive statistics at first and last period by counseling status.

	January 2008 (start)			Final period		
	Noncounsel	Counseled	Total	Noncounsel	Counseled	Total
Current balance	245.8	349.5	284.7	259.9	347.6*	299.1
	(207.7)	(191.8)	(208.0)	(218.8)	(192.8)	(212.1)
FICO score	666.0	686.7	673.8	657.0	679.5*	667.1
	(62.20)	(54.82)	(60.37)	(70.30)	(62.68)	(67.93)
Months delinquent (t)	0	0	0	1.401	1.860*	1.606
	(0)	(0)	(0)	(1.416)	(1.387)	(1.421)
ARM dummy	0.622	0.728	0.661	0.543	0.630*	0.582
	(0.485)	(0.445)	(0.473)	(0.498)	(0.483)	(0.493)
LTV ratio	80.66	79.16	80.10	79.10	78.93	79.03
	(16.18)	(15.30)	(15.87)	(15.82)	(15.19)	(15.54)
Pre-2004 loan dummy	0.155	0.186	0.167	0.154	0.176	0.164
	(0.362)	(0.389)	(0.373)	(0.361)	(0.381)	(0.370)
Orig. 2004 dummy	0.105	0.0738	0.0934	0.117	0.0734*	0.0973
	(0.307)	(0.261)	(0.291)	(0.321)	(0.261)	(0.296)
Orig. 2005 dummy	0.212	0.171	0.197	0.200	0.170	0.186
	(0.409)	(0.377)	(0.398)	(0.400)	(0.376)	(0.389)
Orig. 2006 dummy	0.405	0.405	0.405	0.400	0.420	0.409
	(0.491)	(0.491)	(0.491)	(0.490)	(0.494)	(0.492)
Orig. 2007 dummy	0.122	0.164	0.138	0.130	0.161*	0.144
	(0.328)	(0.370)	(0.345)	(0.337)	(0.368)	(0.351)
Refi. dummy	0.490	0.553	0.514	0.554	0.578	0.564
	(0.500)	(0.497)	(0.500)	(0.497)	(0.494)	(0.496)
Owner occ. dummy	0.824	0.936	0.866	0.845	0.939*	0.887
	(0.381)	(0.246)	(0.341)	(0.362)	(0.239)	(0.316)
Teaser rate dummy	0.167	0.184	0.173	0.169	0.166	0.163
	(0.373)	(0.388)	(0.378)	(0.388)	(0.373)	(0.382)
Second lien dummy	0.138	0.00115	0.0868	0.0607	0.000894	0.0340
	(0.345)	(0.0339)	(0.282)	(0.239)	(0.0299)	(0.181)
MSA qtr. unemp. rate	5.448	5.362	5.416	9.753	9.846	9.795
	(1.290)	(1.218)	(1.264)	(1.988)	(2.039)	(2.012)
Ln home value (HPI adjusted)	5.051	5.724	5.303	4.957	5.410	5.159
	(1.215)	(0.701)	(1.101)	(0.992)	(0.684)	(0.897)
Distance to HOPE event	8.859	7.469	8.338	8.800	7.503*	8.221
	(9.704)	(8.497)	(9.295)	(9.580)	(8.515)	(9.142)

Notes: Means for first and last month of observation for loans ever missing a payment between January 2008 and May 2011, but current as of January 2008. Counseling dummy for all months after counseling received. Last month generally May 2011 unless loan foreclosed. Current loan balance in dollars. FICO is Fair Isaac's credit score. ARM is adjustable-rate mortgage. Origination years are year loan was initially made. Teaser rate defined as initial rate below 200 basis points later permanent increase in rate. MSA unemployment from Bureau of Labor Statistics (BLS) in points. Housing Price Index (HPI) from Federal Housing Finance Agency for MSA or state in non-MSA. Initial home value adjusted by HPI each period then logged.

*Statistically significant difference between counseled and noncounseled at 5 percent level.

fixed effects as shown in equation (1):

$$Y_{i,t} = \alpha + \gamma_0 C_{i,t} + \beta_1 L_{i,t} + \beta_2 U_{i,t} + \beta_3 V_{i,t} + \tau_{\text{quarter}} + \delta_{\text{state}} + \sigma_{\text{servicer}} + E_{i,t}, \qquad (1)$$

Table 3. Loan outcomes in final period by counseling status.

Final period	Noncounsel	Counseled	Total
Behind	0.530	0.622	0.570
	(0.499)	(0.485)	(0.495)
Improved	0.283	0.320	0.299
	(0.450)	(0.467)	(0.458)
Foreclosed	0.0848	0.0644	0.0760
	(0.279)	(0.246)	(0.265)
Modification	0.247	0.296	0.268
	(0.431)	(0.457)	(0.443)
HAMP modification	0.240	0.268	0.252
	(0.427)	(0.443)	(0.434)
Counsel × modification	0	0.296	0.129
	(0)	(0.457)	(0.335)
Counseled	0	1	0.434
	(0)	(0)	(0.496)
Counseled × delinquent	0	0.626	0.272
	(0)	(0.484)	(0.445)
Counseled × current	0	0.366	0.159
	(0)	(0.482)	(0.365)

Notes: Last month means (standard deviation in parenthesis). Last month May 2011 unless foreclosed. Behind = 1 if loan is delinquent. Improved = 1 if loan delinquency status improved from prior month (e.g., 60 days behind to 30 days behind). Foreclosed = 1 if loan completed foreclosure in month. Foreclosure is a terminal status. Modification (Mod) = 1 if loan contract is permanently modified. Modification is a terminal status. Counseled = 1 in month after counseling is completed. Counseling is a terminal status. Counseled delinquent = 1 if loan past due when counseling occurred. Counseled current = 1 if counseled when loan status is current (not delinquent).

where counseling $C_{i,t}$ for loan i is indicated by a 1 in month t during and after counseling is received, with a 0 for uncounseled loans and for periods prior to counseling for counseled borrowers. Equation (1) also includes a variable that indicates the year that loan i was initiated and a vector of loan level characteristics $L_{i,t}$ that includes indicators for loan i being a refinance mortgage (versus purchase), owner occupied (versus vacation or investment residences), first lien status (versus second or higher lien positions for the observed loan), and the existence of a *teaser rate feature*, defined as a rate that increased by more than 2 full percentage points from the original rate. LTV ratio for loan i in the loan vector is indicated by a series of categories, including less than 80 percent, 81 to 90 percent, 91 to 95 percent, 95 to 100 percent, and more than 100 percent of property value. LTV is measured for the observed loan at the time of origination and is not time varying. We also include time-varying factors associated with the loan record, including FICO credit score categories for loan i in time t (under 580, 580 to 650, 651 to 720, and more than 720), as well as indicators for the payment status of loan i in the period $t - 6$ months prior (i.e., lagged) to the current period, and the loan i having an adjustable rate feature in period t (although it was rare, some loans moved from adjustable to fixed rate in the period of the data). The log of the current loan balance is also included in the loan vector. The dummy variables for FICO score categories and ranges of LTV ratios omit the lowest categories.

As a control for local economic conditions, we include metropolitan statistical area (MSA) unemployment rates for each time period, $U_{i,t}$. Given the observation in the literature that negative equity is a necessary condition for default, we include a constructed value of the home ($V_{i,t}$) using the value at origination adjusted for the

FHFA Housing Price Index (HPI) for each quarter (Foote, Gerardi, & Willen, 2008).[10] To capture unobserved time-varying policy or market changes, we include quarter-year fixed effects. We further include state fixed effects to capture relevant state differences including variations in the legal treatment of foreclosure. Finally, we include mortgage servicer fixed effects to account for heterogeneity in the treatment of borrowers by the various financial institutions.

An additional set of models is based on equation (1), but presents $C_{i,t}$ in varying forms rather than simply as a dichotomous counseling indicator. The first variation is that $C_{i,t}$ is estimated as a vector of counseling variables indicating the loan delinquency status at the time of counseling (current or delinquent). The second variation in $C_{i,t}$ includes the duration of counseling in total. These approaches are designed to test the extent to which counseling may have stronger effects on borrowers in greater or lesser distress, as well as the effect of higher intensity of counseling treatment. We present this analysis only for the larger ever-delinquent data sample, not the 24-month post missed-payment sample, although the results remain similar using either sample. In all models, the term $E_{i,t}$ is clustered at the loan level i to correct for the repeated panel nature of the data, and we are also careful to show robust standard errors.

Equation (2) replaces all loan level factors from $C_{i,t}$ that do not change over time with a fixed-effect term for loan i:

$$Y_{i,t} = \alpha + \gamma_0 C_{i,t} + \beta_1 L_{i,t} + \beta_2 U_{i,t} + \beta_3 V_{i,t} + \eta_i + E_{i,t}, \tag{2}$$

where we observe loan i in time t, such that the counseling term again is 0 before counseling and 1 after. Time-varying factors for each month include the adjustable interest rate indicator (ARM), the log of the current loan balance, the FICO score categories, and the six-month lag in the number of months the borrower is delinquent. The individual fixed-effects estimation strategy addresses time-invariant unobserved heterogeneity at the individual level that may affect both mortgage outcomes and the probability of seeking counseling.

A third equation employs an interaction of counseling and permanent loan modifications to explore the extent to which counseling encourages borrowers and lenders to develop restructured loan terms that result in better payment outcomes:

$$\begin{aligned} Y_{i,t} = {} & \alpha + \gamma_0 C_{i,t} + \gamma_1 M_{i,t} + \gamma_2 (C_{i,t} \times M_{i,t}) + \beta_1 L_{i,t} + \beta_2 U_{i,t} + \beta_3 V_{i,t} \\ & + \tau_{\text{quarter}} + \delta_{\text{state}} + \sigma_{\text{servicer}} + E_{i,t} \end{aligned} \tag{3}$$

In this approach, $C_{i,t}$ is still an indicator for postcounseling periods. An added term, $M_{i,t}$, is included to indicate a loan i modified in period t. The interaction term $C_{i,t} \times M_{i,t}$ is the estimate of counseling for modified loans relative to uncounseled modified loans and to counseled but unmodified loans.

All the equations described above are estimated using a linear probability model (LPM). Often the mortgage literature uses a proportional hazard model to estimate default-related behavior (Cox, 1972). Unfortunately, hazard models are not

[10] HPI and unemployment were matched to the corresponding MSA and time period (month and quarter, respectively). For loans issued outside an MSA, statewide data were used. Although the HPI helps to account for differences across 363 metropolises, these estimates are not property specific. The HPI is based on repeat sales (or refinancing) for single-family mortgage transactions securitized by Fannie Mae or Freddie Mac and is only a proxy for price trends.

amenable to extensive controls or fixed effects (Allison & Christakis, 2006). The LPM yields consistent estimates, but a duration model is included as a robustness check (see Table 7). Although payment status varies over time, foreclosure repossession represents a terminal outcome that does not change in subsequent periods, adding cumulatively to the number of repossessed observations and eliminating other conditions. It should also be noted that we observed very few loans (approximately 188 compared to over 3,000 completed foreclosures) being paid off or refinanced in our data, effectively eliminating a competing terminal risk. We therefore include a duration model using a similar specification as in equation (3) to produce an alternative set of estimates. Modifications are also a terminal outcome in that once a mortgage loan contract is permanently changed it does not revert to an unmodified status. This specification is intended to illustrate the relationship between counseling and modifications. However, modifications are ideally a mechanism to prevent foreclosure, not the outcome of primary interest.

In practice, establishing a causal link between default counseling and loan outcomes is difficult. The ideal study of counseling would be a randomized experiment. In the absence of such a design, one approach is to employ an instrumental variable that could be used as an exogenous source of variation in the receipt of counseling for generating causal estimates.[11] In the network we studied, counseling was promoted through large, weekend Fix Your Mortgage events held in about 80 different metropolitan areas during the study period. We propose that time–location variation in these events may serve as an instrumental variable for counseling that is uncorrelated with foreclosures. The events typically involved citywide advertising and media attention, including appearances by public officials. It is plausible that the events and the attention they received resulted in greater awareness of counseling and higher rates of borrowers receiving counseling in an MSA hosting an event, which would not be correlated with individual loan foreclosures. The marketing would also serve to induce marginal borrowers into counseling, producing a local average treatment effect (LATE) estimate.

We constructed an indicator equal to 1 during and after the month of the counseling outreach event in the MSA and 0 prior. This essentially compares loans before and after the event; loans in areas with no event are not included in this analysis, as cities with events are likely to be systematically different than those with no events. Another potential instrumental variable for counseling is the distance from the location of the outreach event to the borrower's home. Motivation for this approach is based in part on the stylized data presented in Figure 1, showing that rates of counseling are higher in areas within the first quartile of distance from an outreach event relative to the farthest distance quartile. This suggests that owners of properties more proximate to the event were more likely to take up counseling.[12]

To exploit the exogenous variation in counseling generated by the timing and distance to these events, we implemented a two-stage least squares (2SLS) estimation strategy.[13] In our first stage, we estimated receipt of counseling as a function of

[11] As discussed previously, propensity scores are based on observable factors and may not overcome selection bias. An alternative identification strategy would be using the HAMP requirement that borrowers with total debt-to-income ratios of 55 percent or more receive counseling as a regression discontinuity. However, current income and debt-to-income ratios are not available in the data.

[12] One limitation of this instrumental variable strategy is that it could be nullified if events are held in the most distressed areas during months of high defaults. However, we do not believe this to be a factor. Typically, events were held in large convention centers or arenas and drew in borrowers from across the metropolitan area. Events also appear to have been scheduled sequentially rather than in response to regional default cycles or patterns.

[13] As discussed later, the results remain robust to a limited information maximum likelihood (LIML) setup.

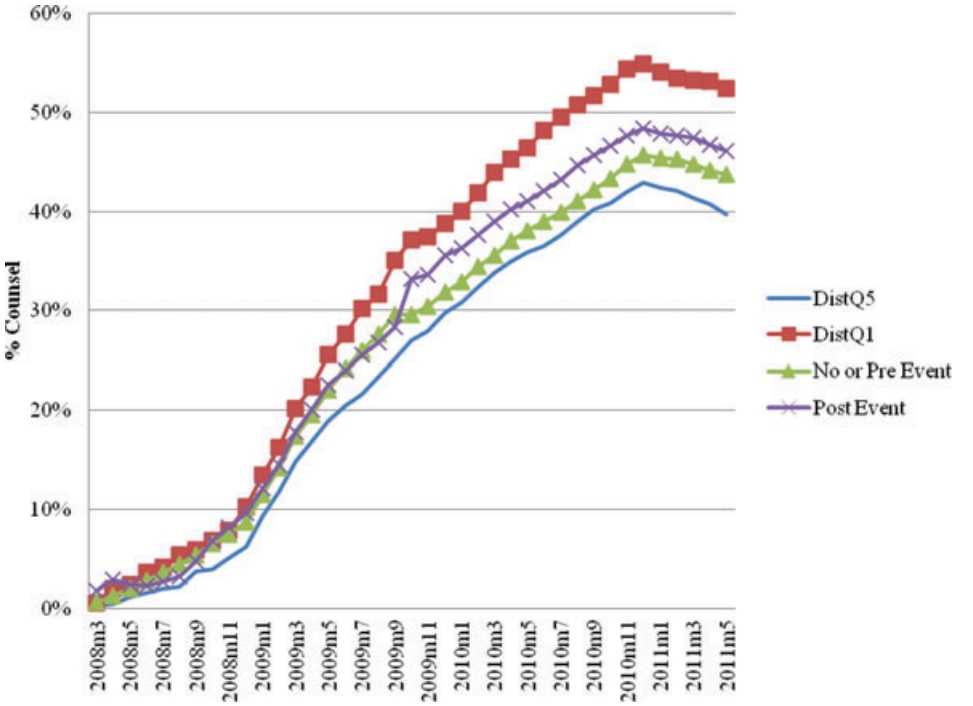

Figure 1. Counseling rate by distance and event date.

an indicator that equals 1 during and after the occurrence of the outreach event, a variable containing the distance to the event from the borrower's zip code, and then an interaction of the two (because borrowers closer to the venue after the event are predicted to be more likely to seek counseling). Next, we estimated a second-stage model using the instrumented receipt of counseling. These estimates are only provided for borrowers in the 80 cities with Fix Your Mortgage events, but they are at least suggestive regarding the impact of counseling on foreclosure.

FINDINGS

The effects of counseling are estimated using the specifications and sample restrictions described above. Estimates for loan, geographic, and time controls performed as expected and are generically indicated in the tables (because these are included only as controls, they are not specifically reported). Of primary interest in each table is the estimate for the dichotomous counseling indicator, as well as any interactions of that variable. After counseling, it might be expected that even if borrowers do not cure a delinquency, they should show some signs of improvement in payment status. The *improved* variable includes months where the borrower is fewer payments than previously behind, but may not be fully current. Often, an improvement in payment status is due to loss mitigation provisions, loan forbearance, or a formal mortgage modification. The indicator is 1 if status is improved from the prior period and otherwise 0. A loan may move from improved status to delinquent for one period, then back to improved status again.

Table 4 presents the results of linear probability regressions for the outcome loan status improvement. Column 1 presents estimates for the sample of loans ever experiencing a delinquency. Column 2 adds fixed effects and restricts the sample

Table 4. Counseled loans more likely to improve payment status after a delinquency.

Dependent variable = 1 if loan status improved	(1) Full sample	(2) Full loan FE	(3) Post default only loan FE	(4) Full sample w/Interaction
Counseled	0.0186***	0.1742***	0.1990***	-0.0092***
	(0.002)	(0.005)	(0.008)	(0.001)
Modification dummy				0.9521***
				(0.000)
Counsel × modification.				0.0095***
				(0.001)
Ln current loan balance	0.2196***	0.3469***	0.4096***	0.0438***
	(0.005)	(0.008)	(0.032)	(0.002)
Months delinquent (t – 6)	–0.0024***	0.0321***	0.0054**	0.0046***
	(0.001)	(0.001)	(0.002)	(0.000)
ARM dummy	–0.2212***	–0.4793***	–0.5271***	–0.0042***
	(0.005)	(0.008)	(0.015)	(0.001)
Refi. dummy	–0.0325***			–0.0048***
	(0.003)			(0.000)
Owner occ. dummy	–0.0072			–0.0052***
	(0.004)			(0.001)
Teaser rate dummy	–0.0017			–0.0028***
	(0.003)			(0.001)
Second lien dummy	–0.0758***			–0.0012
	(0.010)			(0.002)
MSA qtr unemp.	–0.0004	0.0125***	0.0179***	0.0017***
	(0.001)	(0.001)	(0.002)	(0.000)
Ln home value (HPI adjusted)	–0.1092***	–0.1700***	–0.2037***	–0.0324***
	(0.005)	(0.014)	(0.041)	(0.002)
Constant	–0.3276***	–0.6040***	–0.7784***	–0.0189
	(0.038)	(0.066)	(0.212)	(0.023)
Loan orig. yr. dummies	Yes	No	No	Yes
LTV cat. dummies	Yes	No	No	Yes
FICO cat. dummies	Yes	Yes	Yes	Yes
State dummies	Yes	No	No	Yes
Quarter dummies	Yes	No	No	Yes
Servicer FE	Yes	No	No	Yes
Observations	1,437,035	604,386	171,898	1,437,035
Number of unique loans	40,393	18,326	4,459	40,393

Notes: OLS estimates. Dependent variable is an indicator for whether a loan's payment status improved relative to prior month. An improvement in loan status includes any positive change, e.g., moving from delinquent to current or to fewer days delinquent. Data organized by payment month. Counseling dummy = 1 for all months after counseling received. All counseling received between 2008 and December 2010. Column 1 is all loans ever missing a payment between January 2008 and May 2011, but current as of January 2008. Column 2 is conditional on loans that ever show an improvement, with loan fixed effects. Column 3 conditional on ever improved and starting with first missed payment and followed for 24 months, with fixed effects. Column 4 is the same as column 1 with the addition of post-modified loan indicator and modified × counseling interaction. Robust panel corrected SEs in parenthesis (clustered at loan level).

$^{**}p < 0.01$; $^{***}p < 0.001$.

to those loans ever showing an improvement after an initial delinquency. Column 3 maintains the fixed effects, but is estimated on a sample restricted to loans ever improving and for which we have 24 months' worth of observations following the initial default. The final column is the same as Column 1 with the added interaction

of counseling and an indicator that a loan contract was formally modified in a prior period.

The magnitude of the effect of counseling on an improved loan status appears to be sizable, with a 2 percent more likely improved status for the full time-varying model (column 1) and up to 20 percent more likely in the restricted sample with fixed effects. Adding modifications and the interaction shows that modifications mechanically improve payment status, but also shows a small positive effect of modified loans in postcounseling periods. The coefficient on counseling turns negative, showing counseled borrowers who fail to obtain a modification are less likely to improve payment status through other avenues (consistent with the results of Mayer et al., 2011). However, the magnitudes of both counseling and the interaction are so small that the net result is not substantial.

The outcome of particular interest for lenders and investors is whether a borrower is making timely payments. Table 5 presents estimates for the determinants of the mortgage being delinquent by at least one payment in a given month. Counseled loans appear to be more likely to be delinquent in postcounseling periods in all models. This is perhaps to be expected, because counseling may not change the ability of borrowers to catch up after a negative trigger event (such as loss of income or employment), and people in more severe economic distress may be more likely to seek help from a counselor. Seeking counseling could therefore be an early signal of looming payment problems. It is also possible that counselors advise borrowers who are current to miss payments to qualify for hardship programs, or that the counseling process encourages borrowers to be more fully informed about their loan status, perhaps resulting in more "ruthless default" (see Vandell, 1995, for a discussion).

The last column offers some insight regarding the relationship between counseling and modifications. First, counseled loans that receive a loan modification are substantially less likely to be delinquent than counseled loans that do not receive a modification. This illustrates the variation among borrowers who seek counseling and the relative ability of counseling to assist borrowers in becoming current given their financial circumstances. Second, counseled borrowers who receive loan modifications are less likely to be delinquent than comparable uncounseled borrowers who also received loan modifications. This suggests that counseling leads to modifications that are more likely to be successful in avoiding repeated default. It should be noted that although this study's sample and empirical strategy differ from the study by Mayer and colleagues (2011), the direction of the estimated effect of counseling is similar.

Table 6 shows a similar set of models, but in these cases the dependent variable is a completed foreclosure resulting in the repossession of the home (this may become REO or be sold to a new owner). A completed foreclosure is less likely among counseled loans, with the effect ranging from a 2 to 4 percent reduction in probability. The effect of counseling is smaller in magnitude when using loan fixed effects and a restricted sample, but similar in direction. In column 4, the counseling indicator with the modification indicator shows the largest effects of counseling in reducing foreclosure for counseled loans; however, counseled and modified loans are actually slightly more likely to end in foreclosure. This positive coefficient on the counseled and modified interaction term may be due to HAMP requirements for borrowers with high debt ratio loans to receive counseling before obtaining a modification. Because high debt ratios are a risk factor for subsequent redefault and foreclosure, these loans would be more likely to end in foreclosure. However, the net effect of the interaction is not large in magnitude, a 1.5 percent increase, and does not detract from the key finding that counseling decreases the probability of foreclosure, regardless of loan modification status.

Table 5. Counseled loans more likely to be in delinquent payment status.

Dependent variable = 1 if loan past due	(1) Full sample	(2) Full loan FE	(3) Post default only loan FE	(4) Full sample w/Interaction
Counseled	0.1131***	0.1757***	0.0820***	0.1504***
	(0.003)	(0.003)	(0.005)	(0.003)
Modification dummy				–0.2498***
				(0.004)
Counsel × modification				–0.1567***
				(0.007)
Ln current loan balance	–0.0238***	–0.1587***	–0.1826***	–0.0162***
	(0.003)	(0.007)	(0.021)	(0.003)
Months delinquent (t – 6)	0.1243***	0.0648***	0.0624***	0.1174***
	(0.001)	(0.001)	(0.001)	(0.001)
ARM dummy	0.0770***	0.2802***	0.4717***	0.0505***
	(0.003)	(0.007)	(0.013)	(0.003)
Refi. dummy	–0.0146***			–0.0169***
	(0.002)			(0.002)
Owner occ. dummy	–0.0364***			–0.0341***
	(0.003)			(0.003)
Teaser rate dummy	0.0217***			0.0272***
	(0.003)			(0.003)
Second lien dummy	0.0610***			0.0547***
	(0.006)			(0.006)
MSA qtr. unemp.	0.0068***	0.0688***	0.0891***	0.0065***
	(0.001)	(0.001)	(0.001)	(0.001)
Ln home value (HPI adjusted	0.0232***	0.0155	0.0203	0.0244***
	(0.002)	(0.008)	(0.015)	(0.002)
Constant	0.5234***	0.4786***	0.3388***	0.5282***
	(0.064)	(0.050)	(0.100)	(0.070)
Loan orig. yr. dummies	Yes	No	No	Yes
LTV cat. dummies	Yes	No	No	Yes
FICO cat. dummies	Yes	Yes	Yes	Yes
State dummies	Yes	No	No	Yes
Quarter dummies	Yes	No	No	Yes
Servicer FE	Yes	No	No	Yes
Observations	1,437,022	1,437,022	496,934	1,437,022
Number of unique loans	40,393	40,393	12,575	40,393

Notes: OLS estimates. Dependent variable is loan with delinquent payment status in month. Data organized by payment month. Counseling dummy = 1 for all months after counseling received. All counseling received between January 2008 and December 2010. Column 1 is all loans ever missing a payment between January 2008 and May 2011, but current as of January 2008 with controls. Column 2 is all loans ever missing a payment between January 2008 and May 2011, but current as of January 2008 with loan fixed effects. Column 3 is restricted to 24 months post first missed payment ONLY, with fixed effects. Column 4 is the same as column 1 with the addition of a post-modified loan indicator and modified × counseling interaction. Robust panel corrected SEs in parenthesis (clustered at loan level).

***$p < 0.001$.

Table 7 shows duration models for foreclosure and modifications. The estimates are hazard ratios with values below 1 meaning a lower risk and above 1 indicating a higher risk. Loans in postcounseling periods appear to have about one-third the foreclosure risk of uncounseled loans. The result is similar when controlling for modified loans (which show lower foreclosure risk), but there is no significant estimate for modified and counseled loans. Estimates for a loan moving into a modified

Table 6. Counseled loans less likely to end in foreclosure repossession.

Dependent variable = 1 if loan foreclosure is completed	(1) Full sample	(2) Full loan FE	(3) Post default only loan FE	(4) Full sample w/Interaction
Counseled	–0.0393***	–0.0325***	–0.0223***	–0.0403***
	(0.001)	(0.001)	(0.003)	(0.002)
Modification dummy				–0.0486***
				(0.002)
Counsel × modification.				0.0151***
				(0.003)
Ln current loan balance	0.0251***	0.0375***	0.0604***	0.0273***
	(0.002)	(0.002)	(0.009)	(0.002)
Months delinquent (t – 6)	0.0428***	0.0442***	0.0328***	0.0425***
	(0.001)	(0.001)	(0.001)	(0.001)
ARM dummy	0.0186***	0.0093***	-0.0056	0.0083***
	(0.002)	(0.002)	(0.005)	(0.002)
Refi. dummy	–0.0112***			–0.0122***
	(0.002)			(0.002)
Owner occ. dummy	–0.0199***			–0.0194***
	(0.003)			(0.003)
Teaser rate dummy	0.0139***			0.0141***
	(0.002)			(0.002)
Second lien dummy	–0.0300***			–0.0337***
	(0.005)			(0.005)
MSA qtr. unemp.	0.0019***	0.0046***	0.0027***	0.0019***
	(0.000)	(0.000)	(0.000)	(0.000)
Ln home value (HPI adjusted)	–0.0204***	–0.0385***	–0.0598***	–0.0205***
	(0.002)	(0.003)	(0.009)	(0.002)
Constant	–0.0348	0.0159	0.0148	–0.0373
	(0.022)	(0.015)	(0.039)	(0.022)
Loan orig. yr. dummies	Yes	No	No	Yes
LTV cat. dummies	Yes	No	No	Yes
FICO cat. dummies	Yes	Yes	Yes	Yes
State dummies	Yes	No	No	Yes
Quarter dummies	Yes	No	No	Yes
Servicer FE	Yes	No	No	Yes
Observations	1,437,035	1,437,035	496,937	1,437,035
Number of unique loans	40,393	40,393	12,575	40,393

Notes: OLS estimates. Dependent variable is loan with completed foreclosure. Data organized by payment month. Foreclosure is terminal. Counseling dummy = 1 for all months after counseling received. All counseling received between January 2008 and December 2010. Column 1 is all loans ever missing a payment between January 2008 and May 2011, but current as of January 2008 with controls. Column 2 is all loans ever missing a payment between January 2008 and May 2011, but current as of January 2008 with loan fixed effects. Column 3 is restricted to 24 months post first missed payment ONLY, with fixed effects. Column 4 is the same as column 1 with the addition of post-modified loan indicator and modified × counseling interaction.

Robust panel corrected SEs in parenthesis (clustered at loan level).

***$p < 0.001$.

mortgage contract status after counseling are positive and large in magnitude. Thus, counseling appears to be associated with a higher likelihood of receiving a modification and avoiding foreclosure. However, counseled loans that are modified are no more likely to avoid foreclosure than uncounseled loans that receive a modification, consistent with the findings presented in Table 6.

Table 7. Duration models suggest directionally similar estimates for counseling on foreclosure and illustrate positive influence of counseling on incidence of modifications.

	(1) Foreclosure	(2) Foreclosure	(3) Modification
Counseled	0.6467***	0.6598***	1.3922***
	(0.018)	(0.019)	(0.039)
Modification dummy		0.4419***	
		(0.025)	
Counsel × modification		0.9789	
		(0.094)	
Ln current loan balance	0.9422*	0.9754	1.2367***
	(0.028)	(0.028)	(0.036)
Months delinquent (t – 6)	2.3966***	2.3956***	1.1621***
	(0.029)	(0.029)	(0.011)
ARM dummy	2.8352***	2.6404***	0.9470
	(0.099)	(0.095)	(0.040)
Refi. dummy	0.8574***	0.8618***	1.0810**
	(0.023)	(0.023)	(0.029)
Owner occ. dummy	0.6162***	0.6317***	1.5469***
	(0.020)	(0.020)	(0.068)
Teaser rate dummy	0.3852***	0.3913***	0.5756***
	(0.013)	(0.013)	(0.025)
Second lien dummy	0.0701***	0.0664***	0.9533
	(0.014)	(0.013)	(0.069)
MSA qtr. unemp.	1.0721***	1.0719***	1.0377***
	(0.005)	(0.005)	(0.005)
Ln home value (HPI adjusted)	0.8844***	0.8649***	0.9282**
	(0.023)	(0.022)	(0.024)
Loan orig. yr. dummy	Yes	Yes	Yes
CLTV cat. dummy	Yes	Yes	Yes
FICO cat. dummy	Yes	Yes	Yes
Observations	1,382,197	1,382,197	1,304,697

Notes: Exponentiated coefficients reported. Duration model using Weibull distribution. MLE hazard ratios using duration model. Data organized by payment month for loans ever missing a payment between January 2008 and May 2011 but current as of January 2008. Counseling dummy = 1 for all months after counseling received. All counseling received between January 2008 and December 2010. Column 1 dependent variable is foreclosure in given month with postcounseled dummy. Column 2 dependent variable is foreclosure in given month with interaction between counseled and modified. Column 3 dependent variable is modification in place in month.

*$p < 0.05$; **$p < 0.01$, ***$p < 0.001$. Robust standard errors.

Table 8 explores the timing and duration of counseling relative to precounseled and uncounseled loans using the basic specification without loan fixed effects discussed in equation (1). Both the timing of counseling and its duration positively affect loan payment status. The estimate for improved loan status is 2.7 percent for loans counseled while delinquent and essentially 0 (and nonsignificant) for loans counseled when current. This is likely because current loans have a slimmer margin for improvement in payments and may not qualify for loan modifications. The duration of counseling had similar effects for sessions less than 60 minutes, sessions lasting 60 to 89 minutes, and those 90 to 120 minutes in length, but duration beyond two hours had no statistically significant effects. Borrowers counseled when their loans were already delinquent were more likely to still be behind after counseling. Borrowers counseled when their loans were current showed smaller estimated magnitudes, but nonetheless clearly are more likely to fall behind after counseling. The results for completed foreclosures show that when the borrower received

Table 8. Loan status differs little with timing or duration of counseling.

	(1) Improved	(2) Improved	(3) Behind	(4) Behind	(5) Foreclosed	(6) Foreclosed
Counseled delinquent.	0.0273***		0.1326***		–0.0403***	
	(0.003)		(0.003)		(0.002)	
Counseled current.	0.0048		0.0838***		–0.0379***	
	(0.003)		(0.004)		(0.001)	
Counsel 1 to 60 minutes		0.0196***		0.1136***		–0.0354***
		(0.003)		(0.003)		(0.002)
Counsel 60 to 89 minutes		0.0187***		0.1111***		–0.0431***
		(0.004)		(0.004)		(0.002)
Counsel 90 to 120 minutes		0.0157**		0.1164***		–0.0416***
		(0.007)		(0.006)		(0.004)
Counsel 120 minutes or more		0.0154		0.1143***		–0.0447***
		(0.010)		(0.010)		(0.005)
Ln current loan balance	0.2195***	0.2196***	–0.0236***	–0.0238***	0.0250***	0.0251***
	(0.005)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Months delinquent (t - 6)	–0.0031***	–0.0024***	0.1225***	0.1243***	0.0429***	0.0428***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
ARM dummy	–0.2209***	–0.2212***	0.0773***	0.0770***	0.0186***	0.0186***
	(0.005)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Refi. dummy	–0.0326***	–0.0325***	–0.0149***	–0.0146***	–0.0112***	–0.0112***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Owner occ. dummy	–0.0069	–0.0072	–0.0360***	–0.0364***	–0.0200***	–0.0199***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Teaser rate dummy	–0.0013	–0.0017	0.0221***	0.0217***	0.0138***	0.0138***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Second lien dummy	–0.0761***	–0.0757***	0.0603***	0.0610***	–0.0299***	–0.0298***
	(0.010)	(0.010)	(0.006)	(0.006)	(0.005)	(0.005)
MSA qtr. unemp.	–0.0003	–0.0004	0.0068***	0.0068***	0.0019***	0.0019***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Ln home value (HPI adjusted)	–0.1093***	–0.1092***	0.0230***	0.0232***	–0.0203***	–0.0204***
	(0.005)	(0.005)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	–0.3287***	–0.3279***	0.5192***	0.5239***	–0.0347	–0.0342
	(0.040)	(0.038)	(0.066)	(0.064)	(0.022)	(0.022)
Loan orig. yr. dummies	Yes	Yes	Yes	Yes	Yes	Yes
LTV cat. dummies	Yes	Yes	Yes	Yes	Yes	Yes
FICO cat. dummies	Yes	Yes	Yes	Yes	Yes	Yes

Table 8. Continued.

	(1) Improved	(2) Improved	(3) Behind	(4) Behind	(5) Foreclosed	(6) Foreclosed
State dummies	Yes	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes	Yes
Servicer FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,437,035	1,437,035	1,437,022	1,437,022	1,437,035	1,437,035
Number of unique loans	40,393	40,393	40,393	40,393	40,393	40,393

Notes: OLS estimates. Data organized by payment month for loans ever missing a payment between January 2008 and May 2011, but current as of January 2008. Counseling dummy = 1 for all months after counseling received. All counseling received between January 2008 and December 2010. Counseling timing as indicated with status of loan in month counseling first occurred. Counseling duration is 0 for uncounseled. Column 1 with improved payment status in given month by timing of counseling. Column 2 with improved payment status in given month by duration of counseling in minutes, compared to no counseling. Column 3 with delinquent payment status in given month by timing of counseling. Column 4 with delinquent payment status in given month by duration of counseling in minutes, compared to no counseling. Column 5 with foreclosure in given month by timing of counseling. Column 6 with foreclosure in given month by duration of counseling in minutes, compared to no counseling. Robust panel corrected SEs in parenthesis (clustered at loan level).

$^{**}p < 0.01$; $^{***}p < 0.001$. Robust standard errors.

counseling when the loan was delinquent, the loan was about 4 percent less likely to enter foreclosure; borrowers counseled when the loan was current exhibited an effect slightly lower in magnitude. The duration-of-counseling indicators were all significant, ranging from –3.5 to –4.5. Parameter tests of the coefficients show these were not statistically different by duration.

Overall, the effect of counseling meetings seems to be independent of their length, with loans whose borrowers were counseled less than an hour exhibiting similar effects as those counseled twice as long. This may suggest that counselors are effective at calibrating the appropriate quantity of services for each client, or it could be evidence that the effectiveness of counseling is driven primarily by which borrowers seek help and the duration of services is irrelevant. It is also possible that duration is not a valid proxy for counseling intensity with key aspects of the service not requiring a minimum amount of time. Regardless, borrowers who receive any duration of counseling are more likely to improve their delinquency status and less likely to lose their homes to foreclosure.

Table 9 shows estimates for the foreclosure outcome using outreach events and distances to outreach events as instruments for the receipt of counseling. Column 1 shows the first-stage estimates for counseling using the three instruments (distance, event date, and the interaction between the two) as well as familiar controls. This is only implemented for cities that had an outreach event, resulting in a sample of just 22,257 loans. Counseling is instrumented using an indicator for post-outreach event months and the distance from the centroid of the zip code of the property to the event location. Column 2 reports the second-stage estimates for the effects of instrumented counseling outcome, showing a significant and negative coefficient of about 11 percent reduction in foreclosures. While the first-stage *F*-test fails to exceed the common benchmark of 10, the estimates are robust to the use of a generalized methods of moments estimation, as well as a LIML model that is suggested for a weak instrumental variable (Angrist & Pischke, 2009).[14]

[14] The estimates across these methods are nearly identical.

Table 9. Instrumenting for counseling with Fix Your Mortgage events suggestive that counseling is associated with fewer foreclosures.

	(1) Counseled first stage	(2) Foreclosed IV for counseled
Post HOPE dummy	0.1316***	
	(0.004)	
Distance to HOPE event	–0.0004*	
	(0.000)	
Post event × distance	–0.0019***	
	(0.000)	
Counseled dummy		–0.1139***
		(0.013)
Ln cur loan balance	0.0762***	0.0068***
	(0.005)	(0.002)
Months delinquent (t – 6)	0.0654***	0.0533***
	(0.001)	(0.001)
ARM dummy	–0.0444***	0.0094***
	(0.004)	(0.002)
Refi. dummy	–0.0020	–0.0070***
	(0.004)	(0.002)
Owner occ. dummy	0.1224***	–0.0072*
	(0.005)	(0.003)
Teaser rate dummy	0.0513***	0.0008
	(0.003)	(0.002)
Second lien dummy	–0.1200***	–0.0435***
	(0.008)	(0.004)
MSA qtr unemp.	0.0127***	0.0033***
	(0.001)	(0.000)
Ln home value (HPI adjusted)	–0.0301***	–0.0097***
	(0.004)	(0.002)
Constant	–0.4122***	0.0205*
	(0.016)	(0.009)
Loan orig. yr. dummies	Yes	Yes
LTV cat. dummies	Yes	Yes
FICO cat. dummies	Yes	Yes
Quarter dummies	Yes	Yes
Total observations	782,780	782,780
Hansen J	5.310	
Hansen J *P*-value	0.070	
F statistic for weak identification	8.023	

Notes: Limited information maximum likelihood (LIML) regression instrumented counseling using post event date and distance to event to mortgaged property. Data organized by payment month for loans ever missing a payment between January 2008 and May 2011, but current as of January 2008. Sample includes only loans located in MSAs where a HOPE NOW counseling outreach event took place in at least one observed period. Counseling dummy for all months after counseling received. All counseling received between January 2008 and December 2010. Column 1 is first stage prediction of counseling. Column 2 is instrumented counseling estimate from first stage. Adjusted standard errors in parenthesis (clustered at loan level).

*$p < 0.05$; ***$p < 0.001$. Robust standard errors.

Overall, the direction, magnitude, and significance of these estimates are encouraging. These results are consistent with a LATE of borrowers induced into counseling in the post-outreach event periods and located closer to the event venues showing improved loan outcomes in terms of the ultimate loss of the home to foreclosure.

DISCUSSION AND CONCLUSIONS

Although default counseling has existed since the 1960s, the field has grown and changed rapidly following the housing crisis of the 2000s. Federal funding has stimulated the supply of default counseling at a time when a growing number of consumers are seeking the service. To the extent that counseling helps borrowers overcome information barriers, it might facilitate borrower–lender communications and result in better loan outcomes.[15] The evidence in this study highlights the potential of counseling to prevent foreclosure, perhaps suggesting that counseling might be an important part of new models of mortgage lending going forward.[16] But these results also highlight several additional issues.

First, the length of counseling appears to make no difference in outcomes in these data. If borrowers who seek counseling are simply more motivated, it may not matter how much counseling a borrower receives. The act of seeking counseling would then serve as a signal of positive potential. As such, lenders may benefit simply by observing which borrowers seek counseling, and the counseling service itself could be reduced to a short automated phone or web-based transaction that routes borrowers to lenders. There are modest differences in effects for borrowers who seek counseling while still current relative to those who seek counseling after they are in default, but both appear more likely to have positive outcomes relative to uncounseled borrowers.

Second, public subsidies for counseling suggest a belief among policymakers that counseling has positive results for borrowers. Counseling may indeed help borrowers explore alternatives to foreclosure, but because borrowers largely seek out counseling voluntarily, selection bias remains a concern. The instrumental variable approach used in this study offers a potentially powerful estimate of the causal effects of default counseling on foreclosure, but limited in terms of generalizability. Researchers need to be alert for natural experiments, state and local policy shifts, and other exogenous changes that may yield viable strategies for addressing selection into counseling.[17]

Ideally policymakers need randomized experiments to better estimate the effects of counseling, but the logistics of administering such an experiment are substantial.[18] A starting point might be to randomize the intensity or form of counseling, ranging from very light services to more intensive services, to explore whether the duration and timing of counseling matter. If in fact counseling serves primarily as a signal of borrower motivation, this would be an important finding with policy implications, including the ability to reduce the cost per borrower counseled.

Third, the question of the net benefits of counseling requires further study. There were 1.4 million loans with a foreclosure filing in the third quarter of 2011. As an approximation, the total cost to provide counseling for these borrowers would be $580 million.[19] Counseling obviously requires time from borrowers and providers;

[15] Counseling may be rooted primarily in information transfer; see Stigler (1961) for a seminal discussion of information search and asymmetry.

[16] For example, counseling might be integrated into lending for riskier borrower populations such as those described by An and Bostic (2009), Bond, Musto, and Yilmaz (2009), and Green, Sanders, and Wachter (2008).

[17] The release of public data on the HAMP program may offer a new and unique source of information with which to study foreclosure counseling.

[18] Problems include the question of at what point to assign counseling, low take-up rates for those assigned to treatment, unobserved crossovers of control loans into counseling, other services households in crisis might access, and attrition in the sample over time.

[19] This number reflects authors' calculations using the New York Federal Reserve Bank's Consumer Credit Panel figure for number of loans in foreclosure and the average cost to taxpayers

it also may serve to lengthen the foreclosure process. Estimates of the costs of foreclosures vary. Borrowers lose equity and future access to credit, but gain from skipping housing payments. Lenders (and investors) lose servicing and legal costs, plus unpaid principal and interest. Local communities can incur added costs of externalities such as increased public service needs and lower tax revenue as a result of depressed home prices (Immergluck & Smith, 2006; Lin, Rosenblatt, & Yao, 2009; Rueben & Lei, 2010). Estimating costs for various parties is precarious, but given some simple assumptions, counseling may in fact be cost-beneficial: If counseling reduces the ultimate foreclosure and repossession for 24,500 loans (a shift from a 5 percent repossession rate to a 3.3 percent rate, the reduction suggested in Table 7), and if lenders on average suffer a $25,000 loss per foreclosure, this reduction in foreclosure rates would suggest savings of $595 million. This is a back-of-the-envelope estimate, and perhaps based on conservative assumptions, but still supportive of counseling from the perspective of direct delivery costs and savings to lenders alone.

Although they are encouraging in many respects, these findings have some limitations. The CTS data include loans serviced by firms with arguably little incentive to cooperate with borrowers and therefore borrowers who might benefit differentially from counseling. The economic context of this study period was unusual, with weak home sales and weak labor markets combined with variations in state and federal regulatory oversight of lenders and servicers related to the foreclosure process. The results may not apply in more expansionary conditions. These results are derived from a hotline and generally involved telephonic services and may not accurately reflect the effects of more intensive, face-to-face services. The instrument used to identify counseling—Fix Your Mortgage outreach events—shows some promise, especially combined with distance from the event to the borrower's zip code. However, these events were not randomly assigned. These estimates were therefore restricted to MSAs that hosted these events (likely the most distressed housing markets and located in central locations perhaps proximate to distressed borrowers).

The mechanisms through which counseling may operate are worthy of further research, especially related to modifications of mortgage loan contracts. The signaling value of counseling also requires further study, perhaps leading to more precise triage of borrowers in financial distress such that certain borrowers receive more intensive services while others are primarily referred to lenders. Another important issue is the heterogeneity of counseling effects; some populations may benefit differentially, especially those lacking basic financial capability or experience with financial institutions. More generally, this work raises issues regarding the role of information in consumer financial markets and, in particular, the role public policies may have in facilitating information and advice in these markets.[20]

The way in which counseling enhances the value of mortgage loans remains an important question for industry and public policy. Counseling has been a component of the response to the housing crisis by policymakers and industry. More and better data are needed, but counseling may indeed be well positioned to aid borrowers in distress and reduce the incidence of foreclosures.

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for NFMC counseling of $414 per client served, as reported at http://nw.org/network/nfmcp/documents/2011CongressionalReport.pdf.

[20] See Bucks and Pence (2008) or Campbell (2006) for a discussion of failures of information in mortgage markets.

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