DMP Participation and Credit Counseling Outcomes

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Abstract

This paper reports on the final phase of a multi-year project to identify the aspects of a credit counseling experience, if any, that lead to longer-term improvements in consumer credit profiles and credit usage behavior. The paper analyzes the experience of 29,000 clients who were counseled by five non-profit counseling agencies in 2007. Among the 45% of clients who were recommended for a Debt Management Plan (DMP), it is clear that the decision to start a DMP is linked to significant credit score improvement and reduced likelihood of bankruptcy. That is, between two clients for whom the counselor has judged that a DMP is both a workable option and the best option, the client who actually starts payments in a DMP fares significantly better over a three year period in terms of credit score and reduced incidence of bankruptcy. A statistical procedure to control for client self-selection reinforces the finding that it is the DMP experience and not selection that drives the result. Much of the improvement in scores for DMP participants is attributable to debt repayment during the course of the DMP. That is, the longer the client sticks with the DMP payment program, the greater is the pay-down of debt and the greater the corresponding improvement in credit score. Larger reductions in the interest rate offered to clients who agree to a DMP also increase time on plan and the amount of debt repaid. The rationale is straightforward. The interest rate reduction associated with the DMP program is the incentive for clients to start and stick with a monthly repayment plan. The larger the reduction, the greater is the incentive.

A. Introduction

In the wake of the global financial crisis and Great Recession of 2008-2009, credit counseling agencies are experiencing increased regulatory scrutiny (e.g., federal and state "enabling" laws; IRS review of qualifications for non-profit status), greater demand for core counseling services (e.g., foreclosure prevention counseling; bankruptcy pre-filing and pre-discharge counseling), and competitive pressures from debt settlement companies that are increasing the pace of consolidation in the counseling industry. As change continues to permeate the industry, an over-arching question remains: what aspects of counseling programs (and counseling agencies) are most effective in generating positive outcomes for consumer clients? In particular, what aspects of a counseling experience, if any, lead to longer-term improvements in consumer credit profiles and credit usage behavior.

In 2004, American Express and the Consumer Federation of America commissioned a multi-year research project to examine the impact of credit counseling on consumers. Phase 1 of the research focused on the comparative effectiveness of counseling delivery channels. One-on-one counseling (as opposed to credit education offered in groups or online) is inherently resource intensive. A decade ago, the conventional wisdom was that counseling conducted in-person was the gold standard and that telephone counseling – and more recently Internet counseling - was a weaker substitute. But, face-to-face delivery requires brick and mortar offices. A national counseling network built on face-to-face delivery would be far more expensive to build and maintain than technology-assisted delivery through the telephone or Internet. Evidenced on the comparative effectiveness of technology-assisted delivery has important implications for any public policy that would encourage widespread availability of counseling options for consumers throughout the country. Because no study had been conducted to compare the effectiveness of delivery channels, this became an important starting point for the project.[1]

Key findings from Phase 1 included the following:

- After controlling for initial credit profiles and credit experience (as portrayed in credit report information), analysis of 26,000 counseling clients who were counseled in 2003 found that telephone and face-to-face delivery of the initial counseling generated equivalent outcomes in terms of consumers credit scores and credit bureau profiles four years later. This result holds both for clients who complete only an initial counseling session as well as for those who enter agency-administered Debt Management Programs (DMPs).

- This basic finding was robust across the sample, characterizing the client outcomes *within* individual counseling agencies (i.e., holding agency philosophy, educational materials, training, etc., constant) as well as *across* the group of ten participating agencies that employed different follow-up procedures and educational materials.

- The results from Phase 1 *do not* suggest that telephone and in-person delivery are generating equivalent outcomes industry-wide. Agencies in the study were not selected to be representative of the counseling industry as a whole. They were selected in large part because the core of their service delivery appeared to focus on holistic counseling, with an emphasis on client education and identification of underlying financial problems. Consequently, we conclude that *when implemented by agencies focused on client education, telephone and face-to-face delivery of counseling can be equally effective.*

- Another intriguing finding was that consumers who were recommended for a Debt Management Plan (DMP) and actually chose to start payments experienced a significantly lower incidence of bankruptcy and greater improvement in risk scores compared to all other consumers in the study, *including those who were recommended for a DMP and chose not to start.* This preliminary finding warranted more detailed follow-up research in Phase 2 of the project. It suggested that the discipline of DMP participation (e.g., budgeting and committing to maintain regular monthly payments) for qualified individuals, coupled with ongoing interaction with the counseling agency, may help clients to improve their credit behavior.

The following sections describe the results of Phase 2 of the study which sought more concrete evidence of benefits to consumers through an <u>ongoing</u> counseling experience. Further study of the factors that contribute to both DMP success and credit profile improvement reveals that differences in procedures across agencies appear to contribute to that success. To follow up on the role of DMP participation, Phase 2 asked a set of counseling agencies to provide more detailed information on the outcomes of DMP participation, including the extent to which clients stayed with their payment

[1] For more details and results from Phase 1 see Barron and Staten, 2011.

plan commitments and actually repaid debt. We find that DMP participation leads to more favorable outcomes, a result that provides a rationale for encouraging individuals to consider DMPs and preserving the DMP option for consumers. In addition, we find that agencies in the sample varied sharply in their recommendations that observationally similar clients start a DMP, and also in their success in converting such recommendations into active DMPs. These agency effects support an instrumental variable approach to account for self-selection of clients into the category of DMP starters. While the data in this study aren't sufficiently granular to quantify exactly how client treatment varies across agencies, they do encourage subsequent research to try to identify "best practices" within agencies that encourage clients to start and stick with payment plans and improving the client experience.

B. Debt Management Plans and Credit Market Outcomes: An Overview

Five of the credit counseling agencies that participated in Phase 1 provided data for the Phase 2 analysis.[2] The agencies provided counseling session data for all clients who sought and received budget counseling in October and November of 2007. In addition, the agencies also provided DMP status data as of August 2010 for the subset of those counseled clients who started a DMP. The data files were sent to Trans Union to be matched to archived credit bureau data for the respective clients as of October 2007 and August 2010. The credit bureau was able to match credit reports and VantageScore credit scores for both 2007 and 2010 for 93.7% of the clients counseled, yielding 29,395 cases for analysis. The depersonalized data file was sent to the authors for analysis.

Many individuals who seek credit counseling are already suffering serious financial distress. Across all individuals who sought credit counseling in October and November of 2007, about 25% subsequently filed for bankruptcy during the following 34 months. However, as a group they achieved a significant improvement in credit scores with credit scores on average increasing by 44 points over this period.

Tables 1 and 2 provide a more detailed breakdown of credit outcomes for the sample in terms of bankruptcy incidence and change in credit scores. Table 1 considers differences in outcomes by counseling delivery channel and client DMP participation. Table 2 considers differences in credit outcomes across agencies. The results are consistent with the findings of the Phase 1 study: there is both a greater improvement in credit scores and a lower rate of bankruptcy filing for clients who participate in a DMP. Clients who started participation in a DMP subsequent to their counseling in late 2007 managed to achieve a credit score in 2010 about 20 points higher, and a frequency of bankruptcy 43% lower, than clients who did not participate in a DMP. These basic results are similar across different delivery channels (Table 1) and across different agencies (Table 2).

Of course, bankruptcy can affect credit scores and bankruptcy incidence occurs in both DMP clients and non-DMP clients. Table 3 takes a closer look at the interaction of bankruptcy and DMP participation on changes in credit scores. Across the entire sample of clients counseled in 2007, credit scores increased by 44 points, on average, by August 2010. About 30% of the sample experienced a score increase of more than 84 points. Compare these sample averages to the percentages for the subgroups displayed in the two panels of Table 3. The top panel indicates that,

[2] The five agencies were Money Management International, Credability (formerly CCCS-Greater Atlanta), Novadebt, Lutheran Social Services, and Clearpoint.

among clients who did not participate in a DMP, those who subsequently filed for bankruptcy (6,361 clients) experienced larger credit score increases, on average, than those who did not file (16,055 clients). However, the opposite is true for clients who started a DMP. Among DMP clients, those who avoided bankruptcy (5,856 clients) saw their scores increase an average of 61.5 points, compared to an average increase of 48.8 points for DMP clients who did file at some point between 2007 and 2010 (1,108 clients). For purposes of this table, define a "base case" client as one who did not participate in a DMP and did not file for bankruptcy. For this subgroup of 16,055 clients, the average score change (35.2 points) was the smallest of the four groups displayed in the table.

A similar result appears in the bottom panel of Table 3, which displays the percentage of clients in each subgroup who experienced credit score changes greater than 84 points. The base case clients (no DMP, no bankruptcy) exhibit the lowest frequency (25.1%) of large score changes among the four groups. And, DMP clients who did not file for bankruptcy had the highest frequency (40.0%) of large score changes. Most curiously from Table 3, filing for bankruptcy clearly can improve a counseling client's credit score. While this result appears counterintuitive, recall that many of these clients had relatively low scores and large outstanding unsecured debts at the time of counseling. Bankruptcy reduces the outstanding debt and the number of current delinquencies. The change in credit score is measured nearly three years after the initial counseling, diminishing to some extent the impact of bankruptcy on the score. In any case, among non-DMP clients, those who filed for bankruptcy experienced greater improvement in their scores than those who did not, on average. And, a larger percentage of bankruptcy filers (34.6% vs. 25.1%) experienced large score increases than was the case for clients who didn't file for bankruptcy.[3]

One caveat to the comparison of average values displayed in Table 3 is that the composition of the four groups in terms of individual client characteristics may vary sharply. The following section will report multivariate analysis to account for these individual characteristics.

[3] This finding cautions against making sweeping statements about the merits of DMP participation as a means of avoiding bankruptcy and its impact on a client's credit score.

Table 1: Bankruptcy Frequency and Change in Credit Score, 2007-2010 for Clients Who Sought Debt Counseling in 2007: By Delivery Channel and DMP Participation

Delivery Channel	*Variable*	*Did not Participate in DMP Plan*	*Did Participate in DMP Plan*	*Difference for Participants in DMP*
Face-to-Face	*Average Credit Score in 2007*	609.8	602.2	-7.6
	Average Change in Score: 2007 to 2010	38.6	60.6	22.0
	Percent Filing Bankruptcy: 2007 to 2010	30.2%	16.9%	-13.3%
	Number of Observations	2,965	1,480	
Internet	*Average Credit Score in 2007*	597.1	603.2	6.1
	Average Change in Score: 2007 to 2010	39.5	62.2	22.7
	Percent Filing Bankruptcy: 2007 to 2010	31.1%	18.2%	-12.8%
	Number of Observations	6,735	1,310	
Telephone	*Average Credit Score in 2007*	604.0	606.5	2.5
	Average Change in Score: 2007 to 2010	40.0	58.2	18.1
	Percent Filing Bankruptcy: 2007 to 2010	26.5%	14.8%	-11.7%
	Number of Observations	12,716	4,174	
Overall	*Average Credit Score in 2007*	602.7	604.9	2.3
	Average Change in Score: 2007 to 2010	39.7	59.4	19.8
	Percent Filing Bankruptcy: 2007 to 2010	28.4%	15.9%	-12.5%
	Number of Observations	22,416	6,964	

Note that participation in a DMP plan requires at least one payment through the plan.

Table 2: Bankruptcy Frequency and Change in Credit Score, 2007-2010 for Clients Who Sought Debt Counseling in 2007: By Agency and DMP Participation

Agency	*Variable*	*Did not Participate in DMP Plan*	*Did Participate in DMP Plan*	*Difference*
Agency A	*Average Credit Score in 2007*	595.6	591.6	-4.0
	Average Change in Score: 2007 to 2010	38.6	62.8	24.2
	Percent Filing Bankruptcy: 2007 to 2010	30.4%	18.9%	-11.5%
Agency B	*Average Credit Score in 2007*	595.2	597.7	2.5
	Average Change in Score: 2007 to 2010	41.2	62.9	21.8
	Percent Filing Bankruptcy: 2007 to 2010	32.5%	19.0%	-13.5%
Agency C	*Average Credit Score in 2007*	618.0	605.8	-12.2
	Average Change in Score: 2007 to 2010	41.5	63.7	22.2
	Percent Filing Bankruptcy: 2007 to 2010	35.1%	18.3%	-16.8%
Agency D	*Average Credit Score in 2007*	603.5	606.5	3.0
	Average Change in Score: 2007 to 2010	38.8	58.6	19.8
	Percent Filing Bankruptcy: 2007 to 2010	26.8%	15.9%	-10.9%
Agency E	*Average Credit Score in 2007*	617.4	609.3	-8.1
	Average Change in Score: 2007 to 2010	41.4	58.2	16.8
	Percent Filing Bankruptcy: 2007 to 2010	24.3%	11.5%	-12.7%
Overall	*Average Credit Score in 2007*	602.7	604.9	2.3
	Average Change in Score: 2007 to 2010	39.7	59.4	19.8
	Percent Filing Bankruptcy: 2007 to 2010	28.4%	15.9%	-12.5%

Note that participation in a DMP plan requires at least one payment of debt through the plan.

Table 3: Two Measures of Credit Score Improvement By Bankruptcy Filing and DMP Participation
For Clients Who Sought Debt Counseling in 2007

Changes in Credit Score (2007 to 2010)	*Did not Participate in DMP Plan (Base)*	*Did Participate in DMP Plan*	*Difference from Base*
Did not File for Bankruptcy (Base)	35.2	61.5	26.2
Number of Observations	16,055	5,856	
Filed for Bankruptcy	50.9	48.8	13.6
Number of Observations	6,361	1,108	
Difference from Base	15.7	13.6	
Percent with Change in Credit Score (2007 to 2010) Greater than 84 Points	*Did not Participate in DMP Plan (Base)*	*Did Participate in DMP Plan*	*Difference from Base*
Did not File for Bankruptcy (Base)	25.1%	40.0%	14.9%
Number of Observations	16,055	5,856	
Filed for Bankruptcy	34.6%	32.4%	7.3%
Number of Observations	6,361	1,108	
Difference from Base	9.5%	7.3%	

C. The Role of DMP Client Characteristics in Determining Credit Outcomes

Table 4 reports mean values of key credit bureau variables that characterize the credit history of each client as of the time of counseling in 2007, as well as demographic variables and the counseling delivery channel. These variables may be important determinants of a client's credit score at the time of counseling as well as future changes in the score. The set of credit bureau variables displayed in the table includes information on the balances for different types of debt, the utilization rate for revolving credit lines (and whether this variable can be computed), three variables that indicate files with small numbers of active trades (zero trades, 1 to 3 trades (thin) and 4 to 6 trades (low)), the number of credit inquiries, information on public derogatory items with respect to credit, and the age of the client.

The demographic variables, obtained from counseling agency records, indicate if the client is married, has a college degree, is a homeowner, and is currently employed. Also included is the number of individuals reported in the household. The delivery channel variables indicate if the client's first counseling session was by telephone or the internet, as opposed to a face-to-face meeting.

Comparing means for the overall sample (first column) with means for the sample who participated in DMPs (second column), note that individuals in the two groups have very similar initial credit scores, but DMP clients have fewer instances of zero or thin files, lower balances on both revolving and non-revolving trades, higher utilization rates on revolving credit lines, fewer inquiries and fewer derogatory items.

Table 5 begins a series of multivariate estimations that examine specific items of interest, controlling for other factors. In particular, Table 5 reports estimates of probit models to investigate the factors that determine a client's decision to participate in a DMP, estimated across more than 29,000 debt/budget counseling clients in the sample. In each model, the dependent variable equals one if the client seeking counseling participated in a DMP (i.e., agreed to a DMP and made at least one payment). About 23% of all clients in the sample did so.

The first column in Table 5 reports the results that utilize only the credit bureau variables. The second column includes the additional demographic and channel delivery variables provided by the credit counseling agencies. The results reported in Table 5 indicate that clients with "thin" files or "low" number of active trades are less likely to participate in a DMP. Plan participation rises with the number of active trades that have a positive balance as well as with the revolving utilization rate. In contrast, plan participation falls as total balances on revolving and non-revolving debt, inquiries, and the number of public record items rise, other things equal. Note that the client's initial credit score at the time of counseling is not a statistically significant predictor of DMP participation, given the inclusion of the specific credit bureau variables. In terms of the demographic variables, plan participation is higher for clients who are married, employed or have a college degree. DMP participation is lower for homeowners, and those who were counseled via the telephone or the Internet (as opposed to in-person).

Table 4: Means and Standard Deviations for Bureau Credit History and Demographic Variables in 2007

VARIABLE	*Mean (full sample)*	*Mean (DMP participants only)*
Not a DMP Participant and did not file for bankruptcy (Base)	0.55	0.00
DMP Participant and did not file for bankruptcy	0.20	0.84
DMP Participant and filed for bankruptcy	0.04	0.16
Not a DMP Participant and filed for bankruptcy	0.22	0.00
Average Change in Score: 2007 to 2010	44.37	59.45
Bureau credit score, 2007	603.23	604.95
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	10.36	8.87
Bureau record: total balance of revolving trades, 2007, in 10,000s	1.89	1.72
Bureau record: ratio of revolving balance to limit/high credit, 2007	0.65	0.73
Bureau record: ratio of revolving balance to limit/high not available, 2007	0.11	0.04
Bureau record: no active trades (verified last 12 months), 2007	0.03	0.01
Bureau record: number of active trades between 1 and 3 (thin), 2007	0.17	0.12
Bureau record: number of active trades between 4 and 6 (low), 2007	0.22	0.24
Bureau record: percent of active trades with positive balance, 2007	80.83	82.85
Bureau record: number of inquiries in last 6 months, 2007	2.51	1.91
Bureau record: at least one public derogatory item, 2007	0.21	0.16
Bureau record: number of public derogatory items, 2007	0.33	0.23
Bureau report: age of client in 2007	41.74	42.14
Client is married	0.42	0.42
Client has a college degree or higher	0.17	0.19
Client's number in household	2.49	2.40
Client is a homeowner	0.48	0.45
Client is employed	0.72	0.75
Client's initial contact with agency through Internet	0.27	0.19
Client's initial contact with agency by telephone	0.57	0.60
Observations	29,380	6,964

Table 5: The Role of Debt Status, Demographics, and Delivery Channel in Predicting DMP Participation

VARIABLES	*Participate in DMP (Probit Model, marginal effects reported)*	*Participate in DMP (Probit Model, marginal effects reported)*
Bureau credit score, 2007, in 100s	-0.0014	-0.0021
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	-0.0009***	-0.0008***
Bureau record: total balance of revolving trades, 2007, in 10,000s	-0.0087***	-0.0093***
Bureau record: ratio of revolving balance to limit/high credit, 2007	0.0542***	0.0539***
Bureau record: ratio of revolving balance to limit/high missing	-0.1056***	-0.1080***
Bureau record: no active trades (verified last 12 months), 2007	0.0243	0.0290
Bureau record: number of active trades between 1 and 3 (thin), 2007	-0.0729***	-0.0710***
Bureau record: number of active trades between 4 and 6 (low), 2007	-0.0221***	-0.0213***
Bureau record: percent of active trades with positive balance, 2007	0.0009***	0.0009***
Bureau record: number of inquiries in last 6 months, 2007	-0.0137***	-0.0132***
Bureau record: at least one public derogatory item, 2007	-0.0078	-0.0044
Bureau record: number of public derogatory items, 2007	-0.0195***	-0.0214***
Bureau report: age of client in 2007	-0.0001	0.0002
Client is married		0.0277***
Client has a college degree or higher		0.0455***
Client's number in household		-0.0022
Client is a homeowner		-0.0176***
Client is employed		0.0613***
Client's initial counseling through Internet		-0.0848***
Client's initial counseling by telephone		-0.0805***
Agency A	-0.2038***	-0.1980***
Agency B	-0.0878***	-0.0914***
Agency C	-0.0932***	-0.1172***
Agency E	-0.0433***	-0.0116
Mean of dependent variable	0.237	0.237
Observations	29,380	29,380

Note that *** p<0.01, ** p<0.05, and * p<0.1.

Table 6 explores the importance of credit history and demographic variables as well as DMP participation on the change in client credit scores between 2007 and 2010. In effect, this table takes a closer look at differences across the groups reported in Table 3. The first column in Table 6 replicates the results in the first panel of Table 3, as there are no control variables included in the regression and the dependent variable is the change in the credit score between 2007 and 2010. The second column adds variables to control for the credit and demographic characteristics of the clients. The mean value for the dependent variable (change in scores) for the sample was 44 points. The results reported in Table 6 reinforce several interesting points already observed in Table 3 regarding the impact of DMP participation and bankruptcy on credit score changes for counseling clients. Clients either participated in a DMP or did not. Within each of those two groups, clients either filed for bankruptcy at some point after counseling or did not. The "base" group of clients for this analysis is the group who did not start a DMP and did not file for bankruptcy. The first three variables in Table 6 represent the other three groups of clients, with the base group omitted from the variable list for purposes of comparison.

The estimated coefficients in the second column indicate that, on average, all three of these groups experienced significantly higher credit scores by 2010 as compared to the omitted base group (those who didn't start a DMP and didn't file for bankruptcy), even after accounting for differences in client characteristics at the time of counseling. For example, DMP participants who did not file for bankruptcy had credit scores 20.7 points higher, on average, than the base group by 2010, other things equal. But, it is also clear from Table 6 that clients who declared bankruptcy achieved higher scores, on average, than the base group, holding other factors constant. This is true whether or not those bankrupt clients had started a DMP. But, for clients on a DMP who managed to avoid bankruptcy, the score improvement relative to the base group was two to three times larger than that achieved by clients who declared bankruptcy.

Clearly, starting a DMP does not guarantee that bankruptcy will be avoided, but it does seem to help. Table 7 considers the relationship between our set of credit bureau and demographic variables (including an indicator of DMP participation) and the likelihood of subsequently filing for bankruptcy. The coefficients in the right-most column indicate that, controlling for other client characteristics at the time of counseling, DMP participation lowers the likelihood of a bankruptcy filing by 11.9%.[4]

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[4] Credit scorecard developers have recognized that credit characteristics have a different relationship with loan risk for different sub-populations. See "Segmentation for Credit-based Delinquency Models", May 2006, VantageScore Solutions, LLC. In particular, the VantageScore document suggests segmenting the population by the number of active trades and by initial risk scores. We applied this segmentation approach to the predictions of credit score changes and bankruptcy filings to check whether the predictions regarding DMP participation are robust to sub-populations. Details are reported in Appendix A. In general, the results are robust to segmentation.

Table 6: The Interaction of DMP Paticipation and Bankruptcy Filing on Client Credit Score Change, 2007-2010

VARIABLES	*Change in Risk Score, 2007 to 2010, for all clients without control variables*	*Change in Risk Score, 2007 to 2010, for all clients with control variables*
DMP Participant and did not file for bankruptcy	26.2191***	20.6692***
DMP Participant and filed for bankruptcy	13.6047***	6.4897***
Not a DMP Participant and filed for bankruptcy	15.6803***	10.3954***
Bureau credit score, 2007		-0.6288***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s		-0.1393***
Bureau record: total balance of revolving trades, 2007, in 10,000s		-0.0744
Bureau record: ratio of revolving balance to limit/high credit, 2007		-5.0786***
Bureau record: ratio of revolving balance to limit/high not available, 2007		-20.6545***
Bureau record: no trades verified last 12 months (active), 2007		-41.9118***
Bureau record: number of active trades between 1 and 3 (thin), 2007		-15.1566***
Bureau record: number of active trades between 4 and 6 (low), 2007		-5.2382***
Bureau record: percent of active trades with positive balance, 2007		-0.3402***
Bureau record: number of inquiries in last 6 months, 2007		-2.0061***
Bureau record: at least one public derogatory item, 2007		-7.4206***
Bureau record: number of public derogatory items, 2007		-3.5009***
Bureau report: age of client in 2007		0.4288***
Client is married		4.3844***
Client has a college degree or higher		8.3045***
Client's number in household		-2.2541***
Client is a homeowner		5.3927***
Client is employed		3.7391***
Client's initial counseling through Internet		-0.6937
Client's initial counseling by telephone		-2.4120**
Constant	35.2374***	425.9520***
Mean of dependent variable	44.37	44.37
Observations	29380	29380

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

Table 7: The Role of Delivery Channel, Debt Status, Demographics, and DMP Activity on Likelihood of Filing for Bankruptcy

VARIABLES	*File for Bankrtupcy, 2007 to 2010 (Probit Model)*	*File for Bankrtupcy, 2007 to 2010 (Probit Model)*
DMP Participant	-0.1188***	-0.1193***
Bureau credit score, 2007		-0.0004***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s		0.0013***
Bureau record: total balance of revolving trades, 2007, in 10,000s		0.0068***
Bureau record: ratio of revolving balance to limit/high credit, 2007		0.0022
Bureau record: ratio of revolving balance to limit/high missing		-0.0118
Bureau record: no trades verified last 12 months (active), 2007		-0.1681***
Bureau record: number of active trades between 1 and 3 (thin), 2007		-0.1313***
Bureau record: number of active trades between 4 and 6 (low), 2007		-0.0809***
Bureau record: percent of active trades with positive balance, 2007		-0.0001
Bureau record: number of inquiries in last 6 months, 2007		0.0068***
Bureau record: at least one public derogatory item, 2007		0.1684***
Bureau record: number of public derogatory items, 2007		-0.0128***
Bureau report: age of client in 2007		0.0022***
Client is married		0.0112*
Client has a college degree or higher		-0.0360***
Client's number in household		0.0069***
Client is a homeowner		0.0350***
Client is employed		0.0090
Client's initial counseling through Internet		-0.0152*
Client's initial counseling by telephone		-0.0276***
Mean of dependent variable	0.254	0.254
Observations	29,380	29,380

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables Indicating agency. Probit model reports coefficients indicating marginal effects.

Accounting for Information Revealed to the Credit Counselor: To this point, the results strongly indicate that DMP participants outperform non-participants in terms of larger increases on credit scores and lower bankruptcy incidence during the 3 years subsequent to counseling. Of course, it is true that not all clients qualify for a DMP. Some have too much debt to repay within 5 years at their current income levels, the general criteria for DMP eligibility. For some the opposite is true: they are in better financial shape and can handle payments on their own without the assistance of a DMP plan. To the extent that differences in financial condition are captured in credit report data, then to some degree, the regression and probit estimates displayed thus far have accounted for these differences and still found that DMP participants outperform non- participants. But, through the course of a counseling interview, information is often revealed to the counselor that may not be evident in credit bureau data obtained at the time of counseling. Since the database for this project contains the counselor's assessment of the client's suitability for a DMP, this recommendation can be used to further segment the sample and control for factors unobservable in the objective credit report and demographic data.

Tables 8 – 10 focus on the sample of clients who counselors recommended for a DMP.
Table 8 summarizes the breakdown of DMP recommendations and DMP participation among those seeking counseling. Note that about 46% of clients were recommended for a DMP, and of those recommended for a DMP, only 45% participated in a DMP. Interestingly, for the 54% of clients not recommended a DMP, approximately 5% ended up participating in a DMP.

Table 8: Breakdown of Clients In Terms of Counselor Recommendation for DMP And Client Participation

Counselor Recommendation	*Client Did Not Participate in DMP*	*Client Participated in DMP*	*Overall*
Client Not Recommended for a DMP	15,001	873	15,874
Client Recommended for a DMP	7,415	6,091	13,506
Overall	22,416	6,964	29,380

The estimates in Table 9 acknowledge the role of the counselor in driving DMP participation. Specifically, these estimates consider how the delivery channel, credit history and demographic variables affect the likelihood a DMP is recommended as well as the likelihood of participation in a DMP among those recommended. The effects of these variables on these two likelihoods are similar, with three notable exceptions. Individuals who initially seek counseling services by telephone are more likely to be recommended for a DMP, but are less likely to participate in a DMP, other things equal. Older individuals are less likely to be recommended for a DMP, but are more likely to participate in a DMP, other things equal. Finally, those with a higher credit score are less likely to be recommended for a DMP, but are neither more nor less likely to participate among those recommended, other things equal.

Table 9: The Role of Delivery Channel, Debt Status, and Demographics on the Likelihood a DMP is Recommended and the Likelihood of Participation in a DMP for those Recommended

VARIABLES	*DMP Recommended*	*Participated in DMP (for those Recommended a DMP)*
Bureau credit score, 2007, in 100s	-0.0128**	0.0081
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	-0.0019***	-0.0003
Bureau record: total balance of revolving trades, 2007, in 10,000s	-0.0099***	-0.0094***
Bureau record: ratio of revolving balance to limit/high credit, 2007	0.0733***	0.0527***
Bureau record: ratio of revolving balance to limit/high missing	-0.0687***	-0.1501***
Bureau record: no trades verified last 12 months (active), 2007	0.0604*	-0.0203
Bureau record: number of active trades between 1 and 3 (thin), 2007	-0.0408***	-0.1198***
Bureau record: number of active trades between 4 and 6 (low), 2007	-0.0129	-0.0294**
Bureau record: percent of active trades with positive balance, 2007	0.0008***	0.0010***
Bureau record: number of inquiries in last 6 months, 2007	-0.0055***	-0.0200***
Bureau record: at least one public derogatory item, 2007	-0.0021	-0.0042
Bureau record: number of public derogatory items, 2007	-0.0200***	-0.0290***
Bureau report: age of client in 2007	-0.0023***	0.0024***
Client is married	0.0352***	0.0144
Client has a college degree or higher	0.0878***	0.0294***
Client's number in household	0.0020	-0.0049
Client is a homeowner	-0.0309***	-0.0187
Client is employed	0.0466***	0.0759***
Client's initial counseling through Internet	-0.1252***	-0.1074***
Client's initial counseling by telephone	0.0513***	-0.1694***
Mean of dependent variable	0.46	0.45
Observations	29,380	13,506

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables Indicating agency.

Table 10 confirms that participation in a DMP is linked to credit score improvement and reduced likelihood of bankruptcy, even when the sample is restricted to include only individuals who were recommended for a DMP. This result is worth repeating: between two clients who are recommended for a DMP (i.e., clients for whom a DMP is both a workable option and the best option, in the judgment of the credit counselor), the client who actually starts payments in a DMP fares significantly better over a three year period in terms of credit score and reduced incidence of bankruptcy. This suggests some inherent value in the DMP experience, to be explored more thoroughly in the following section.

Indicating

Table 10: The Role of Delivery Channel, Debt Status, Demographics, and DMP Participation on Credit Score Change and Likelihood of Filing for Bankruptcy, Among Those Recommended for a DMP

VARIABLES	*Change in Risk Score, 2007 to 2010 (Regression Model)*	*File for Bankrtupcy, 2007 to 2010 (Probit Model)*
DMP Participant	17.0919***	-0.0689***
Bureau credit score, 2007	-0.6085***	-0.0002***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	-0.2167***	0.0016***
Bureau record: total balance of revolving trades, 2007, in 10,000s	-0.2712	0.0068***
Bureau record: ratio of revolving balance to limit/high credit, 2007	-2.2847	-0.0004
Bureau record: ratio of revolving balance to limit/high missing	-16.6726***	-0.0132
Bureau record: no trades verified last 12 months (active), 2007	-43.8139***	-0.1300***
Bureau record: number of active trades between 1 and 3 (thin), 2007	-17.5166***	-0.0958***
Bureau record: number of active trades between 4 and 6 (low), 2007	-6.0426***	-0.0570***
Bureau record: percent of active trades with positive balance, 2007	-0.3223***	0.0003
Bureau record: number of inquiries in last 6 months, 2007	-2.0818***	0.0075***
Bureau record: at least one public derogatory item, 2007	-7.1385***	0.2333***
Bureau record: number of public derogatory items, 2007	-3.4501***	-0.0234***
Bureau report: age of client in 2007	0.4731***	0.0014***
Client is married	4.0561***	0.0065
Client has a college degree or higher	9.5228***	-0.0263***
Client's number in household	-2.1556***	0.0040
Client is a homeowner	6.6593***	0.0179**
Client is employed	3.5439***	0.0049
Client's initial counseling through Internet	0.8127	0.0000
Client's initial counseling by telephone	-1.5941	-0.0112
Mean of dependent variable	49.11	0.197
Observations	13,506	13,506

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

Accounting for client self selection into DMPs: The above discussion presumes a causal relationship between DMP participation and outcomes, but there are well-known selection issues to consider in making such a claim. To illustrate the problem, suppose that individuals who are "motivated" to reduce debt achieve greater improvements in their credit scores, other things equal. It is plausible that the same motivation makes them more likely than other borrowers to actively participate in a DMP. Unfortunately, we can't directly measure differences in the level of motivation across individuals. This means that our OLS estimates of the effect of DMP participation on credit scores will be biased, as the estimated effect of DMP participation on credit scores also captures the fact that more motivated individuals, and thus individuals with more successful outcomes, are more likely to choose to participate in DMPs. This would be a classic example of a "selection" problem.

We know from Table 8 that only 45% of borrowers recommended to a DMP actually start a plan. Table 9 provides some insight into the factors that drive the decision to participate, once recommended. Clearly, some of the client demographic and credit bureau attributes that predict client risk score changes and bankruptcy incidence in Table 10 are also driving client participation in the DMP in Table 9. Unmeasured "motivation" may be doing the same.

Ideally, to avoid this problem, clients would be randomly assigned into DMP participation "treatments." In this way, motivated borrowers would be no more or less represented in the DMP group. Any evidence that DMP participation leads to improved credit scores could be attributed to the DMP experience and not to motivated borrowers self-selecting into the treatment.[5] To avoid incorrect inferences arising from the self-selection problem, what we would like to do is to identify one or more "instrumental" variables that predict DMP participation, but are not variables that also directly affect credit outcomes.

Table 5 indicates that agencies substantially differed in the ability to encourage individuals to participate in a DMP, even when one controls for debt status, demographics, and delivery channel. It seems reasonable to assume that such large differences in the extent to which clients are steered toward the adoption of a DMP are not the result of correspondingly large differences across agencies in their clients' motivation to repay debt. Whether you call it steering, persuasion, or salesmanship, the unobserved factor(s) generating the significant differences across agencies in DMP start rates are not plausibly linked to similar differences in motivation to repay debt among the consumers these agencies happen to draw as clients. Consequently, in Table 11 we use agency variables as instrumental variables in a two-stage, selection-correction estimation of the determinants of credit score changes and bankruptcy incidence following counseling.

The instrumental variable results reported in Table 11 indicate that our prior findings that DMP participation has a positive effect on credit outcomes do not simply reflect a selection outcome. In fact, comparing the ordinary least squares (OLS) results reported in the second column of Table 6 with the instrumental variable estimation reported in column 1 of Table 11 suggests that the causal effect of DMP participation is similar to that suggested by the OLS findings. Similarly, the instrumental variable results reported in column 2 of Table 11 indicate that DMP participation significantly reduces the likelihood of a bankruptcy filing, as we found earlier.[6]

[5] Of course, credit counseling is voluntary and not mandatory. And, especially in the case of a DMP program, client agreement is required and a DMP is never imposed on individuals, even if we could identify situations in which DMP recommendations were randomly assigned. So, true random assignment of borrowers into DMPs simply doesn't occur.
[6] Note, however, that the coefficients in Tables 7 and 11 regarding the effect of DMP participation on the likelihood of a bankruptcy filing are not directly comparable given that the instrumental variables estimation presents standard Probit coefficients.

Table 11: The Role of Delivery Channel, Debt Status, Demographics, and DMP Participation on Credit Score Change and Likelihood of Filing for Bankruptcy: An Instrumental Variable Estimation

VARIABLES	*Change in Risk Score, 2007 to 2010 (Instrumental Variables for DMP Participant, GMM)*	*File for Bankruptcy, 2007 to 2010 (Instrumental Variables for DMP Participant, Probit)*
DMP Participant	21.6085***	-0.9679***
Bureau credit score, 2007	-0.6303***	-0.0012***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	-0.1235***	0.0038***
Bureau record: total balance of revolving trades, 2007, in 10,000s	0.0436	0.0171***
Bureau record: ratio of revolving balance to limit/high credit, 2007	-5.2207***	0.0428
Bureau record: ratio of revolving balance to limit/high credit missing	-20.4904***	-0.0767
Bureau record: no trades verified last 12 months (active), 2007	-43.9947***	-0.7102***
Bureau record: number of active trades between 1 and 3 (thin), 2007	-15.7584***	-0.5148***
Bureau record: number of active trades between 4 and 6 (low), 2007	-5.6974***	-0.2822***
Bureau record: percent of active trades with positive balance, 2007	-0.3522***	0.0002
Bureau record: number of inquiries in last 6 months, 2007	-1.9271***	0.0159***
Bureau record: at least one public derogatory item, 2007	-7.2186***	0.4989***
Bureau record: number of public derogatory items, 2007	-3.3837***	-0.0498***
Bureau report: age of client in 2007	0.4468***	0.0070***
Client is married	4.1136***	0.0597***
Client has a college degree or higher	7.4756***	-0.0829***
Client's number in household	-2.1830***	0.0168**
Client is a homeowner	5.3873***	0.0836***
Client is employed	3.3662***	0.0848***
Client's initial counseling through Internet	-1.0534	-0.1462***
Client's initial counseling by telephone	-1.6698	-0.1835***
Mean of dependent variable	44.37	0.254
Observations	29,380	29,380

Note that *** p<0.01, ** p<0.05, and * p<0.1. The first column is an instrumental-variables egression.
generalized method of moments (GMM). The second column is an instrumental variables probitsecond column
reports the estimation of an instrumental probit model using the conditional maximum-likelihood

E. Time on Plan, Debt Repayment and Impact on Credit Scores For DMP Participants

From the previous section we know that clients in the sample who start payments on a DMP also achieve higher credit scores in the three years following counseling. It seems reasonable that at least some of this improvement in scores is attributable to debt repayment during the course of the DMP. That is, the longer the client sticks with the DMP payment program, the greater would be the pay-down of debt and the greater the corresponding improvement in credit score. In this section we focus exclusively on DMP participants and explore additional variables that could impact time-on-plan, such as the total amount of debt in the DMP and the interest rate concessions from creditors for debt on a DMP.

Table 12 begins by examining the potential determinants of the proportion of debt repaid as of August 2010. For the first variable listed in the table, the estimated coefficient in the right-most column indicates, not surprisingly, that clients with a larger original amount of debt in the DMP had paid a smaller proportion of debt. Looking at other key variables, the proportion of debt repaid increases with the client's credit score, the percent of active trades with a positive balance, and the education of the client. The percent of debt repaid decreases for older clients, and clients with larger households, as well as greater revolving and non-revolving balances, inquiries and public record items at the time of counseling.

Table 13 indicates that clients who repay a greater proportion of debt on a DMP have better credit market outcomes in terms of credit score increases and bankruptcy avoidance. The first column in Table 13 predicts the change in risk score; the second column in Table 13 predicts the likelihood of a bankruptcy filing for this sample of DMP participants. Increases in the total amount of debt in the plan (for a given proportion repaid) and the proportion actually repaid (for a given total debt) each lead to a positive change in the credit score.

Not surprisingly, the second column of Table 13 indicates that a higher level of DMP debt increases the likelihood that a DMP participant subsequently files for bankruptcy, but an increase in the proportion of DMP debt repaid is associated with a lower likelihood of bankruptcy. Interestingly, unlike earlier results for the entire sample (see Table 7), a higher 2007 credit score among DMP participants does not reduce the likelihood of filing for bankruptcy. Also, it appears that delivery channel has no statistically significant impact on either the change in risk score or the likelihood of bankruptcy for DMP clients, after controlling for the amount of debt repaid and other factors.

Table 12: The Role of Delivery Channel, Debt Status, and Demographics on the Percent of Debt Repayment for DMP Participants

VARIABLES	*Percent of DMP Debt Repaid to Date, for clients participating in DMP*	*Percent of DMP Debt Repaid to Date, for clients participating in DMP*
Total amount of debt to be repaid under the DMP	-0.3644***	-0.2752***
Bureau credit score, 2007, in 100s		6.2181***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s		-0.1560***
Bureau record: total balance of revolving trades, 2007, in 10,000s		-1.0070***
Bureau record: ratio of revolving balance to limit/high credit, 2007		3.0151*
Bureau record: ratio of revolving balance to limit/high not available, 2007		-5.2751*
Bureau record: no trades verified last 12 months (active), 2007		6.8258
Bureau record: number of active trades between 1 and 3 (thin), 2007		-1.8525
Bureau record: number of active trades between 4 and 6 (low), 2007		0.4037
Bureau record: percent of active trades with positive balance, 2007		0.0755***
Bureau record: number of inquiries in last 6 months, 2007		-1.4989***
Bureau record: at least one public derogatory item, 2007		2.7645
Bureau record: number of public derogatory items, 2007		-2.5583***
Bureau report: age of client in 2007		-0.0837***
Client is married		-0.5185
Client has a college degree or higher		2.5496**
Client's number in household		-0.8751**
Client is a homeowner		0.5310
Client is employed		0.2636
Client's initial contact with agency through Internet		-0.2052
Client's initial contact with agency by telephone		-1.6736
Mean of dependent variable	58.4	58.4
Observations	6,963	6,963

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

Table 13: The Role of Level and Proportion of DMP Debt on Credit Score Change and Likelihood of Bankruptcy Filing for DMP Participants

VARIABLES	*Change in Risk Score, 2007 to 2010 (Regression Model)*	*File for Bankrtupcy, 2007 to 2010 (Probit Model)*
Total amount of debt to be repaid under the DMP	0.2401**	0.0042**
Proportion of debt repaid to date (DMP plan)	71.7971***	-0.3075***
Bureau credit score, 2007	-0.6575***	0.0001
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	-0.1930***	0.0010***
Bureau record: total balance of revolving trades, 2007, in 10,000s	0.5340*	-0.0001
Bureau record: ratio of revolving balance to limit/high credit, 2007	-1.3082	-0.0225
Bureau record: ratio of revolving balance to limit/high not available, 2007	-16.2308***	-0.0276
Bureau record: no trades verified last 12 months (active), 2007	-37.3882***	-0.0212
Bureau record: number of active trades between 1 and 3 (thin), 2007	-15.2307***	-0.0673***
Bureau record: number of active trades between 4 and 6 (low), 2007	-7.7366***	-0.0294***
Bureau record: percent of active trades with positive balance, 2007	-0.3184***	0.0012***
Bureau record: number of inquiries in last 6 months, 2007	-1.3839***	0.0040***
Bureau record: at least one public derogatory item, 2007	-11.7889***	0.2927***
Bureau record: number of public derogatory items, 2007	-0.9299	-0.0290***
Bureau report: age of client in 2007	0.4873***	0.0010***
Client is married	3.1338	-0.0110
Client has a college degree or higher	8.8696***	-0.0228**
Client's number in household	-1.9453***	0.0044
Client is a homeowner	7.1619***	0.0069
Client is employed	4.3553**	0.0076
Client's initial contact with agency through Internet	4.0268	0.0079
Client's initial contact with agency by telephone	0.9251	-0.0070
Mean of dependent variable	59.44	0.16
Observations	6,963	6,963

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

A DMP typically involves concessions by most creditors in terms of reductions in the interest rates on the outstanding debt. The magnitude of these rate reductions positively influences the number of debtors who can qualify for a DMP, which typically requires 100% payment of debt on the plan within 60 months or less. Simply put, lower interest rates mean less principle and interest to pay over time and faster pay down of the initial balance. The five agencies that provided matched data for DMP participants also provided, in most cases, a composite annual percentage interest rate (APR) for the debt associated with the DMP. Four of these five agencies also provided information on a composite APR for the original debt.

Focusing on the four agencies that provided both APRs prior to counseling and for the DMP, the average APR for the DMP is quite similar across the agencies. In particular, the average APR for a DMP across all agencies is 10.3%, and the average for individual agencies ranged from 10.2% to 10.6%. The average reduction in the APR associated with entering a DMP across all agencies is 11.6 percentage points. However, there exists a wider range across agencies in the extent of the reduction in the APR, reflecting to a large extent a wider range in the average prior APRs across clients for the different agencies.

Consumers' original contract interest rates on loans and credit cards are generally subject to risk-based pricing. That is, loan and credit card interest rates vary across borrowers according to individual risk characteristics, including credit scores. However, it is important to note that DMP interest rates are generally <u>not</u> tailored to individual borrowers. DMP interest rates are typically set by creditor policy toward agencies and DMP products (e.g., standard vs. hardship products) and are generally uniform across clients within those categories. Consequently, the size of the reduction in the client's APR associated with starting a DMP primarily reflects the level of the prior APR. To illustrate, Table 14 reports regression analysis that models the size of the reduction in APR associated with a DMP as determined by prior APR and the credit bureau and demographic variables used in earlier tables. The R-Squared statistic at the bottom of the first column notes that more than 75% of the variance in the reduction across clients is explained by the prior APR. The coefficient on Prior APR indicates that for every 1 percentage point increase in Prior APR, there is a .93 percentage point increase in the size of the reduction in interest rate associated with adopting a DMP. Moreover, the other coefficients (and lack of statistical significance) in Table 14 indicate that this finding is not particularly sensitive to the inclusion of other control variables.

Table 15 examines the effects of the DMP debt pricing on the proportion of debt repaid. Across the four agencies that reported APR information on debt pre and post-DMP (5,119 cases), about 59% of the plan debt had been repaid by August 2010. The coefficients in the right-most column indicate that a higher initial level of debt on the plan reduces the proportion repaid, other things equal. As for the DMP pricing, the coefficients on the variables for DMP APR and the Reduction in APR are both positive and significant. That is, holding constant the DMP interest rate, the higher is the original interest rate (which translates into a larger reduction in the APR), the greater the repayment percentage. The rationale is straightforward. The interest rate reduction associated with the DMP program is the incentive for clients to start and stick with a monthly repayment plan. The larger the reduction, the greater is the incentive. Adding control variables, some additional findings are that a greater proportion of debt is repaid if the client's initial credit score was higher, if the client had a college degree, or if there are fewer individuals in the household.

Table 14: Determinants of Extent of Reduction in APR for DMP Participants

VARIABLES	*Reduction in APR for Clients participating in DMP (Regression model)*	*Reduction in APR for Clients participating in DMP (Regression model)*
Prior APR on DMP Debt	0.9265***	0.9241***
Total amount of debt to be repaid under the DMP		-0.0001
Bureau credit score, 2007, in 100s		0.0591
Bureau record: total balance of non-revolving trades, 2007, in 10,000s		0.0099**
Bureau record: total balance of revolving trades, 2007, in 10,000s		0.0174
Bureau record: ratio of revolving balance to limit/high credit, 2007		-0.2857
Bureau record: ratio of revolving balance to limit/high not available, 2007		0.7075**
Bureau record: no trades verified last 12 months (active), 2007		0.3303
Bureau record: number of active trades between 1 and 3 (thin), 2007		0.7908***
Bureau record: number of active trades between 4 and 6 (low), 2007		0.4591***
Bureau record: percent of active trades with positive balance, 2007		-0.0076**
Bureau record: number of inquiries in last 6 months, 2007		-0.0117
Bureau record: at least one public derogatory item, 2007		-0.2016
Bureau record: number of public derogatory items, 2007		0.0805
Bureau report: age of client in 2007		0.0012
Client is married		0.0032
Client has a college degree or higher		0.1374
Client's number in household		-0.0128
Client is a homeowner		-0.0555
Client is employed		-0.1064
Client's initial contact with agency through Internet		0.1506
Client's initial contact with agency by telephone		0.2389**
Mean of dependent variable	11.73	11.73
Observations	5,119	5,119
R-Squared	0.757	0.763

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

Table 15: The Role of APRs on the Debt Repayment for DMP Participants

VARIABLES	*Percent of DMP Debt Repaid to Date, for clients participating in DMP*	*Percent of DMP Debt Repaid to Date, for clients participating in DMP*
Total amount of debt to be repaid under the DMP	-0.3154***	-0.2396***
APR on DMP Debt	0.6952***	0.6745***
Reduction in APR for Clients participating in DMP	0.4834***	0.4483***
Bureau credit score, 2007, in 100s		6.8902***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s		-0.1406***
Bureau record: total balance of revolving trades, 2007, in 10,000s		-0.9859***
Bureau record: ratio of revolving balance to limit/high credit, 2007		2.7505
Bureau record: ratio of revolving balance to limit/high not available, 2007		-3.4219
Bureau record: no trades verified last 12 months (active), 2007		5.8849
Bureau record: number of active trades between 1 and 3 (thin), 2007		-0.1057
Bureau record: number of active trades between 4 and 6 (low), 2007		1.3484
Bureau record: percent of active trades with positive balance, 2007		0.0730**
Bureau record: number of inquiries in last 6 months, 2007		-1.5011***
Bureau record: at least one public derogatory item, 2007		2.2976
Bureau record: number of public derogatory items, 2007		-1.9366*
Bureau report: age of client in 2007		-0.1101***
Client is married		-0.8130
Client has a college degree or higher		3.2984***
Client's number in household		-1.2206***
Client is a homeowner		0.9133
Client is employed		-0.8197
Client's initial contact with agency through Internet		-0.0479
Client's initial contact with agency by telephone		-1.5907
Mean of dependent variable	59.55	59.55
Observations	5,119	5,119

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

F. Differences in Results Across Agencies

Included (but not shown) in many of the prior tables has been a set of variables to capture agency-specific effects on client outcomes. As we have seen, the agencies differed in their ability to recruit observationally equivalent individuals to participate in DMPs. This section focuses on differences in outcomes for those who participated in DMPs across agencies.

The first two columns of Table 16 indicate that for clients in the sample who started DMPs, there are no statistically significant differences across agencies in the change in credit scores, and only Agency E clients experienced a significantly smaller likelihood of a bankruptcy filing. In contrast, the third column of Table 16 indicates significant differences across agencies in the proportion of clients who start a DMP. Across the 6,963 clients who started a DMP, Agency A had significantly lower repayment rates than Agency D, as did Agency E. On the other hand, Agency B had a significantly higher repayment rate across its clients relative to Agency D. As this pattern does not match the pattern with respect to encouraging DMP participation indicated by Table 5, these results suggest that differences in agency procedures in dealing with clients on their DMPs may be generating different client outcomes.

Table 16: Differences in Outcomes Across Agencies For DMP Participants

VARIABLES	*Change in Risk Score, 2007 to 2010 (DMP Sample - Table 13)*	*Likelihood File for Bankruptcy, 2007 to 2010 (DMP Sample - Table13)*	*Percent of DMP Debt Repaid to Date (DMP Sample - Table 15)*
Agency A	-5.6301	0.0340	-11.3879***
Agency B	-0.3331	0.0150	3.7841***
Agency C	4.7076	0.0463	4.1632
Agency E	2.7432	-0.0324***	-5.4171***
Observations	6,963	6,963	6,963

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are the standard set of other control variables. Differences are relative to Agency D. Note that for the debt repaid equation, the regression differs from Table 15 in that the APR for the DMP debt was not included as an independent variable so that all agencies are included in the estimation.

G. Conclusions

This project sought more concrete evidence of benefits to consumers through an ongoing counseling experience, as manifested in the Debt Management Plans (DMPs) administered by credit counseling agencies. Overall, the analysis indicated that DMP participation leads to more favorable credit outcomes for consumers, a result that provides a rationale for encouraging individuals to consider DMPs and preserving the DMP option for consumers. In addition, we find that agencies in the sample varied sharply in their recommendations that observationally similar clients start a DMP, and also in their success in converting such recommendations into active DMPs. These agency effects support an instrumental variable approach to account for self-selection of clients into the category of DMP starters. While the data in this study aren't sufficiently granular to quantify exactly how client treatment varies across agencies, they do encourage subsequent research to try to identify "best practices" within agencies that encourage clients to start and stick with payment plans and improving the client experience.

Key findings include the following:

- Across the sample of more than 29,000 debt/budget counseling clients, 46% were recommended for a DMP. Of these, slightly less than half (45%) agreed to participate and actually started payments on a plan, so that only about 21% of clients begin DMPs as a result of the initial counseling interview.[7]

- Who elects to participate in a DMP (among those who have sought counseling)? Multivariate probit models estimated across more than 29,000 budget counseling clients in the sample reveal the following. Holding other factors constant, plan participation rises for clients with a greater number of active trades that have a positive balance as well as with the revolving utilization rate. Clients with "thin" files are less likely to participate in a DMP. But, plan participation falls as total balances on revolving and non-revolving debt, inquiries, and the number of public record items rise, other things equal. The client's initial credit score at the time of counseling is not a statistically significant predictor of DMP participation, given the inclusion of the specific credit bureau variables in the model (although clients with higher scores are less likely to be recommended for a DMP). In terms of the demographic variables, plan participation is higher for clients who are married, employed or have a college degree, but lower for homeowners. Consumers who initially seek counseling services by telephone are more likely to be recommended for a DMP but are less likely to participate in a DMP, relative to consumers counseled in person. In contrast, consumers counseled through the Internet are less likely to be recommended for a DMP and are less likely to participate, relative to those counseled in person. (See Tables 5 and 9)

- What is the impact of a DMP on a client's risk score and bankruptcy incidence? Among clients who were recommended for a DMP, it is clear that the decision to start a DMP is linked to significant credit score improvement and reduced likelihood of bankruptcy. That is, between two clients for whom the counselor has judged that a DMP is both a workable option and the best option, the client who actually starts payments in a DMP fares

[7] Note that an additional 873 clients in the sample (about 3%) started a DMP even though the counselor in their initial interview did not recommend the DMP solution. This generated a total of 6,964 total DMPs in the sample.

significantly better over a three year period in terms of credit score and reduced incidence of bankruptcy (Table 10). This result is reinforced by statistical procedures used to control for the tendency of highly motivated clients to self-select into the DMP opportunity. The positive effect of DMP participation on credit scores and bankruptcy does not simply reflect a selection outcome (Table 11).

- Do clients who stick with DMP payment programs longer fare better in terms of scores and bankruptcy incidence? Much of the improvement in scores for DMP participants is attributable to debt repayment during the course of the DMP (Table 13). That is, the longer the client sticks with the DMP payment program, the greater is the pay-down of debt and the greater the corresponding improvement in credit score. The proportion of debt repaid increases with the client's initial credit score, the percent of active trades with a positive balance, and the education of the client. The percent of debt repaid decreases for older clients and clients with larger households, as well as those with greater revolving and non-revolving balances, inquiries and public record items at the time of counseling. The counseling delivery channel does not appear to have an impact on time on plan/amount of debt repaid (Table 12).

- What is the impact of creditor interest rate concessions on client debt repayment? Across the four agencies that reported interest rate information on debt pre and post-DMP (5,119 cases), about 59% of the plan debt had been repaid by August 2010. Table 15 indicates that larger reductions in the interest rate offered to clients who agree to a DMP increase time on plan and the amount of debt repaid. The rationale is straightforward. The interest rate reduction associated with the DMP program is the incentive for clients to start and stick with a monthly repayment plan. The larger the reduction, the greater is the incentive. Adding control variables, some additional findings are that a greater proportion of debt is repaid if the client's initial credit score was higher, if the client had a college degree, or if there are fewer individuals in the household.

References

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Appendix A: Impact of Sample Segmentation on Estimates of Score Change and Bankruptcy Incidence

Tables A1 and A2 segment the sample by the number of active trades (six and below versus more than six) and by the VantageScore risk score (below 600 versus greater than or equal to 600) for purposes of estimating changes in credit scores. Tables A3 and A4 utilize similar segmentation in estimating the probit model for the likelihood of a bankruptcy filing.

The results across these four tables indicate differences across segments in how specific variables predict credit market outcomes. But, in general, the overall results are robust to segmentation. The predicted increase in the change in credit score for individuals who participate in a DMP is similar across trade level and risk score segments (Tables A1 and A2), and the predicted lower bankruptcy filing rate is similar across risk score segments (Table A4). However, the predicted reduction in the likelihood of bankruptcy filings for those who participate in a DMP is over two times larger among the segment with a high number of trades versus the segment with a low number of trades (Table A3). Table A5 breaks out agency differences in these outcomes.

Table A1: The Role of Delivery Channel, Debt Status, Demographics, and DMP Activity on Credit Score Change (Segmented by Number of Active Trades)

VARIABLES	*Change in Risk Score, 2007 to 2010 - Low Active Trades*	*Change in Risk Score, 2007 to 2010 - High Active Trades*
DMP Participant	14.9454***	15.7427***
Bureau credit score, 2007	-0.5750***	-0.6790***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	-0.1000	-0.1237***
Bureau record: total balance of revolving trades, 2007, in 10,000s	0.9338**	-0.0279
Bureau record: ratio of revolving balance to limit/high credit, 2007	-1.7053	-10.8386***
Bureau record: ratio of revolving balance to limit/high not available, 2007	-16.7884***	-42.9544***
Bureau record: no trades verified last 12 months (active), 2007		
Bureau record: number of active trades between 1 and 3 (thin), 2007	12.8879***	
Bureau record: number of active trades between 4 and 6 (low), 2007	21.8874***	
Bureau record: percent of active trades with positive balance, 2007	-0.1882***	-0.5379***
Bureau record: number of inquiries in last 6 months, 2007	-1.8149***	-2.0252***
Bureau record: at least one public derogatory item, 2007	-6.1367***	-6.9043***
Bureau record: number of public derogatory items, 2007	-3.2016***	-3.6078***
Bureau report: age of client in 2007	0.4243***	0.4110***
Client is married	4.5619***	4.5953***
Client has a college degree or higher	11.6987***	6.2633***
Client's number in household	-2.4006***	-2.0854***
Client is a homeowner	5.9759***	5.1710***
Client is employed	2.3311*	5.0804***
Client's initial contact with agency through Internet	1.0819	-1.8927
Client's initial contact with agency by telephone	-1.3943	-3.5285**
Mean of dependent variable	42.92	45.41
Observations	12,248	17,132
R-squared	0.262	0.335

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

Table A2: The Role of Delivery Channel, Debt Status, Demographics, and DMP Activity on Credit Score Change (Segmented by Risk Score)

VARIABLES	*Change in Risk Score, 2007 to 2010 - Low Risk Score*	*Change in Risk Score, 2007 to 2010 - High Risk Score*
DMP Participant	14.6412***	16.6291***
Bureau credit score, 2007	-0.6140***	-0.5949***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	-0.0417	-0.2710***
Bureau record: total balance of revolving trades, 2007, in 10,000s	0.7150***	-0.2858
Bureau record: ratio of revolving balance to limit/high credit, 2007	-3.1607**	-5.7294**
Bureau record: ratio of revolving balance to limit/high not available, 2007	-18.8474***	-18.0429***
Bureau record: no trades verified last 12 months (active), 2007	-50.3362***	-37.5879***
Bureau record: number of active trades between 1 and 3 (thin), 2007	-15.6602***	-16.8053***
Bureau record: number of active trades between 4 and 6 (low), 2007	-7.9013***	-3.0056*
Bureau record: percent of active trades with positive balance, 2007	-0.4197***	-0.2888***
Bureau record: number of inquiries in last 6 months, 2007	-1.6045***	-2.7078***
Bureau record: at least one public derogatory item, 2007	-7.2971***	-7.6328***
Bureau record: number of public derogatory items, 2007	-3.9111***	-1.5332
Bureau report: age of client in 2007	0.5205***	0.3248***
Client is married	3.3929***	5.7875***
Client has a college degree or higher	5.9734***	9.8511***
Client's number in household	-2.0653***	-2.5213***
Client is a homeowner	4.6550***	6.7227***
Client is employed	2.0326*	5.7677***
Client's initial contact with agency through Internet	1.5880	-3.2525
Client's initial contact with agency by telephone	-2.1595	-2.6189
Mean of dependent variable	72.90	11.25
Observations	15,773	13,607
R-squared	0.175	0.190

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

Table A3: The Role of Delivery Channel, Debt Status, Demographics, and DMP Activity on Likelihood of Bankruptcy Filing (Segmented by Number of Active Trades)

VARIABLES	*Bankruptcy Filing (probit) Low Active Trades*	*Bankrutpcy Filing (probit) High Active Trades*
DMP Participant	-0.0684***	-0.1551***
Bureau credit score, 2007	-0.0003***	-0.0004***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	0.0019***	0.0013***
Bureau record: total balance of revolving trades, 2007, in 10,000s	0.0108***	0.0070***
Bureau record: ratio of revolving balance to limit/high credit, 2007	-0.0054	0.0181
Bureau record: ratio of revolving balance to limit/high not available, 2007	-0.0047	-0.0939**
Bureau record: no trades verified last 12 months (active), 2007	-0.0992***	
Bureau record: number of active trades between 1 and 3 (thin), 2007	-0.0488***	
Bureau record: number of active trades between 4 and 6 (low), 2007		
Bureau record: percent of active trades with positive balance, 2007	-0.0002	-0.0001
Bureau record: number of inquiries in last 6 months, 2007	0.0028***	0.0099***
Bureau record: at least one public derogatory item, 2007	0.1566***	0.1964***
Bureau record: number of public derogatory items, 2007	-0.0033	-0.0485***
Bureau report: age of client in 2007	0.0024***	0.0019***
Client is married	0.0115	0.0106
Client has a college degree or higher	-0.0300***	-0.0424***
Client's number in household	0.0059**	0.0064**
Client is a homeowner	0.0187**	0.0392***
Client is employed	0.0109	0.0070
Client's initial contact with agency through Internet	-0.0026	-0.0255**
Client's initial contact with agency by telephone	-0.0291***	-0.0250**
Mean of dependent variable	0.18	0.30
Observations	12,248	17,132

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.

Table A4: The Role of Delivery Channel, Debt Status, Demographics, and DMP Activity on Likelihood of Bankruptcy Filing (Segmented by Risk Score)

VARIABLES	*Bankruptcy Filing (probit) Low Risk Score*	*Bankruptcy Filing (probit) High Risk Score*
DMP Participant	-0.1238***	-0.1160***
Bureau credit score, 2007	-0.0003***	-0.0003***
Bureau record: total balance of non-revolving trades, 2007, in 10,000s	0.0012***	0.0014***
Bureau record: total balance of revolving trades, 2007, in 10,000s	0.0075***	0.0061***
Bureau record: ratio of revolving balance to limit/high credit, 2007	-0.0084	0.0500***
Bureau record: ratio of revolving balance to limit/high not available, 2007	-0.0112	-0.0159
Bureau record: no trades verified last 12 months (active), 2007	-0.1946***	-0.1511***
Bureau record: number of active trades between 1 and 3 (thin), 2007	-0.1324***	-0.1229***
Bureau record: number of active trades between 4 and 6 (low), 2007	-0.0799***	-0.0801***
Bureau record: percent of active trades with positive balance, 2007	-0.0006**	0.0001
Bureau record: number of inquiries in last 6 months, 2007	0.0063***	0.0085***
Bureau record: at least one public derogatory item, 2007	0.1445***	0.2402***
Bureau record: number of public derogatory items, 2007	-0.0046	-0.0458***
Bureau report: age of client in 2007	0.0026***	0.0017***
Client is married	0.0097	0.0116
Client has a college degree or higher	-0.0220**	-0.0499***
Client's number in household	0.0103***	0.0026
Client is a homeowner	0.0543***	0.0099
Client is employed	0.0150*	0.0031
Client's initial contact with agency through Internet	-0.0217*	-0.0083
Client's initial contact with agency by telephone	-0.0345***	-0.0201*
Mean of dependent variable	0.27	0.24
Observations	15,773	13,607

Note that *** p<0.01, ** p<0.05, and * p<0.1. Also included but not reported are variables indicating agency.