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Smriti Rao

Assumption College, srao@assumption.edu

Hazel Jean L. Malapit

International Food Policy Research Institute

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**Gender, household structure,
and financial participation in the United States**

Smriti Rao*

Associate Professor, Economics and Global Studies, Assumption College
and Visiting Research Associate, Women's Studies Research Center, Brandeis University
313 Founders Hall
Assumption College
Worcester MA 01609
Ph: 508 767 7565
srao@assumption.edu

and

Hazel Jean L. Malapit
Research Coordinator
Poverty, Health and Nutrition Division
International Food Policy Research Institute
2033 K St N.W., Washington, D.C. 20006
Ph: 202-627-4355
h.malapit@cgiar.org

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Abstract

Despite considerable work on gender and access to financial services in the developing world, there have been few studies on this issue in the United States. In this paper, 2007 and 2010 US Survey of Consumer Finance data are used to study the differential impact of children on the likelihood of being unbanked and underbanked for couples, male-headed households and female-headed households. After controlling for various aspects of socio-economic status, logistic regressions indicate that an additional child increased female-headed households' likelihood of being unbanked and underbanked. This child penalty is stronger for female-headed households than for couples or male-headed households. This result cannot be explained solely on the basis of demand side factors, including income, and calls for further research into the supply-side dynamics of access to financial services in the US.

The growing literature on wealth suggests that in the United States, disparities in wealth are sharper than disparities in income, and access to financial markets is key to the ability to create and increase wealth (Caner and Wolff 2004, Oliver and Shapiro 2006). Gendered patterns of wealth accumulation have received some attention recently (Chang and Liu 2010, Sanders and Porterfield 2010, Schmitt and Sevak 2006, Yamakosi and Keister 2006) but while there has been an explosion of literature on women and credit in developing countries thanks to the microfinance revolution, the literature on access to US financial markets has been dominated by studies that focus on race and ethnicity (Bercovec et al. 1998, Munnell et al. 1996, Oliver and Shapiro 2006, Shapiro 2005). While some studies have provided evidence of gender discrimination in the residential mortgage market (Dymski et al. 2013, Fishbein and Woodall 2006, Robinson 2002), we know little about whether gender is an issue when it comes to access to financial services more generally.

In her review of the literature on discrimination in financial markets, Ladd (1998) has implied that gender discrimination ceased to be an issue in the US after the passage of the Equal Credit Opportunities Act (ECOA) of 1974. On the other hand, Dymski et al. (2013) have seen the over-representation of women and minorities amongst sub-prime mortgage holders as evidence of ongoing discrimination based on gender and race in US financial markets. This paper investigates that claim using data from the 2007 and 2010 rounds of the US Federal Reserve's Survey of Consumer Finance (SCF).

Feminists have argued that their primary category of analysis is not, in fact, the sexed body of the woman or man, but gender as social construction. One crucial aspect of gender is the construction of a household member's relationship to the reproductive sector, in particular the care and maintenance of children (Folbre 2004). Given that data on financial participation in the United States is available at the household rather than the individual level, this paper focusses on the impact

of household structure on financial participation, particularly the differential impact of children upon couples, male-headed and female-headed households.

The most basic form of participation in the US financial sector consists of holding a checking, savings or CD account in a bank, credit union or thrift. The absence of such an account implies that the household is unbanked. Policy makers and researchers have expressed concern both about the negative wealth impacts of remaining unbanked, including an excessive reliance upon potentially predatory “fringe banking” services such as pawn shops, payday lenders, check cashers and pre-paid card providers (Caskey 2002).

The main focus of this study is, however, the related and perhaps even more important category of the underbanked. The underbanked are defined as those who do possess accounts in formal sector financial institutions, but under-use those accounts, therefore perhaps using fringe banks to meet many of their financial needs. While the literature has acknowledged that this is a larger group than the unbanked (Caskey 2002, Siedman et al. 2005), the authors are currently unaware of any other studies that analyze this category using a large dataset such as the Survey of Consumer Finance. Given the credit freeze that followed the recession of 2007-09, it is important for policy makers to pay as much attention to this category as they do to the unbanked.

As mentioned above, the impact of children on the financial participation of different household types is of special interest to those concerned about the financial inclusion of women. Some studies on the unbanked have found that the number of children (under 18) in a household affects the household’s likelihood of being banked (Berry 2004, Caskey et al. 2006, Washington 2006). However, these studies have not addressed how or why children might impact access to financial services and whether the impact differs by household structure (see Sanders and Porterfield 2010 for an exception). There have been no studies, to our knowledge, that ask similar questions about the underbanked.

On the demand side, such effects tell us how the costs and benefits of children differ within households depending upon their structure. However, as Robinson (2002) has suggested, they may also potentially reveal some of the social norms internalized by bankers, including those about the economic disadvantages faced by female-headed households with children, and thus help us understand possible patterns of statistical discrimination on the supply side. This issue takes on even greater importance given the relatively high share of single-headed households in the United States population (Minotte 2012).

In this paper, US SCF data is used to study: a) whether and to what extent the interaction between number of children and household structure affects financial participation in the United States, and b) how this relationship may (or may not) have changed over the course of the 2007-2009 recession.

Household Structure, Wealth and Financial Participation in the United States

Despite the explosion of financial services and instruments over the past decades, there are still a significant number of unbanked individuals in the United States. According to the SCF, this percentage dropped marginally from 7.8% in 2007 to 7.4% of all US households in 2010. In data from the Survey of Income Program and Participation (SIPP), which surveys a more representative income spectrum, this percentage has fluctuated around 20% of US households (Washington 2006).

Analyses of SCF and SIPP data have found that the unbanked are more likely to be low-income, non-white, less educated, Mexican immigrants, younger, unemployed and single-headed households (Bucks et al. 2009, Chang and Liu 2010, Hogarth et al. 2005, Rhine and Greene 2006, Washington 2006). The Federal Reserve Bank and other financial institutions have commissioned surveys to investigate the determinants of being unbanked. These surveys have resulted in similar findings with lower income being a significant factor in all cases (Berry 2004, Caskey et al. 2006, Rhine et al.

2006). Based on this literature, income poverty is a key correlate of exclusion from mainstream financial institutions.

There is of course a large body of literature showing that low income and wealth are significantly correlated with household structure, gender and race in the United States, with female-headed households, non-whites, and households with young children much more likely to be poor (Cellini et al. 2008, Deere and Doss 2006). This is one important reason why many female-headed households with children may be unbanked or underbanked.

The intersectionality of race and gender is an important consideration here (Dymski et al. 2013). Based on the 2007 SCF, Chang and Liu (2010) has found that single black female heads had a median wealth (excluding vehicles) of just \$100, with up to 46% having zero or negative wealth; for Hispanic women that number was \$120, while for white women it was \$41,500. In each case single male heads had higher median wealth: \$7,900 for black men, \$9,730 for Hispanic men, and \$43,800 for white men. The gender gap was also the lowest for white women, whose median wealth was 94% of white male median wealth; while for black and Hispanic women that figure was 1%. As a result, our analysis controlled for the impact of race, even though our primary focus in this paper is the effect of household structure.

As mentioned earlier, access to the financial sector usually occurs via membership in a household, making it difficult to identify gender effects by simply analyzing the sex of the asset holder. While feminists have suggested that individual ownership of assets by women may have concrete benefits for them, in most households assets continue to be viewed as jointly owned (Deere and Doss 2006) with the overwhelming majority of couples reporting joint bank accounts. In the US, 79% of couples responding to the 2007 US SCF held joint accounts.

In an attempt to disaggregate these household effects, Klawitter and Fletschner (2011) has used SCF data to examine the impact of higher female bargaining power on the banking decisions of low-

income, different-sex couples and argued that higher relative female earnings and greater female education increased the likelihood that a household would be banked. Their paper has suggested that on the demand side women were more likely than their male partners to access the mainstream financial sector. However, while their work showed that households were not in fact “unitary”, the authors analyzed the financial participation of couples alone, leaving out the single-headed households who account for a significant share of low-income households in the country.

Our study compared couples to single-headed households and thus, rather than disaggregating within households, identified gender effects by examining how the presence of children differentially affected households with couples and male and female-headed households.

Using the sex of the household head to differentiate between households clearly has its problems. As Chant (2008) has pointed out, there is contradictory evidence on the economic status of female-headed households. This is often the result of a failure to distinguish young female heads with dependents and without social networks from older women who, as mothers-in-law or grandmothers, occupy the position of female head along with considerable cultural legitimacy and powers of decision-making. In the US too, widowed female heads over the age of 65 occupy a very different economic position from their younger counterparts, both because they are covered by social security but also because they are more likely to have inherited and/or earned some wealth.

On the other hand, there is very strong evidence that within working-age cohorts in the US, female-headed households have had both a higher rate of entry into and a lower rate of exit from poverty which in turn has contributed to lower levels of wealth accumulation (Cellini et al. 2008, Sanders and Porterfield 2010). Furthermore, the presence of dependent children appears to disproportionately affect the economic status of female-headed households, once again justifying the classification of households based on headship. Disaggregating the economic situation of younger female heads, Schmidt and Sevak (2006) has found that single female-headed households had lower

wealth per capita than male-headed and married households, and female heads with children had the largest negative effect. Using data from the National Longitudinal Survey of Youth, Yamakosi and Keister (2006) has found that that the mean and median net worth of married couples without children were higher than those for married couples with children, and that single mothers and fathers were economically disadvantaged compared to households with no children. This wealth penalty was most severe for single mothers (Keister 2006). The interaction between household structure and gender is thus key to understanding the dynamics of poverty in this country.

Our study extends the above analysis to financial participation. The next section examines what descriptive statistics can tell us about the links between household structure and the use of mainstream financial institutions.

The Dataset

This study used the SCF household level unit data for 2007 and 2010 because of the richness of information on financial transactions at the household level through the 2007-09 recession, and because, for the first time, the 2007 SCF asked if a household had used a payday lender in the last year, an important piece of data for the analysis of the underbanked.

The SCF covered approximately 4,400 US households in 2007 and 6,400 households in 2010. In both years, household income was only recorded for those with positive incomes. As a result, the study sample was restricted to those with positive incomes. The sample was also restricted to households with respondents of working age (18-64), since single women over 65 were more likely to be widows with social security and inherited financial assets, making their financial profiles unique. All our reported results were weighted using the population weights provided by the SCF.

Despite the use of weights, the survey's oversampling of the rich should be noted as a potential problem for our study. For example, the median household income in the 2007 SCF was \$70,000

compared to \$48,000 for the US as a whole. It is therefore possible that our analysis has underestimated the percentage of those unbanked and underbanked in the US.

The definitions of household structure in this paper followed those used by the SCF. Households with couples were defined as households containing co-habiting (married or unmarried) partners of the same or different sex who shared the same physical residence. Single-headed households were those where even if a partner/spouse existed, he/she did not share the same physical residence. Real income was computed in 2010 dollars through the rest of this analysis.

Descriptive Statistics

Table 1 presents the mean, minimum and maximum values for the variables discussed in this paper. As this table shows, female-headed households have lower average incomes than couples and male-headed households and more children under 18, on average, than male-headed households.

(Table 1 here)

Unbanked households were those reporting that no household member currently holds any checking, savings or CD accounts in any bank, credit union or thrift organization. Despite the widespread public criticism of the banking industry during and after the 2007-09 economic crisis, the SCF data indicated that the share of the unbanked fell slightly post-recession (Table 2). When disaggregated by household type, race, and the presence of children, a small decline was apparent across most subgroups. The unbanked share of African American household heads (relative to other races) remained the same, however, as did the share of couples and female heads.

(Table 2 here)

Identifying the underbanked would typically involve information on the extent to which households use fringe banking services – from check cashing outlets, to using money orders to payday lenders – in lieu of the banks with which they have checking or savings accounts. The SCF

unfortunately did not ask about the use of check cashers or pawn shops, although in 2007 it began asking whether the household used payday lenders in the past year. Identifying the underbanked thus required some assumptions on our part.

The underbanked are characterized by the tenuous nature of their connection to the formal banking sector. In this paper, this was translated into any one of three criteria: whether the household took a payday loan in the last year, whether members maintained low account balances across their various accounts, and whether the household had unmet credit demand.

The terms low balance and unmet credit demand are, however, ambiguous. In the analysis below, unmet credit demand existed if households who made loan applications in the last five years were denied or not fully met and could not find a way to successfully reapply, or if households did not apply for loans at all because they were afraid of being turned down. Previous research has shown that such households are significantly more likely to choose payday lenders (Dew 2008).

The question of how to define a low balance was also difficult to answer. Post-financial crisis, the age of free checking seems well and truly over. However, even in pre-crisis 2007, maintenance and other fees kicked in if either checking or combined balances fell below certain levels. Rather than use a fixed cutoff, low balances were defined here as those that fell into the bottom 25th percentile of total account values for each year. In 2007, this meant households with a value of all accounts less than \$646.80, while for 2010 this meant households with a value of all accounts less than or equal to \$500. Worries over bank fees and overdrafts were likely to be acute for this group, leading them to choose fringe banking institutions for some transactions.

Across both years, non-white households, female-headed households and households with children – particularly female-headed households with children – tended to have the highest shares of each of the three constituent categories of the underbanked (Table 2). In 2010, 60% of all female-

headed households and 65% of all households headed by African Americans were underbanked by this definition.

Table 2 also shows that the share of the underbanked increased between 2007 and 2010 for most groups, driven by increases in all three constituent categories. There was an increase in the share of those who sought out a payday loan across all subgroup categories except Hispanics. Unmet credit demand rose across all categories, with the exception of female-headed households with children, whose share remained constant. The share of households with account values in the bottom 25th percentile of all account values also rose across the groups, with the exception of male-headed households, whose share remained the same.

Looking at the constituent categories of the underbanked variable, female-headed households had the highest shares of all three categories in both 2007 and 2010 (Table 2). Female-headed households with children were also in that situation in 2007, but in 2010 male-headed households with children performed slightly worse when it came to both payday loans as well as unmet credit demand. The well documented fact that male unemployment rose by more in this recession (as was the case in prior US recessions as well) may have been responsible for this outcome (Peterson 2012).

(Table 3 here)

A different way of approaching the demographic characteristics of the underbanked is to look at the underbanked population in each year and decompose it into these constituent groups. Table 3 suggests that increases in unmet credit demand and the use of payday loans contributed slightly more to the growth of the underbanked population than increases in households with low account values. Couples formed a slightly larger share of the underbanked in 2010 than in 2007, but female-headed households and non-whites continued to be over-represented in the underbanked population. Within the underbanked, the share of households with children dropped slightly over this period but was still higher than their share in the overall population.

This preliminary look at the data leads us to two conclusions. First, there was no significant change in the demographic composition of the unbanked and underbanked between the two surveys. When it came to financial participation, the recession thus deepened existing trends rather than disrupting them. Second, the data suggested a strong need to further investigate the impact of household structure, alongside race, upon financial exclusion. As mentioned previously, regression analysis is required in order to control for direct income effects that surely explain some, but perhaps not all, of these outcomes. Before turning to regression analysis, however, the next section presents some hypotheses about possible non-income effects, based on the existing literature.

Theoretical Framework: Gender and the Costs and Benefits of being Unbanked/Underbanked

Demand-Side Factors

Being banked helps households convert income into cash and bills paid. It can potentially help households gain access to credit, at the very least by building a credit history. There is mixed evidence on whether bank accounts increase rates of savings, but they are certainly one way to secure existing savings (Hogarth et al. 2005). Enumerated below are the demand-side costs and benefits of basic banking services provided through checking, savings and CD accounts.

(Figure 1 here)

Constraints such as histories of bankruptcy, or, in the case of illegal immigrants, the lack of a social security number may prevent some low-income individuals from obtaining bank accounts. A history of fraud and discrimination by banks has also left large sections of the black population mistrustful of mainstream banks (Dymski et al. 2013). Berry (2004) has pointed out that the relative costs of being banked fall with income, making it a rational choice for some low-income customers to rely upon check cashing outlets, payday lenders and others in the fringe banking industry. He has argued that customers are able to find cheap, often free sources of check cashing (such as grocery

stores). For checks in small amounts, the fees charged by check cashing outlets (usually a share of the check) may not be as significant as potential maintenance or penalty fees charged by banks (usually flat fees). Furthermore, many low-income neighborhoods operate as cash economies, with few landlords or storekeepers willing to accept checks. Studies have also reported that customers find fringe banking outlets more convenient – money is handed over instantly and the time taken to process the transaction is much less (Doyle et al. 1998, Siedman et al. 2005). Thus, these authors have emphasized that demand-side factors lead to a rational decision to remain unbanked.

There is, however, much less discussion of how gender could affect the costs and benefits of being banked within such a rational choice framework. In one very useful study, Sanders and Porterfield (2010) used SIPP data on female-headed households to examine the effect of children on the likelihood and value of holding four different assets: homes, automobiles, defined contribution plans, and non-pension interest bearing assets. This latter category excludes non-interest bearing checking accounts and includes other assets, such as treasuries, that do not quite correspond to our categories of unbanked and underbanked. Furthermore, the study only looked at the impact of children on female-headed households and not on other types of households. Nevertheless, their findings are relevant for this study.

The authors found that children presented an entry barrier to female-headed households owning pension and non-pension interest bearing assets but not homes or cars. Children had no impact upon the values of the assets once they were owned. The authors suggested that apart from raising the costs of running a household, children may have negatively impacted the ability to make the changes in educational and occupational status that result in higher incomes and thus higher wealth. They used their results to make the important point that redressing wealth gaps requires policies targeted specifically at female-headed households with children. Given the importance of access to financial institutions in addressing such wealth gaps, studies like ours are a part of such attempts.

Gender could affect the likelihood of being banked in another way. To the extent that being a woman within particular household structures also implies a double burden of productive and reproductive work, the opportunity costs of time for such women are clearly higher. Minotte (2012) found that this work-family conflict was more severe for female-headed households than for male-headed households. The additional transactions costs of using banks rather than payday lenders or check cashing outlets may then become significant enough to overcome the additional money costs of the latter. One effect of children in such households may thus be to increase the likelihood of being unbanked. This effect would be greater in households with little access to childcare assistance.

There is one final way in which gender may affect the likelihood of being banked. There is now a growing literature on gender and levels of risk tolerance. This literature suggests that whether for reasons of socialization or differing experiences of economic vulnerability, women are somehow more “risk averse” than men and tend to choose more conservative financial strategies (Eckel and Grossman 2008, Jianakoplos and Bernasek 1998, Seguino and Floro 2003, Whitaker et al. 2013). If indeed this is a significant effect, and if indeed fringe banks are seen as relatively risky, women may be more likely to choose formal sector banking.

As mentioned earlier, a study by Klawitter and Fletschner (2011) found that increases in metrics of female bargaining power within low-income couples increased the likelihood that the household would be banked, suggesting that women preferred to be banked. Chang and Liu’s (2010) analysis of 2007 SCF data also showed that while smaller shares of single white female heads were banked, higher shares of African American and Hispanic female heads were banked when compared to male heads in the same racial groups. The median value of the cash accounts was significantly lower in the case of all women. Chang and Liu did not, however, use regression analysis to control for factors such as income, education etc.

All else constant, the presence of children may further decrease risk tolerance (Chaulk et al. 2003) and increase what Robinson (2002) calls the desire for financial stability. To that extent, the presence of children may indeed increase the likelihood of participation in the formal banking sector. This effect should hold for all kinds of households, however, so it would not explain a differential effect for female-headed households.

In summary, low income may increase the likelihood of being unbanked or underbanked on the demand side. The impact of children on the demand side is both to increase the economic needs of the household while at the same time lowering the risk tolerance of adults in the household. Children also increase the likelihood of time poverty and thus the opportunity costs of physical banking at mainstream financial institutions. Their overall impact upon the likelihood of being unbanked or underbanked is thus unclear.

Finally, if it is the case that women tend to be less risk tolerant overall, this would suggest that female-headed households (as well as other households where financial decisions are made by women) should be more likely to be banked, all else constant.

Supply-Side Factors

Figure 2 suggests some obvious supply-side reasons why banks might want to discourage low-income customers. They tend to hold smaller deposits, have higher rates of default and thus require greater monitoring of accounts than higher-income customers. There has been an ongoing debate over the impact of the falling numbers of bank branches in low-income neighborhoods with some arguing that this decrease in the supply of mainstream banking services has forced customers to embrace fringe banking institutions (Caskey 2002, Karger 2005), while others have cited surveys of the unbanked showing that an absence of bank branches is not the main consideration for choosing fringe bankers (for the SCF see Bucks et al. 2009, page A21). Unfortunately the dataset used in this

paper does not identify the geographic location of the respondent, preventing us from testing the impact of the number of bank branches.

(Figure 2 here)

In the case of gender, on the one hand the assumption that women are less likely to default has been the basis of the microcredit movement, and if true, would suggest that bankers should prefer women clients, all else equal. On the other hand, prior research has indicated that US bankers may internalize social norms about women with children that can be unfavorable to them.

In Robinson's (2002) supply-side analysis for mortgage lending in Boston, she argued that race and household type shaped the way that bankers evaluate the presence of children in a household. Bankers saw children as a sign of stability when the applicants were African American families with working mothers, but as a sign of potential disruption to the woman's income in the case of white applicants. She argued that one legacy of slavery was that working African American mothers were seen as "normal" in the US, with white women more likely to be viewed as potential stay-at-home moms, contributing to statistical discrimination against them.

The extent to which banks actively discriminate against particular population groups in extending financial services post-ECOA has been extensively debated, although the emphasis has been on credit access rather than access to basic banking services (Berkovec et al. 1998, Munnell et al. 1996). Dymski et al. (2013) have argued that bankers and mortgage brokers see women and minorities as explicit targets for discrimination, super-including them in the most risky financial products (such as sub-prime mortgages) and charging them higher fees and interest for assets whose value ultimately collapses. Ladd (1998) has argued that the persistence of race-based patterns in formal lending, even after controlling for income and other factors, provided evidence of profit-increasing statistical discrimination in which bankers use variables such as race and location as proxies for risk of default. By extension, assumptions about the bleak economic prospects of female-

headed households with children are likely to provide bankers with another proxy for the risk of default.

There could also be “pull” effects from the expanding fringe banking sector. One powerful critique of fringe banks is that they deliberately mislead and misinform users and draw them into cycles of debt that in turn make it harder for them to access mainstream banks (Karger 2005). Indeed, Washington (2006) has found that the introduction of lifeline banking and restrictions placed on the activities of fringe bankers resulted in a decrease in the share of unbanked amongst minority groups, although with a time lag. She suggested that supply-side factors (including false advertising by fringe bankers) may have played a role in determining the use of the fringe banking sector, particularly amongst marginalized groups. If gendered patterns are to be explained by this factor, the implication would be that female-headed households with children are more susceptible to misinformation and false advertising by fringe bankers, perhaps due to lower levels of financial literacy. Our empirical analysis does control for education more broadly, but unfortunately cannot control specifically for financial knowledge.

To summarize, low income and associated adverse financial events such as bankruptcy or bounced checks generate supply-side barriers to being fully banked. If bankers see women as indeed less risk tolerant, they should be more likely to fully bank women, including in female-headed households. On the other hand, bankers’ assumptions about the financial situation of female-headed households, particularly those with children, may result in statistical discrimination against them, increasing the likelihood of their being unbanked or underbanked.

Regression Methodology

Binary logistic regression analysis was used to test the interaction between household structure and children upon access to financial services. In the case of logistic regression, the convention is to

report coefficients and odds ratios, the latter being easier to interpret in many cases. However, with a non-linear function, these effects may vary considerably across different values of the independent variable. Interaction terms such as those used here are especially problematic in this regard. Norton et al. (2004) has pointed out that the coefficient and standard error (and thus the odds ratio) of interaction terms were meaningless when the function was non-linear and recommended the computation of marginal effects instead.

The marginal effect is the partial derivative of the dependent variable with respect to the independent variable – that is, the change in the probability of success for a unit change in the independent variable. The non-linearity of the logistic distribution requires the computation of the marginal effects across a range of values. The tables below report the average of these marginal effects, computed using the “margins” command in STATA. For consistency, average marginal effects (AMEs) are reported for all independent variables, including the non-interaction terms. Logit coefficients are also reported but the discussion relies more on the AMEs.

A further methodological issue arose from the fact that the SCF data consists of five “implicates.” That is, for each respondent, five different records of the data are provided, each called an implicate. This is done partly in order to preserve the confidentiality of respondents but more importantly to account for missing data, and the fact that interviewees sometimes prefer to provide a range rather than a specific value as an answer. The implicates are created using a program that simulates or imputes the data (see Kennickel 1988 for details). The five implicates taken together provide a more accurate representation of what is known about the respondent than a single imputation could (Lindamood et al. 2007). In this analysis, STATA’s “mi estimate” command was used in conjunction with the margins command so that the marginal effects reported were computed across all five implicates. Descriptive statistics were also reported for all five implicates. We are happy to provide the code used to interested readers.

There were two different dependent variables used below: whether the household was unbanked (Table 4) and whether the household was underbanked (Table 5). In each case, three empirical models were estimated. In accordance with the literature, the first logit regression evaluated the impact of race, household type, education, income, age, unemployment of either the respondent or spouse upon being unbanked and underbanked (Model 1 in Tables 4 and 5). The answer to the question “have you ever declared bankruptcy” was included as a potential supply-side determinant of financial exclusion, along with a time dummy for the year 2010 to track changes over time.

Given our particular interest in household structure, Model 1 included dummies for couple and female-headed household (the omitted category was thus male-headed households). It also included the number of children under 18 in the household, a key variable in our analysis. As noted earlier, children may increase the likelihood of being unbanked and underbanked by increasing the income and time poverty of households. On the other hand, they may increase households’ desire for financial stability lowering the likelihood of being unbanked in particular. The number of adults in the household other than the respondent was an additional independent variable. Such adults may help reduce time poverty by sharing the household’s burden of care (Minotte 2012). On the other hand, they may increase the economic needs of the household as well as require care themselves. Finally, Model 1 included an interaction term between household income and female-headed households, in order to control for the fact that female-headed households are much more likely to be low-income.

Model 2 included two additional interaction terms. The first was the interaction between the number of children and couples, the second the interaction between the number of children and female-headed households. As discussed earlier, theory did not provide us with definitive hypotheses for the effects of these interactions upon financial participation.

Model 3 added an additional dummy indicating whether there were any children under five in the household. To the extent that children under five might have the greatest care needs, and might be more likely to live with mothers, this dummy helped us control for their disproportionate impact upon the time poverty of female-headed households.

An additional model not reported here included interaction terms for race and household structure as well, but the interaction terms themselves were statistically insignificant and did not change the results on the other independent variables.

Regression Results

The Likelihood of Being Unbanked

Table 4 shows that the results of the regression analysis were very stable across the three models and largely in line with previous literature when it came to the impact of race, income, years of education and the impact of unemployment upon the likelihood of being unbanked. Both African American and Hispanic/Latino household heads were associated with higher likelihoods of being unbanked. Lower household incomes and years of education also increased the likelihood of being unbanked. In the case of the unbanked, age did not seem to have an impact and neither did a history of bankruptcy. The latter is more likely to matter for access to credit rather than a simple checking or savings account and, as seen below, did indeed affect the likelihood of being underbanked.

(Table 4 here)

As the descriptive statistics suggested earlier, there was no significant change in the likelihood of households being unbanked across the 2007-2010 period. Neither branch closures and bank consolidations on the supply side, nor the loss of credibility suffered by the banking sector on the demand side, appears to have affected the likelihood that households maintained checking and

savings accounts. As seen later, the impact of the recession appears to be most significant in the category of the underbanked.

The results on our household structure variables were interesting. Each additional child under 18 strongly increased the likelihood of being unbanked in all three models. AMEs suggested that that after controlling for the impacts of low income and the interaction between household structure and the number of children, couples, but also female-headed households, were *less* likely to be unbanked than male-headed households.

This result for female-headed households does seem to support the hypothesis that women have a lower appetite for financial risk and a greater desire for financial stability, all else constant. And yet, as seen in Table 1, female-headed households had high rates of being unbanked and underbanked. The regression results suggest that this is in part due to the effect of income. The interaction term between income and female-headship indicates that additional income has greater impact on the likelihood of being banked for female-headed households than for other households. Given the relatively high percentages of unbanked female-headed households, income generation and higher wage employment are therefore even more important for ensuring their financial participation, which in turn, provides a mechanism for reducing wealth gaps (Caner and Wolff 2004).

However, income effects do not tell the whole story. Even after controlling for the disproportionately low income of female-headed households, children influenced female-headed households' financial participation much more than that of couples. Based on the AME of the couple*kids interaction term, each additional child had a statistically insignificant impact upon the likelihood of a couple being unbanked.

The interaction term female-headed household*kids is more difficult to interpret. Each additional child positively and significantly increased the female-headed household's likelihood of being unbanked, although for non-female headed households, the AME was also positive and

statistically significant, albeit three times smaller in size. Taken together with the earlier insignificant result for couples, this suggests that male-headed households account for the bulk of the negative impact of children on non-female headed households' financial participation, but that this impact is weaker than the impact on female-headed households.

All else constant, a female-headed household with no children was actually more likely to be banked than a male-headed household. Low income was an exceptionally strong explanation for the high shares of the unbanked amongst female-headed households, but the differential impact of each additional child on their participation is what strikes us as the most interesting finding. Having controlled for various demand side factors, including the presence of other adults (potential caregivers) and the greater likelihood of children under five living with mothers, a stronger child penalty for female-headed households remains.

The Likelihood of Being Underbanked

The results across the three models for being underbanked were extremely similar to those for the unbanked, and once again, stable across the different formulations (Table 5). Minorities, lower income households, the unemployed and the less educated were all more likely to be underbanked. Age was now significant, with older respondents less likely to be underbanked, as was a history of bankruptcy, which was also correlated with being underbanked. Based on the female-headed household*income interaction term, income once again had a larger impact on female-headed households' financial participation.

The impact of the recession is quite clear here: the likelihood of being underbanked, all else constant, increased between 2007 and 2010.

(Table 5 here)

Turning to the household structure variables, there is another important difference from the unbanked. In Model 1, couples were clearly less likely than male-headed households to be underbanked, but female-headed households were *more* likely than male-headed households to be underbanked. Interestingly, the statistical significance of the AME for female-headed households weakened after the introduction of the couple*kids and female-headed household*kids interaction terms, and were no longer significant. The differential impact of children may therefore have something to do with the overall results for female-headed households.

Turning to children, each additional child increased the likelihood of being underbanked, but once again this result was disproportionately strong for female-headed households, as shown by the interaction terms for couple*kids and female-headed households*kids. While the presence of children under five was once again statistically insignificant, the presence of other adults only seemed to increase a household's likelihood of being underbanked. If other adult members in the household are indeed helping to reduce time poverty, this appears to be offset by their impact on the economic needs of the household.

Implications for Policy and Research

Financial participation is crucial to closing wealth gaps. Given the fact that single-headed households are a large share of the US population and especially likely to be poor, the impact of household structure on financial participation in the United States is an important but understudied topic. The goal in this paper is to disentangle the impact of income upon financial participation from that of household composition and thus try to understand why, as other studies have reported, single-headed households and those with children seemed less likely to participate in formal financial institutions. Furthermore, the definition of financial participation in this paper extends beyond being

banked or unbanked to include the category of the underbanked as well. Our analysis also provides some insight into the impact of the 2007-09 recession on financial participation.

To begin with the impact of the recession, our results highlight the importance of going beyond the banked/unbanked binary to truly understand financial participation in the US. One of our surprising findings was that the share of unbanked households continued to fall even through a recession that sharply lowered the median income and wealth of American households and exposed the vulnerabilities of our banking system. It was not possible to probe whether this was due to the spread of electronic banking and thus the lowered transactions costs of accessing banks, or due to more effective financial education, but if our analysis had stopped there, we would have failed to capture the much larger impact of the recession upon the share of those who were underbanked. By our definition, the share of underbanked households grew from 37% in 2007 to 43% in 2010. Together with our difficulty finding a commonly used definition of the category of underbanked, this result suggests that both researchers and policy makers need to devote more attention to defining and addressing the problems of underbanked households.

With respect to the determinants of financial participation, the regression analysis uncovered several similarities between the unbanked and the underbanked. Minorities, lower income households, the unemployed and the less educated were all more likely to be unbanked as well as underbanked. Younger adults and those with a history of bankruptcy were more likely to be underbanked.

Interestingly, however, male-headed households were more likely to be unbanked than female-headed households after controlling for the impact of income and children (including interaction terms). All else constant, female-headed households without children were *more* likely to be banked than similar male-headed households, perhaps due to the latter's greater appetite for risk or lower level of financial literacy. In the case of the underbanked, after including interaction terms for

income and children, the gender of the household head became statistically insignificant for single-headed households, and couples became significantly more likely to be fully banked. Another important finding was that female-headed households' financial participation suffered much more from a lack of income than either couples or male-headed households.

There are several policy and research implications here. First, while it is well-known that female-headed households are poorer than both couples and male-headed households, the regression results suggests that they are penalized to a greater extent for their poverty when it comes to financial participation. Despite the very real increases in male unemployment through the last recession, when it comes to the ability to be fully banked, female-headed households face the most serious economic barriers to recovery from the recession. The need to target education and employment and, importantly, credit to these women seems more essential than ever. The results for the unbanked variable indicate that this may be an especially willing population, eager to be fully banked if given the opportunity.

Second, children were an important negative correlate of financial participation, and this impact was greater for female-headed households. Indeed in the case of the unbanked and underbanked, our regression analysis showed that female-headed households suffered the highest child penalties in this respect. Based on the various controls included, the results suggest that income effects could not fully account for the financial exclusion of female-headed households with children. Furthermore, time-poverty indicators – the presence of children under five, and the presence of other adults - do not seem to affect this basic result, leaving us with questions about what was happening on the supply-side, in particular how bankers understood and evaluated household structure and the presence of children.

To the extent that being underbanked contained a component on unmet credit demand, the regression results may have been driven by bankers internalizing social norms about the economic

prospects of women with children. If so, this is a form of statistical discrimination that further compounds the economic troubles of female-headed households. Future research into this topic, including primary research via interviews with bank staff, would help us better understand financial participation in the United States.

Finally, while studies have looked at the size of the child penalty upon the income and wealth of women, our study points to one possible mechanism for the perpetuation of this penalty, the impact on their financial participation. The fact that race and household type shape the way children influence the economic fortunes of Americans is not news. However, for the number of children to differentially affect the more specific likelihood of households being fully banked suggests the need for further work exploring how gendered relationships with reproductive, caring labor shape participation in US financial markets.

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Tables

Table 1: Descriptive Statistics (weighted, for all five implicates, and restricted to households with

respondents of working age).

Variable	Obs	Mean	Std. Dev.	Min	Max
Unbanked	912200000	0.09	0.28	0	1
Underbanked	912200000	0.40	0.49	0	1
African_american/black	912200000	0.1	0.4	0	1
Hispanic/latino	912200000	0.12	0.32	0	1
Age (yrs)	912200000	43.36	11.95	18	64
Education in years	912200000	13.55	2.61	0	17
Never declared bankruptcy	912200000	0.86	0.35	0	1
Respondent/partner is unemployed	912200000	0.23	0.42	0	1
Couple	912200000	0.56	0.50	0	1
Female-headed household	912200000	0.24	0.43	0	1
Male-headed household	912200000	0.20	0.40	0	1
Any children below 5	912200000	0.13	0.34	0	1
Number of adults other than respondent	912200000	1.04	0.92	0	8
Year 2010	912200000	0.50	0.50	0	1
No of children					
All	912200000	0.81	1.16	0	8
Couple HH (couple=1)	511300000	1.05	1.23	0	8
Male-headed HH (mhh=1)	184500000	0.36	0.87	0	8
Female-headed HH (fhh=1)	216400000	0.63	1.02	0	7
HH Income					
All	910100000	87879.32	331640.40	508.25	361 million
Male-headed HH (mhh=1)	184300000	56130.25	245371.10	508.25	178 million
Female-headed HH (fhh=1)	215400000	38577.52	55790.75	700.31	20 million
HH Income (log)					
All	910100000	10.82	0.97	6.23	19.71

Male-headed HH (mhh=1)	184300000	10.47	0.93	6.23	19.00
Female-headed HH (fhh=1)	215400000	10.23	0.81	6.55	16.81

Table 2: Financial participation by household demographic characteristics and year: percentages (weighted, for all five implicates, and restricted to households with respondents of working age).

	Unbanked		Underbanked		Took a Payday loan in the last year		Unmet credit demand		Account value in the bottom 25th percentile of all account values	
	2007	2010	2007	2010	2007	2010	2007	2010	2007	2010
All households	9	8	37	43	3	5	13	17	30	33
By household type										
Couple	5	5	28	33	2	4	11	15	21	24
Male-headed	14	12	46	49	4	6	14	18	39	39
Female-headed	13	13	53	60	5	6	17	19	46	50
By race of household head										
White	5	4	32	35	2	4	12	15	25	26
Black	20	20	57	65	5	10	18	22	49	53
Hispanic	21	16	55	63	4	4	13	21	49	53
Does the household contain any children										
No	7	8	35	41	3	4	11	15	29	31
Yes	10	9	40	45	4	6	16	19	32	35
Household structure and children combined										
Couple with children	6	5	30	36	2	4	14	16	23	26
Male-headed with children	17	18	56	65	5	10	21	29	47	51
Female-headed with children	23	17	69	71	7	9	25	25	60	61

Table 3: Shares of various groups within the underbanked and fully banked populations by year: percentages (weighted, for all five implicates, and restricted to households with respondents of working age).

	Shares of overall population		Shares of the underbanked population		Shares of the fully banked population	
	2007	2010	2007	2010	2007	2010
Unmet-credit demand	13	17	35	39	NA	NA
Payday loan use	3	5	8	11	NA	NA
Low account value	30	33	82	77	NA	NA
Household type						
Couples	56	56	42	43	65	65
Male-headed households	20	21	25	24	17	18
Female-headed households	24	24	34	33	18	17
Households with children	43	42	47	44	41	40
Race of household head						
White	71	68	60	55	77	77
Black	14	15	21	22	10	9
Hispanic	11	13	16	19	8	8

Table 4: Logit results for determinants of being unbanked: Coefficients and average marginal effects

Dependent Variable: Being Unbanked	(1)		(2)		(3)	
	Coefficient	AME	Coefficient t	AME	Coefficient	AME
African American respondent	1.113*** (0.115)	0.068*** (0.008)	1.105*** (0.116)	0.068*** (0.008)	1.105*** (0.116)	0.068*** (0.008)
Hispanic/Latino respondent	0.608*** (0.143)	0.035*** (0.009)	0.600*** (0.144)	0.034*** (0.009)	0.600*** (0.144)	0.034*** (0.009)
Age of respondent	-0.005 (0.004)	0.000 (0.000)	-0.005 (0.004)	0.000 (0.000)	-0.005 (0.004)	0.000 (0.000)
Log HH Income (in 2010 \$)	-1.273*** (0.082)	-0.061*** (0.004)	-1.291*** (0.082)	-0.062*** (0.004)	-1.291*** (0.082)	-0.062*** (0.004)
Years education of respondent	-0.228*** (0.019)	-0.012*** (0.001)	-0.229*** (0.019)	-0.012*** (0.001)	-0.229*** (0.019)	-0.012*** (0.001)
Never declared bankruptcy	0.131 (0.145)	0.007 (0.00)	0.129 (0.146)	0.007 (0.00)	0.128 (0.146)	0.007 (0.00)
Respondent or partner unemployed	0.478*** (0.105)	0.025** (0.005)	0.457*** (0.106)	0.023*** (0.005)	0.456*** (0.106)	0.023*** (0.005)
Couple	-0.438** (0.147)	-0.022** (0.007)	-0.191 (0.172)	-0.023** (0.007)	-0.202 (0.173)	-0.024*** (0.007)
Female-headed HH	-2.595 (1.379)	-0.011 (0.007)	-2.663 (1.381)	-0.015** (0.006)	-2.698 (1.382)	-0.015** (0.006)
No. of children under 18	0.120** (0.041)	0.006** (0.002)	0.281** (0.075)	0.007** (0.002)	0.267*** (0.079)	0.007** (0.002)
No. of adults other than respondent	0.003 (0.059)	-0.000 (0.003)	-0.111 (0.060)	-0.001 (0.003)	-0.009 (0.060)	-0.000 (0.003)
Year_2010	-0.130 (0.102)	-0.007 (0.005)	-0.128 (0.102)	-0.007 (0.005)	-0.128 (0.102)	-0.007 (0.005)
Any children below 5 years(yes/no)					0.100 (0.161)	0.005 (0.009)

Note: Standard errors in parentheses. * p<0.05 **p<0.01 *** p<0.001

Table 4 continued: Logit results: Coefficients and average marginal effects

Dependent Variable: Being Unbanked	(1)		(2)		(3)	
	Coefficient	AME	Coefficient	AME	Coefficient	AME
<i>Interactions</i>						
Children*Couple			-0.270** (0.094)		-0.270** (0.094)	
AME children: couple: 0				0.018*** (0.004)		0.017*** (0.004)
AME children: couple: 1				0.000 (0.002)		0.000 (0.002)
Children*Female-headed HH			-0.123 (0.102)		-0.123 (0.102)	
AME children: fhh: 0				0.005** (0.002)		0.005** (0.002)
AME children: fhh: 1				0.015* (0.007)		0.014* (0.007)
Female-headed HH*Log HH Income	0.238 (0.140)		0.249 (0.140)		0.249 (0.140)	
AME log HH Income: fhh: 0		-0.052*** (0.004)		-0.053*** (0.004)		-0.053*** (0.004)
AME log HH Income: fhh: 1		-0.096*** (0.010)		-0.096*** (0.011)		-0.096*** (0.011)
Constant	13.441*** (0.850)		13.577*** (0.853)		13.577*** (0.853)	
N	8571		8571		8571	

Notes: Standard errors in parentheses. * p<0.05 ** p<0.01 *** p<0.001

Table 5: Logit results for determinants of being underbanked: coefficients and average marginal effects

Dependent Variable: Being Underbanked	(1)		(2)		(3)	
	Coefficient	AME	Coefficient	AME	Coefficient	AME
African American respondent	0.709*** (0.082)	0.109*** (0.013)	0.703*** (0.082)	0.109*** (0.013)	0.702*** (0.083)	0.108*** (0.013)
Hispanic/Latino respondent	0.436*** (0.094)	0.066*** (0.015)	0.433*** (0.094)	0.066 (0.015)	0.432*** (0.094)	0.065 (0.015)
Age of respondent	-0.017*** (0.003)	-0.003*** (0.000)	-0.017*** (0.003)	-0.003*** (0.000)	-0.016*** (0.003)	-0.002*** (0.000)
Log HH Income (in 2010 \$)	-0.824*** (0.052)	-0.113*** (0.006)	-0.823*** (0.052)	-0.131*** (0.006)	-0.823*** (0.052)	-0.131*** (0.006)
Years education of respondent	-0.174*** (0.013)	-0.026*** (0.002)	-0.173*** (0.013)	-0.025*** (0.002)	-0.173*** (0.013)	-0.025*** (0.002)
Never declared bankruptcy	-0.787*** (0.079)	-0.115*** (0.011)	-0.784*** (0.079)	-0.115*** (0.011)	-0.785*** (0.079)	-0.115*** (0.011)
Respondent or partner unemployed	0.500*** (0.067)	0.073*** (0.010)	0.496*** (0.067)	0.073*** (0.010)	0.496*** (0.067)	0.073*** (0.010)
Couple	-0.272*** (0.083)	-0.041*** (0.013)	-0.204** (0.094)	-0.044*** (0.013)	-0.213* (0.094)	-0.044*** (0.013)
Female-headed HH	3.470*** (1.171)	0.027** (0.014)	3.461** (1.174)	0.025 (0.015)	3.458** (1.174)	0.025 (0.015)
No. of children under 18	-0.104*** (0.028)	0.015*** (0.004)	0.175** (0.070)	0.017*** (0.004)	0.163* (0.071)	0.016*** (0.005)
No. of adults other than respondent	0.093** (0.036)	0.014** (0.005)	0.089** (0.036)	0.013** (0.005)	0.091** (0.036)	0.013** (0.005)
Year _ 2010	0.236*** (0.060)	0.035*** (0.009)	0.236 (0.060)	0.035*** (0.009)	0.236*** (0.060)	0.034*** (0.009)
Any children under 5 (yes/no)					0.093 (0.548)	0.014 (0.015)

Notes: Standard errors in parentheses. * p<0.05 ** p<0.01 *** p<0.001

Table 5 continued: Logit results: Coefficients and average marginal effects

Dependent Variable: Being Under-banked	(1)		(2)		(3)	
	Coefficient	AME	Coefficient	AME	Coefficient	AME
<i>Interactions</i>						
Children*Couple			-0.105 (0.077)		-0.104 (0.077)	
AME of Children: couple: 0				0.031*** (0.008)		0.030*** (0.009)
AME of Children: couple: 1				0.009** (0.004)		0.008* (0.005)
Children*Female-headed HH			0.009 (0.097)		0.015 (0.097)	
AME of Children: fhh: 0				0.014*** (0.004)		0.013** (0.005)
AME of Children: fhh: 1				0.031** (0.011)		0.030** (0.011)
Female-headed HH*Log HH Income	-0.306*** (0.113)		-0.307*** (0.114)		-0.307** (0.114)	
AME of Log HH Income: fhh: 0		-0.116*** (0.006)		-0.117*** (0.006)		-0.117*** (0.006)
AME of Log HH Income: fhh: 1		-0.191*** (0.014)		-0.190*** (0.013)		-0.190*** (0.013)
Constant	11.697*** (0.545)		11.692*** (0.546)		11.651*** (0.548)	
N	8571		8571		8571	

Notes: Standard errors in parentheses. * p<0.05 ** p<0.01 *** p<0.001

FIGURES

Fig 1: Costs and benefits of basic banking on the demand Side

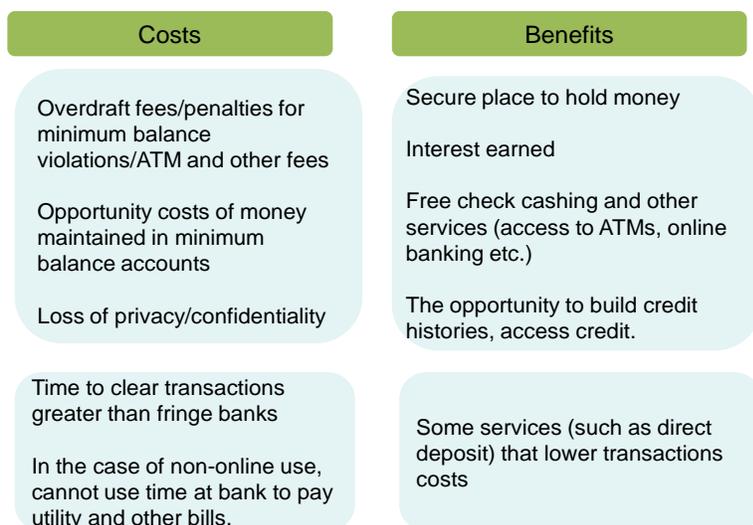


Fig 2: Costs and benefits of basic banking on the supply side

