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# Research Brief

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## A TEST OF CULTURAL AFFINITY IN HOME MORTGAGE LENDING

National data on the disposition of applications for home mortgages reveal wide disparities in rejection rates among racial and ethnic groups. Some have advanced race-based cultural affinity as a possible explanation for these disparities. The literature has developed two related, yet distinct, versions of cultural affinity. In the taste-based form of the theory, lenders have a preference, or “taste,” for members of their group. In the common bond formulation, the affinity allows lenders to better assess the quality of members of their group.

This paper tests these theories by evaluating their differing implications for the experiences of *marginal applicants*, both in terms of where these applicants apply and how lenders evaluate their applications. This focus on marginal applicants differs from much of the earlier literature on these issues and yields more definitive conclusions on the existence of either type of cultural affinity. The results provide no evidence consistent with the common bond form of the theory. By contrast, there is some evidence consistent with the taste-based theory in three of the four sample years examined. These findings, which conform with those in other studies, are only weakly supportive of the taste-based theory, however.

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## CULTURAL AFFINITY - THE THEORY AND ITS IMPLICATIONS

The theoretical literature on cultural affinity has developed two related, but distinct, formulations. In both, decision-makers have an affinity towards members of their own group (“same group members”) and are indifferent or disaffected towards members of other groups. However, the two differ in the way the affinity affects decision-making. This section describes the two formulations and their main testable implications.

*“Taste-based” cultural affinity.* The early literature on discrimination, first developed in Becker (1971) and later applied to lending by Peterson (1981), argues that discrimination can occur if agents have a “taste” for discrimination, such that favoring same-group members or discriminating against other-group members maximizes utility. Clearly, taste-based cultural affinity will have its largest impact on applicants closest to the accept/reject threshold, whom I define as “marginal applicants.” All applicants who are clearly qualified (unqualified) for a loan will be approved (rejected) by a lender regardless of the group they are in. However, marginal applicants can benefit or be harmed by affinities. For example, the affinity could cause a lender to increase its assessment of same-group applicants whose quality is just below the established accept/reject threshold such that they are viewed to be creditworthy. Similarly, marginal other-group applicants of a quality just above the threshold could be penalized by such lenders, such that they are no longer deemed worthy of credit. Thus, an implication of the theory is that lenders will favor marginal same-group applicants over marginal other-group applicants.

The taste-based cultural affinity hypothesis has an additional testable implication. If applicants recognize the presence of taste-based cultural affinity, one might expect them to act strategically to maximize their likelihood of success; that is, marginal applicants would try to apply to same-group lenders, because the lender’s same-group affinity would improve the likelihood of the applicant’s approval.

*“Common bond” cultural affinity.* More recently, a second cultural affinity literature has emerged. In this formulation, the same-group affinity allows agents to distinguish between high-quality and low-quality applicants better for those in the same group than for those in other groups. Cornell and Welch (1996) and Calomiris, Kahn, and Longhofer (1994) develop common bond-models of labor hiring and lending, respectively. More relevant for the current research, Calomiris, Kahn, and Longhofer (1994) focus on race as the dimension of discrimination. They assume that lenders (who are primarily white) can evaluate the credit quality of applicants with similar back-

grounds and experiences more accurately than they can those with different histories, i.e., minorities; for minority applicants, lenders are forced either to gather additional information at extra cost or to rely on the less useful information from the application.

In both cases, screening leads to the following rank-ordering of applicants: high-quality same-group applicants, all other-group applicants, low-quality same-group applicants. Because agents are unable to distinguish between high- and low-quality other-group applicants, they will assign the average quality of the other-group applicants to every other-group applicant. Since this average quality will necessarily be higher than the low-quality same-group applicants, all other-group applicants will be ranked higher than the low-quality same-group applicants. Cornell and Welch (1996) refer to this “common bond” affinity mechanism as “screening discrimination.”



Unlike the taste-based theory, the common bond theory of cultural affinity does not have definitive implications regarding the general treatment of other-group applicants. The theory can imply that lenders will in some cases favor same-group applicants over other-group applicants and in other cases favor other-group applicants over same-group applicants. The predicted outcome depends on whether the acceptance threshold is set above or below the average

quality of the pool of other-group applicants. For example, if the threshold for acceptance is set below the average quality for the other-group applicants but above the quality of the low-quality same-group applicants, all high-quality same-group applicants and all other-group applicants are accepted and all low-quality same-group applicants are rejected. Thus, rejection rates are higher for same-group applicants than for other-group applicants. By contrast, if the acceptance threshold is set above the average quality of the other-group pool, then no other-group applicants are accepted.

The implication of this rank ordering for marginal applicants is that lenders will favor marginal other-group applicants over marginal same-group applicants. In other words, if lenders accept applicants beyond those they can clearly identify as high-quality, then low-quality other-group applicants will be accepted before any low-quality same-group applicants.

In terms of acting strategically, one would expect low-quality same-group applicants to seek out other-group lenders in deciding where to submit an application. Such applicants will recognize that same-group lenders will be better able to identify them as lower-quality and thus be more likely to reject their applications. For example, only a same-group lender might have negative information about an applicant’s experience with transaction accounts, such as patterns of account management

(e.g., “bouncing” checks), that may have accrued from its relationship with the applicant. By applying to the other-group lender, the low-quality applicant will, in effect, be moving from the lowest-ranked group from the perspective of the same-group lender to the middle-ranked group from the perspective of the other-group lender. More generally, the theory implies that marginal applicants will seek out other-group lenders.

## EMPIRICAL APPROACH

The taste-based and common bond theories of cultural affinity have different implications for the approval (and thus rejection) and application patterns that should be observed for banks with different racial ownership. For example, consider the approval decision. Suppose there are two banks – one white-owned and one minority-owned – that are identical in all other respects and that the banks receive loan applications from identical pools of white and minority applicants. In the taste-based theory of cultural affinity, one should observe that (i) marginal white applicants are approved more often than marginal minority applicants at the white-owned bank, and (ii) marginal minority applicants are approved more often than marginal white applicants at the minority-owned bank. In common bond theory of cultural affinity, the white lender can more easily identify marginal white applicants, so the marginal minority applicants will be approved more often than the marginal white applicants at the white-owned bank, and vice versa for the minority-owned bank. Similar reasoning yields predictions for the application decision.

Table 1 lays out the hypotheses for bank approval and applicant application patterns. Clearly, they are related, as they emerge from an explicit recognition that application patterns are likely to be influenced by the beliefs that applicants hold regarding their likely treatment by lenders of particular backgrounds. The empirical approach accounts for this using a two-stage selection model. In the first stage, applicants’ decisions about where to submit their mortgage application are a function of characteristics of both the applicant and the bank. In the second stage, given an applicant’s decision about where to apply, the bank that receives the application decides whether to approve it or not, which is a function of applicant and bank characteristics as well as of locational factors that could affect the lender’s ability to recoup losses in the event of a loan default.

## ANALYTICAL RESULTS

The two-stage selection model was estimated using 1994 and 1995 conventional home purchase mortgage lending experiences of a sample of minority-owned and white-owned peer banks. Only banks identified as being majority-owned by blacks or Asians are included as minority-owned in the sample. To be included as a peer in the sample, the white-owned bank is required to have a head office or branch in the same state and county as the head office or branch of a minority-owned bank and to be of a similar asset

size. For those minority-owned banks with multiple peer banks, only the three closest matches (by asset size) for a given minority-owned bank are included. For 1994, the final sample includes 35 minority-owned and 92 white-owned peer banks. The corresponding numbers for 1995 are 40 minority-owned and 106 peer banks.

The data indicate that, even after controlling for the fact that both banks have offices located in the same state and county, the applicant pool for minority-owned banks is a very different segment of the population than that of their peer banks (Table 2). As compared with their peers, minority-owned banks receive far more applications from minorities, from neighborhoods with high minority concentrations, and from lower-income neighborhoods; to a lesser extent, they receive more applications from lower income applicants.

The operating assumption for all the analyses is that lenders of a given ethnicity have an affinity with applicants of that ethnicity. Thus, by assumption, white-owned banks have an affinity with white applicants, black-owned banks have an affinity with black applicants, and Asian-owned banks have an affinity with Asian applicants. Alternatively, it could be argued that all banks have an affinity toward white applicants, given that whites make up the bulk of all applications. If so, then no differences would be expected in the treatment of white applicants across banks with different racial ownership. Regarding Hispanic applicants, having no prior expectations, I assume that Hispanics have no affinity with any of these groups; thus no differences in treatment are expected.

*Results for the sample of Asian-owned banks and peers.* Two results are of note. First, in 1994 marginal white applicants are significantly less likely to apply to Asian-owned banks than are other applicants. Importantly, tests indicate that marginal white applicants in 1994 are significantly less likely to apply to Asian-owned banks than to white-owned peer banks. Second, in 1995 marginal Asian applicants are significantly less likely to apply to white-owned banks than they are to apply to Asian-owned banks. These results strongly contradict the cross-race predictions of the common bond theory. However, it is important to recognize that the evidence does not directly affirm the predictions of the taste-based formulation of the theory; none of the same-race application choice relationships differ significantly from relationships involving racial interactions that are not believed to involve any form of cultural affinity.

The evidence suggests that banking institutions do not treat marginal applicants differently based on sharing the applicant’s racial background. In short, the data on denials of marginal applicants do not support either the taste-based or common bond formulation of cultural affinity.

*Results for the sample of black-owned banks and peers.* The bank choice results largely mirror those for the Asian-owned bank sample. Marginal black applicants are more likely to apply to black-owned banks than to white-owned banks in 1994, which contrasts with the predictions of the common bond theory but supports those of the taste-based theory. Aside from this,



though, there is little support for either the taste-based or common bond forms of cultural affinity in the bank choice equations. The application patterns of marginal minority and white applicants are not significantly different from populations not thought to be affected by cultural affinity.

The results for the denial equation are quite similar to those for the sample of Asian-owned banks and their peers in that the coefficients on the marginal applicant variables do not suggest that either form of cultural affinity exists. Applications from marginal applicants have comparable likelihoods of being denied, independent of the race of the applicant and the race of the bank.

## SUMMARY AND CONCLUSION

Cultural affinity has been put forward as a potential explanation for observed race-based disparities in denial rates for mortgage applications. The theoretical literature has developed two forms of cultural affinity. In the taste-based formulation of the theory, the affinity benefits all same-group members; in the common bond formulation, the affinity benefits only high quality same-group members and disadvantages low-quality same-group members.

By focusing on the behavior and treatment of marginal applicants of different racial backgrounds and recognizing that banks vary in their racial makeup, this paper assesses the importance of each type of cultural affinity for mortgage markets. The tests capitalize on the fact that, if affinities are race-specific, the theories predict that we should observe specific, and contrasting, application and denial patterns for marginal applicants across banks whose owners have different ethnic backgrounds. These tests are implemented using data on conventional mortgage applications in 1994 and 1995 for a sample of black-owned and Asian-owned banks and comparable white-owned peer banks.

The results of the analysis provide no support for the common bond form of the theory. There are no cases that suggest that marginal applicants seek out lenders of a different ethnic background or that banks approve applications from opposite-race individuals with marginal credit quality more frequently.

By contrast, some evidence is consistent with the notion of taste-based cultural affinity in the application data. Marginal white applicants are found to be less likely to apply to Asian-owned banks than to white-owned peer banks in 1994, marginal Asian applicants are less likely to apply to white-owned banks than to Asian-owned banks in 1995, and marginal black applicants are less likely to apply to white-owned banks than to black-owned banks in 1994. However, in these cases, the estimates also generally show that the application propensities for same-race pairings are not significantly different from the application propensities for pairings not believed to have cultural affinity issues. Thus, the findings here regarding application patterns are only weakly supportive, as

they imply a shying away from opposite-race pairings rather than a seeking out of same-race pairings.

The evidence from the denial equation estimates suggests no differences in application disposition for marginal applicants based on race, either that of the applicant or the bank, and thus offer no support for the taste-based form of the theory. In short, the denial rate equation findings offer little support for either the taste-based or common bond forms of cultural affinity. This result differs from those of Hunter and Walker (1996), who find evidence in denial-rate equations consistent with the view that taste-based cultural affinity exists. The divergence in results may arise for several reasons, with one important possibility being their use of a single-equation estimation structure, which admits the possibility of selection biases associated with applicant decisions on which bank to patronize. Such potential biases are absent in the current research.

In closing, I note issues that could explain the observed results while preserving the notion that both formulations of the cultural affinity hypothesis operate in mortgage markets, at least in some circumstances. While this study uses the race of the bank ownership as a signal of the affinity the bank will have with applicants, the race of the bank ownership need not correspond with the race of the loan officers and underwriters who interact with loan applicants. In addition, activities by market participants, such as lenders, brokers, and real estate agents, could shape mortgage application patterns, and thus the results, apart from any affinity effects that may exist. While not explored in the current study, potential explanations such as this have validity and should be empirically tested.

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