have higher denial rates wherever they attempt to borrow but whites face higher denials when they attempt to borrow in minority neighborhoods. In addition, Avery *et al.* found that home improvement loans had significantly higher denial rates in minority neighborhoods. Given the very strong effect of the individual applicant's race on denial rates, Avery *et al.* note that since minorities tend to live in segregated communities, a policy of targeting minority neighborhoods may be warranted.

- The median income of the census tract had strong effects on both application and denial rates of purchase and refinance loans, even after other variables were accounted for.
- There is little difference in overall denial rates between central cities and suburbs, once individual applicant and census tract characteristics are controlled for.

Avery, Beeson and Sniderman conclude that a tract-level definition would be a more effective way to define underserved areas in the GSE regulation than using the list of OMB-designated central cities as a proxy.

The next section will also document that there are equally widespread and pervasive differences in socioeconomic conditions across neighborhoods.

f. Conclusions From HUD's Analysis and the Economics Literature About Urban Underserved Areas

The implications of studies by HUD and others for defining underserved areas can be summarized briefly. First, the existence of large geographic disparities in mortgage credit is well documented. HUD's analysis of 1993 and 1994 HMDA data shows that low-income and high minority neighborhoods receive substantially less credit than other neighborhoods and, by most reasonable criteria, fit the definition of being underserved by the nation's credit markets.

Second, researchers are testing models that more fully account for the various risk, demand, and supply factors that determine the flow of credit to urban neighborhoods. The studies by Holmes and Horvitz and Schill and Wachter are good examples of this recent research. Their attempts to test the redlining hypothesis show the analytical insights that can be gained by more rigorous modeling of this issue. However, as those two studies show, the fact that our urban areas are highly segregated means that the various loan, applicant, and neighborhood characteristics currently being used to explain credit flows are often highly correlated with each other which makes it difficult to reach definitive conclusions about the relative importance of any single variable such as neighborhood racial composition. Thus, the need continues for further research on the underlying determinants of geographic disparities in mortgage lending.[35]

Finally, much research strongly supports a targeted definition of underserved areas. Studies by Shear, *et al.* and Avery, Beeson, and Sniderman conclude that characteristics of both the applicant and the neighborhood where the property is located are the major determinants of mortgage denials and origination rates—once these characteristics are controlled for, other influences such as central city location play only a minor role in explaining disparities in mortgage lending. HUD's analysis shows that both credit and socioeconomic problems are highly concentrated in underserved areas within central cities and suburbs. The remaining, high-income portions of central cities and suburbs appear to be well served by the mortgage market.

HUD recognizes that the mortgage origination and denial rates forming the basis for the research mentioned in the preceding paragraph, as well as for HUD's definition of underserved areas, are the result of the interaction of individual risk, demand and supply factors that analysts have yet to disentangle and interpret. The need continues for further research addressing this problem. HUD believes, however, that the economics literature is consistent with a targeted rather than a broad approach for defining underserved areas.

3. Alternative Underserved Area Definitions for Urban Areas[36]

This section compares the final rule's underserved definition to the alternative definitions advanced by Freddie Mac and Fannie Mae. Other comments were essentially variations on the two distinct approaches suggested by the GSEs. Therefore, rather than analyzing all variants, this section analyzes the two major alternative definitions—using all central cities and all rural areas, or expanding on the proposed rule's tract-based approach. The tracts added by these two alternative definitions have lower denial rates and higher origination rates than the tracts covered by the final rule. A study by the Urban Institute, summarized below, criticized both alternative definitions for being too broad in coverage.

a. The Fannie Mae Definition

Fannie Mae urged that HUD use the following definition for the geographically targeted goal: All central cities as defined by OMB, all non-metropolitan areas, *and all other* metropolitan census tracts that are more than 50 percent minority *or* that have an income less than 80 percent of area median income. The alternative definition proposed by Fannie Mae includes central city tracts that are substantially better off and have fewer problems accessing credit than underserved tracts covered by the final rule's definition. In suburban areas, the Fannie Mae definition excludes suburban tracts that appear to have mortgage access problems.

Table B.3 reports mortgage denial and origination rates and socioeconomic characteristics of served and underserved census tracts under the Fannie Mae definition. Credit access does not appear to be a problem in the added tracts—mortgage denial rates are one-half of mortgage denial rates in central city tracts covered by HUD's underserved definition. Moreover, the added central city census tracts appear substantially better off than the central-city census tracts covered by HUD's definition. The 7 percent poverty rate for the central city tracts added by Fannie Mae's underserved definition is only about one-third the 22 poverty rate for tracts included in central cities under the final rule.

The suburban tracts excluded from Fannie Mae's definition do not appear as distressed as other suburban underserved tracts covered by the final rule. For example, the 10 percent poverty rate in the excluded tracts is lower than the 14 percent poverty rate in all HUD suburban underserved tracts. But these tracts do appear to have problems accessing mortgage credit as evidenced by their high denial rates. The denial rate in the excluded tracts is 18 percent compared to the 20 percent denial rate in all underserved suburban tracts covered by the final rule.

[35] Methodological and econometric challenges that researchers will have to deal with are discussed in Mitchell Rachlis and Anthony Yezer, ''Serious Flaws in Statistical Tests for Discrimination in Mortgage Markets,'' *Journal of Housing Research,* Volume 4, 1993, pp. 315–336.

[36] The analysis in this section relies on 1993 HMDA data.

BILLING CODE 4210–32–P