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## DEFAULT RISK ON FHA-INSURED HOME MORTGAGES AS A FUNCTION OF THE TERMS OF FINANCING: A QUANTITATIVE ANALYSIS

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GEORGE M. VON FURSTENBERG\*

I. THE ANALYTICAL CONTEXT

IT HAS LONG BEEN UNDERSTOOD THAT, given "general credit conditions," the yield required on a particular security depends on its riskiness. The investor's risk exposure, in turn, is a function of both the risk class of the productive assets securing the various claims ordered by seniority, and the position of any chosen instrument in the financial structure. In financial analysis, it is frequently unnecessary to define the probability distribution of rate of return outcomes, including such events as default and bankruptcy. Instead, risk is inferred from risk premiums and proximate causes are assigned to visible effects. However, in the case of government-insured home mortgages, risk premiums are no longer tied to the characteristics of individual issues. In attempting to define risk, this study will therefore return to basis causes. We will measure comparative default rates on different mortgage cohorts in order to assess the transfers and social costs arising under the federal insurance program.

As in the market for corporate securities, two microeconomic elements of risk can clearly be distinguished in home financing. First there is the risk attached to the asset itself. It is influenced by anticipated price developments in the local real estate market, the age and design of the house, and the expected degree of family, income, and place-of-residence stability of the mortgagor. Apart from these "fundamental"<sup>1</sup> factors, however, the financing terms of the mortgage or the expected strength of the equity shield, particularly over the first few years after the date of issue, determine both how likely and how costly default will be. Qualities of the home and the mortgagor therefore govern the first element of risk distinguished, and characteristics of the mortgage the second.

If the influence of the first risk component can be held constant between

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1. Characteristics of the mortgaged property as well as the borrower are here treated as fundamental factors influencing mortgage risk. Just as the fundamental risk class of a firm's assets may be determined both by the nature and location of the business and by the quality of management, the qualities of mortgagors are regarded as part of the asset securing the claims of mortgagees.

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