handle is hein.journals/fedred79 and id is 376 raw text is: The Herfindahl-Hirschman Index

Stephen A. Rhoades, of the Board's Division of
Research and Statistics, prepared this technical
note.
The Herflndahl-Hirschman index, better known as
the Herfindahl index, is a statistical measure of
concentration. It has achieved an unusual degree of
visibility for a statistical index because of its use by
the Department of Justice and the Federal Reserve
in the analysis of the competitive effects of merg-
ers. The Herfindahl index can be used to measure
concentration in a variety of contexts. For example,
it can be used to measure the concentration of
income (or wealth) in U.S. households and also
market concentration, that is, the degree of concen-
tration of the output of firms in banking or indus-
trial markets. It is useful in analyzing horizontal
mergers because such mergers affect market con-
centration, and economic theory and considerable
empirical evidence suggest that, other things equal,
the concentration of firms in a market is an impor-
tant element of market structure and a determinant
of competition. However, despite its visibility, the
Herfindahl index is sometimes not understood in
terms of its use, measurement, or interpretation in
merger analysis.
To facilitate and simplify the application of the
antitrust laws regarding mergers, in 1982 the
Department of Justice published formal numerical
guidelines for horizontal mergers (those between
firms operating in the same product and geographic
markets) based on the Herflndahl index (HIH).' In
1985, the Justice Department proposed somewhat
modified numerical guidelines for mergers in the
banking industry and published revised guidelines
1. The index was developed independently by the economists
A.O. Hirschman (in 1945) and O.C. Herfindahl (in 1950). Hirsch-
man presented the index in his book, National Power and the
Structure of Foreign Trade (Berkeley: University of California
Press, 1945). Herfindnhl's index was presented in his unpublished
doctoral dissertation, Concentration in the U.S. Steel Industry
(Columbia University, 1950). For more detail on the background of
the index, see Albert 0. Hirschman, The Paternity of an Index
American Economic Review (September 1964), pp. 761-62.

in 1992. These numerical guidelines are used by
the Federal Reserve as the first step in analyzing
the effect on competition of bank mergers. The
guidelines, as applied to banking, specify that if a
bank merger would result (1) in a post-merger HHI
in a market of less than 1,800 or (2) in a change in
the HM of less than 200 (less than 50 in other
industries), it is likely that the market structure
would not reach a concentration level, or concen-
tration would not increase enough, such that firms
in the market would have the market power to.
maintain prices above the competitive level for a
significant period.
The HHI is only one element in the analysis of
the competitive effects of bank mergers. However,
because of the importance attached to market con-
centration as an indicator of competition and the
relative ease of calculating the HHI, this index
serves as an efficient screening device for regula-
tors and as a planning tool for bankers. At the
Federal Reserve, the HHI is calculated by includ-
ing 100 percent of the deposits of commercial
banks in a market and at least 50 percent of the
deposits of thrift institutions. If the post-merger
HHI does not exceed the numerical guidelines, it is
generally presumed that the merger would not be
seriously anticompetitive, and no further analysis is
conducted. If, on the other hand, the post-merger
HI exceeds the numerical guidelines, a detailed
economic analysis of competition is undertaken to
determine whether other factors, such as potential
competition, indicate that the market would be
more (or less) competitive than the Hi alone
suggests.
The HHI accounts for the number of firms in a
market, as well as concentration, by incorporating
the relative size (that is, market share) of all firms
in a market. It is calculated by squaring the market
shares of all firms in a market and then summing
the squares, as follows:
n
HHJ =    Mj)2
i= t


