Price Discrimination and Social Welfare:
Hal Varian
The American Economic Review
Vol. 75n No. 4 (Sep., 1985) pp. 870-875

A Reservation Price Model

max $r(a_0)a_0$.

Assuming a_1, a_2 and prices p_1,p_2 such that businesses less than 10,000 square feet a_1, face p_1 and businesses > 10,000 square feet a_2, face p_2.

max $r(a_1)a_1 + r(a_2)(a_2 - a_1)$.

Fact 1: *If r(a) is decreasing function, then output and welfare must increase when price discrimination is allowed.*

PROOF:

Assume not so that $a_0 > a_2$ and thus:
$-r(a_0)\ a_1 > -r(a_2)\ a_1$. By profit maximization: $r(a_0)a_0 >$ or $= r(a_2)a_2$.
Adding these two inequities together, and adding $r(a_1)a_1$ to each side of the resulting inequity gives
$r(a_1)a_1 + r(a_0)(a_0 - a_1) > r(a_1)a_1 + r(a_2)(a_2 - a_1)$.

Which contradicts profit maximization.

*Department of Economics University of Michigan, Ann Arbor, MI 48109. This research is supported in part by the National Science Foundation.

DOC'S WINE SHOP
22570 FOOTHILL BLVD.
HAYWARD, CA 94541