

EFFECT OF DIFFERENTIAL CHANGE IN ASSESSMENT RATIO ON THE TAX RATE AND ON INDIVIDUAL TAX BILLS

We define the tax rate

$$T = \frac{L}{A} \quad (1)$$

where L is the revenue or tax levy and A is the total assessed value of all property. For a budget period the revenue L is a fixed quantity, set by law and the taxing entity (county, school district, etc.).

The total assessed value

$$\begin{aligned} A &= (rR + c(1-R))F \\ &= (c - R(c-r))F \end{aligned} \quad (2)$$

where

- F = total cash value of all property;
- R = fraction of the total cash value contributed by residential property;
- r = assessment ratio for residential property;
- c = assessment ratio for commercial property.

We have allowed only two classes of property, residential and commercial; the argument extends easily to the nine classes defined by the Arizona statutes.

Reducing the assessment ratio c for commercial property to c' and holding constant the assessment ratio r for residential property, affects the total assessed value A , decreasing it to A' . There must be a proportionate increase of the tax rate, from T to T' , for the revenue to be constant at $L = AT = A'T'$. The ratio of the tax rates

$$\begin{aligned}\frac{T'}{T} &= \frac{A}{A'} \\ &= \frac{(c - R(c - r))}{(c' - R(c' - r))}\end{aligned}\tag{3}$$

We now examine the effect of the essentially identical Arizona House and Senate bills HB2250 and SB1114, respectively, which set the assessment ratios for all classes of property at 10 percent of full cash value for purposes of computing and levying secondary property taxes. The current assessment ratio for residential property is 10 percent, that for the principal classes of commercial property is 25 percent, and for agricultural property and vacant land, 16 percent. In order to evaluate the ratio T'/T of eq. (3), we set the flat assessment ratio $c' = r = 10\%$ and use a weighted average $c = 20\%$, estimated from the current assessment ratios for commercial property and agricultural or vacant land. The fraction of full cash value contributed by residential property $R = 0.67$, for the year 2000. From eq. (3)

$$\begin{aligned}\frac{T'}{T} &= \frac{(20 - 0.67(20 - 10))}{(10 - 0.67(10 - 10))} \\ &= 1.33\end{aligned}\tag{4}$$

Reducing the assessment ratio for commercial property to that for residential property leads to a 33 percent increase in the secondary property tax rate. For a representative residential property in Tucson, secondary property taxes are 1/4 of the total property tax. The 33 percent increase in secondary property tax rate that would follow passage of HB2250/SB1114 translates into an 8 percent increase in the total property tax paid by an owner of residential property:

$$\begin{aligned}\frac{(\text{total_tax})'}{(\text{total_tax})} &= 0.75 + 1.33 \cdot 0.25 \\ &= 1.08\end{aligned}\tag{5}$$

The effect of bills HB2250/SB1114 is to shift significantly the tax burden

from owners of commercial property and agricultural or vacant land to owners of residential property.

The effect is five times greater for owners of historic residential property, for which the current assessment ratio is 5 percent. The increase in tax bill would be 40 percent:

$$\frac{(total_tax_historic)'}{(total_tax_historic)} = 0.75 + 1.33 \cdot 2 \cdot 0.25 \quad (6)$$
$$= 1.4$$

Neither the full text of the bills nor the summary descriptions describe the effect on homeowners and renters (presuming that owners of rental residential property would pass on an increased tax to renters). The fiscal analysis requested by the Senate states, "This bill has no fiscal impact". This is true with regard to State and local budgets. Could one not hope for an honest statement of the impact on taxpayers, to the effect that the bills shift the tax burden more onto residential property owners.

There has been already a significant shift of the tax burden from owners of agricultural/vacant land onto residential owners. Comparing the 1998 and 1999 budgets of Pima County, the total valuation of agricultural/vacant land dropped by 34 percent, corresponding to a 7 percent decrease in its fraction of the full cash value of all property. Over the same period the valuation of residential property rose slightly and its fractional contribution increased by 8 percent. This increase translated directly into an increased tax bill for residential owners.