Orange County Case

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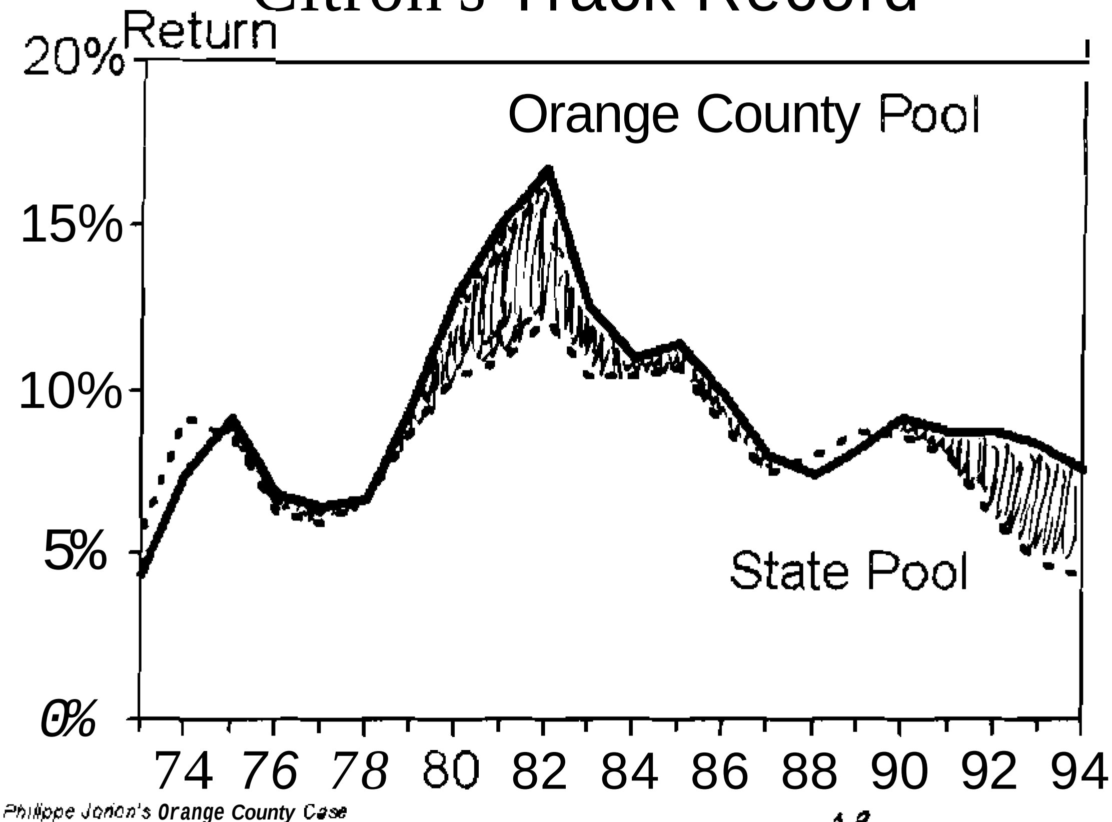
Citron's Track Record



Bob Citron managed the Orange County Treasury.

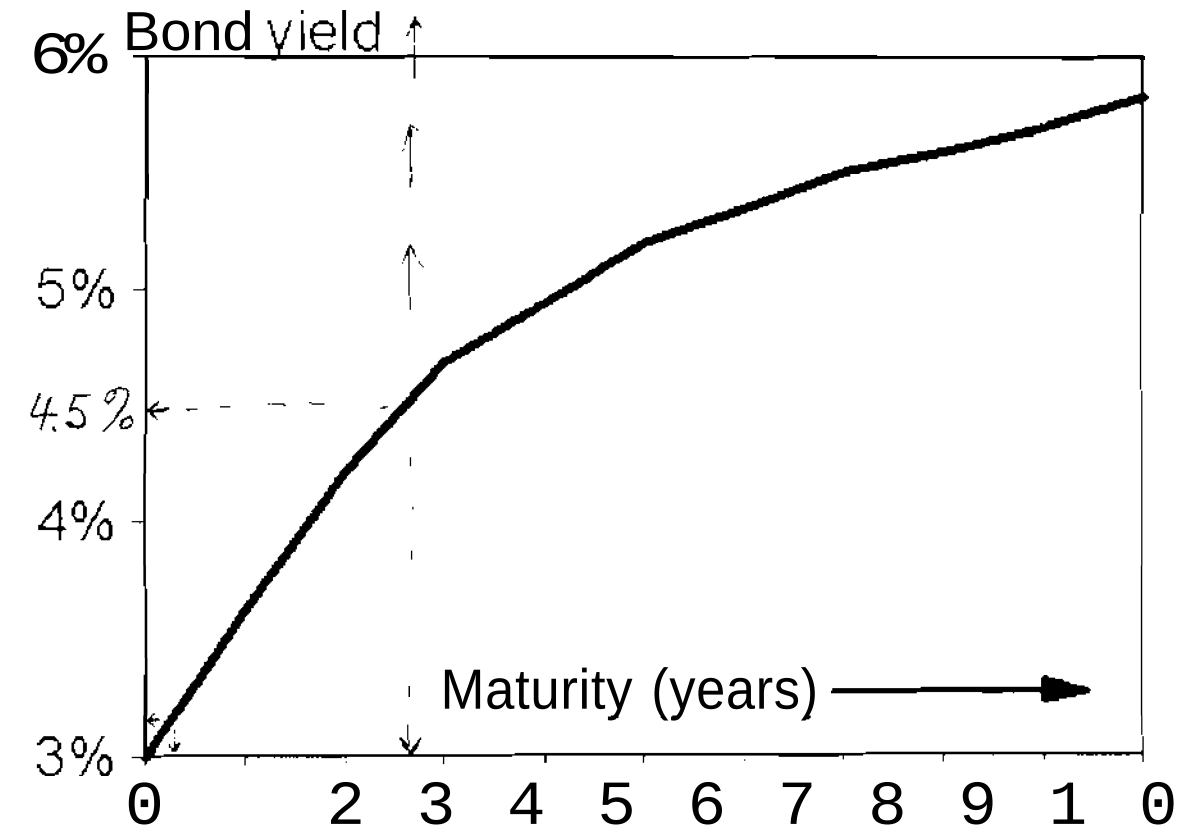
In the 20 years before 1994,
Bob Citron often outperformed the Bond Market.

How could he do this?
By taking more risk (higher Duration),
& using leverage.

When you take more risk,
you are likely to LOSE eventually!

In 1994, Citron lost $1.6 Billion
on Orange County's $7.5 Billion portfolio

Term Structure on Dec.1993



Philippe Jorion's Orange County Case

Carry Trade: Borrow Short, Invest Long

Orange County had $7.5 Billion equity to invest in 199.

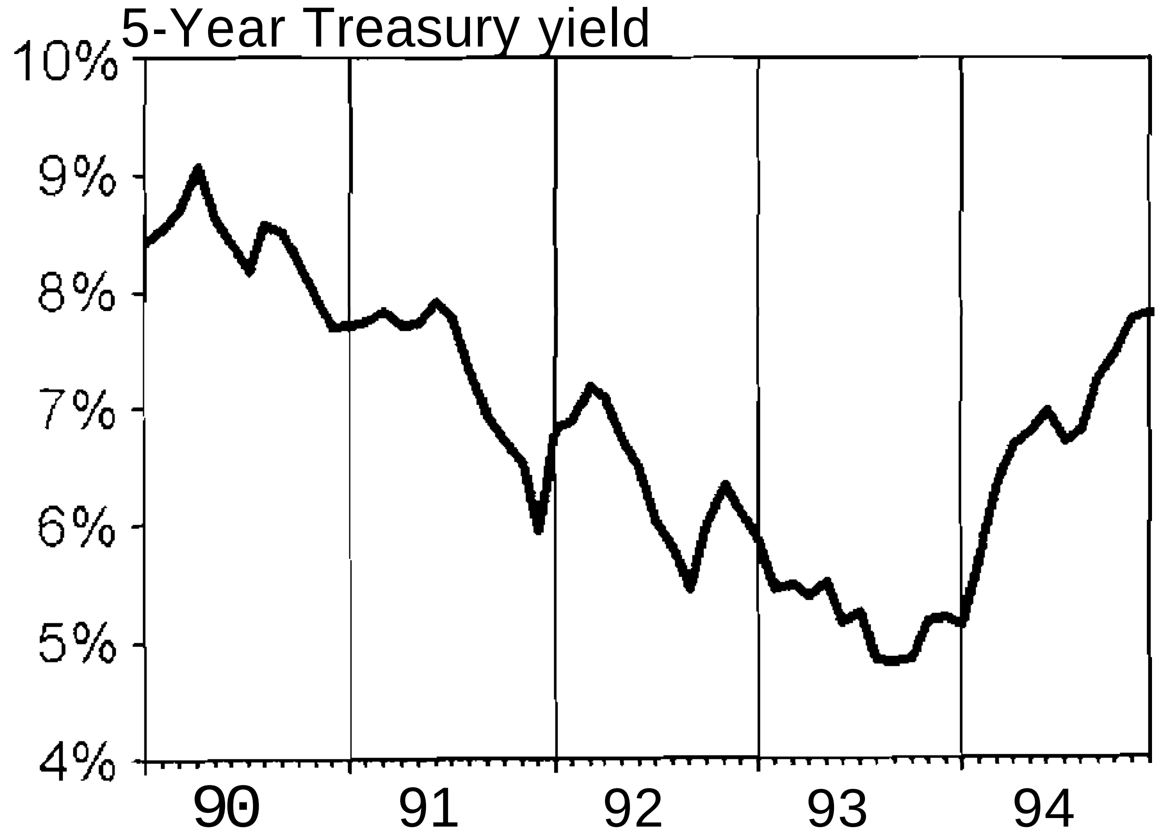
1. Invested $7.5 Billion at 4.5% (D = 2.77 years)
2. Borrowed $12 Billion at 3% (D = 0.25 years)
   - must pay back borrowed money every 3 months & then borrow again for another 3 months.
3. Invested the $12 Billion at 4.5% (D = 2.77 years)

Leverage = $19.5 Billion / $7.5 Billion = 2.6

Bet that yield curve would stay low and steep!!

If right, earn 4.5% on $7.5 Billion
+ 1.5% on $12. Billion } Total Return

Path *of* Interest Rates



Philippe Jorion's ***Orange*** *County Case*

Later Performance : $\Delta B = [-B\,D\,\Delta y] \times \text{Leverage}$

In 1994 interest rates ↑ 3%.

$$\left.\begin{aligned} B &= \$7.5 \text{ Billion} \\ D &= 2.77 \text{ years} \\ \Delta y &= +.03 \\ L &= 2.6 \end{aligned}\right\} \Delta B = -(7.5)(2.77)(.03)(2.6)$$

$$= \boxed{-\$1.6 \text{ Billion}}$$

loss on bond portfolio