Pop of Chile 1940 - 1992

2 Models

$y = 5000 \cdot 1.02^t$

(Rough / Ready From graph)

$y = 4922.9 \cdot 1.0196^t$

(Regression by Excel)

Which is better?

Use RMSR

The lower the better

Yr	Pop	Predict $5000 \cdot 1.02^t$	Resid	Resid^2
0 40	5023	$5000 \cdot 1.02^0 = 5000$	23	$23^2 = 529$
12 52	5932	$5000 \cdot 1.02^{12}$		
20 60	7374	$5000 \cdot 1.02^{20}$		
30 70	8885			
42 82	11330			
52 92	13348			
			Mean	208,709.1
			RMSR	330

Resid = (Act − Pred)

Yr	Pop	$4922.9 \cdot 1.0196^t$		Resid^2
0		4922.9		
12		$4922.9 \cdot 1.0196^{12}$		
20				
30				
42				
52				
			Mean	29331.69
			RMSR	171.3

"average" error

Lab C

D6 = sqrt(average(D10:End))

C10 = D$4 * A10 + D$5

{mx + b}

D10 = ($B10 - C10)^2

Actual - Predicted

E10 = F$4 * F$5 ^ A10

{k * a^t}

F10 = ($B10 - E10)^2

F5 = exp(0.023)

Excel Model $y = 18.015\ e^{0.023t}$

$y = k \cdot a^t$

$a = e^{0.023} = \exp(0.023)$