Fitting Preston Curve for the States of India

Dr. Shyju Mathew

Faculty (visiting) in Economics, National Institute of Commerce and Technology,

Thrissur 680519, Kerala.

Abstract

This paper seeks to fit the Preston curve for India which explores the nature of relationship between life expectancy and real income per capita NSDP. The finding was inanalogy with the original proposition of Preston(1975).

Keywords: Rahn Curve, Optimal government size

Introduction

An increase in life expectancy is a sign of improved quality of life. The effect of food supply on mortality is the most obvious explanation for the link between life expectancy and income. Higher income also means better access to housing, education, health care, and other necessities, all of which contribute to better health, reduced mortality rates, and longer life expectancy. The empirical cross-sectional connection betweenlife expectancy and real income per capitawas explored bySamuel H. Preston who illustrated the relationship in an article entitled "The Changing Relation between Mortality and Level of Economic Development", published in 1975 in the journal Population Studies. Preston studied the relationship in the 1900s, 1930s and 1960. In this article we seek to fit the Preston curve for India.

Data

State-level data for both the variables were obtained from secondary sources. Life expectancy at birth (2010-20) was taken from GoI (2020) abridged life tables while NSDP Per capita PPP\$ (2019–20) data was obtained from IMF (2020).

Results and Discussion

A reciprocal model with the following econometric specification was administered in consistency with the proposition of Preston (1975).

$$Y_i = \beta_1 + \beta_2 \left(\frac{1}{X_i} \right) + u_i$$

Y_i = life expectancy at birth
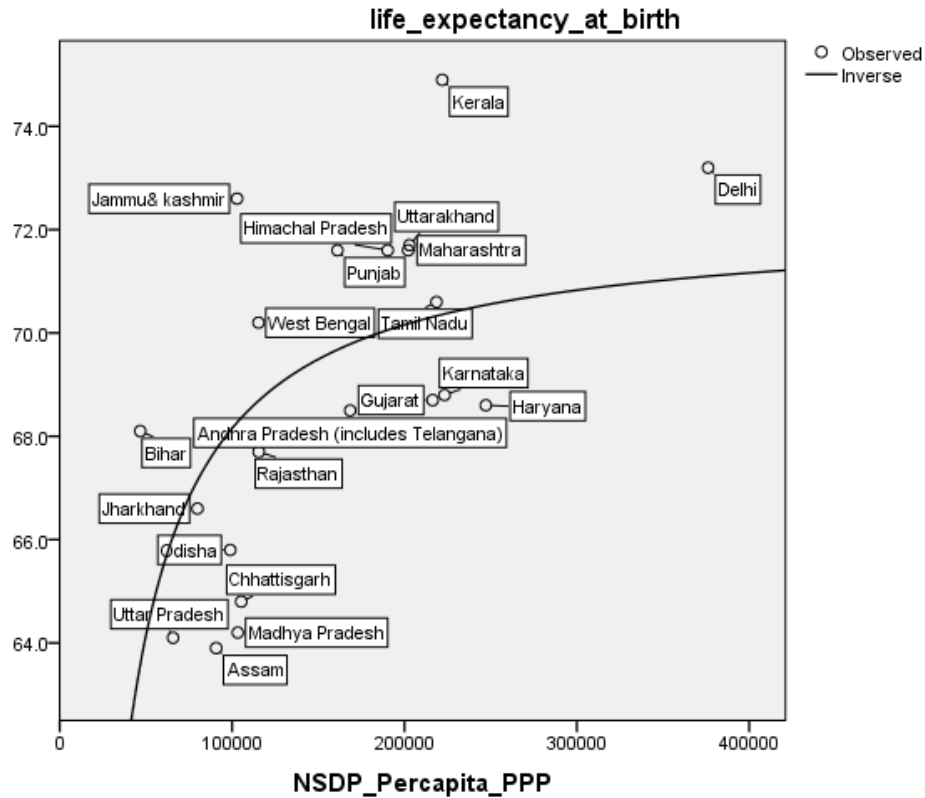
X_i = NSDP percapita PPP

u_i = Error term

Estimates

The estimates of the regression model is reported below

$$Y_i = 72.165 - 401125.430$$

AsNSDP percapita PPP increases indefinitely, - 401125.43*(1/X) approaches zeroand X approaches the limiting value 72(*p<0.01*).

.Figure 1:Preston curveof India

Longevity expanded with percapita NSDP. However the effect is stabilizing once income levels reach a critical up threshold.

Summing Up

The finding is in congruence with the original proposition of Preston about life expectancy and real income per capita. Longevity was found to be a saturating positive function of percapita NSDP among Indian states.

References

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