

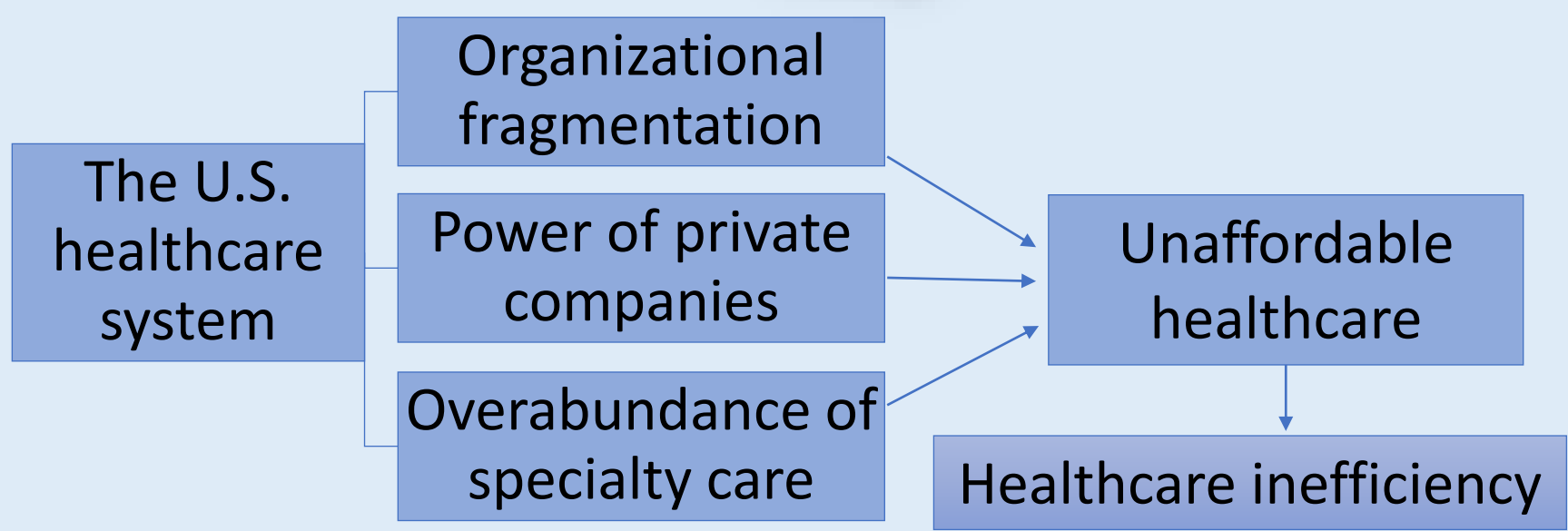
THE UNITED STATES HEALTHCARE SYSTEM

EXPENDITURES AND COVERAGE RATES ON PUBLIC INSURANCE PROGRAMS

1. Introduction

The national healthcare spending provides the resources needed to maximize health outcomes' quality and to achieve healthcare system efficiency. However, in the United States (U.S.), high levels of health spending translates into suboptimal health outcomes. In this work, coverage rates on public health insurance plans are set as an indicator of health outcomes. The aim is to study the relationship between health spending and coverage rates on public health insurance plans in the U.S. from 1988 to 2018.

2. Literature review



In 2010, the Affordable Care Act (ACA) policy intervention was established to improve healthcare efficiency.

3. Methodology

Model specification

To evaluate the relationship between health spending (ExpPublicHI) and coverage rates (TCPublic), both on public health insurance programs, an Ordinary Least Squares (OLS) multiple regression analysis is generated, following a stationary stochastic process. First-differences are used to de-trend the series.

Control variables

Real GDP/capita (RealGDP), unemployment rate (Unemployment), tertiary education rate (Educ), liters per capita of alcohol consumed (Alcohol Consumption), average per capita level of income (Income) and medical doctors per 1000 people (Physicians) are added to the model.

Final equation

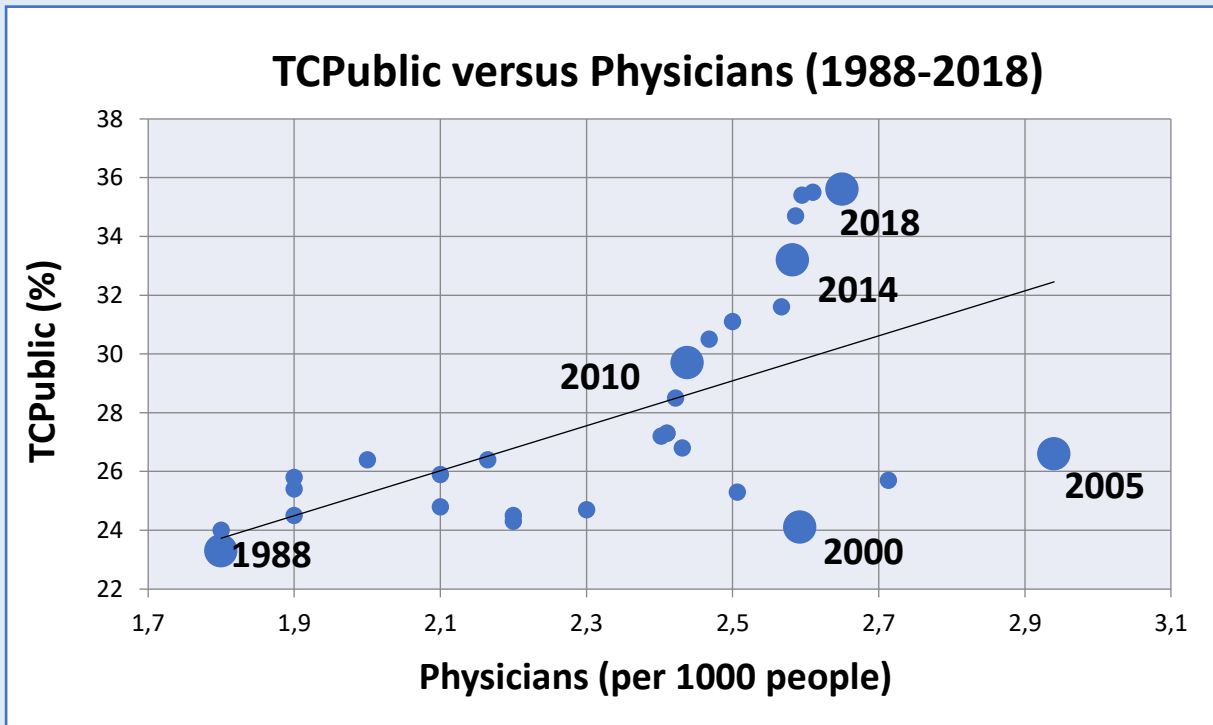
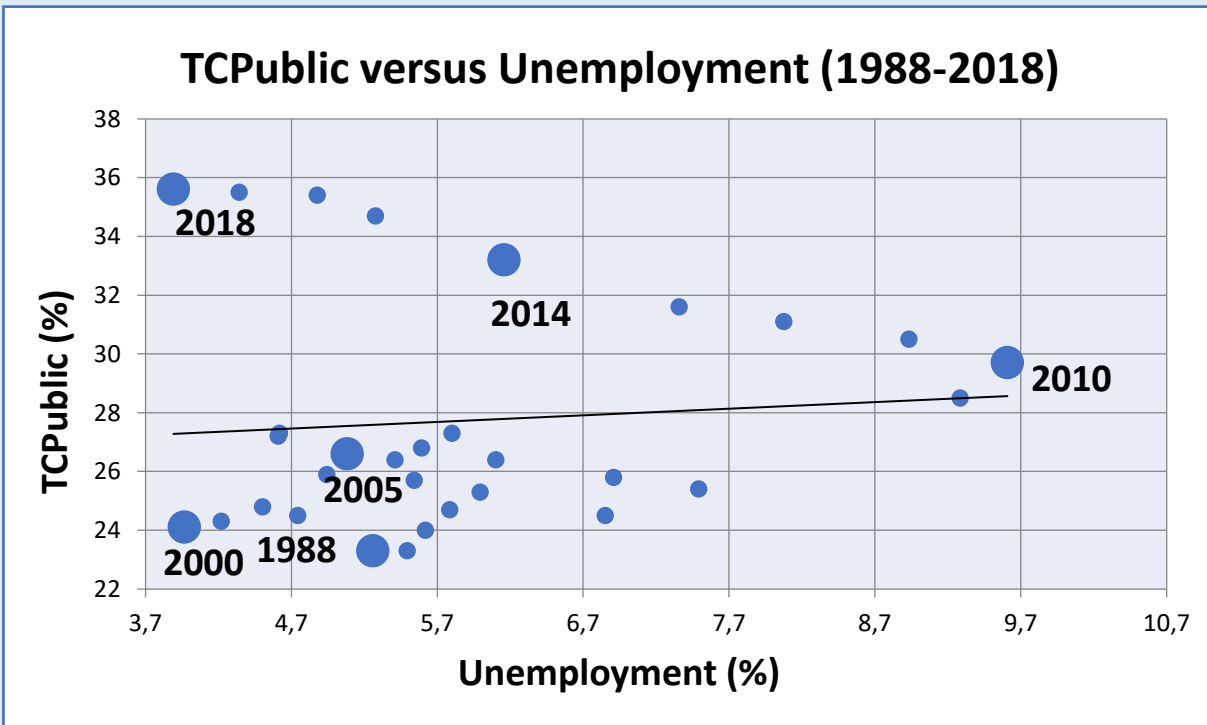
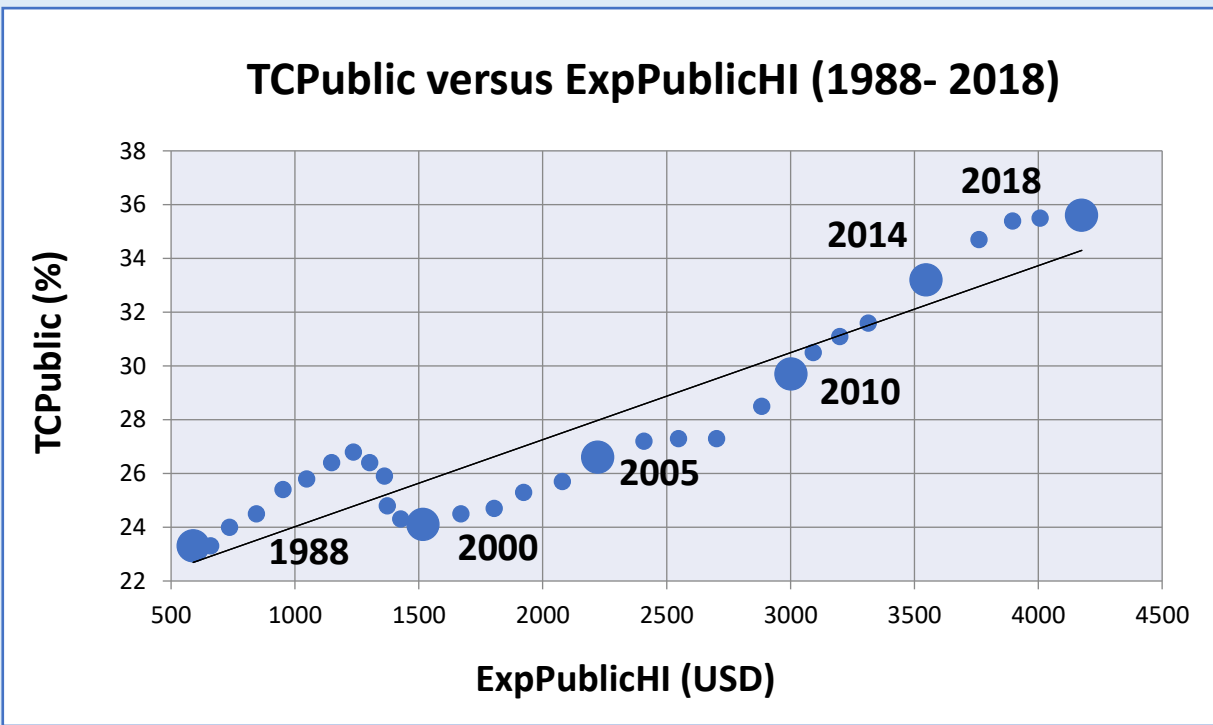
$$d_TCPublic = \beta_0 + \beta_1*d_ExpPublicHI + \beta_2*d_RealGDP + \beta_3*Unemployment + \beta_4*d_Educ + \beta_5*d_AlcoholConsumption + \beta_6*d_Physicians + \beta_7*d_Income + \varepsilon$$

Where $d_$ is the first difference on the corresponding variable, β_0 is the constant, $\beta_1... \beta_7$ are unknown parameters and ε is the error term.

4. Results

Model 1: OLS, using observations 1989-2018 (T=30) Dependent variable: d_TCPublic HAC standard errors, bandwidth 2 (Bartlett kernel)				
	Coefficient	St. Error	t-ratio	p-value
const	-2.11003	0.398789	-5.291	<0.001 (***)
d_ExpPublicHI	0.00917208	0.00146624	6.255	<0.001 (***)
d_RealGDP	<0.001	0.000114529	0.6837	0.5013
Unemployment	0.219752	0.0260756	8.427	<0.001 (***)
d_Educ	0.0339837	0.0309440	1.098	0.2840
d_AlcoholConsumption	-0.194327	0.247565	-0.7850	0.4409
d_Physicians	0.322948	0.175496	1.840	0.0793 (*)
d_Income	0.000114198	0.000126360	0.9037	0.3759
Mean dependent var	0.410000	S.D. dependent var	0.600201	
Sum squared resid	2.144254	S.E. of regression	0.312196	
R-squared	0.794749	Adjusted R-squared	0.729442	
F(7, 22)	32.26269	P-value (F)	<0.001	
Log-likelihood	-2.992070	Akaike criterion	21.98414	
Schwarz criterion	33.19372	Hannan-Quinn	25.57018	
rho	0.114196	Durbin-Watson (DW)	1.730103	

- A positive and significant relationship between ExpPublic and TCPublic can be assumed. Also, a positive and significant effect of unemployment rate and physicians' density on TCPublic is found.
- It seems that, after the ACA implementation, unemployment rate and the number of physicians per 1000 people were lower than before.



5. Conclusions

- There is a positive association between the increase in health spending and the growth in public healthcare insurance coverage rates. However, its real qualitative effects are subject to the way this expenditures are used and distributed.
- By reducing specialty care and increasing primary care, physicians would be cheaper, there would be more resources available and the amount of medical doctors would rise, as well as the rate of population covered under public health insurance.