

Exploring the Equity of Out-of-Pocket Healthcare Expenses and Catastrophic Healthcare Expenditures in Taiwanese Households

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Background

Countries around the world are committed to achieving universal health coverage, ensuring that people can access medical services without facing financial hardship. Despite these efforts, household healthcare expenditures continue to rise. In Taiwan, there is a lack of comprehensive studies examining households' out-of-pocket (OOP) healthcare expenditures.

Objectives

This study aims to evaluate the equity of OOP spending and the distribution of catastrophic healthcare expenditures in Taiwan, and identify the key factors that influence these expenditures.

Methods

This study utilizes data from Taiwan's Survey of Family Income and Expenditure from 2014 to 2023. All analyses used probability weights (pweight) to ensure national representativeness. Catastrophic healthcare expenditure is defined as the OOP share that exceeds 10% of households' consumption. The distribution of absolute household OOP health expenditures is analyzed using the Concentration Index. Subsequently, the Kakwani Index is employed to examine the income-proportional distribution of these expenditures. Finally, a decomposition analysis is conducted to identify and quantify the determinants of OOP health expenses in Taiwan

Results

Our findings indicate that the proportion of households in Taiwan experiencing catastrophic healthcare expenditures increased from 8.94% in 2014 to 11.98% in 2023. The Concentration Index decreased from 0.177 in 2014 to 0.17 in 2023. However, the trend in OOP healthcare expenditures has been regressive over the past decade, with the Kakwani index decreased from -0.133 in 2014 to -0.1435 in 2023. Additionally, factors such as the socioeconomic status of the household head had the largest contribution to this inequality.

Table 1. 2023 Sample Characteristics (Unit of analysis: household, n=9,116,055)

	Catastrophic healthcare expenditures households	Non-catastrophic healthcare expenditures households	<i>p</i>
n (%)	1,092,203(11.98)	8,023,852(88.02)	
Sex (Household head) (%)			<0.001
Male	673,927(61.70)	5,432,225(67.70)	
Female	418,276(38.30)	2,591,627(32.30)	
Age (Household head) (%)			<0.001
20-39	154,706(14.16)	1,383,957 (17.25)	
40-64	515,888(47.23)	4,693,609(58.50)	
≥65	421,609(38.60)	1,946,286(24.26)	
Education (Household head) (%)			<0.001
Elementary school or below	168,789(15.45)	887,330(11.06)	
Junior high school	145,145(13.29)	1,042,677(12.99)	
Senior high school	268,953 (24.62)	2,443,895(30.46)	
University	411,516(37.68)	2,934,847(36.58)	
Graduate school	97,800(8.95)	715,103(8.91)	
Household head employment (%)	752,947(68.94)	6,289,590(78.39)	<0.001
Household Size			<0.001
1-2	627,903(57.49)	3,832,640 (47.77)	
≥3	464,300(42.51)	4,191,212(52.23)	
Household with elderly (%)	730,213(66.86)	4,029,901(50.22)	<0.001
Household with kids under 5 (%)	62,840(5.75)	532,906 (6.64)	0.114
Reside in urban areas (%)	774,758(70.94)	5,743,218(71.58)	0.380

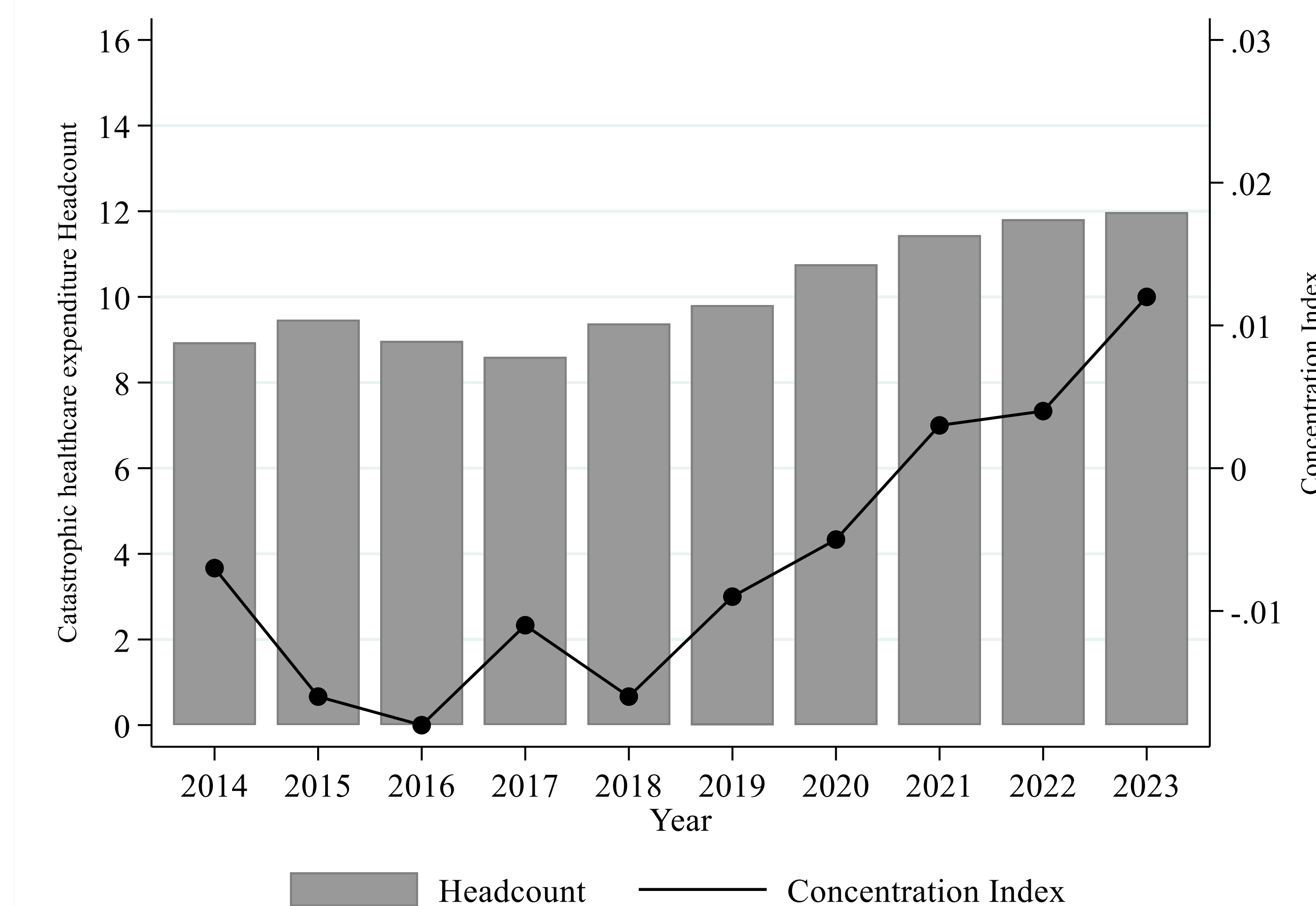
Table 2. OOP Concentration Index

	2014			2023		
	CI	SE	<i>p</i>	CI	SE	<i>p</i>
OOP total	0.177	0.008	<0.001	0.170	0.007	<0.001
Therapeutic equipment	0.325	0.012	<0.001	0.264	0.012	<0.001
Outpatient and hospital services	0.154	0.012	<0.001	0.192	0.011	<0.001
Long-term care	0.339	0.088	<0.001	0.046	0.153	0.764
Pharmaceutical and other medical products	0.171	0.007	<0.001	0.124	0.005	<0.001

Table 3. OOP Kakwani index

	2014	2023
OOP total	-0.1330	-0.1435
Therapeutic equipment	0.0148	-0.0495
Outpatient and hospital services	-0.1559	-0.1210
Long-term care	0.0287	-0.2672
Pharmaceutical and other medical products	-0.1397	-0.1895

Figure 1 . Catastrophic healthcare expenditures headcount and concentration Index



Conclusions

This study provides the most recent post-COVID analysis of the OOP in Taiwan. While high-income households incur higher absolute OOP healthcare expenditures, these expenditures still pose a significant burden on low-income households due to the regressive nature of OOP. In addition, there is still a considerable number of households experiencing catastrophic health expenditure. Therefore, despite the presence of the National Health Insurance, policies are required to strengthen financial protection for low-income households and improve the equity of OOP health expenditures in Taiwan.