Health Facilities Financial Resilience Amidst 1 COVID-19: Insights from Out-of-Pocket Payments Revenue Declines in Gabon

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Study Rationale & Setting

Examine the effect of the pandemic of the SARS-Cov-2 pandemic on financial viability of health facilities

Narrative Dissonance

- Use of terminology: out of pocket expenditure vs user fees/user charges
- Choice of literature reviewed in the introduction: focus on service use vs health system prepardness
- Choice of perspective to be highlighted (in both introduction and discussion, passing by methods and results): demand vs supply, relationship between the two

Methods: Overall Approach & Data Sources

- **Describe changes in health service utilisation and derived revenues in one health facility in Lambaréné**
- Data on service utilisation collected from registries from Nov 2019 to early days of 2022 (age & gender available) = 3887 visits
- From the graphs, it looks like data may to be missing for about 12 weeks (if I read the graphs correctly), yet no explanation is provided
- Author also includes weather data (average weekly tempertature)
- Value of revenues is derived from secondary sources approximating unit cost of user charges (what the author defines as OOPE): two different sources given at two points in the paper

Methods: Analytical Approach

Linear regression model differentiating before & after (1st April as pandemic onset + 2 sensitivity analyses modifying the onset of the pandemic)

$$\mathbf{Yt = \beta 0 + \beta 1 Trend + \beta 2 Cov1 + \beta 3 Cov1 * Trend1 + \beta 4 Cov2 + \beta 5 Cov2 * Trend2 + \beta 6 Age + \beta 7 Temp + \varepsilon t}$$

Trend=1, 2, 3…, N weeks in the pre-pandemic period

Trend1=1, 2, 3…, N weeks in the post COVID-19 period

Trend2=1, 2, 3…, N weeks in the COVID-1 second year

COV1=1 if pandemic period 1; 0 otherwise

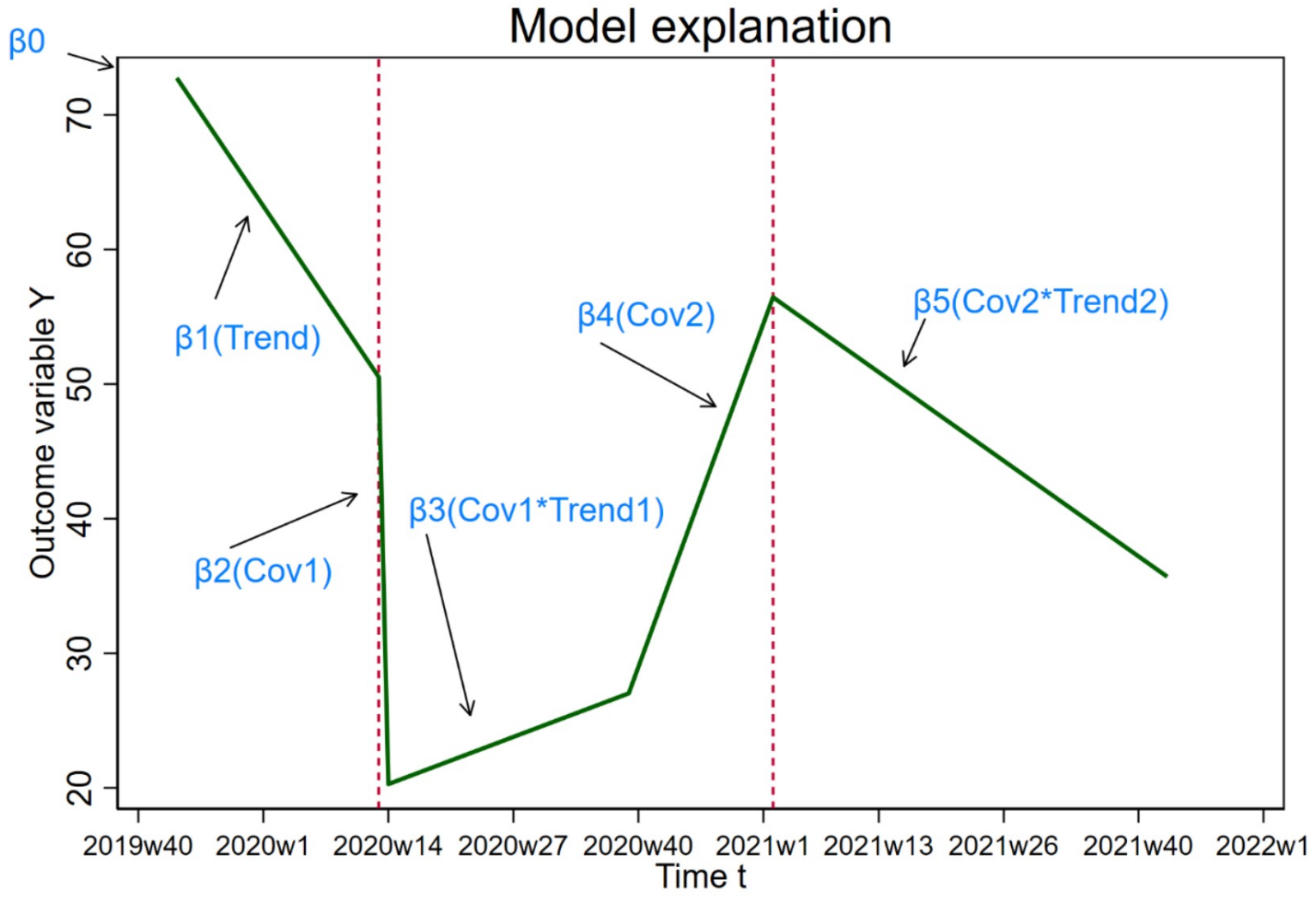
COV2=1 if time is after pandemic first year and 0 otherwise

Age=Average weekly patient's age

Temp= Average weekly temperature

Yt=weekly number of visits; or weekly OOP expenditures

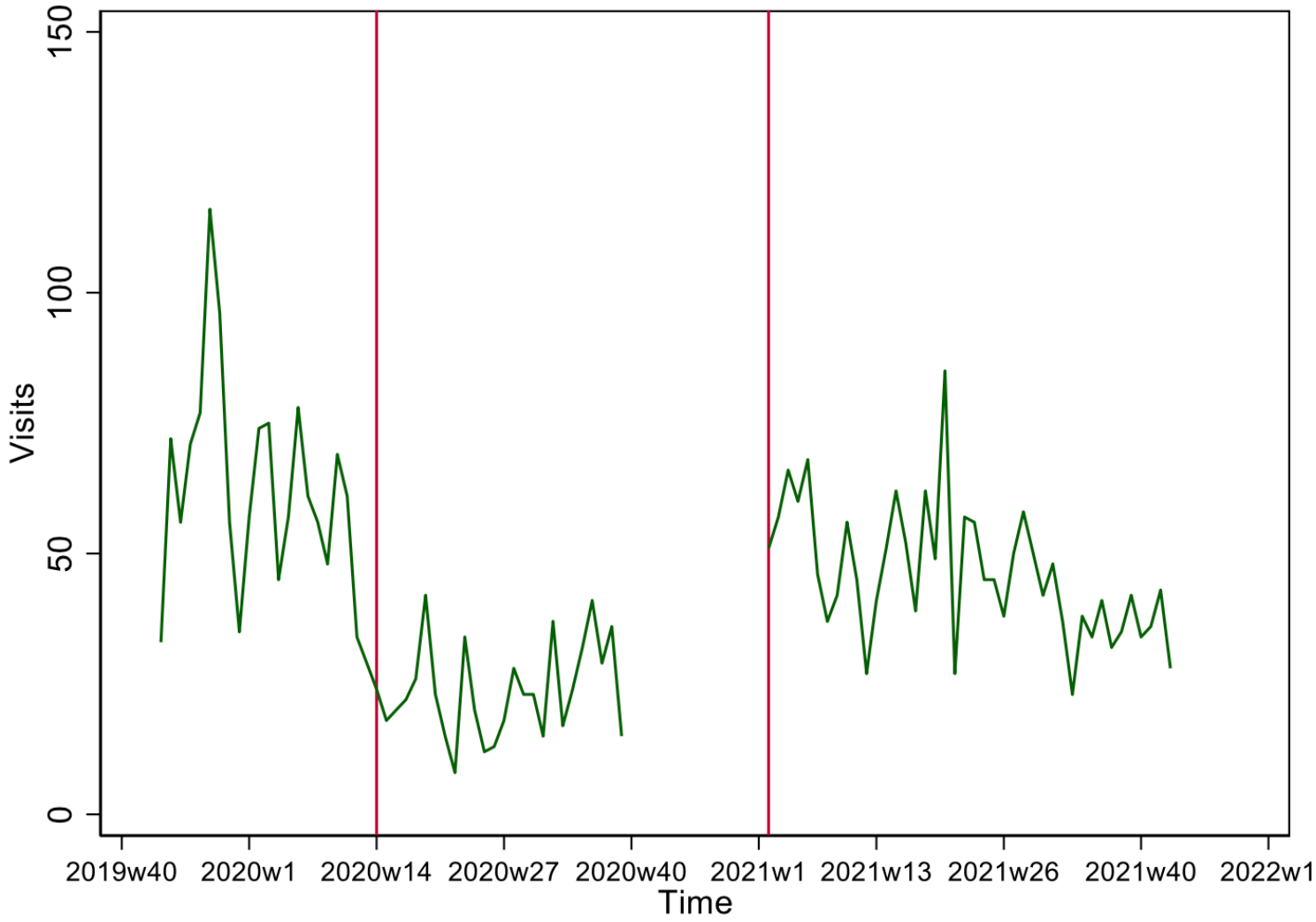
Methods



To be or not to be?

To ITSA or not to ITSA?

Results


150
100
50
0
Visits
2019w40
2020w1
2020w14
2020w27
2020w40
2021w1
2021w13
2021w26
2021w40
2022w1
Time

Results (2)

	Visits		*Costs*	
	Coefficients	t	Coefficients	t
Trend	-1.172*	(-2.37)	-14,728.3*	(-2.37)
Start of pandemic (Cov1)	-23.16**	(-2.69)	-291,102.8**	(-2.69)
Start of pandemic*Trend1 (Cov1*Trend1)	1.740*	(2.40)	21,873.8*	(2.40)
Second pandemic year (Cov2)	10.48	(0.71)	131,662.4	(0.71)
Second pandemic year*Trend2 (Cov2*Trend2)	-0.892*	(-2.02)	-11,208.4*	(-2.02)
Average weekly patient age (Age)	-0.833*	(-2.31)	-10,467.4*	(-2.31)
Average weekly temperature (Temp), lag	2.241	(1.26)	28,168.3	(1.26)
Constant	27.09	(0.54)	340,414.5	(0.54)
N	90		90	

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Some Comments on the Methodological Approach

1. Strive for clarity on data completeness and data handling – why missing data and how were they handled?

2. Strive for clarity of operationalisation of statistical model

    - If effectively this is an ITSA, it needs to be handled as such – check & account for autocorrelation

    - Why two interruptions?

    - Alternatively switch to simple before and after analysis

3. Is the approach adopted to quantify revenues lost and recovered the most efficient and effective?

Let us open the discussion to the audience