Letter to Editor

Threshold and regime effects of policy uncertainty on health tourism investment: points needing clarification

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Dear Editor,

Kazemi Nasab Hashemabadi et al. used a panel smooth transition regression (PSTR) model to study economic policy uncertainty and investment in health tourism across eight Iranian provinces (1). The question matters for health system planning. Several reporting problems, however, limit the interpretation of the main result.

The first inconsistency concerns the direction of the effect. The Abstract calls −0.353 a positive effect above the threshold and 0.218 a negative effect below it. The Results describe a negative effect of 0.353 percent above the threshold and a positive effect of 0.218 percent below it. A later sentence refers to a positive effect above the threshold. The Discussion places the negative effect above the threshold. In Table 6, the regime labels sit in a separate row. Read in the order printed, they would place 0.218 above the threshold. They also call regime One the lower regime. Yet the article gives two definitions of the transition function G: a step function equal to 1 at or above the threshold (Equation 3) and a logistic function (Equation 2) that equals 0.5 at the threshold and approaches 1 above it (1–3). Under either definition, regime One would be the upper regime if it denotes G = 1. These statements cannot all hold. They allow two readings: uncertainty raises investment at low levels and lowers it at high levels, or the reverse. The article does not show which is intended, so the central finding cannot be interpreted reliably.

The second inconsistency concerns the value −0.428. The Abstract calls it the threshold. The Results give the index as 0.428 percent, without the minus sign. The Discussion and Table 6 treat −0.428 as the coefficient of the uncertainty index (1). The remaining points need information from the authors. A PSTR model has three kinds of parameters (2,3). The location parameter c is the threshold. The slope parameter γ sets how fast the logistic transition function G moves from 0 to 1 around c. The regression coefficients β_0 and β_1 together give the marginal effect of uncertainty, $\beta_0 + \beta_1 G$ (Equation 1). Table 6 reports no γ and labels no entry as the threshold. Only C = 1.999 matches the article's notation for the location parameter. The article also gives no confidence interval for the threshold (4) and no information on how province-years are distributed across the transition function, which sets the weight each regime effect receives.

Table 6 does not say which entries are β_0 and β_1, so two readings are possible. In the first, −0.428 is β_0, as the Discussion implies. Equation 1 has a single interaction coefficient, but Table 6 lists two interaction values, so each is taken in turn as β_1. The marginal effect of uncertainty would then

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be −0.428 where G = 0, and −0.210 or −0.781 where G = 1 (adding 0.218 or −0.353). As G lies between 0 and 1, the marginal effect would be negative throughout, and no positive effect would follow from the table. In the second, 0.218 and −0.353 are the regime coefficients, and the role of the −0.428 entry needs explanation. The published information does not allow a choice, so no conclusion about validity is drawn.

The Methods say only that the uncertainty index was calculated from published sources and earlier studies. Its definition, source, scaling and transformation are not given. The index of Baker et al. is positive by design and normalized to a mean of 100 over a reference period (5). A threshold of −0.428 could therefore reflect standardization, centering or another transformation. This is not necessarily an error, but the threshold cannot be interpreted without this information.

Theory gives context only: classic models allow either sign (6,7), while the real options view (8) and firm level and tourism studies (9–11) point to a negative relation. None of this excludes a positive effect; the concerns above rest on the internal consistency and reproducibility of the reported results.

The authors are invited to clarify these points. A table that labels each estimate as c, γ, β_0 or β_1, with confidence intervals, would help readers. So would the marginal effect of uncertainty in each regime with standard errors, a full description of the index, the distribution of province-years across the transition function, and an explanation of how the resulting regime effects should be interpreted. With these clarifications, and consistent reporting across the Abstract, Results, Discussion and Table 6, the study would give health policy makers a clearer empirical base.

Conflict of interest

The author declares that there is no conflict of interest.

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