

Placebo Reforms: Correction of Minor Error in Proof of Proposition 1*

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December 11, 2017

In the proof of Proposition 1 of the paper "Placebo Reforms" (*American Economic Review* 103, 1490-1506, 2015), the derivation of the final expression for player t 's expected gross payoff (which appears at the very bottom of p. 1495 of the published version) is inaccurate. The expression itself is correct. The following is a correct derivation.

Define player t 's *gross payoff* from choosing $a \neq 0$ to be equal to his payoff from this action plus ε^t . Let us first verify that the strategy described in the statement of the result is an equilibrium strategy. Suppose that player t chooses some $a \neq 0$ and that $r(t) = t + n$. Then, player t 's gross payoff is

$$(1 - \delta) \left[\sum_{j=1}^n \delta^{j-1} (j\mu_a + \varepsilon^{t+j}) + \sum_{j=n+1}^{\infty} \delta^{j-1} (n\mu_a + \varepsilon^{t+n}) \right]$$

The term ε^{t+j} for $j = 1, \dots, n$ is missing from the original version. Given that all players $s > t$ intervene if and only if $\varepsilon^s < \varepsilon^*$, player t 's expected gross payoff from choosing $a \neq 0$ is therefore

$$(1-\delta) \sum_{n=1}^{\infty} F_a(\varepsilon^*) (1-F_a(\varepsilon^*))^{n-1} \left[\sum_{j=1}^{n-1} \delta^{j-1} (j\mu_a + E(\varepsilon \mid \varepsilon > \varepsilon^*)) + \sum_{j=n}^{\infty} \delta^{j-1} (n\mu_a + E(\varepsilon \mid \varepsilon < \varepsilon^*)) \right]$$

where

$$E(\varepsilon \mid \varepsilon > \varepsilon^*) = \frac{\int_{\varepsilon^*}^{\infty} \varepsilon f_a(\varepsilon) d\varepsilon}{1 - F_a(\varepsilon^*)}$$

$$E(\varepsilon \mid \varepsilon < \varepsilon^*) = \frac{\int_{-\infty}^{\varepsilon^*} \varepsilon f_a(\varepsilon) d\varepsilon}{F_a(\varepsilon^*)}$$

The reason is that when $r(t) = t + n$, it must be the case that $\varepsilon^{t+j} > \varepsilon^*$ for all $j = 1, \dots, n - 1$ and $\varepsilon^{t+n} < \varepsilon^*$.

*I am extremely grateful to Kfir Eliaz for discovering the error in the proof.

Now, straightforward algebra establishes that

$$\sum_{n=1}^{\infty} F_a(\varepsilon^*) (1 - F_a(\varepsilon^*))^{n-1} \left[\sum_{j=1}^{n-1} \delta^{j-1} E(\varepsilon \mid \varepsilon > \varepsilon^*) + \delta^{n-1} E(\varepsilon \mid \varepsilon < \varepsilon^*) \right] = 0$$

Therefore, the expression for player t 's expected gross payoff can be rewritten as

$$(1-\delta) \sum_{n=1}^{\infty} F_a(\varepsilon^*) (1-F_a(\varepsilon^*))^{n-1} \left[\sum_{j=1}^n \delta^{j-1} j \mu_a + \sum_{j=n+1}^{\infty} \delta^{j-1} (n \mu_a + E(\varepsilon \mid \varepsilon < \varepsilon^*)) \right]$$

which is the exact same expression that appears in the original proof. This expression in turn is indeed equal to

$$\frac{\mu_a + \delta \int_{-\infty}^{\varepsilon^*} \varepsilon f_a(\varepsilon) d\varepsilon}{1 - \delta(1 - F_a(\varepsilon^*))}$$

as appears at the very bottom of p. 1495 of the published version.