

The Natalist Bias of Pollution Control - corrigendum

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Recently, Ms Maria Kamran, lecturer at the College of Economics and Social Development, Institute of Business Management, Karachi, Pakistan, pointed out several typos in our paper. We provide here a *corrigendum*.

I) The first one appear in equation (9) which should be read:

$$y_t = \frac{1 + \gamma\eta}{1 + \delta + \gamma} k_t, \quad \text{instead of} \quad y_t = \frac{\gamma\eta}{1 + \delta + \gamma} k_t.$$

The same error affects the value of \bar{y} , which is:

$$\bar{y} = \tau^{\frac{1}{1-\nu\eta}} \frac{1 + \gamma\eta}{1 + \delta + \gamma} \left(\frac{\gamma\eta}{1 + \delta + \gamma} \right)^{\frac{\eta}{1-\nu-\eta}}, \quad \text{instead of} \quad \bar{y} = \tau^{\frac{1}{1-\nu\eta}} \left(\frac{\gamma\eta}{1 + \delta + \gamma} \right)^{\frac{1-\nu\eta+\eta}{1-\nu\eta}}.$$

One should also correct the last line of Proposition 1 accordingly.

II) Another typo is on p. 278 where one should read

$$k_{t+1} = \tau \left(\frac{\eta\phi}{1-\eta} \right)^\eta N_t^{\eta\alpha} k_t^{\nu+\eta} (1-ap)^\eta, \quad \text{instead of} \quad k_{t+1} = \tau \left(\frac{\eta\delta}{1-\eta} \right)^\eta N_t^{\eta\alpha} k_t^{\nu+\eta} (1-ap)^\eta.$$

implying that the corresponding phase line is given by

$$\Delta k_{t+1} = 0 \Leftrightarrow k_{t+1} - k_t = \tau \left(\frac{\eta\phi}{1-\eta} \right)^\eta N_t^{\eta\alpha} k_t^{\nu+\eta} (1-ap)^\eta - k_t = 0.$$

Solving for N_t gives

$$N_t = \tau^{\frac{-1}{\eta\alpha}} \left(\frac{\eta\phi}{1-\eta} \right)^{\frac{-1}{\alpha}} (1-ap)^{\frac{-1}{\alpha}} k_t^{\frac{1-\nu-\eta}{\eta\alpha}}.$$

III) Another typo, unrelated to the previous ones, is on p 281. The calibrated value of k_0 should be 13.623 and not 16.0271. The implied Table 1 is provided below.

The subsequent simulations are affected by this change in k_0 . To keep results very similar to what they were, one can renormalize the pollution cap: $E^* = 75$. The corresponding new tables and figures are displayed below.

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t	N_t	n_t	ℓ_t	y_t	Y_t
1983	4.680	1.426	0.608	4.541	21.252
2008	6.674	1.154	0.608	7.615	50.820
2033	7.698	1.059	0.608	11.643	89.634
2058	8.154	1.023	0.608	15.742	128.353
2083	8.344	1.009	0.608	19.232	160.476
2108	8.422	1.004	0.608	21.862	184.128
2133	8.454	1.002	0.608	23.690	200.272
2158	8.467	1.001	0.608	24.896	210.784
2183	8.472	1.000	0.608	25.665	217.430
2208	8.474	1.000	0.608	26.146	221.558

Table 1: Benchmark Simulation - World Economy 1983-2208

t	N_t	p_t	n_t	ℓ_t	y_t	Y_t
1983	4.680	0.000	1.426	0.608	4.541	21.252
2008	6.674	0.000	1.154	0.608	7.615	50.820
2033	7.698	0.226	1.146	0.657	9.742	75.000
2058	8.819	0.480	1.162	0.724	8.504	75.000
2083	10.252	0.531	1.084	0.738	7.316	75.000
2108	11.116	0.549	1.041	0.744	6.747	75.000
2133	11.572	0.558	1.020	0.747	6.481	75.000
2158	11.801	0.562	1.010	0.748	6.355	75.000
2183	11.914	0.564	1.005	0.748	6.295	75.000
2208	11.969	0.565	1.002	0.749	6.266	75.000

Table 2: Simulation with a Constant Pollution Cap - 1983-2208

t	N_t	p_t	n_t	ℓ_t	y_t	Y_t
1983	4.680	0.000	1.426	0.608	4.541	21.252
2008	6.674	0.000	1.154	0.608	7.615	50.820
2033	7.698	0.226	1.146	0.657	9.742	75.000
2058	8.819	0.280	1.077	0.670	10.906	96.182
2083	9.499	0.207	1.003	0.653	12.985	123.347
2108	9.532	0.076	0.956	0.624	16.595	158.185
2133	9.116	0.000	0.957	0.608	20.661	188.350
2158	8.728	0.000	0.983	0.608	23.478	204.911
2183	8.576	0.000	0.993	0.608	25.013	214.510
2208	8.516	0.000	0.997	0.608	25.843	220.070

Table 3: Simulation with technical progress - 1983-2208

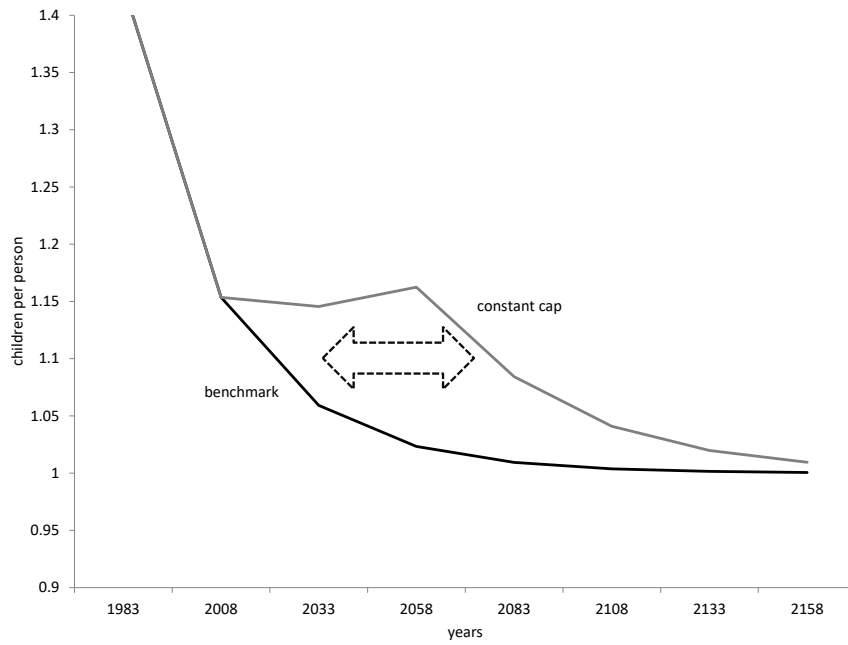


Figure 1: Delay in the Demographic Transition

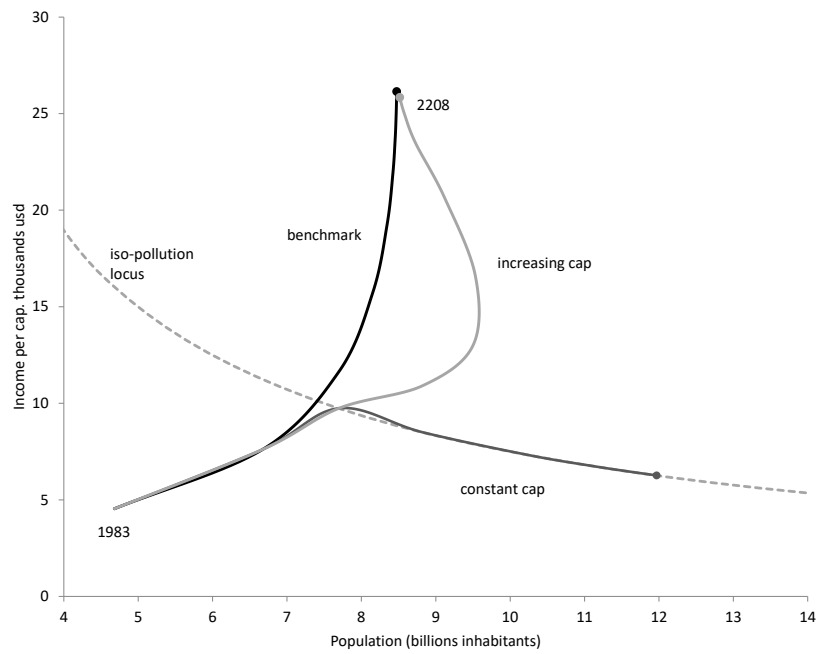


Figure 2: Income and Population Dynamics in the Examples