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CORRIGENDUM

MACHINES THAT GO 'PING': MEDICAL TECHNOLOGY AND HEALTH EXPENDITURES IN OECD COUNTRIES

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The published version of our paper contained an error in the programming code. This note describes the mistake and reports results based on corrected data. The revised results are qualitatively similar to those published and confirm the important role of technology as a driver of aggregate health spending.

Willemé and Dumont estimate a panel model of aggregate health expenditures for 18 Organisation for Economic Co-operation and Development countries over the period 1981–2012 in a paper published in the August 2015 issue of *Health Economics* (first published online in 2014). When the model was recently updated, a programming error was discovered that resulted in the values of the dependent variable not being properly deflated (the series were converted to current US$ purchasing power parity units instead of constant purchasing power parities). Consequently, the historical growth of health spending (but not gross domestic product) was measured in current instead of constant prices and was therefore too high.[1] At the same time, it became clear that the estimation results were also seriously affected by the inclusion of the share of out-of-pocket in total spending (%OOP), a variable for which only relatively recent data are available for most countries. The inclusion of the variable substantially shortens the length of the time dimension of the panel in the extended model and thereby affects the estimated coefficients and the computed contributions of the model variables to the explained historical growth of real per capita health expenditures. Because the contribution of the %OOP variable to historical growth is negligible, we have excluded the variable in our revised results, which are reported in the updated Tables IV and V. An additional advantage of excluding the out-of-pocket variable is that enough observations are available to compute the Im–Pesaran–Shin test of residual stationarity (not reported in the original paper). The updated results are qualitatively similar to those originally published, but there are some obvious and inevitable quantitative differences. Specifically, the estimated coefficients of all variables except those related to the share of the elderly in the total population remain highly significant and confirm the effects of income, lifestyle (BMI) and technology on spending. The differential effects of 'radical' (NME and PMA) and 'incremental' (NDA and PMN) medical innovation are also confirmed. In terms of the contributions to (explained) historical growth, the contribution of income is revised upward, while the effect of technology is somewhat lower but remains very substantial and similar to the range reported in Smith *et al*. (2009).

[1]As a consequence, the share of health expenditures in gross domestic product in the first line of Table I changes as follows: 7.2% (avg 1980), 10.7% (avg 2011), 5.3% (min 1980), 8.9% (min 2011), 9.0% (max 1980), 17.7% (max 2011).

Table IV. Estimation results for total health expenditure panel model (OECD 1981–2012).

Model variables	1: Explicit lags	2: No tech variables	3: Tech capital stock	4: Extended model	5: No tech variables
GDP	1.026 ***	1.316 ***	0.948 ***	0.847 ***	1.000 ***
%Pub	0.372 ***	0.384 *	0.365 ***	0.218 **	0.170 **
% Oop	—		—	—	—
BMI	—		—	2.732 ***	4.154 ***
Age 65–74	0.054	−0.023	0.089 **	0.212 ***	0.168 ***
Age 75–84	0.018	0.085 **	0.013	−0.087 **	−0.024
Age 85+	−0.033	0.109 ***	−0.100 ***	−0.083 **	0.025
NDA [a]	−0.315 ***	—	−0.235 ***	−0.132 **	—
NME [c]	0.399 ***	—	0.443 ***	0.279 ***	—
PMN [b]	−0.272 ***	—	−0.150 ***	−0.129 ***	—
PMA [b]	0.140 ***	—	0.134 ***	0.118 ***	—
Model specification tests					
N obs	540	540	540	497	497
LR (ex tech)		168.9 ***			72.0 ***
Residual stationarity [d]	−2.857 ***	−1.789 **	−1.896 **	−3.102 ***	−4.055 ***

***, **, * estimates different from zero at <1%, < 5%, and < 10% tolerance levels respectively, two-sided tests.
[a, b, c] Capital stock computed with 15%, 10% or 5% depreciation rate respectively.
[d] Im–Pesaran–Shin tests with 2 or 3 lags.

Table V. Estimated total contributions of income, share of public spending, age composition and medical technology on historical growth of total health expenditures 1980–2009 (OECD panel).

Variable country	Income	Financing	Lifestyle (BMI)	Age composition	Technology
AT	54%	2%	17%	−8%	35%
BE	55%	0%	14%	−12%	43%
FI	62%	−1%	13%	−13%	39%
DE	49%	−1%	18%	−6%	40%
NL	49%	3%	19%	−4%	34%
ES	58%	−1%	19%	−10%	34%
FR	50%	−1%	15%	−14%	49%
IRL	75%	−1%	12%	−4%	19%
IT	42%	0%	15%	−13%	56%
AU	45%	2%	31%	−7%	29%
CA	40%	−1%	32%	−7%	37%
CH	38%	9%	14%	−13%	53%
DK	47%	−1%	22%	−5%	38%
JA	55%	3%	13%	−7%	36%
NO	55%	0%	23%	−8%	30%
SE	55%	−3%	17%	−10%	41%
UK	53%	−1%	27%	−6%	27%
US	43%	2%	31%	−5%	29%
Average	51%	1%	20%	−8%	37%
Minimum	38%	−3%	12%	−14%	19%
Maximum	75%	9%	32%	−4%	56%

Computations based on shorter periods for some countries because of incomplete data.

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