MISALLOCATION AND MANUFACTURING TFP IN CHINA AND INDIA

CORRECTION APPENDIX

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ABSTRACT. Our paper Misallocation and Manufacturing TFP in China and India (Quarterly Journal of Economics, 124: 1403-1448, Nov 2009) contained some errors in the equations pertaining to the definition of TFP. This appendix gives the correct equations. All results of our paper are computed using the correct equations and hence are not affected.

(1) Definition of $\overline{MRPL}_s$ and $\overline{MRPK}_s$ in equations (12) and (13) should be:

$$\overline{MRPL}_s \triangleq \frac{w}{\left(\sum_{i=1}^{M_s}(1-\tau_{Ysi})\frac{P_{si}Y_{si}}{P_sY_s}\right)}$$

$$\overline{MRPK}_s \triangleq \frac{R}{\left(\sum_{i=1}^{M_s}\frac{1-\tau_{Ysi}}{1+\tau_{Ksi}}\frac{P_{si}Y_{si}}{P_sY_s}\right)}$$

(2) Definition of $TFPQ_{si}$ and $TFPR_{si}$ on page 1410 should be:

$$TFPQ_{si} \triangleq A_{si} = \frac{Y_{si}}{K_{si}^{\alpha_s}L_{si}^{1-\alpha_s}}$$

$$TFPR_{si} \triangleq P_{si}A_{si} = \frac{P_{si}Y_{si}}{K_{si}^{\alpha_s}L_{si}^{1-\alpha_s}}$$

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(3) Definition of $\overline{TFPR}_s$ in equation (15), footnote (10) and (11) should be (given the above definition of $TFPR_{si}$):

$$
\begin{aligned}
TFPR_{si} &= \frac{\sigma}{\sigma-1}\left(\frac{MRPK_{si}}{\alpha_s}\right)^{\alpha_s}\left(\frac{MRPL_{si}}{1-\alpha_s}\right)^{1-\alpha_s} \\
&= \frac{\sigma}{\sigma-1}\left(\frac{R}{\alpha_s}\right)^{\alpha_s}\left(\frac{w}{1-\alpha_s}\right)^{1-\alpha_s}\frac{(1+\tau_{Ksi})^{\alpha_s}}{1-\tau_{Ysi}} \\
\overline{TFPR}_s &\triangleq \frac{\sigma}{\sigma-1}\left[\frac{R}{\left(\alpha_s\sum_{i=1}^{M_s}\frac{1-\tau_{Ysi}}{1+\tau_{Ksi}}\frac{P_{si}Y_{si}}{P_sY_s}\right)}\right]^{\alpha_s}\left[\frac{w}{\left((1-\alpha_s)\sum_{i=1}^{M_s}(1-\tau_{Ysi})\frac{P_{si}Y_{si}}{P_sY_s}\right)}\right]^{1-\alpha_s} \\
&= \frac{\sigma}{\sigma-1}\left(\frac{\overline{MRPK}_s}{\alpha_s}\right)^{\alpha_s}\left(\frac{\overline{MRPL}_s}{1-\alpha_s}\right)^{1-\alpha_s}
\end{aligned}
$$

(4) Using these new expressions, the derivation of equation (15) should be:

$$
TFP_s \triangleq \frac{Y_s}{K_s^{\alpha_s}L_s^{1-\alpha_s}} = \frac{\left[\sum_i^{M_s}\left(A_{si}K_{si}^{\alpha_s}L_{si}^{1-\alpha_s}\right)^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}}}{\left(\sum_i^{M_s}K_{si}\right)^{\alpha_s}\left(\sum_i^{M_s}L_{si}\right)^{1-\alpha_s}}
$$

$$
= \frac{\left[\sum_i^{M_s}\left(A_{si}\left(\frac{1-\tau_{Ysi}}{1+\tau_{Ksi}}\frac{P_{si}Y_{si}}{P_sY_s}\right)^{\alpha_s}\left((1-\tau_{Ysi})\frac{P_{si}Y_{si}}{P_sY_s}\right)^{1-\alpha_s}\right)^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}}}{\left(\sum_i^{M_s}\frac{1-\tau_{Ysi}}{1+\tau_{Ksi}}\frac{P_{si}Y_{si}}{P_sY_s}\right)^{\alpha_s}\left(\sum_i^{M_s}(1-\tau_{Ysi})\frac{P_{si}Y_{si}}{P_sY_s}\right)^{1-\alpha_s}}
$$

$$
= \frac{\left[\sum_i^{M_s}\left(A_{si}\frac{1-\tau_{Ysi}}{(1+\tau_{Ksi})^{\alpha_s}}\right)^{\sigma-1}\right]^{\frac{1}{\sigma-1}}}{\left(\sum_i^{M_s}\frac{1-\tau_{Ysi}}{1+\tau_{Ksi}}\frac{P_{si}Y_{si}}{P_sY_s}\right)^{\alpha_s}\left(\sum_i^{M_s}(1-\tau_{Ysi})\frac{P_{si}Y_{si}}{P_sY_s}\right)^{1-\alpha_s}}
$$

$$
= \left[\sum_i^{M_s}\left(A_{si}\frac{\overline{TFPR}_s}{TFPR_{si}}\right)^{\sigma-1}\right]^{\frac{1}{\sigma-1}}
$$

(5) Equation (16) should be:

Assume $(\ln A_{si}, \ln(1-\tau_{Ysi}), \ln(1+\tau_{Ksi}))$ is multivariate normal. Let the variances of $\ln(1-\tau_{Ysi})$ and $\ln(1+\tau_{Ksi})$ be denoted by σ_Y^2 and σ_K^2, respectively, and their covariance by σ_{KY}. Then

$$
\begin{aligned}
TFP_s &= M_s^{\frac{1}{\sigma-1}} \left[\sum_i^{M_s} \frac{\left(A_{si} \frac{\overline{TFPR}_s}{TFPR_{si}} \right)^{\sigma-1}}{M_s} \right]^{\frac{1}{\sigma-1}} \approx M_s^{\frac{1}{\sigma-1}} \left[\mathbf{E} \left(A_{si} \frac{\overline{TFPR}_s}{TFPR_{si}} \right)^{\sigma-1} \right]^{\frac{1}{\sigma-1}} \\
\ln TFP_s &= \frac{1}{\sigma-1} \left[\ln M_s + \ln \mathbf{E} \left(A_{si} \frac{\overline{TFPR}_s}{TFPR_{si}} \right)^{\sigma-1} \right] \\
&= \frac{1}{\sigma-1} \left[\ln M_s + \ln \mathbf{E}(A_{si}^{\sigma-1}) \right] - \frac{\sigma}{2} \mathrm{Var} \left[\ln \left(\frac{1-\tau_{Ysi}}{(1+\tau_{Ksi})^{\alpha_s}} \right) \right] \\
&\quad - \frac{\alpha_s(1-\alpha_s)}{2} \mathrm{Var} \left[\ln(1+\tau_{Ksi}) \right] \\
&= \frac{1}{\sigma-1} \left[\ln M_s + \ln \mathbf{E}(A_{si}^{\sigma-1}) \right] - \frac{\sigma}{2} \mathrm{Var} \left[\ln TFPR_{si} \right] - \frac{\alpha_s(1-\alpha_s)}{2} \sigma_K^2 \\
&= \frac{1}{\sigma-1} \left[\ln M_s + \ln \mathbf{E}(A_{si}^{\sigma-1}) \right] - \frac{\sigma}{2} \sigma_Y^2 + \sigma \alpha_s \sigma_{KY} - \left[\frac{\sigma \alpha_s^2}{2} + \frac{\alpha_s(1-\alpha_s)}{2} \right] \sigma_K^2
\end{aligned}
$$

(6) κ_s in equation (19) should be:

$$
\kappa_s = (P_s Y_s)^{-\frac{1}{\sigma-1}} / P_s
$$