Corrigendum for "Lives vs. Livelihoods: The Impact of the Great Recession on Mortality and Welfare"

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March 31, 2026

There is a mistake in the approximation formula in equation (16) in our published paper (Finkelstein et al., 2025). The mistake does not affect any of the welfare cost calculations in our published paper since all of the welfare results come from solving our model numerically. We did not use the approximation formula directly; the formula was only used in the paper to build intuition.

The published paper provides the following approximation formula for the welfare cost of a recession, Δ^{dT}:

$$\Delta^{dT} \approx \Delta - dT\left(\frac{\text{VSLY}}{c} + \frac{1}{\gamma - 1}\right)$$

where Δ is the welfare cost of a recession when mortality is exogenous, VSLY/c is the value of a statistical life-year divided by consumption, dT is the recession-induced change in life expectancy, and γ is the coefficient of relative risk aversion.

The corrected formula is the following:

$$\boxed{\Delta^{dT} \approx \Delta - dT\left(\frac{\text{VSLY}}{c}\right)}$$

The corrected formula shows that the welfare cost is approximately separable in Δ and the change in life expectancy multiplied by the value of a statistical life-year scaled by consumption. The same mistake also appears in the extended model in Appendix E.2, where the term $\left(\frac{\text{VSLY}}{y_0} + \frac{1}{\gamma-1}\right)$ should be replaced by the term $\left(\frac{\text{VSLY}}{y_0}\right)$.

The derivations in the Online Appendix are all correct up to the final steps that simplify the expressions after taking the first-order approximation. For completeness, we provide the additional steps and approximations needed to derive the corrected formula at the end of this note.

Intuitively, if the value of b in the per-period utility function $(u(c) = b + c^{1-\gamma}/(1-\gamma) \equiv b + \tilde{u}(c))$ is chosen so that $\text{VSLY} = 0$, then the formula shows, as expected, that there is no first-order effect of the change in mortality on the welfare cost of a recession when recessions affect mortality risk and $\text{VSLY} = 0$.[1]

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[1] Note that $\text{VSLY}/c = bc^{\gamma-1} + \frac{1}{1-\gamma}$ given the per-period utility function, which is used in the derivation below. If $b = 0$ and $\gamma > 1$, then $\text{VSLY} < 0$ (which perversely implies that individuals are willing to pay to reduce life expectancy). In this case, if a recession increases life expectancy ($dT > 0$), then this generates an additional welfare cost since the individual is willing to pay to reduce life expectancy when $b = 0$.

References

Finkelstein, Amy, Matthew J. Notowidigdo, and Steven X. Shi, "Trading Goods for Lives: NAFTA's Mortality Impacts and Implications," Working Paper 34855, National Bureau of Economic Research 2026.

_ , **Matthew Notowidigdo, Frank Schilbach, and Jonathan Zhang**, "Lives Versus Livelihoods: The Impact of the Great Recession on Mortality and Welfare," *The Quarterly Journal of Economics*, 2025, *140* (3), 2269–2328.

Appendix

Begin with the closed-form expression for Δ in the Online Appendix and set $p^H = 0$ and then re-arrange and take a first-order approximation around $\Delta = 0$

$$\begin{aligned}
\Delta &= \left(\frac{p^H(1-d^H)^{(1-\gamma)} + (1-p^H)}{p^L(1-d^L)^{(1-\gamma)} + (1-p^L)}\right)^{1/(1-\gamma)} - 1 \\
\Delta &= \left(\frac{1}{p^L(1-d^L)^{(1-\gamma)} + (1-p^L)}\right)^{1/(1-\gamma)} - 1 \\
(1+\Delta)^{1-\gamma} &= \frac{1}{p^L(1-d^L)^{(1-\gamma)} + (1-p^L)} \\
1 + (1-\gamma) * \Delta &\approx \frac{1}{p^L(1-d^L)^{(1-\gamma)} + (1-p^L)} \\
\Delta &\approx \frac{1}{1-\gamma}\left(\frac{1}{p^L(1-d^L)^{(1-\gamma)} + (1-p^L)} - 1\right)
\end{aligned}$$

Now take the exact formula for the welfare cost of a recession with endogenous mortality and again set $p^H = 0$ and take a first-order approximation around $\Delta^{dT} = 0$:

$$\begin{aligned}
\Delta^{dT} &= \left(\frac{-dT * b/\tilde{u}(c) + p^H(1-d^H)^{(1-\gamma)} + (1-p^H)}{(1+dT)(p^L(1-d^L)^{(1-\gamma)} + (1-p^L))}\right)^{1/(1-\gamma)} - 1 \\
1 + (1-\gamma) * \Delta^{dT} &\approx \frac{-dT * b/\tilde{u}(c) + 1}{(1+dT)(p^L(1-d^L)^{(1-\gamma)} + (1-p^L))}
\end{aligned}$$

This is the same as equation (40) in the Online Appendix. We then simplify and re-arrange terms. First, we use the approximations $1/(1+dT) \approx 1 - dT$ and $(dT)^2 \approx 0$:

$$\begin{aligned}
1 + (1-\gamma) * \Delta^{dT} &\approx \frac{-dT * (b/\tilde{u}(c) + 1)}{(p^L(1-d^L)^{(1-\gamma)} + (1-p^L))} + \frac{1}{(p^L(1-d^L)^{(1-\gamma)} + (1-p^L))} \\
\Delta^{dT} &\approx \frac{-dT * (b/\tilde{u}(c) + 1)/(1-\gamma)}{(p^L(1-d^L)^{(1-\gamma)} + (1-p^L))} + \Delta
\end{aligned}$$

Then, we substitute using the approximation formula for Δ above and the additional approximation $dT * \Delta \approx 0$ (so that $dT * \Delta * (1-\gamma) * \left(\frac{\text{VSLY}}{c}\right) \approx 0$) to arrive at the final result:

$$\begin{aligned}
\Delta^{dT} &\approx -dT * \left(\frac{\text{VSLY}}{c}\right) * (1 + (1-\gamma)\Delta) + \Delta \\
\Delta^{dT} &\approx -dT * \left(\frac{\text{VSLY}}{c}\right) - dT * \Delta * (1-\gamma) * \left(\frac{\text{VSLY}}{c}\right) + \Delta \\
\Delta^{dT} &\approx \Delta - dT * \left(\frac{\text{VSLY}}{c}\right)
\end{aligned}$$