

Learning as a Rational Foundation for Macroeconomics and Finance: Corrigendum

George W. Evans
University of Oregon,
University of St Andrews

Seppo Honkapohja
Bank of Finland

April 5, 2013

Proposition 4 in the paper Evans and Honkapohja (2013) and its proof in the second appendix are incorrectly stated because of a programming error that we later discovered. The correct statement of the result in Proposition 4 is in fact stronger and should be stated as:

Proposition 4 *A price-level targeting rule with $\psi > 0$ implies E-stability of the targeted steady state.*

The proof of Proposition 4 must be amended as follows. The matrices M , N , a and b are correct. The mistake is in the solutions to the matrix quadratic $Mb^2 - b + N = 0$. This leads to simultaneous equations $b_{23}(\beta^{-1}\psi^{-1}b_{33} - 1) - 1 = 0$ and $b_{33}(\beta^{-1}\psi^{-1}b_{23} - 1) = 0$, which yields two solutions. The first solution is $b_{23} = -1$ and $b_{33} = 0$. The second solution is $b_{23} = \beta\psi$ and $b_{33} = 1 + \beta\psi$. The second solution is explosive (and locally unstable under learning).

The solution of interest is $b_{23} = -1$ and $b_{33} = 0$, i.e. $\pi_t = -p_{t-1}$ and $p_t = 0$ which means that the system is on the targeted path. It can be computed that all eigenvalues of $DT_a - I$ are equal to -1 . The matrix $DT_b - I$ has six roots equal to -1 and three roots equal to $-1 - \beta^{-1}\psi^{-1}$. All of these roots are negative if $\psi > 0$.

The analysis of the deflationary steady state is unchanged.

References

EVANS, G. W., AND S. HONKAPOHJA (2013): “Learning as a Rational Foundation for Macroeconomics and Finance,” in Frydman and Phelps (2013), chap. 2.

FRYDMAN, R., AND E. E. PHELPS (eds.) (2013): *Rethinking Expectations: The Way Forward for Macroeconomics*. Princeton University Press, forthcoming.