

## Report on “Information Stickiness in General Equilibrium and Endogenous Cycles” by Gomes (2012)

---

This paper takes a tractable version of the general-equilibrium model with sticky information à la Mankiw and Reis (2006a, 2007). Via the introduction of “two new assumptions”, the paper aims to build a model of endogenous business-cycles.

The assumptions are essentially modifications of aggregate expectation formation. It is assumed that (i) aggregate expectation about a future endogenous variable is a weighted average of its perfect foresight and its steady-state value, where the weight on the perfect foresight value decreases with the forecast-horizon. It is also assumed that (ii) aggregated expectations are based on information sets whose update frequency is counter-cyclically. The coexistence of the two assumptions introduces non-linearities into an otherwise linearized model. It is argued that these assumptions are reasonable and “allow to approach real life conditions”. According to my understanding, this states a departure from the rational expectations hypothesis (REH) in a sticky information model, which is a novelty in this literature.

Next, stability analyses show that co-existence of assumptions (i) and (ii) generates endogenous business cycles, in cases where monetary policy is not sufficiently aggressive towards inflation.

Thus, the paper’s two main policy implications are that (a) in presence of the aforementioned assumptions (i) and (ii) monetary policy should respond more aggressively to inflation as in the standard sticky information model under perfect foresight and (b) should provide as much information about the economic conditions as it can to private sector agents.

I consider the issue of expectation modeling and especially deviations from the REH as central to modern macroeconomics. Therefore, I am sympathetic with the aims and most of the approach in this paper. However, I have a number of comments, especially regarding assumptions (i) and (ii) as well as the provided intuition for the results. According to my opinion, a suitable revised version of the paper could make a very nice contribution to the literature.

### Comments:

1. If equation (4) is a standard Euler equation, consumption of two subsequent periods should be related to each other, see for example Mankiw and Reis (2006b, p.14). If (4) is correct, but special to the outlined model, it should be clarified for the interested reader.
2. The monetary policy parameter is usually restricted to be non-negative, i.e.  $\phi \geq 0$ , see for example Bullard and Mitra (2002). I would suggest that the author either relaxes his restriction on  $\phi$  or explains, why it is necessary to have  $\phi \geq 1$ .
3. If I understood correctly, assumption (i) on p.12 implies that an agent that can solve extremely difficult optimization problems (i.e. his individually perfectly rational) is not able to collect all information available. This creates a discrepancy, between the optimizing skills and the information collection skills of the agent that might be questioned. Some empirical evidence, could help to make this assumption appear more reasonable.
4. Anyway, it seems like assumption (i) is imposed on the linearised aggregate economy and not on the individual agent level. This needs to be emphasized. It is not clear, what kind of strategies become optimal for an individually rational agent, if the assumption would be made about individual beliefs instead.
5. Following this line of argument, it seems like under assumption (i) the law of iterated expectations, does no longer hold. If this law is assumed to hold in the micro-foundations of the original Mankiw and Reis (2006a, 2007) model, then this needs to

be highlighted as well. Imposing assumption (i) on individuals could be considered a topic for subsequent research.

6. Assumption (ii) is based on a statement in another paper. However, to the reader, it is not clear, whether the statement refers to empirical evidence in favour of counter-cyclical information stickiness or whether it is a prediction of another theoretical model? I guess, the former is true. Thus, a clarification would be helpful. If the latter is true, the assumption would need a more convincing justification.
7. Assumption (ii) is implemented into the model via the information updating function (11). But it remains unclear to the reader, why this particular function (11) is chosen out of the family of candidate functions.
8. The intuition in the last paragraph of section 5 on p.19 is not clear to me. What are the implications of more inattentiveness for the behaviour of economic agents and how does this behaviour in turn affect aggregate variables, given assumptions (i) and (ii). Then, how does the more aggressive policy of the central bank affect the behaviour of agents, given more inattentiveness, and yield stability? More intuition at this stage might also help to provide some intuition for the results in section 6.

## References

- Bullard, J. B. and Mitra, K. (2002). Learning about Monetary Policy Rules. *Journal of Monetary Economics*, 49(6):1105–1129.
- Gomes, O. (2012). Information Stickiness in General Equilibrium and Endogenous Cycles. *Economics Discussion Papers - Kiel Institute for the World Economy*, 2012-46.
- Mankiw, N. G. and Reis, R. (2006a). Pervasive Stickiness. *The American Economic Review*, 96(2):164–169.
- Mankiw, N. G. and Reis, R. (2006b). Sticky Information in General Equilibrium. *Mimeo*.
- Mankiw, N. G. and Reis, R. (2007). Sticky Information in General Equilibrium. *Journal of the European Economic Association*, 5(2-3):603–613.