Transparency, expectations anchoring and inflation target

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ABSTRACT

In various speeches, former Fed Chairman Ben Bernanke contrasted the proposal of setting a higher inflation target by claiming that it could unanchor inflation expectations. A standard New Keynesian framework with learning supports this claim both asymptotically, because a higher inflation target shrinks the E-stability region when a central bank follows a Taylor rule, and in the transition phase, because a higher inflation target slows down the speed of convergence of expectations. Transparency helps anchoring expectations. However, the importance of being transparent diminishes with the level of the inflation target. Finally, the higher the inflation target, the more policy should respond to inflation and the less to output to guarantee E-stability. Hence, a policy that increases both the inflation target and the monetary policy response to output would be "reckless".

1. Introduction

"*In this context, raising the inflation objective would likely entail much greater costs than benefits. Inflation would be higher and probably more volatile under such a policy, undermining confidence […]. Inflation expectations would also likely become significantly less stable.*" Bernanke's remarks at the 2010 Jackson Hole Symposium.

Following the Great Recession, Blanchard et al. (2010) proposed to increase the central bank inflation target in order to deal with the problem of the zero lower bound on interest rates. More recently, Ball (2014) and Krugman (2014) have forcefully supported this view. In various speeches, the former Federal Reserve Chairman Ben Bernanke contrasted this argument by claiming that a higher inflation target could unanchor inflation expectations. The debate is still ongoing. On the one hand, in April 2015 Eric Rosengren, president of the Federal Reserve Bank of Boston, returned to the topic arguing that the Fed may need to set a higher inflation target. On the other hand, in the same month, at an IMF panel, none of the panelists, both policy makers and monetary policy experts, shared the proposal to increase the inflation target. Among them, Stanley Fischer, the Federal Reserve Vice Chairman, strongly contrasted the choice of a 4% inflation target dubbing it as "a mistake".[2] Few months later, the Federal Reserve Chair Janet Yellen (2015) declared there was no point in raising the inflation target. Again, in May 2016, three Fed Presidents supported Yellen's idea.[3]

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  [2] See Fischer et al. (2015).
  [3] The three Fed Presidents were San Francisco's John Williams, Atlanta's Dennis Lockhart and Dallas' Robert Kaplan who were panelists at Hoover Institution's International Monetary Stability Conference on May 5, 2016.

Do higher inflation targets unleash inflation expectations? This is a very topical and fundamental question about monetary policy design. A positive answer would provide a significant argument against the Blanchard et al.'s (2010) (and others') policy prescription of raising the inflation target. The New Keynesian literature has convincingly shown that price stability should be the goal of monetary policy even after taking into account the perils of hitting the zero lower bound (e.g. Coibion et al., 2012; Schmitt-Grohé and Uribe, 2010). However, these papers, assuming rational expectations, cannot address Bernanke's concern that a higher inflation target could destabilize inflation expectations. Given the importance of this debate, this paper aims at providing a thorough investigation of Bernanke's proposition.

The appropriate framework to investigate this issue should encompass various elements: a positive inflation target, the possibility of expectations unanchoring, and the communication strategy of monetary policy.

As for the former, we will adopt the New Keynesian macromodel with trend inflation proposed by Ascari and Ropele (2009). These authors show that a higher inflation target could destabilize the economy by increasing the likelihood of a self-fulfilling rational expectations equilibrium (REE).

In addition, the concept of expectations unanchoring requires us to drop the assumption of rational expectations and assume an alternative mechanism for expectation formation. The learning literature provides a natural alternative environment where agents create forecasts according to a linear model updated recursively.[4] In this context, expectations are unanchored when the learning rule fails to converge to the rational expectations solution of the model—technically, the REE is not expectationally stable or E-stable.

Moreover, the paper explores further the notion of expectation anchoring tackling two points recently brought into the debate by Ball (2014). Proposing to raise the target from 2% to 4%, Ball claims that: (i) expectations should remain anchored as long as the central bank is able to explain the change to private agents; (ii) the transitional period of learning should not necessarily harm the economy significantly.[5] Contrary to (i) above, Yellen (2015) notably argued that expectations anchoring after a change of the inflation target may prove difficult, despite transparency, because this result could only be achieved if a given policy is in place long enough for agents to learn the new average level of inflation.

Regarding the first aspect, our analysis acknowledges that the communication strategy is particularly relevant for a policymaker that wants to keep private sector's expectations under control and that ponders to modify the inflation target.[6] To capture this distinctive feature of monetary policy, we follow Eusepi (2005) and Preston (2006) and consider two opposite communication strategies characterised by the amount of information that the monetary authority provides to the public: transparency, where central bank fully discloses its policy function so that the agents can use it to forecast interest rates, and opacity, where agents need to resort to their adaptive forecasting rule. We specifically address this point and examine how the degree of monetary policy transparency affects the stability of expectations for different levels of trend inflation.

With respect to the second aspect, we study both the length of the transition to a new equilibrium and its potential adverse effects on the economy. To this end we investigate the condition for asymptotic convergence (E-stability) but also the speed at which convergence occurs. From a policy perspective, the speed of convergence is an important aspect, often neglected in the literature that focuses mainly on E-stability. While a fast convergence means that the economy will always be very close to the REE, a slow convergence implies that the behaviour of macro variables will be dominated by the transitional dynamics implied by the learning algorithm.

Characterising how the inflation target changes the set of policy rules that guarantees stability of the REE under learning allows us to study how monetary policy design should change with the inflation target to guarantee expectations anchoring, that is, whether a central bank that targets a higher inflation level needs to respond more or less aggressively to inflation in order to stabilize expectations.

The paper yields a number of results. First and foremost, our main result provides support to the Bernanke's (2010) statement: a higher inflation target tends to destabilize expectations *both asymptotically*, because it shrinks the E-stability region for a given Taylor rule, and *in the transition phase*, because it slows down the speed of convergence of expectations to the REE. Second, a transparent communication strategy can only marginally offset the destabilizing effect of a high inflation target. While for low inflation targets our results support the claim that transparency is an essential component of the inflation targeting approach to monetary policy, the advantage of being transparent rapidly fades if the inflation target is raised, both in terms of E-stability and speed of convergence. These findings support the view by Yellen (2015). Third, in terms of monetary policy design under a higher inflation target, expectations stabilization calls for a hawkish reaction to inflation and only a mild response to output. This result questions the arguments that urged the Fed to increase the inflation target and, contemporaneously, ease monetary policy to respond to the surge in unemployment.[7] Our findings suggest that such a policy would indeed be "reckless" and "unwise", as Bernanke (2012)

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[4] Interestingly, Bernanke himself suggested to use the adaptive learning framework to study this topic: "*What is the right conceptual framework for thinking about inflation expectations in the current context? [...] Although variations in the extent to which inflation expectations are anchored are not easily handled in a traditional rational expectations framework [...] In a learning context, the concept of anchored expectations is easily formalized.*" Bernanke's speech at the NBER Monetary Economics Workshop, July 10, 2007. For a thoughtful survey on how learning affects the science of monetary policy, see Eusepi and Preston (2016).

[5] "*We have learned from recent experience that 4% inflation is better than 2%, because of the zero bound problem. Why can't policymakers explain this, raise inflation to 4%, and keep it there? [...] An increase in the central bank's inflation target might involve a transitional period of learning, during which inflation uncertainty is greater than usual. But nobody has demonstrated that this transition would harm the economy significantly.*" (Ball, 2014, p. 14).

[6] "*The second major element of best-practice inflation targeting (in my view) is the communications strategy [...] To the extent that it can explain its general approach, clarify its plans and objectives, and provide its assessment of the likely evolution of the economy, the central bank should be able to reduce uncertainty, focus and stabilize private-sector expectations.*" Bernanke's speech at the Annual Washington Policy Conference of the National Association of Business Economists, March 25, 2003.

[7] For example, see Krugman's article on The New York Times of April 24, 2012.