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# “Leaning against the wind” and the timing of monetary policy



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If monetary policy is to aim also at financial stability, how would it change? To analyze this question, this paper develops a general-form framework. Financial stability objectives are shown to make monetary policy more aggressive: in reaction to negative shocks, cuts are deeper but shorter-lived than otherwise. By keeping cuts brief, monetary policy tightens as soon as bank risk appetite heats up. Within this shorter time span, cuts must then be deeper than otherwise to also achieve standard objectives. Finally, we analyze how robust this result is to the presence of a bank regulatory tool, and provide a parameterized example.

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## 1. Introduction

Various authors have argued that central banks' prolonged accommodative policies spurred risk taking incentives among the financial intermediaries that were at the heart of the recent financial crisis.<sup>2</sup> This had led to calls for a monetary policy that explicitly considers bank risk taking and financial stability,<sup>3</sup> or as it is known in this literature, to “lean against the wind”. The main mechanisms through which the so-called risk taking channel of monetary policy is thought to work are: valuation effects,

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<sup>2</sup> See Dell'Ariccia et al. (2008), Calomiris (2009), Brunnermeier (2009), Brunnermeier et al. (2009), Allen et al. (2009), Diamond and Rajan (2009) and Kannan et al. (2009), Adrian and Shin (2010), and Borio and Zhu (2012).

<sup>3</sup> Borio and White (2004), Borio and Zhu (2012), Adrian and Shin (2008, 2009, 2010) and Disyatat (2010).

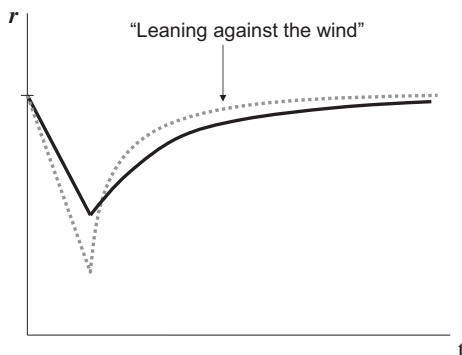


Fig. 1. The timing of monetary policy.

such as collateral which gains value from expansive policy, encouraging riskier profiles (Borio and Zhu, 2012); a search-for-yield that is driven by institutional factors leading some fund managers to seek higher risk to maintain yields after rates on safer assets decline (Rajan, 2006); and cheaper short-term debt, which raises leveraging incentives, and through interaction with banks' limited liability consequently also asset risk incentives (Agur and Demertzis, 2012; Dell'Ariccia et al., 2010).

Empirically, Delis et al. (2011) use micro-level datasets from the US banking sector to examine the relationship between policy rates and risk taking. They find that low interest rates significantly strengthen banks' incentives to take on risky assets, and this is especially true for prolonged rate cuts. Maddaloni and Peydro (2011) use data from the Euro Area Bank Lending Survey to show that lower overnight rates soften lending standards. They also find evidence that keeping rates "low for too long" reduces credit standards even further. Similarly, Altunbas et al. (2010) find that keeping rates low for an extended period of time significantly raises banks' risk profiles. They obtain this result from a data set that includes quarterly balance sheet information on listed banks in the EU and the US.<sup>4</sup>

In this paper we give an analytical interpretation for the meaning of keeping rates "low for too long", on the basis of the persistence of risk on banks' balance sheets, which relates to the long maturity of their assets. In a general form approach, in which we take the objectives of the monetary authority as given, we show that there are two main effects on optimal policy rates following a shock: the first is upon impact, and the second refers to the dynamic path of interest rates.

Faced with a negative shock, the authority that "leans against the wind" would cut interest rates deeper upon impact, than absent of a financial objective. However, its dynamic response will be to return to the equilibrium level quicker. Intuitively, the monetary authority cuts extra deep at the bottom of the recession, when banks are in the process of building down risks. This extra depth of the cut is intended to compensate for its short duration. The reason the cut is short-lived is that as soon as the economy is past its lowest point, the monetary authority wants to raise back rates quickly in order to tame the banks' renewed appetite for risk. If this financial stability objective is indeed representative of a welfare gain, then by comparison to it, the interest rate path of a standard-objectives authority is "low for too long".

The result is summarized in Fig. 1, which represents the response of the monetary authority to a negative economic shock. The dotted line graphs the policy of an authority whose objectives include financial stability, while the solid line is that of an authority with standard objectives. While we derive our result in a general-form model, we also provide a parameterized example of the model to highlight its mechanisms (Appendix D).

<sup>4</sup> Other empirical papers that focus on the relationship between monetary policy and bank risk taking are Jiménez et al. (2009), Ioannidou et al. (2009), Buch et al. (2010), Delis and Brissimis (2010), Delis and Kourtas (2011), Paligorova and Santos (2012) and Dell'Ariccia et al. (2013). Unlike the three papers cited in the text, however, these papers do not analyze the relation to the duration of a rate change.

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