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Assessing the link between price and financial stability☆

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ABSTRACT

This paper aims at investigating first, the (possibly time-varying) empirical relationship between price and financial stability, and second, the effects of some macro and policy variables on this relationship in the United States and the Eurozone. Three empirical methods are used to examine the relevance of A.J. Schwartz's "conventional wisdom" that price stability would yield financial stability. Using simple correlations and VAR and Dynamic Conditional Correlations, we reject the hypotheses that price stability is positively correlated with financial stability and that the correlation is stable over time. The latter result and the analysis of the determinants of the link between price stability and financial stability cast some doubt on the appropriateness of the "leaning against the wind" monetary policy approach.

1. Introduction

Is financial stability correlated with price stability? This topical question matters for policy implementation, since most of the central banks have become responsible for financial stability supervision in the aftermath of the global financial crisis. In spite of the subject's relevance, the literature on it is surprisingly limited, and mostly dominated by "conventional wisdom" on the links between monetary and financial stability summarized by Borio and Lowe (2002, p. 27): "A monetary regime that produces aggregate price stability will, as a by-product, tend to promote stability of the financial system". The conventional wisdom originates in Schwartz (1995), who emphasizes both a micro and a macro channel in the link between inflation and asset prices. On the micro side, she relates price instability to inflation distortion, growing uncertainty, shortened investment horizons, and governments' nominal gains. All these dimensions produce financial instability. On the macro side, she discusses the impact of price instability on the value of collateral and on financial risk. Inflation would then encourage speculative investment, leading to financial instability.

The link between financial and price stability is also relevant for the ongoing theoretical debate on the conduct of monetary policy, in particular on monetary policy instruments and objectives (Smets, 2014; Woodford, 2012). Assuming that the conventional wisdom is true, a central bank focusing on price stability would then

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also contribute to financial stability (Bordo and Wheelock, 1998). Although this conventional wisdom has not been explicitly adopted by central banks, it was *de facto* embedded in the conduct of monetary policy since the 1990s, which has been strongly influenced by the Jackson Hole Consensus stipulating that central banks are primarily assigned the price stability objective and only implicitly the financial stability objective.[1] The prevailing consensus in the literature on central banks and monetary policy has indeed disregarded the issue of financial instability.[2] Following Bernanke and Gertler (1999, 2001), asset prices had to be considered in monetary policymaking only to the extent that they were threatening the price stability objective. The recent financial turmoil has cast some doubt on these issues. The dotcom bubble and the subprime crises have indeed erupted in a context of low and stable inflation – the so-called "Great Moderation" – whereas the role of central banks in promoting price stability has been emphasized (Stock and Watson, 2003, or more recently Mumtaz and Surico, 2012). Since then central banks have *de facto* or *de jure* given the financial stability objective a status close to that of the price stability objective (Cukierman, 2013).[3] There is consequently a need for an in-depth analysis of the link between price stability and financial stability. To our knowledge, there is no recent and comprehensive empirical assessment of this link in the literature.[4]

The objective of this paper is to fill this gap and to investigate evidence on the link between price and financial stability since 1993 for the United States (US) and since 1999 for the Eurozone (EZ). It must be stressed that we do not address the issue of the causality because the conventional wisdom is compatible with several causation approaches. The estimation period covers a stable period – the Great Moderation – as well as a more volatile period – the Global Financial Crisis – which makes it possible to assess the effect of changing economic conditions on the empirical relevance of the conventional wisdom. Furthermore, covering the years between 1993 (or 1999) and the Global Financial Crisis is all the more relevant since most central banks focused only on price stability during this period, despite a growing debate on the nexus between financial and monetary stability (Borio and Lowe, 2002). The empirical approach developed in this paper may then provide some critical insights into the existing beliefs that prevailed *de facto* during the Great Moderation.

We test the null hypothesis that price stability is positively correlated with financial stability and that this relationship is stable over time. This task is made difficult because there is no precise definition of financial instability. One can distinguish at least two recent approaches. First, Borio (2012) and Drehmann et al. (2012) seek to characterize financial cycles by using ad-hoc frequency-based filters. The identification of financial cycles may be useful to characterize periods of boom and bust, but such an approach goes beyond what may be deemed financial instability. Second, the indices of financial stability constructed by the ECB and the St Louis Fed can be used to give composite information on a wide range of financial instruments. We adopt this second approach and make use of both indices, plus asset price variables for robustness purposes.

The link between financial and price stability is analyzed through three different methods. We start with simple correlation analysis – while unsophisticated, this has the merit of simplicity and clarity – using no statistical or theoretical manipulation of the data. We then test our hypothesis using a simple VAR model, using as endogenous variables industrial production, inflation, asset prices and various financial stability indicators. Finally, following Engle (2002), we estimate a time-varying measure of correlations based on dynamic conditional correlation (DCC). The three methods provide converging results. We reject the hypothesis that price stability is positively correlated with financial stability and do not find evidence in support of the conventional wisdom. None of the three empirical methodologies shows a stable positive link between financial and price stability. Consequently, the main policy implication of this paper is that, as the link between price and financial stability is unstable and not positive, the "leaning against the wind" strategy is hard to justify on empirical grounds.

The rest of this paper is structured as follows. Section 2 presents the related literature. Section 3 describes the data and section 4 the empirical methodologies and the results. Section 5 investigates the determinants of the link between financial and price stability and discusses the appropriateness of the "leaning against the wind" monetary approach in the Eurozone and the US. Section 6 concludes.

2. Related literature

2.1. The conventional wisdom

The "conventional wisdom" (also known as the Schwartz hypothesis) is based on relatively few contributions. Besides the work of Schwartz (1995), the idea that price and financial stability exhibit a positive correlation is supported by Bordo et al. (2001) and Issing (2003). Schwartz (1995) mainly focuses on the banking sector: "the fact remains that price instability undermines sound banking. It contributes to financial risk" (p. 39), and she goes beyond debt-deflation à la Fisher (1933) as she relates the end of price (hence financial) instability to sound monetary policy. Woodford (2012) also argues that monetary stability eliminates numerous sources of financial instability such as wage-price spirals. Nevertheless, to our knowledge, only a few papers are specifically dedicated to an empirical assessment of the conventional wisdom. Bordo and Wheelock (1998) and Bordo et al. (2001) conclude that unanticipated movements in the price level and inflation rate have contributed historically to financial instability in the US, ever more so between 1870 and 1933, or in the 1980s and 1990s. Furthermore, Hardy and Pazarbasioglu (1999) and Dermirguc-Kunt and Detragiache (1997) find that countries with high levels of inflation are more prone to financial crises.

Before the global financial crisis, the conventional wisdom had already come in for criticism, e.g. by Borio and Lowe (2002), Rajan (2005), White (2006) and Leijonhufvud (2007). These authors claimed that monetary stability could lead to financial instability in that it sometimes allows low interest rates ("cheap money"), favoring projects with a high level of risk. The argument is also raised by Taylor (2009), who presents a counterfactual dynamic of housing market prices from 2001 to 2006. He argues that if monetary policy rates had not been excessively low, with regard to what is implied by a Taylor rule, the housing boom would have been avoided and no bust would have occurred. These different authors also point out that major economic and financial crises were not preceded by inflationary pressures. This is the "paradox of credibility" according

[1] Financial stability here is understood in a narrow sense: central banks are meant to avoid a liquidity squeeze in the interbank market through their role as lenders of last resort (LLR). Going a step further, Goodhart (2011) recalls that central banks have historically pursued three objectives or functional roles: price stability, financial stability and support for State financing.

[2] This issue is not dealt with in the influential papers of Clarida et al. (1999) or Svensson (1999).

[3] For instance, the Financial Services Act 2012 in the UK established a Financial Policy Committee (FPC) and gave the Bank of England an explicit financial stability objective.

[4] Klomp and de Haan (2009) analyze the role of central banks in promoting financial stability but they focus on central bank independence, invoking a political economy dimension rather than the link through price stability.