3
Inflation Uncertainty and Output

3.1 Introduction

This chapter introduces the relationship between output and inflation, including the role of inflation uncertainty. Friedman (1977) argued that increased inflation uncertainty reduces the information function of price movements and hinders long-term contracting, thus potentially reducing real output growth, and high inflation leads to higher inflation uncertainty. The chapter uses a generalized autoregressive conditional heteroscedasticity-in-mean (GARCH-M) framework to investigate why price stability as a mandate for monetary policy authorities is significant.

This chapter investigates the importance of price stability by focusing on four hypotheses advanced by Fountas and Karansos (2007) to assess any significant relationships between inflation, inflation uncertainty, output growth uncertainty, and output growth in South Africa. The hypotheses relate to:

- the impact of inflation on inflation uncertainty – which is expected to be positive, according to Friedman (1977);
- the impact of inflation uncertainty on inflation in order to determine whether the central bank pursues stabilization policies (as suggested by Holland 1995), or goes out of its way to make unanticipated decisions with regard to higher inflation, hoping for output gains (Cukierman and Meltzer 1986);
- the impact of inflation uncertainty on real output growth – which is expected to be negative, as argued by Friedman (1977);
- the impact of inflation uncertainty on real output growth uncertainty – which is expected to be negative according to Taylor (1979), or positive, according to Logue and Sweeney (1981).
This chapter contributes to the literature by investigating questions related to price stability to minimize social welfare loss.

The chapter measures both inflation and output growth uncertainties by the conditional variances estimated by a GARCH-M framework to capture their time-varying natures. The inflation uncertainty effects are transmitted into the economy through various channels, either contemporaneously or with some lags. Fountas and Karanasos (2007) suggest inflation uncertainty affects interest rates (inflation premium), and all decisions relating to intertemporal allocation of resources and the real cost of factors of production and relative prices of final goods, which is the intratemporal allocation of resources. The link between inflation uncertainty and employment takes place when higher inflation uncertainty leads to the postponement or cancellation of long-term spending plans (Levi and Makin 1980). Holland (1986) argues effects of inflation uncertainty can be reflected in the degree of wage indexation, which spreads to sectors beyond the labour market covered by bargaining agreements to the smaller union contracts and non-unionized labour. Moreover, Ratti (1985) considers that the rise in inflation uncertainty increases actual and expected real wages, and depresses the level of employment.

The rest of the chapter is organized as follows: Section 3.2 presents the theory, Sections 3.3 and 3.4 present a literature review and the econometric methodology used in this study, Section 3.5 presents the data and the empirical results, and Section 3.6 concludes.

### 3.2 Theory

#### 3.2.1 The Friedman hypothesis

Friedman (1977) argued that increased uncertainty distorts the price system in allocating resources efficiently, thereby reducing the informative value of price movements associated with long-term contracting; hence, potentially reducing output growth and investment. This happens because inflation uncertainty hinders the settlement of contracts for long-term investment projects that may be difficult to amend. In addition, since inflation uncertainty increases relative price variation in the economy, it hinders the efficiency of the price system from allocating resources (Elder 2004). Thus, Friedman (1977) postulates that a higher than average inflation rate leads to greater inflation uncertainty. This hypothesis suggests a positive relationship. This happens when an increase in inflation induces an erratic policy response by the monetary