Dissertation Thesis Summary
Essays on Welfare Costs of Shifting Trend Inflation and Policy Uncertainty

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It is vital for economists and policy makers to understand welfare costs of central bank's a lack of commitment to a fixed inflation target or welfare costs of central bank's a tendency to raise inflation targets. The consequences of these policy inconsistencies can be investigated by studying welfare costs of shifting trend inflation. The dissertation quantifies these costs under different situations: when there are unexpected changes in uncertainty about monetary policies as described in Chapter 3 or there exist additional channels rather than staggered prices only as discussed in the literature, through which shifting trend inflation can distort the economy as shown in Chapter 4.

We use a highly persistent shock to trend inflation, which can be interpreted as the Federal Reserve's slowly-moving implicit inflation target to model the shifting trend inflation. Another essential feature of our specification is a clear classification of structural shocks and stochastic volatility shocks. Then, welfare costs are computed by comparing the welfare of one economy with zero variance of shock and one with positive variance of shock. In particular, the dissertation performs the three-step quantitative exercise. In the first step, parameters are jointly calibrated to match selected moments in the 1954Q3-2015Q1 U.S data by using Simulated Method of Moments (SMM) or the calibrated method. We solve the model nonlinearly before simulating the data and the second perturbation method is used to approximate the policy function around the deterministic steady-state. Subsequently, these calibrated parameter values are employed to quantify welfare costs. Finally, we conduct the sensitivity analysis that shows responses of these costs with respect to changes in relevant parameters.

We start the dissertation by describing the motivation, research objectives, methodology, and organization in Chapter 1. In Chapter 2, we analyse the U.S data to present two main features: shifting trend inflation and time-varying volatility. Following this, we develop the DSGE model which incorporates a shock to trend inflation and a time-varying stochastic volatility shock arising in a monetary policy shock in Chapter 3. We find interactions between shifting trend inflation and policy uncertainty. On the one hand, welfare costs of exogenous variations in trend

inflation are larger if there is policy uncertainty. A rise in the variance of shocks to trend inflation decreases welfare not only by increasing volatilities of consumption and leisure, but also by decreasing their average levels. An introduction of uncertainty then signifies these changes to produce greater welfare costs. On the other hand, policy uncertainty impacts the economy more significantly when central banks raise their inflation targets. In particular, the costs caused by monetary policy uncertainty become more sizeable when trend inflation is higher. Further, we also document impulse response functions illustrating trend and magnitude of effects of policy uncertainty shocks with respect to various levels of trend inflation. We find that uncertainty shocks adversely impact the economy by leading to a decrease in output growth as well as a rise in the inflation and price dispersion. When central banks set the inflation target to a higher level, these adverse effects of policy uncertainty shocks become stronger.

In Chapter 4, we develop a New Keynesian model featuring staggered price and wage contracts to study welfare costs of exogenous variations in trend inflation. We show that consequences of constant positive trend inflation and shifting trend inflation are severe, especially when trend inflation is high. Among two channels, staggered wage contracts play a vital role in transmitting adverse impacts of constant and shifting trend inflation into the economy. Without the staggered wage channel, these costs are modest. We also conduct exercises to examine the sensitivity of welfare costs to a wide range of plausible parameters. The results show that if the price and wage friction are sufficiently large, the price and wage indexation level are sufficiently small, or there is an upward biased trend inflation process, welfare costs are severe. Moreover, changes in parameters governing the wage environment cause greater movements of welfare costs as opposed to parameters controlling the pricing environment. The results provide more compelling evidence on the role of staggered wage channel.

We close the dissertation by providing the main findings and policy implications in Chapter 5. We also leave a room for discussion over an issue of whether central banks should raise their inflation targets due to the zero lower bound. From the results of the dissertation, raising inflation targets would seem to be a bad policy prescription and we advocate a temporary increase in expected inflation instead of a permanent increase in the long-run inflation objective.