



Contents lists available at SciVerse ScienceDirect

Journal of Economic Psychology

journal homepage: www.elsevier.com/locate/joep

Keeping up with the Joneses and the welfare effects of monetary policy

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ARTICLE INFO

Article history:

Received 29 November 2010
 Received in revised form 21 June 2011
 Accepted 29 August 2011
 Available online 2 October 2011

JEL classification:

E50
 E60

PsycINFO classification:

3000

Keywords:

Monetary policy
 Jealousy
 Consumption externality

ABSTRACT

This paper examines the implications of “keeping up with the Joneses” preferences (jealousy) for the welfare effects of monetary policy. I develop a New Keynesian model, where households are jealous and the central bank follows the Taylor rule. I show that the welfare effects of monetary policy over time depend significantly on the relative strength of the consumption externality caused by jealousy and the monopolistic distortion. When a first-order approximation of the utility function is used, then the main result is the following: If jealousy (the monopolistic distortion) dominates, then a decrease in the interest rate reduces (increases) welfare in the short run, but increases (reduces) welfare in the medium run. However, the use of a second-order approximation changes the sign of the overall welfare effect of monetary policy if the initial level of employment is at the optimal level or just below it.

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1. Introduction

There is substantial evidence that individuals derive utility not only from the level of their own consumption, but also from the consumption of the people around them, as emphasised by Ravina (2007). Using micro level data, Ravina finds that relative consumption or the so-called “keeping up with the Joneses” effect is an important determinant of household decision making. In addition, her findings support the theories that explain macroeconomic phenomena by introducing habit formation in the utility function.

The implications of habit formation for monetary policy have been analysed e.g. by Fuhrer (2000) and Amato and Laubach (2004). Fuhrer (2000) shows that habit formation, where utility depends on the consumer’s own past consumption, can enhance the ability of monetary policy models to account for the hump-shaped response of consumption to monetary shocks. Amato and Laubach (2004) study the implications of habit formation for optimal monetary policy. Chugh (2004) analyses the consequences of catching up with the Joneses preferences, where household utility depends on past average consumption, for optimal monetary policy. He finds that catching up with the Joneses preferences may render interest-rate smoothing optimal.

Although the keeping up with the Joneses effect might be an important factor to explain macroeconomic phenomena, Ryff (2010) points out that in the field of monetary economics, its impact has not been studied widely.¹ Pierdzioch (2003), Pier-

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¹ The literature that addresses the relationship between economic policy and relative consumption has dealt with a variety of topics, such as taxation in stabilisation policy (Ljungqvist & Uhlig, 2000), environmental externalities (Howarth, 2006), social insurance (Abel, 2005) and income tax policy (Ireland, 2001).

dziuch and Yener (2004) and Tervala (2007) have analysed the implications of keeping up with the Joneses preferences for the welfare effects of monetary policy. These studies, however, have abstracted from much that the field of monetary economics has learned about monetary policy modelling by analysing the effects of a simple shock to the money supply. In more sophisticated analyses of monetary policy, policy is described in terms of rules setting the nominal interest rate.

One purpose of this study is to examine whether the welfare results of Pierdziuch (2003), Pierdziuch and Yener (2004) and Tervala (2007) are valid in a more sophisticated framework, where monetary policy is described in terms of a rule setting the nominal interest rate. In addition, the previous studies have been missing a thorough analysis of the evolution of welfare over time. The main contribution of this paper is to go beyond the previous studies, which employ simultaneous one-step-ahead pricing, and to analyse the welfare effects of monetary policy over time. To do this, I use a New Keynesian model with the Calvo-pricing mechanism.

The above-mentioned studies have shown the dependence of the overall welfare effect of monetary policy on the interplay between the consumption externality caused by keeping up with the Joneses preferences and the monopolistic distortion. The relative strength of these distortions determines the level of employment which may exceed or fall below the social optimum. In these papers, expansionary monetary policy can be welfare-reducing, if households are sufficiently jealous and the economy suffers from overemployment. The reason is that in such a case, expansionary monetary policy increases employment that is already higher than the social optimum.

The findings of this paper generalise the results of the earlier studies: If the keeping up with the Joneses effect is sufficiently strong, then expansionary monetary policy can reduce overall welfare (the discounted present value of welfare) also in the framework where monetary policy is modelled in terms of an interest rate rule (the Taylor rule). In this case, employment is higher than the social optimum and a decrease in the interest rate increases employment, moving it even farther away from its socially optimal level.

More importantly, this present paper shows that keeping up with the Joneses preferences can reverse the welfare effects of monetary policy both in the short and medium run. If the keeping up with the Joneses effect is sufficiently strong (weak), then expansionary monetary policy decreases (increases) welfare in the short run by increasing (decreasing) employment that is higher (lower) than the social optimum. On the other hand, if the keeping up with the Joneses effect is sufficiently strong (weak), then policy increases (decreases) welfare in the medium run by decreasing (increasing) employment that is higher (lower) than the social optimum. Thus, keeping up with the Joneses preferences have important implications for the evolution of welfare over time.

A drawback of the above-mentioned studies is that they use a first-order approximation of the utility function. Sims (2009, p. 2), for example, argues that “comparisons of welfare across different solutions, corresponding to, say, different policies or market structures, often require second-order accuracy in the approximation of the social welfare function”. This paper shows that the use of a second-order approximation of the utility function can reverse the sign of the welfare effect of monetary policy if the initial level of employment is at the optimal level or just below it. Assume that employment is just below the social optimum. If a first-order approximation is used, then welfare is an increasing function of the level of consumption and a decreasing function of the level of employment. In this case, the welfare gain of higher consumption dominates the welfare loss from higher employment. A second-order approximation also takes into account the variance of employment. Therefore, the welfare gain of higher consumption does not dominate the welfare losses from higher employment and the variance of employment. Consequently, expansionary monetary policy is no longer welfare-improving.

The rest of the paper is organised as follows: In Section 2, I lay out the model. In Section 3, I study the implications of keeping up with the Joneses preferences for the welfare effects of monetary policy. Section 4 concludes the paper.

2. Model

2.1. Demand side: Households

2.1.1. Preferences

To study the implications of jealousy for the welfare effects of monetary policy, this paper introduces keeping up with the Joneses preferences into a New Keynesian monetary policy model (see Galí, 2008, chapter 3). The economy is populated by a continuum of households, indexed by $z \in [0, 1]$.

The lifetime utility of the representative household is given by

$$U_t = E_0 \sum_{s=t}^{\infty} \beta^{s-t} \left[\log \left(C_s - \alpha C_s^A \right) - \frac{\kappa (\ell_s(z))^2}{2} \right], \quad (1)$$

where E is the expectation operator, β ($0 < \beta < 1$) is the discount factor, C is a CES basket of all varieties consumed by the household (defined below), C_t^A is average consumption goods across all households, the parameter α captures the desire to keep up with the Joneses (as explained below), κ (> 0) is a parameter and ℓ stands for labour supply. The overall consumption index is

$$C_t = \left[\int_0^1 c(z)^{\frac{\theta-1}{\theta}} dz \right]^{\frac{\theta}{\theta-1}},$$

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