



# Beggar-thyself or beggar-thy-neighbour? The welfare effects of monetary policy

Philipp Engler<sup>a,\*</sup>, Juha Tervala<sup>b,1</sup>

<sup>a</sup> Freie Universität Berlin, Boltzmannstr. 20, 14195 Berlin, Germany

<sup>b</sup> Aboa Center for Economics and University of Turku, Assistentinkatu 7, 20014 Turun yliopisto, Finland

## ARTICLE INFO

### Article history:

Accepted 5 April 2011

### JEL classification:

E32  
E52  
F30  
F41

### Keywords:

Open economy macroeconomics  
Monetary policy  
Beggar-thyself  
Beggar-thy-neighbour

## ABSTRACT

This paper examines whether monetary expansion is a beggar-thyself or beggar-thy-neighbour policy. Obstfeld and Rogoff (1995) show that monetary expansion under producer currency pricing increases domestic and foreign overall welfare, in cases where the cross-country substitutability is high. If the cross-country substitutability is low, then monetary expansion is a beggar-thyself policy that reduces domestic welfare and increases foreign welfare (Corsetti & Pesenti 2001; Tille 2001). In this paper, we will show that regardless of whether the cross-country substitutability is high or low, monetary expansion is always a beggar-thyself policy in the short run.

© 2011 Elsevier B.V. All rights reserved.

## 1. Introduction

The U.S. Federal Reserve and the European Central Bank have implemented expansionary monetary policies during the recent global recession in an attempt to stimulate their economies. An important question about expansionary monetary policies is whether such a policy stance is beggar-thy-neighbour or beggar-thyself, that is, whether it is beneficial or detrimental for the domestic economy, and what the effects are for the rest of the world. With flexible exchange rates and open capital markets, a permanent increase in the supply of money depreciates the currency and increases exports and employment. From the perspective of the traditional Mundell–Fleming model, this policy is beggar-thy-neighbour, and is recommended to the domestic policy maker if increasing output is the policy goal.

Since the publication of the Redux model by Obstfeld and Rogoff (1995), the question of whether a permanent monetary expansion is welfare improving or not has been analysed in the framework of fully micro-founded two-country models.<sup>2</sup> The welfare measure employed is the discounted present value (DPV) of the change in utility of the domestic and foreign representative households. Obstfeld and Rogoff

show that a monetary shock increases the DPV of utility by the same amount in both countries, in cases where the elasticity of substitution between goods produced in different countries (the cross-country substitutability) is the same as the elasticity of substitution between goods produced in the same country (the within-country substitutability). On the other hand, Corsetti and Pesenti (2001) and Tille (2001) find that the gains in domestic output are more than offset by deteriorating terms of trade, if the cross-country substitutability is lower than the within-country substitutability.<sup>3</sup>

What has been missing until recently in this literature, however, was a thorough analysis of the evolution of welfare over time.<sup>4</sup> The contribution of this paper is to go beyond the above-mentioned studies, which employ simultaneous one-step-ahead pricing, and to analyse the welfare effects of monetary policy over time. To do this, we extend these models with the Calvo-pricing mechanism.

<sup>3</sup> Further contributions to this literature challenging the basic results of Obstfeld and Rogoff (1995) on the positive cross-country spillover effects of monetary policy shocks include Betts and Devereux (2000), Warnock (2003), and Tille (2008). Betts and Devereux (2000) show that under local currency pricing a country may improve its terms of trade and thus raise its consumption and welfare, at the expense of its neighbour. Warnock (2003) shows that a beggar-thy-neighbour effect can result in the presence of a home bias in consumption. More recently, Tille (2008) shed light on the role of cross-country holdings of different asset classes showing, inter alia, that cross-country equity holdings can reduce the net dividend payments to the rest of the world when the money shock increases real wages and reduces profits resulting in a positive welfare differential.

<sup>4</sup> In a related paper, Tervala (2010) analyses the question of how the welfare effects of monetary policy over time depend on the currency of export pricing, using a version of the Betts and Devereux (2000) model.

\* Corresponding author. Tel.: +49 30 54632.

E-mail addresses: [philipp.engler@fu-berlin.de](mailto:philipp.engler@fu-berlin.de) (P. Engler), [juha.tervala@utu.fi](mailto:juha.tervala@utu.fi) (J. Tervala).

<sup>1</sup> Tel.: +358 2 3336925.

<sup>2</sup> Lane (2001) provides an early and extensive survey of the New Open Economy Macroeconomics literature. Lane and Ganelli (2003) focus on the exchange rate pass-through debate and the role of the current account in adjustment dynamics. Corsetti (2007) provides a more recent survey.

The main finding of this paper is that the frameworks of [Obstfeld and Rogoff \(1995\)](#), [Corsetti and Pesenti \(2001\)](#), and [Tille \(2001\)](#) in the end generate a common result: A monetary shock is a beggar-thyself policy in the short run, no matter whether the cross-country substitutability is equal to or is smaller than the within-country substitutability. Therefore, the expansionary monetary policies of the U.S. Federal Reserve and the European Central Bank might have a negative effect on welfare in the short run and increase welfare only after some time. The intuition behind this result is the following: In all cases, a monetary shock causes an increase in domestic output without an equivalent increase in consumption. In addition, we show that a high value of the cross-country substitutability implies a higher decrease in domestic welfare in the short run. That is, the beggar-thyself effect is strongest in the Obstfeld–Rogoff case. The main reason is that a high cross-country substitutability implies a strong expenditure switching effect. This causes a high response of output (employment) without an equivalent increase in consumption, due to a deterioration in the terms of trade and the accumulation of net external assets.

The rest of the paper is organised as follows: In [Section 2](#), we present the model. In [Section 3](#), we analyse the welfare effects of an unexpected shock to the domestic money supply, using illustrative numerical simulations. [Section 4](#) concludes the paper.

## 2. The Model

In this section, we develop a standard new open economy model.<sup>5</sup> The world economy consists of two countries: home and foreign. There is a continuum of firms and households that are indexed by  $z \in [0, 1]$ . A fraction  $n$  of these are located in the home country, while the remaining fraction  $1-n$  are located in the foreign country.

Nominal price rigidity is introduced by the mechanism proposed by [Calvo \(1983\)](#), so that a fraction of goods prices remain unchanged each period and new prices are set for the rest of the goods. This can be justified by the findings of [Bils and Klenow \(2004\)](#). They find evidence of infrequent price adjustments at the firm level. Calvo-pricing is a standard approach in the class of mainstream dynamic general equilibrium models that new open economy models belong to. This mechanism allows for an analysis of the welfare effects of monetary policy over time, which goes beyond the studies of [Obstfeld and Rogoff \(1995\)](#), [Corsetti and Pesenti \(2001\)](#), and [Tille \(2001\)](#), which employ simultaneous one-step-ahead pricing.

### 2.1. Households

#### 2.1.1. Preferences

All households have identical preferences. The utility function of the representative domestic household is given by<sup>6</sup>

$$U_t(z) = \sum_{s=t}^{\infty} \beta^{s-t} \left[ \log C_s + \frac{\chi}{1-\varepsilon} \left( \frac{M_s}{P_s} \right)^{1-\varepsilon} - \frac{\ell_s(z)^2}{2} \right], \quad (1)$$

<sup>5</sup> The model that we use is similar to the ones developed by [Obstfeld and Rogoff \(1995\)](#), [Pierdzioch \(2006\)](#), [Tille \(2001\)](#), and [Tervala \(2010\)](#). Compared to the Obstfeld and Rogoff model, there are three main differences. The first is that nominal rigidities take the form of staggered price setting as in [Calvo \(1983\)](#), rather than one-period fixed prices. The second is that the cross-country substitutability is not equal to the within-country substitutability. The third is that we abstract from government spending. Compared to [Tille \(2001\)](#), the only main difference is that we use the Calvo price setting, rather than one-period fixed prices. Compared to [Tervala \(2010\)](#), the main differences are that the cross-country substitutability is not equal to the within-country substitutability and that we focus on the producer currency pricing case, abstracting from deviations from the law of one price. The closest precursor to our model is [Pierdzioch \(2006\)](#). He, however, does not analyse the effects of monetary policy, but focuses on fiscal policy.

<sup>6</sup> For the foreign country, equivalent equations apply unless they are explicitly discussed.

where  $\beta$  is the discount factor,  $C$  is a consumption index (defined below),  $\varepsilon$  and  $\chi$  are positive parameters,  $M$  is nominal money balances,  $P$  is the consumer price index (defined below) and  $\ell$  denotes the supply of labour. The overall consumption index is

$$C_t = \left[ \frac{1}{n^\rho} \left( C_t^h \right)^{\frac{\rho-1}{\rho}} + (1-n) \frac{1}{\rho} \left( C_t^f \right)^{\frac{\rho-1}{\rho}} \right]^{\frac{\rho}{\rho-1}},$$

where  $C^h$  ( $C^f$ ) is an index of domestic (foreign) goods and  $\rho > 0$  measures the elasticity of substitution between domestic and foreign goods. As in [Tille \(2001\)](#), this elasticity is referred to as the cross-country substitutability. The consumption indexes are defined as

$$C_t^h = \left[ n^{-\frac{1}{\theta}} \int_0^n \left( C_t^h(z) \right)^{\frac{\theta-1}{\theta}} dz \right]^{\frac{\theta}{\theta-1}}, \quad C_t^f = \left[ (1-n)^{-\frac{1}{\theta}} \int_n^1 \left( C_t^f(z) \right)^{\frac{\theta-1}{\theta}} dz \right]^{\frac{\theta}{\theta-1}},$$

where  $C^h(z)$  ( $C^f(z)$ ) denotes consumption of domestic (foreign) good  $z$  and  $\theta > 1$  is the elasticity of substitution between goods produced in the same country. Following [Tille \(2001\)](#), this is referred to as the within-country substitutability.

The optimal allocation of consumption between different types of goods is governed by the following equations:

$$C_t^h(z) = \left[ \frac{P_t^h(z)}{P_t^h} \right]^{-\theta} \left[ \frac{P_t^h}{P_t} \right]^{-\rho} C_t, \quad C_t^f(z) = \left[ \frac{P_t^f(z)}{P_t^f} \right]^{-\theta} \left[ \frac{P_t^f}{P_t} \right]^{-\rho} C_t,$$

$$C_t^{*h}(z) = \left[ \frac{P_t^{*h}(z)}{P_t^{*h}} \right]^{-\theta} \left[ \frac{P_t^{*h}}{P_t^*} \right]^{-\rho} C_t^*, \quad C_t^{*f}(z) = \left[ \frac{P_t^{*f}(z)}{P_t^{*f}} \right]^{-\theta} \left[ \frac{P_t^{*f}}{P_t^*} \right]^{-\rho} C_t^*.$$

The prices and price indexes are denoted as follows:  $p_t^h(z)$  ( $p_t^f(z)$ ) is the domestic currency price of a domestic (foreign) good  $z$ ,  $P_t^h$  ( $P_t^f$ ) is the price index of domestic (foreign) goods and  $P_t$  is the domestic consumer price index. All of these price indexes are expressed in domestic currency terms. Analogously, for instance,  $P_t^{*h}(z)$  ( $P_t^{*f}(z)$ ) is the foreign currency price of a domestic (foreign) good. The law of one price holds for each good so that  $p_t^h(z) = S_t P_t^{*h}(z)$ , where  $S$  is the nominal exchange rate (the domestic currency price of foreign currency). Therefore, the purchasing power parity holds:  $P_t = S_t P_t^*$ .

The domestic price indexes are given by

$$P_t^h = \left[ n^{-1} \int_0^n p_t^h(z)^{1-\theta} dz \right]^{\frac{1}{1-\theta}}, \quad P_t^f = \left[ (1-n)^{-1} \int_n^1 p_t^f(z)^{1-\theta} dz \right]^{\frac{1}{1-\theta}}$$

$$P_t = \left[ n \left( P_t^h \right)^{1-\rho} + (1-n) \left( P_t^f \right)^{1-\rho} \right]^{\frac{1}{1-\rho}}.$$

#### 2.1.2. Budget constraints and optimal behaviour

The budget constraint of the representative domestic household is

$$M_t + \delta_t D_t = D_{t-1} + M_{t-1} + w_t \ell_t(z) - P_t C_t + \pi_t + P_t \tau_t. \quad (2)$$

Here,  $\delta_t$  is the price of the bond ( $\delta_t = (1 + i_t)^{-1}$ , where  $i_t$  is the nominal interest rate) that pays one unit of domestic currency in period  $t + 1$ ,  $D_t$  denotes bonds held at the beginning of period  $t$ ,  $w$  is the nominal wage paid to the household in a competitive labour market,  $\pi$  denotes the household's share of the nominal profits (dividends) of domestic firms, and  $\tau$  is a transfer from the government (senior age revenues). All domestic households own an equal share of all domestic firms.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات