



Counterfeiting, screening and government policy

Kee-Youn Kang*

Yonsei University, South Korea

Received 20 October 2015; final version received 10 July 2017; accepted 7 August 2017
Available online 18 August 2017

Abstract

We construct a search theoretic model of money in which counterfeit money can be produced at a cost, but agents can screen for fake money, also at a cost. Counterfeiting can occur in equilibrium when both costs and the inflation rate are sufficiently low. Optimal monetary policy is the Friedman rule. However, the rationale for the Friedman rule in an economy with circulation of counterfeit money differs from the conventional mechanism that holds in the model when counterfeiting does not occur. We also study optimal anti-counterfeiting policy that determines the counterfeiting cost and the screening cost.

© 2017 Elsevier Inc. All rights reserved.

JEL classification: D82; D83; E40; E50

Keywords: Money; Counterfeiting; Screening; Verification; Search

1. Introduction

Counterfeiting of money is a centuries-old problem and has been one of major issues that monetary authority must deal with. Despite its importance, there is a relatively small body of literature that studies counterfeiting in a general equilibrium model. Furthermore, in previous studies, counterfeiting often works as a threat and does exist in equilibrium. Thus, the following questions still need to be addressed: Under what conditions does counterfeit money exist as an equilibrium outcome? How does counterfeiting, or its potential threat, distort economic agents'

* Correspondence to: School of Business, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 03722, South Korea.
E-mail address: keeyoun@yonsei.ac.kr.

behavior and the allocation of resources? Is it optimal to eradicate counterfeiting? How does monetary policy affect counterfeiting activity?

We address these questions by developing a monetary search model, building on the [Lagos and Wright \(2005\)](#) framework, in which counterfeiting can occur as an equilibrium outcome. In the model economy, an asset is necessary for an exchange to take place, and the only asset is fiat money supplied by the government. To study counterfeiting, we first introduce costly counterfeiting into the model: Agents can produce fake money at a cost that is indistinguishable from genuine money. The previous work on counterfeiting, such as [Li, Rocheteau and Weill \(2012\)](#), has typically focused on the counterfeiting incentive with this costly counterfeiting technology and shown that counterfeiting works as a threat restricting trade volume. In this paper, we take a step forward and incorporate costly counterfeit detection through screening as an additional ingredient of a theory of counterfeiting. By considering these conflicting incentives together, we provide new insights that counterfeiting can occur in equilibrium, in contrast to [Li et al. \(2012\)](#), despite using similar equilibrium concepts and economic environments.¹

More precisely, the model shows that counterfeiting occurs only if there is screening activity. The intuition for this result is as follows. If an agent produces counterfeits for exchanges, and money is not screened, the agent can always find a profitable deviation that prevents counterfeiting from taking place by reducing the quantity of the money transfer.² However, preventing counterfeiting by restricting the money transfer is costly, because it limits the volume of exchanges. Screening can relax this constraint on the money transfer, and the trade volume increases; however, for an agent to find it optimal to screen, there must be some counterfeits in the economy.

Equilibrium can be one of three types: *no threat of counterfeiting equilibrium*, *threat of counterfeiting equilibrium*, and *counterfeiting equilibrium*. First, in the *no threat of counterfeiting equilibrium*, the counterfeiting cost is so high that there is no incentive to produce fake money. Thus, economic activities are the same as in an economy where counterfeiting is not a possibility. Second, in the *threat of counterfeiting equilibrium*, the counterfeiting cost is not too high, but the screening cost is relatively high, so no agents screen money in a trade to check its authenticity. Therefore, counterfeits do not exist in this equilibrium. However, the counterfeiting cost matters for real allocations because it restricts the volume of exchange, as in [Li and Rocheteau \(2011\)](#), [Li et al. \(2012\)](#), and [Shao \(2014\)](#). Finally, when both the counterfeiting cost and the screening cost are sufficiently low, the economy is in the *counterfeiting equilibrium*, where both counterfeiting and screening occur, and, thus, genuine and counterfeit monies coexist.

In the last two equilibria, counterfeiting, or the threat of counterfeiting, generates a distortion in the allocation. First, because of the restriction on the money transfer, the quantity traded is inefficiently small in the *threat of counterfeiting equilibrium*. Second, in the *counterfeiting equilibrium*, the counterfeiting probability decreases with the quantity traded, as a result of the strategic behavior of agents, which implies that the marginal money transfer for an additional unit of goods traded decreases as the trade volume increases. Due to this pecuniary effect of in-

¹ In their extension, [Li et al. \(2012\)](#) make contracts incomplete and derive counterfeiting in equilibrium. More precisely, they assume that the shock on the counterfeiting cost is realized after the offers have been made; thus, the offers cannot be contingent on specific types of agents. In our model, by contrast, we derive counterfeiting in equilibrium under complete contracts.

² This is why it was difficult to generate counterfeiting in equilibrium in previous models that studied counterfeiting without a screening decision.

متن کامل مقاله

دریافت فوری ←

ISIArticles

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