ELSEVIER

Available online at www.sciencedirect.com

SCIENCE DIRECT

J. of Multi. Fin. Manag. 15 (2005) 137–153

Journal of MULTINATIONAL FINANCIAL MANAGEMENT

www.elsevier.com/locate/econbase

Valuing the flexibility of currency choice in multinational trade with stochastic exchange rates

Snorre Lindset*

Norwegian University of Science and Technology, Department of Industrial Economics and Technology Management, Alfred Getzvei 1, 7491 Trondheim, Norway

Received 28 January 2004; accepted 20 August 2004
Available online 2 November 2004

Abstract

Trade credits with an implicit "multi-currency" option embedded are analyzed. The option gives the holder the right to choose whichever currency, from a pre specified set of currencies, to use when he pays for merchandises bought on credit. The price is specified in several currencies at the time the merchandise is bought. The customer will use the most favorable currency, relative to his home currency, to pay for the merchandise at the time the payment is due. We calculate the market value of this flexibility.
© 2004 Elsevier B.V. All rights reserved.

JEL classification: F31; G12; G15

Keywords: Heath, Jarrow, and Morton term structure of interest rates; Implicit currency option; Market value of flexibility

1. Introduction

In this paper, we consider an implicit currency option that may be embedded in trade credits. A typical trade credit states that the customer has to pay for the merchandises bought on, e.g., 30 days free on board (FOB), 45 days cost, insurance, and fright (CIF),

* Tel.: +47 73 59 31 83; fax: +47 73 59 36 03.
E-mail address: snorre.lindset@iot.ntnu.no.

1042-444X/$ – see front matter © 2004 Elsevier B.V. All rights reserved.
doi:10.1016/j.mulfin.2004.08.001

and so on. If the customer, hereafter referred to as *the multinational*, operates in several countries, it may not be that clear what currency the price should be denominated in. Should the price be denominated in the sellers' home currency, in the home currency of the multinational's parent company, or in the local currency of one of the subsidiaries? Much of international trade is denominated in US dollars, and then the problem analyzed in this paper is not present. However, there are situations where other currencies are used, and sometimes the price may even be denominated in several currencies. This is the situation we analyze in this paper. The multinational is assumed to buy merchandises from some (possibly) foreign company. Accompanied with the merchandise is an invoice that tells the multinational how much it has to pay the seller at some given point in the future. However, the price is quoted in several currencies, and the multinational is free to choose which of these to use for the future payment. The choice is made at the time of payment.

We assume that the multinational's parent company is located in the country with currency h (*h*ome). The multinational has therefore a wish to minimize its costs expressed in currency h. If the payment is due immediately after the trade has been agreed upon, it is reasonable to assume that the price, converted to currency h, is the same whatever currency is used. As mentioned above, trade credits are quite common, and the prices, converted to currency h, either using the spot exchange rates or the relevant forward rates, are likely to coincide at the time the merchandises are bought, say, at time 0. During the time period from time 0 to the time of payment, the exchange rates will fluctuate. The multinational will therefore at the time of payment minimize the cost denoted in currency h, i.e., it will choose to pay using the most favorable currency relative to currency h.

For companies from smaller countries that participate in international trade, the above description may be a fairly realistic description of the trade credits they have to offer their customers. The flexibility included in the above trade credit implies that an option element is embedded. The purpose of this paper is to find the economic value of the flexibility the option element represents.[1]

The paper is organized as follows: In Section 2, our economic model is described. In Section 3, we analyze flexible trade credits and numerical examples are presented. We conclude in Section 4. Some technical material is placed in the appendices.

2. The economic model

We let all exchange rates be given in numbers of home currency h per unit of foreign currency i, i.e., if the home country is the United States and the foreign country is Canada, the exchange rate will be USD/CAD. For simplicity we denote this "the exchange rate for CAD".

[1] On a smaller scale, this option is also present when submitting research papers to some of the European finance journals. The submission fee is often the same amount of euros and dollars. After electronically submitting the paper, one asks the department secretary to pay the submission fee using the most favorable currency.

دریافت فوری ← متن کامل مقاله

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