

Exploration of the role of expectations in foreign exchange risk management

Vivek Bhargava ^{a,*}, Robert Brooks ^b

^a *MBA Program, Alcorn State University, 15 Campus Drive, Natchez, MS 39120, USA*

^b *University of Alabama, Tuscaloosa, AL, USA*

Received 18 February 2000; accepted 25 February 2001

Abstract

Stochastic dominance and expected utility criteria are used to explore the effects of unique expectations on foreign exchange investors. This paper illustrates the use of stochastic dominance and expected utility in selecting appropriate hedging strategies, when an individual investor's expectations of the future do not match the expectations implied in market prices. The investor is assumed to hold one unit of foreign currency. This position can be hedged by selling futures, writing covered call options, or buying protective put options. Preferences are assessed based on the stochastic dominance criteria, as well as the expected utility criteria under asymmetric information. When the investor's expectations regarding the domestic interest rate, volatility, or both are different from those of the market, we find clear preferences regarding hedging strategies. The major finding is that different sets of expectations lead to different optimal hedging strategies. Based on the particular parameters analyzed, an investor is always better off with some form of hedging. © 2002 Elsevier Science B.V. All rights reserved.

JEL classification: F31; G13; G15

Keywords: Currency risk management; Hedging strategies; Asymmetric expectations

1. Introduction

The importance of managing currency risk has increased in the last few years due to increased globalization and currency volatility. Currency risk can be hedged

* Corresponding author. Tel.: +1-601-304-4319; fax: +1-601-304-0189.

E-mail address: vivek@lorman.alcorn.edu (V. Bhargava).

using either symmetric instruments, such as futures or asymmetric instruments, such as options. This paper illustrates methodologies for assessing the conditions under which an investor will choose futures, as opposed to options, to hedge currency risk. The investor is assumed to have different future expectations than those implied by derivative prices.

A firm can neutralize its position by using symmetric hedging with instruments, such as futures contracts. The firm can also insure its position with asymmetric hedging by using instruments, such as options. When investors have expectations that are different from those implied by the market (it is difficult to find investors whose expectations perfectly match those implied by the market), they may have a clear preference in hedging strategy, symmetric or asymmetric. If investors believe that the currency is going to move in an unfavorable direction, what should they use as a tool to hedge? If they expect the currency to move favorably, but are not entirely sure, should they use a different risk management strategy? This paper answers these questions by analyzing the decisions of a risk-averse individual, who has a set of expectations, which differ from those of the market. It is also assumed currency spot prices follow a lognormal distribution, permitting the use of simple derivative valuation models. This paper determines the circumstances under which it is optimal to use either futures or options by applying the stochastic dominance criterion.

Stochastic dominance does not depend on the risk preference of an investor and hence includes a wide range of utility functions. Unfortunately, it may not always be possible to find dominance among various strategies. In such cases, several utility functions have been used to make inferences regarding preferences under different strategies. The strategy that maximizes the expected utility of an investor will be preferred. In this analysis, we explore the log, exponential, power, and isoelastic utility functions.

Stochastic dominance was introduced to the finance literature by Hadar and Russell (1969), Hanoch and Levy (1969), Rothschild and Stiglitz (1970), Whitmore (1970). Since then, stochastic dominance has been widely applied in practical finance problems, such as portfolio insurance. Bookstaber and Clark (1985) show that, when evaluating portfolios that include options, mean–variance rules are not applicable as the normality assumption is violated. According to Brooks et al. (1987), this problem can be solved using stochastic dominance.

Benninga and Blume (1985) find that, in complete markets portfolio insurance will not work, but, in incomplete markets, the investor will benefit from buying a put along with an asset. Claude and Rentz (1984) analyze the impact of changing expectations regarding the density functions of subjective returns and find that, with lognormal functions, investors would prefer put writing over buying underlying stocks. Levy (1985), Perrakis and Ryan (1984), Ritchken (1985) apply stochastic dominance to evaluate a portfolio with options versus a portfolio without options. Levy (1985) uses stochastic dominance to determine the upper and lower values of option prices for all concave utility functions, but this gives a range rather than a unique value for the price.

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