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Aggregate and disaggregate measures of the foreign exchange risk premium☆

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Abstract

Using a disaggregate survey database, this paper reexamines the issue of the existence of a time-varying risk premia in three foreign exchange markets. Previous research on this topic has utilised a consensus measure of the risk premium, based on the rational expectations assumption, and is not supportive of the existence of such a premium. In contrast, this paper reports compelling evidence in favour of time-varying risk premia for the British pound (BP), German mark (DM), and Japanese yen (JY) exchange rates. In particular, we demonstrate that consensus measures of the risk premium mask the existence of risk because of the importance of heterogeneous expectations. © 2002 Elsevier Science Inc. All rights reserved.

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1. Introduction

The failure to uncover a statistically significant risk premium in foreign exchange markets has become something of a stylised fact in the international finance literature (see, for

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example, Engle, 1995). Thus, although the common finding that the forward exchange rate is a biased predictor of the future exchange rate is often interpreted as evidence in favour of a time-varying risk premia (see, for example, Fama, 1984), researchers who have empirically modelled the risk premium report only limited success. For example, a number of researchers have used ARCH-based models (see Domowitz & Hakkio, 1985), the latent variable class of models (see Hansen & Hodrick, 1983), and the portfolio balance approach (see Frankel, 1993) and reported, at best, only limited evidence that foreign exchange risk premia are related to 'fundamentals'. However, all of these works, including the interpretation of the biasedness finding, is predicated on the assumption that agents form their expectations rationally. However, if they do not, or if there is some sort of 'expectational failure', such as a 'peso' effect (Krasker, 1980), then these tests may not have established that unbiasedness does indeed reflect a risk premium and, more fundamentally, the measure of risk used may be wrong.

In this paper, we propose using survey expectational data to establish an independent risk premium measure (independent, that is, of the assumption of rationality) for three key currencies, namely, the US dollar bilaterals of the German mark (DM), British pound (BP), and Japanese yen (JY). Other researchers have begun to use survey data for this purpose (see Giorgianni, 1997; MacDonald & Marsh, 1996).[1] In addition to exploiting a new data set for this purpose, our work, in contrast to these other studies, involves looking at various levels of disaggregation of the risk premium. In particular, the nature of our data set, supplied by Consensus Economics of London, allows us to go from the overall international market mean, to a country mean, to aggregation at the sectoral level (such as banking or securities companies) down to the behaviour of the individual risk premium. This, of course, is only a worthwhile activity if the participants in the data display heterogeneous behaviour, a feature of our data set which has, in fact, already been established by Chionis and MacDonald (1997) and MacDonald and Marsh (1996).

The outline of the remainder of this paper is as follows. In the next section, we present a brief discussion of issues relating to the definition of the foreign exchange risk premium. In Section 3, we discuss our data set and provide a preliminary analysis of the data. Empirical results based on an ARCH-in-mean modelling framework are presented in Section 4. The paper closes with a concluding section.

2. The foreign exchange market risk premium

The foreign exchange risk premium is the amount required by a risk-averse investor to compensate her for taking a position in a foreign asset whose characteristics are identical

[1] There is a fairly large literature that exploits aggregate (i.e., mean) survey data to test the rationality of survey expectations and the existence of time-varying risk premia (see, for example, Cavaglia, Verschoor, & Wolff, 1993; Chinn & Frankel, 1994; Dominguez, 1986; Frankel & Froot, 1987; MacDonald, 1990; MacDonald & Torrance, 1988, 1990). A more limited literature uses disaggregate survey data to investigate the existence of heterogeneity amongst survey expectations (see Chionis & MacDonald, 1997; Ito, 1990; MacDonald & Marsh, 1994, 1996).