A Note on the Behavior of Eurobond Interest Rates

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I. *Introduction*

Recently, a number of studies have been published dealing with the eurobond market.[1,2,4,6] Most of these studies have limited their interest to a discussion of the institutional[1,6] aspects; while others have treated the analysis of the market in a non-empirical fashion.[4,2] It is the purpose of this paper to make some contribution to the understanding of this market by considering one part of this market using regression analysis.

II. *Scope and Methodology of the Study*

This study will focus its attention upon analyzing the behavior of interest rates and financial variables dealing with U.S. corporate securities which have been denominated or marketed in U.S. dollars. The types of securities considered are of a straight debt nature issued by well-known U.S. multinational corporations. The following form was used to explain the behavior of eurobond rate:

$$(1) \qquad Reb = R(UKr, ER_{30}, Ra)$$

in which

Reb = Eurobond interest rates on U.S. corporate straight debt denominated in dollars.

UKr = United Kingdom central bank rate

ER_{30} = Eurodollar deposit rate (30 days)

Ra = U.S. Corporate Aaa Bond rate (U.S. market)

The use of the United Kingdom central bank rate was to get a reasonable proxy of the cost of borrowing in the overseas market. Although there are certain limitations, the U.S. multinational corporation financial manager must weigh alternative sources and costs of borrowing. The United Kingdom central bank rate does indicate the costs of borrowing in an important European financial market.

The use of the eurodollar thirty day deposit rate has a twofold rationale. First of all, short-term borrowing in the eurodollar is a financial alternative to eurobond financing.[2] In addition, when eurobonds are floated, the initial deposit creation is in the form of eurodollars.[2] Therefore, the eurodollar rate would appear to have a significant impact on eurobonds in that they have both a complement and substitute relationship with eurobonds. Independent studies have shown that the substitute characteristic is much more important than the complement relationship.[6] R. Genillard works also lends support to the ulative importance of the substitute relationship between the eurodollar thirty-day deposit rate and eurobonds.[3]

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III. *Empirical Results*

The method used to estimate the hypothesized relationship was a single state regression model. The mathematical relationship that produced the best statistical results was:

$$(2)\quad \ln Reb = Bo + B_1 \ln UKr_{t-1} + B_2 \ln ER_{t-1t} + B_3 \ln Ra_{t-1} + ut$$

in which each of the independent variables was lagged one quarter.

The estimation process used quarterly data from the second quarter of 1963 through the second quarter of 1971.

The results of the regression were:

$$\ln Reb = 1617.90230 + \underset{(4.66327)}{.77627} \ln UKr_{t-1} - \underset{(-2.77479)}{.22672} \ln ER_{t-1} + \underset{(2.02601)}{.24171} \ln Ra_{t-1}$$

$$S.E.E. = 21.9345$$
$$\bar{R}^2 = .88$$
$$\gamma = .05$$
$$F = 66.90$$
$$D.W. = 1.67$$

The empirical results show that all three of the variables are significant at the .05 level as indicated by the t values which are in parenthesis underneath the parameter estimates. The sign in front of the United Kingdom rate is positive indicating that the eurobond rates move in the same direction as do other European rates.

The negative sign of the eurodollar rate points out that there is a significant substitute relationship between eurodollar financing and eurobonds. Finally, the significant positive U.S. domestic rate indicates that Eurobond financing decisions are somewhat influenced by the cost of borrowing in U.S. markets.

IV. *Conclusion*

Although this study was limited to only one type of financial security that is issued on the Eurobond market, this paper hopefully provided some insights as to the financial interlinkages in the eurobond market. The study showed that foreign rates as well as eurodollar rates influence the rates on eurobonds. Further analysis is needed to investigate the nature of the behavior eurobonds such as U.S. convertible debentures and non-U.S. foreign issues.

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