

Target Zone Rearrangements and Exchange Rate Behaviour in an Options-Based Model

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This paper develops an options-based model of target zone arrangements. The exchange rate in a target zone system is modelled as the exchange rate of a currency in an underlying freely floating system adjusted by the price of two options. The novelty of our model is that the options are interrelated and we develop the appropriate option-pricing method. The model is used to decompose exchange rate changes after band realignment (i.e. band shift or band widening) into the direct effect of realignment, changing expectations, and changing uncertainty. We apply the model to realignments of Denmark, France, Hungary and Portugal.

JEL classification: F31; F33; G12; C63.

Keywords: target zone system, options, target zone realignment, EMU entry, EMS.

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• The views expressed are those of the authors and do not necessarily reflect the official view of the Magyar Nemzeti Bank. This disclaimer is particularly important in the case of the applied numerical values of the future conversion rate of the Hungarian forint. These values were determined on the basis of the expectations of market analysts as reported in the Reuters Polls. Numerical values of the final conversion rate were necessary to solve the model, and were utilized exclusively for illustrative purposes. None of the presented numerical values of the final conversion rate necessarily coincide with the preferred final conversion rate of the Magyar Nemzeti Bank.

