

# Speculative noise trading and manipulation in the foreign exchange market

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## Abstract

We investigate the possibility that in the foreign exchange market uninformed speculators find it convenient to trade on noise in order to gain an informational advantage they can exploit in future. In a two-period model, we analyze the trade-off between the cost of the “informational investment” and the profits this brings about, studying the optimal manipulation strategy under different hypotheses on the activity of market participants. Our results give a possible explanation for the presence of noise trading in the foreign exchange market. © 2000 Elsevier Science Ltd. All rights reserved.

*JEL classification:* D82; G14; G15

*Keywords:* Foreign exchange market; Speculative noise trading; Manipulation

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## 1. Introduction

A large component of transactions in securities markets derives from noise traders. According to Black (1986), noise traders are agents who sell and buy assets on the basis of irrelevant information. These speculators do not possess inside or fundamental information and trade irrationally on noise as though this gave them an edge. Despite its irrational nature, noise trading represents an important aspect of the functioning of securities markets, because it reduces the risk of market crashes and facilitates transactions among agents. Indeed, if all traders were rational it would not be convenient to gather information, because prices would be fully revealing. Con-

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versely, when noise traders are present, rational speculators will gain profits at the expense of the irrational ones. As in this case prices will not be fully revealing, there would still be an incentive to gather information, so that in practice noise trading may be beneficial for the efficiency of securities markets.

Different types of behavior are associated with noise and liquidity trading.<sup>1</sup> These comprise hedging strategies, such as portfolio insurance and stop-loss orders, popular models of forecasting and trading, such as chart and technical analysis, and so forth. In particular, considering the market for foreign exchange, there is ample evidence of widespread use of chartism by traders. Indeed, on the basis of a survey conducted in the London foreign exchange market, Allen and Taylor (1990) point out that most traders consider chartism at least as relevant as fundamentalism in the formulation of exchange rate expectations in the short run. Likewise, Frankel and Froot (1987), using survey data in the foreign exchange market, find strong evidence of extrapolative expectations and attribute it to the utilisation of chartism by professional traders.

A problem with this description of noise trading in securities markets is its profitability. In fact, it is commonly believed that noise traders incur losses, because they buy when prices are high and sell when prices are low. Nevertheless, empirical studies question this thesis. Goodman (1979) compares the profitability of different forecasting techniques in the market for foreign exchange. In the seventies, the worst technically orientated forecasting technique was three times more profitable than the best fundamentally orientated one. Likewise, Schulmeister (1988) finds that large speculative profits of commercial banks in the market for foreign exchange are due to the utilization of technical trading rules. Levich and Thomas (1993) confirm the thesis that chartism is profitable employing a bootstrap approach, while Menkhoff and Schlumberger (1995) extend previous results to a longer period.

Therefore, explaining the use of chartism and other forms of noise trading represents an important topic of research. Several explanations have been proposed. Frankel and Froot (1986) suggest that if traders learn slowly the fundamental value of a currency, chartists can dominate fundamentalists and lead the exchange rate on a bubble path. De Long et al. (1990) show that if irrational traders can bear more risk than other traders, they can gain larger profits than risk-averse rational speculators. Froot et al. (1992) show that if traders have short horizons, they may find it convenient to trade on the basis of information completely unrelated to fundamentals. Palomino (1996) proves that in small markets in which investors are not price takers, noise traders might hurt sophisticated traders more than themselves.

Our analysis suggests an alternative explanation, based on a particular mechanism of manipulation of expectations and exchange rates. Even if this analysis could be applied to other dealer markets, we refer principally to the foreign exchange market because it is there that most of the evidence on the profitability of noise trading is

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<sup>1</sup> Liquidity traders differ from noise traders in that their transactions are led by hedging needs and not by speculative reasons. Generally this distinction is lost in theoretical models of securities markets, while it represents an important element of our analysis.

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