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The profitability of central bank foreign exchange market intervention☆

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Abstract

This paper assesses the profitability of foreign exchange market intervention by the Bank of England for the period 1973–1995. Profitability appears to an objective measure of the success of intervention policy, but we show that the tendency of the central bank to "lean against the wind" in its foreign exchange interventions means that profitability calculations will be heavily biased by the amount of cumulative intervention arbitrarily considered. It follows that profitability calculations will be strongly affected by the start–end dates used for calculation purposes. This cumulative intervention bias undermines the usefulness of using the profitability criterion as the sole measure for evaluating intervention policy. Nonetheless, the large sums of public money that can be staked on foreign exchange market interventions suggests the need for open reporting of the profits/losses involved. © 2001 Society for Policy Modeling. Published by Elsevier Science Inc.

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1. Introduction

In a classic 1953 essay "The Case for Flexible Exchange Rates," Milton Friedman proposed an appealingly simple criterion by which the success or

☆ Data sources: The underlying change in the reserves, the Bank of England, UK and US Treasury Bill Rates, the Bank of England Quarterly Bulletin. Exchange rate end of period, and period average, International Financial Statistics. All data was monthly.

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failure of interventions by the authorities in the foreign exchange market should be judged. Specifically, he argued:

> . . .it would do little harm for a government agency to speculate in the exchange market provided it held to the objective of smoothing out temporary fluctuations and not interfering with fundamental adjustments. And there should be a simple criterion of success-whether the agency makes or loses money. (Friedman, 1953, p. 188)

The profitability criterion is intuitively appealing and seemingly objective criterion with which to assess central bank intervention. Moreover, it also has the advantage of being easily quantifiable. However, using data for the United Kingdom, we show that a theoretical argument developed by Carrado and Taylor (1986) showing that *ex post* profitability measures will inevitably be biased by the amount of cumulative intervention arbitrarily considered constitutes an important criticism of the profitability criterion and has empirical relevance. This paper also helps to reconcile the conflicting results of existing studies, some of which find central bank intervention to have been profitable, such as Argy (1982) and the Bank of England (1983) and others, which have found it to be loss making such as Jacabson (1984) and Taylor (1982).

2. A theoretical critique of the profitability criterion

A theoretical model developed by Carrado and Taylor (1986) argued that *ex post* reported profitability measures will be heavily dependent upon the amount of cumulative intervention recorded. The basic argument is summarised in Fig. 1:

In Fig. 1, the exchange rate is assumed to follow a random walk. The dollar value of sterling either rises or falls by a constant amount with equal probability. The authorities are assumed to "lean against the wind" buying sterling in the region *ab* once it has depreciated after a certain threshold movement and selling sterling when it appreciates after a certain threshold movement in the region *cd*. If the pound in depreciates in Period 1 and appreciates in Period 2 to its original value, the authorities net intervention will be zero and the central bank will make a profit by having bought low in the region *ab* and sold high in the region *cd*. If, however, the pound depreciates in Period 1 and also in Period 2, the central bank will have a large cumulative net purchase of pounds in the region *ae* and will record a loss by having bought a continuously depreciating currency. The argument is symmetric so if the pound appreciates in Period 1 and depreciates to its original value in Period 2, the authorities net intervention will be zero and the central bank will make a profit by having sold high in the region *fg* and bought low in the region *hd*. If, however, the pound appreciates in Period 1 and also in Period 2, the central bank will have a large net cumulative sale of pounds in the region *fi* and will record a loss because it has sold a continuously appreciating currency. The argument follows that any *ex post* measure will be

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