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Does the Fed beat the foreign-exchange market?

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Abstract

This paper's estimates and tests of Fed intervention profits are the first that explicitly adjust for foreign-exchange risk premia; failure to adjust may grossly affect estimated profits. Profits appear economically and statistically significant, whether risk premia are modeled as time-constant or as appreciation's market beta depending on Fed intervention. The estimates are sensitive to the method of risk adjustment and to the periods used. Because a key variable, cumulative intervention, is $I(1)$, test statistics may have non-standard distributions, a problem affecting past tests; this paper's tests account for non-standard distributions. Possible explanations of these profits have mixed empirical support in the literature. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

The profitability of central bank intervention is a contentious issue. (i) Some observers expect speculators to make money at the expense of central banks,

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partly because of beliefs of government inefficiency relative to private activities, partly because some central banks assert they sometimes lean against the wind in attempts to slow down exchange-rate movements (Sweeney, 1986; Corrado and Taylor, 1986). (ii) Others note that if the foreign-exchange market is strong-form efficient relative to intervention, a central bank makes zero expected profits on its intervention. (iii) Those who expect central bank intervention profits offer differing sources of profits. Some argue that central banks have information unavailable to the public, particularly regarding future monetary policy, and may make intervention profits from using this information. Others argue that central banks profit from intervention to reduce volatility in "disorderly markets". Related, some argue that central banks profit from intervening against destabilizing speculation or from supplementing insufficiently strong private stabilizing speculation (Leahy, 1995); still others argue the contrary, that central banks may profit from intervention that is destabilizing. [1]

Empirical results have not settled the debate because they are conflicting. Some authors present evidence of central bank losses (Taylor, 1982a,b; Schwartz, 1994), others of profits (Leahy, 1989, 1995; Fase and Huijser, 1989, among others). Sweeney (1997) provides a review of the literature.

Previous estimates of central bank intervention profits are unreliable for several reasons. Previous work incorrectly measures profits by not accounting for the foreign-exchange risk central banks bear from intervention and the premia they can expect to earn for bearing this risk, though some papers note that an unknown part of measured profits may be due to risk premia (Leahy, 1989, 1995). Further, previous work takes no account of the implications of the Efficient Markets Hypothesis in formulating measures and tests of intervention profits, though some paper discuss implications of estimated profits for efficiency (Leahy, 1989, 1995). Finally, previous work does not take account of the fact that profit measures depend on a variable integrated of order one, and thus the asymptotic distributions both of the profit measure and its test statistics can easily be non-normal. This paper presents estimates and tests of Fed intervention profits that account for all of these problems. [2]

Central banks have goals beyond profitability and may intervene to achieve desired outcomes even at the cost of intervention losses (Bank of England, 1983; Edison, 1993; Dominguez and Frankel, 1993a). Most central banks argue

[1] Despite (Friedman's, 1953) famous conjecture that stabilizing intervention generates central bank profits, there is no consensus that profits are either necessary or sufficient for intervention to be stabilizing. Some argue that destabilizing speculation may be profitable (for the debate, see Baumol, 1957; Kemp, 1963; Johnson, 1976; Hart and Kreps, 1986; Szpiro, 1994). Others note that profitable intervention may have no effect on exchange rates and thus fail to be stabilizing (Leahy, 1989, 1995; Edison, 1993; Dominguez and Frankel, 1993a).

[2] This paper builds on Sweeney (1996a). Sweeney (1997) discusses some results from the older paper.