currency peg or hang on? In a setting of purposeful action by the authorities, however, the possibility of self-fulfilling crises cannot be easily dismissed. Speculative anticipations depend on conjectured government responses, which depend, in turn, on how price changes that are themselves fueled by expectations affect the government's economic and political positions. This circular dynamic implies a potential for crises that need not have occurred, but that do occur because market participants expect them to.

The paper is organized as follows. Section 1 begins by analyzing speculative attacks in exhaustible resource models, where attacks are inevitable as a result of resource depletion. These models are compared with Krugman's model, in which a process of reserve depletion is imposed with no modeling of the basis for government policy decisions. A brief review of Sweden's 1992 currency crisis serves to illustrate some restrictive features of the standard model and to suggest factors that should play a role in more general models of currency crisis.

Section 2 presents two different models in which crisis and realignment result from the interaction of rational private economic actors and a government that pursues well-defined policy goals [1]. In the first of these models, high nominal interest rates associated with devaluation expectations can force a government to devalue a currency whose peg would have been viable under another set of private expectations. This model is based on the effects of high interest rates on the government's fiscal position, but one could devise similar models in which high interest rates induce the government to realign though their impact on the banking system, firms' balance sheets, mortgage interest rates, and so on.

A second model shows how realignments may reflect the authorities' desire to offset shocks to competitiveness and employment. This model, too, is subject to multiple equilibria. In it, arbitrary expectational shifts can turn a fairly credible exchange-rate peg into a fragile one [2].

1. HOW UNSUSTAINABLE POLICIES LEAD TO CRISES

In the most basic model of currency crisis, authorities pursue unsustainable macroeconomic policies that must eventually force a fixed exchange rate to be abandoned. Krugman (1979) showed that in a world of perfect foresight, the moment of transition between the fixed-rate regime and its successor generally involves a speculative attack in which private participants in the foreign exchange market acquire in an instant all the foreign-currency reserves central banks commit to the existing parity's defense.

1.1. Speculative Attacks in Gold and Other Exhaustible Resource Markets

Krugman's model was inspired by the literature on government price-fixing schemes in exhaustible resource markets (Salant and Henderson 1978, Salant 1983). Both the logic and limitations of his account are placed in perspective by first reviewing the standard partial-equilibrium model of attacks on government resource stockpiles.

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(1) In two earlier papers (1986, 1988) I presented models in which speculative attacks trigger government responses that effectively validate those attacks. Dellas and Stockman (1993) build on my 1986 analysis to show how the possibility that a government will introduce capital controls in a crisis can generate self-fulfilling attacks. These papers do not, however, derive official responses from models of optimal government behavior, as I do here. Probably the earliest attempt formally to analyze the realignment decision in a strategic context is in a neglected chapter of a book by Gale (Gale 1982, chapter 3). Gale concluded, as I do below in more fully specified models, that devaluations could be self-fulfilling phenomena.

(2) Ozkan and Sutherland (1993) and Bensaid and Jeanne (1993) explore models in which higher nominal interest rates depress output, so that governments abandon pegged exchange rates if nominal interest rates reach too high a level. Both models produce realistic interest-rate dynamics prior to a collapse: those in the first come from the stochastic evolution of foreign interest rates, those in the second from market learning about the fixed cost policymakers incur when they realign. A similar fixed cost figures in the models of section 2, below; the Bensaid-Jeanne model shares with those models the prediction that self-fulfilling attacks may occur. In earlier work, Gros (1992) studies a dynamic model in which realignment is driven by interest rates and self-fulfilling attacks are possible. While Gros did not explicitly cast his model in a setting of policy optimization, it would not be hard to rationalize his assumptions in terms of policy objectives like those assumed by Ozkan and Sutherland and by Bensaid and Jeanne.