Chapter Overview

This chapter examines the economic determinants of the spot exchange rate. The principal theme of the chapter is that the exchange rate is a forward-looking variable that should be priced in the same way as other financial assets. It first uses several news items about macroeconomic events to show the forward-looking nature of the foreign exchange market and the difficulties in modeling exchange rates. It then surveys some of the stylized models of exchange rate determination including the flow approach and the stock approach. The stock approach, which is also referred to as the asset approach, has been adopted as the main paradigm for explaining exchange rate movements. The chapter reviews two main categories of asset modes: the monetary and portfolio-balance models and several variants of each model. It outlines the broad predictions of these models and then analyzes the empirical evidence to determine whether these models offer a satisfactory explanation for exchange rate behavior. Empirical evidence suggest that during some periods of higher inflation and over the longer run, exchange rate behavior is significantly related to fundamentals within the context of an asset model. Still, economic models of exchange rates have often been unreliable and unsuitable for forecasting. As usual, the chapter concludes with a discussion of policy choices that affect private enterprises and public policymakers in connection with exchange rate models.

Answers to end-of-chapter questions

1. How would you explain the seemingly contradictory reaction of the foreign exchange market, sometimes rising and sometimes falling in response to similar news announcements?

Different reactions to what appears to be similar news items could be the result of (1) actual differences in the news items, (2) differing interpretations of news items, or (3) differences in other market conditions at the time of the news announcement. In the text, we reviewed examples of (1) where an increase in interest rates could be interpreted as an increase in either nominal or real interest rates; (2) where an increase in the money supply could be interpreted as a signal of a permanent change in the money supply or simply a temporary blip; and (3) where a fiscal deficit could promote a currency appreciation if it attracts foreign capital to purchase government bonds, but it might also promote inflationary fears and a weaker domestic currency. These interpretations presume that the FX market is efficient.
2. "The foreign exchange market reacts only on unanticipated news." Is this statement true or false? Explain.

True. In theory, the FX market should behave like other well-functioning asset markets. Prices should reflect all available information and respond only to those news announcements that are unanticipated.

3. "The stock models of foreign exchange pricing sees foreign exchange primarily as a medium of exchange for executing international trade transactions." Is this statement true or false? Explain.

False. The stock model of foreign exchange pricing views foreign exchange as an asset which is held in portfolios as long as the return is commensurate with the return on other financial assets.

4. Describe how an increase in the foreign demand for US goods and services would impact supply and demand curves in the flow and stock models of exchange rate determination.

An increase in the demand for US goods and services creates a flow demand for US$ and a flow supply of DM. The ss curve in Figure 6.8 shifts to the left. At the prevailing spot rate ($0.50/DM), the US runs a current account surplus which adds to its holdings of foreign assets. The SS curve in Figure 6.8 gradually shifts to the right and the US$ strengthens. At some rate, say $0.45/DM, the current account is back in balance.

5. Describe how an increase in the stock demand for US assets impacts demand and supply curves in the flow and stock models of exchange rate determination.

An increase in the stock demand for US assets creates a decrease in the stock demand for DM assets (because the proportions of wealth invested in these two assets must total unity). The DD curve in Figure 6.8 immediately shifts to the left, and the US$ appreciates to, say $0.45/DM. At this new exchange rate, the flow demand for DM exceeds the flow supply and the US runs a current account deficit. Gradually, the supply of DM assets declines along with the current account deficit. The SS curve shifts to the left, until the current account is brought back to equilibrium.
6. Explain how a shift in the supply and demand for US$ affects the exchange rate in the flow model of exchange rate determination.

In the flow model of exchange rate determination (Figure 6.5), demand and supply curves for US$ are derived from the demand and supply for US goods and services relative to the demand and supply for foreign goods and services. Those factors that increase the demand for US goods (SS [the supply of £] shifts to the right) or decrease the demand for UK goods (DD [the demand for £] shifts to the left) cause the US$ to strengthen.

7. Discuss the similarities and differences between the monetary approach and the portfolio balance approach to the determination of exchange rates.

The monetary approach and the portfolio balance approach are similar in that they are both examples of the asset approach to exchange rate determination. Both models assume forward looking, rational behavior in which the exchange rate reflects the present value of all future exogenous variables. The models differ in that the portfolio balance model specifies a longer list of assets (bonds as well as money), and the portfolio balance model allows for a currency risk premium.

8. Describe and contrast the monetarist and the overshooting models of exchange rate determination.

The overshooting model is a variation of the monetary model that allows for purchasing power parity to hold in the long-run but not in the short-run. Under the monetary approach, an unexpected increase in the domestic money supply (by 1%) immediately raises domestic prices by 1% and depreciates the domestic currency by 1%. Domestic interest rates are not affected. With the overshooting model, an unexpected increase in the domestic money supply leaves domestic prices unchanged, domestic currency depreciates by more than 1%, while domestic interest rates fall (below world levels) because of a domestic liquidity effect. An intermediate appreciation of domestic currency compensates international investors for the lower domestic interest rate.

9. Can the monetarist model predict changes in the real exchange rate?

The pure monetarist model would not predict any changes in the real exchange rate because the model predicts continuous purchasing power parity. The monetarist model could be modified to permit changes in real variables that would lead to a real exchange rate change.
10. "According to the monetarist model, a rise in the domestic interest rate will result in a fall in the domestic currency." True or false. Explain.

True. A rise in the domestic interest rate occurs in the monetarist model because of an increase in anticipated inflation, which based on PPP, should lead to a weaker domestic currency value.

11. "According to the monetarist model, a rise in domestic real income will create added demand for domestic money, thus provoking a rise in the price of domestic currency." True or false. Explain.

True. A rise in domestic real income increases the transaction demand for real money balances. One channel to satisfy this increase in demand is through a domestic currency appreciation.

12. What is the difference between in-sample and post-sample testing of foreign exchange models?

In-sample testing involves fitting a regression model to a body of data, and checking whether the hypothesized values of the regression coefficients are as expected, and whether the model adequately explains the variability in this sample of exchange rates. Post-sample testing involves taking the estimated coefficients from an in-sample period, and using them to make exchange rate predictions on a fresh set of data -- usually a later, "post-sample," time period.

13. From the experience of the 1970s and 1980s, we know that exchange rates can be highly volatile. Does this experience suggest that economic factors are not related to exchange rate behavior?

Economic models of exchange rates, where \( S = f(X) \) is such a model, theorize that volatility in \( S \) is directly related to volatility in \( X \). Thus exchange rates may be volatile because underlying economic variables are volatile. Moreover, models like the overshooting model, show that exchange rate volatility may be greater still when some prices in the economy are sticky and the exchange rate must "over-respond" to produce a short-term equilibrium.
14. Define the term "speculative bubble." Explain how a speculative bubble could develop in the foreign exchange market.

A speculative bubble is measured by the difference between the present spot rate and the fundamental equilibrium rate. A speculative bubble could develop if traders buy a currency not based on a determination that it is undervalued on the basis on fundamentals, but solely on the basis that the currency is expected to appreciate in tomorrow's market. If other traders also buy based on the expectation of further appreciation, rather than on the basis of fundamentals, a bubble may develop between the actual spot rate and its fundamental value.

15. How would you devise a governmental policy of communication to the markets to avoid extreme volatility in the foreign exchange market?

Exchange rates are volatile in part because of volatile underlying conditions, and in part because policy "surprises" (unanticipated news announcements) contribute to volatility -- especially in a world with sticky goods prices and exchange rate overshooting. Government policies that limit the volatility in underlying variables and reduce policy surprises should contribute to lower exchange rate volatility.