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Report to the Honorable
Jim Leach, Ranking Minority Member,
Committee on Banking, Finance and
Urban Affairs, House of Representatives

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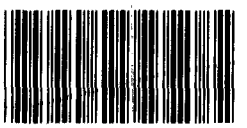
INTERNATIONAL FINANCE

Recent Developments in Foreign Exchange Markets



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The Honorable Jim Leach
Ranking Minority Member
Committee on Banking, Finance and Urban Affairs
House of Representatives

Dear Mr. Leach:

As you requested, we reviewed emerging issues in foreign currency exchange markets. This report summarizes the briefings we gave you and your staff. Specifically, in this report we discuss (1) developments in the foreign exchange market, (2) the economics of foreign exchange rate determination, (3) the role of speculation in foreign exchange trading, (4) the efficacy of government intervention to influence exchange rates, and (5) the European Exchange Rate Mechanism (ERM) crisis in September 1992.

Background

Exchange rates can be thought of as the "price" of one currency expressed in terms of another currency. Since the Bretton Woods system of fixed exchange rates collapsed in the early 1970s, major industrial nations have relied primarily on market forces to set the value of their currencies on foreign exchange markets. In these markets, investors, and businesses conducting international commerce, buy and sell currencies primarily through a network of banks and brokers. While investments in foreign currencies (or securities denominated in foreign currencies) can be long term, there are substantial short-term movements of funds in response to actual and expected exchange rate changes.

Governments and central banks still try to influence their currencies' exchange rates as part of their economic policies. For example, 11 European countries have coordinated exchange rate management under the ERM, as part of economic integration within the European Community.[1]

Results in Brief

Foreign exchange currency trading has grown tremendously in the last decade because of the globalization of financial markets and increased international commerce and investment. While fundamental economic forces determine long-term exchange rates, the complexity and variability

[1]Belgium, France, Germany, Italy, Luxembourg, the Netherlands, Denmark, Ireland, the United Kingdom, Spain, and Portugal (that is, all the European Community members except Greece) have participated in the ERM.

of these forces make predicting short-term exchange rates highly uncertain. Speculation adds liquidity and flexibility to the market and can be stabilizing; however, the risks of such speculation create concerns for policymakers. Some recent academic research indicates that, within specific limits, government intervention can influence short-term movements of exchange rates. Nevertheless, recent events in the functioning of the European Community's Exchange Rate Mechanism show that government attempts to keep exchange rates at levels that ignore changes in economic fundamentals cannot be sustained.

Scope and Methodology

Our work required research into numerous sources concerned with foreign currency exchange markets. We reviewed academic research on exchange rates and foreign exchange markets published in economic and financial literature, particularly analyses of recent developments. Our description of the foreign exchange market and events surrounding the ERM crisis are based upon recent studies by groups including the International Monetary Fund, the Bank for International Settlements, and the deputies of the Group of Ten (G-10).[2] (See bibliography.) We also talked to U.S. officials at the Treasury Department, the Board of Governors of the Federal Reserve System, and the Federal Reserve Bank of New York. We interviewed several foreign exchange traders from commercial banks, an investment bank, and a brokerage firm to understand the perspective of market participants; however, we did not randomly sample market participants.

We did our work from January to May 1993 in accordance with generally accepted government auditing standards.

Developments in the Foreign Exchange Market

The foreign exchange market has changed over the past decade, becoming much bigger and more complex. Such market changes include (1) trading volumes that grew over 40 percent, to $880 billion a day between 1989 and 1992; (2) faster reactions to events; (3) new participants, including

[2]The countries constituting the G-10 participated in the General Agreements to Borrow—originally Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, the United Kingdom, and the United States. Switzerland joined in 1984, making the number in fact 11 countries, but the name remains G-10 by convention.

pension, mutual, and "hedge funds," bringing more diverse economic interests; and (4) new financial instruments.[3]

These changes result from the globalization of financial markets and increased international commerce and investment, including fewer international capital controls, new technology, and reduced government regulation. Historically, foreign exchange trading was primarily based on commercial transactions, i.e., international trade flows, which tended to generate steady offsetting demands for and supply of a country's currency. Today this trading is being overshadowed by trading based on international financial transactions, which may generate more variable demands that move quickly in one direction or another in response to news.

Foreign Exchange Economics

Despite abundant academic research, there is no definitive explanation of what really determines short-term exchange rate movements; the foreign exchange market is far too complex and unpredictable. Much market behavior at any given moment is based on participants' market expectations, which can be influenced by intangibles such as politics, rumor, and group psychology.

Still, the literature shows a consensus among academics, policymakers, and market participants that, over the long term, fundamental forces in national economies, as reflected in interest rates, inflation rates, current account balances, international capital flows, and economic growth rates, determine exchange rates. The confluence of all these powerful forces can create dramatic changes to exchange rates, as the 1992-1993 ERM crisis showed. Furthermore, government actions (discussed in a following section) are unable to dominate the foreign exchange market in the long term; government exchange rate policy must take these market forces into account in order to set realistic objectives.

Role of Speculation and Risk

While speculation and risk are important to the efficient functioning of financial markets, they are always areas of concern to policymakers. Speculators are said to take more risks and leverage their capital more highly than other traders, but the foreign exchange market cannot

[3]Many of these new financial instruments are "derivatives." Derivatives are financial contracts whose value depends on the values of one or more underlying assets. Currency derivatives build on traditional "spot" (i.e., immediate delivery) contracts. Derivative types include traditional forward and swap contracts, as well as futures and options. They are traded both over the counter (e.g., dealer to dealer) and on organized exchanges.

distinguish a speculative trade from any other. For example, the market cannot judge who is intending to speculate—a trader buying an unhedged long-term yen or deutsche mark position, or another trader buying many financial instruments that react in offsetting ways to market changes.

Financial instruments, including derivatives, are often considered "risky," and are used by speculators. But the use of currency derivatives can add liquidity to the foreign exchange market, allow flexible trading (sometimes at lower cost), and can be a form of insurance for users. Derivatives permit a transaction to be divided into particular components of risk. Some derivatives link foreign exchange market trading to other financial markets such as debt and equities. As financial products, they are sources of income for providers. While newer derivatives constitute the fastest-growing segments of the foreign exchange market, highly leveraged types, such as currency futures and options, form only a small proportion of total trading.[4]

Derivatives allow market participants greater flexibility to isolate and hedge specific risks associated with a change in a currency's value. These instruments give market participants the ability to tailor their risk portfolios when investing internationally. Academic researchers and market participants believe that these instruments dampen volatility (except in the most extreme market situations) and have a calming influence by increasing market liquidity, although there is not sufficient research to support or refute this opinion.[5]

The market participants we talked to told us they do not consider the foreign exchange market any "riskier" today than years ago, despite all the changes. However, some told us their concerns focus on improving management of customer and counterparty credit risk, and improving settlement systems, i.e., payment transfer systems, between participants. Recent studies by the International Monetary Fund and G-10 confirm the observations we heard from some market participants that, while there are issues that need to be pursued, the foreign exchange market is not "a house of cards."

[4]Currency futures and options equalled approximately 5 percent of foreign exchange market activity in 1992, according to the Bank for International Settlements.

[5]GAO is currently conducting a study of derivatives, the related risks, how users manage these risks, and the role of government regulators.

Government Intervention Can Achieve Only Short-Term Objectives

Governments have used a variety of actions to influence the exchange rate of their currency by affecting its supply and demand. These actions have generally meant (1) establishing capital controls; (2) managing interest rates; or (3) conducting interventions in foreign exchange markets, that is, purchasing or selling currencies in the market.[6] None of these actions make exchange rate management an easy policy option for most governments. In particular, many argue that (1) capital controls restrict the freedom of markets to operate efficiently, (2) either raising interest rates or inflating the money supply can have adverse effects extending beyond the parts of the economy directly affected by exchange rates, and (3) government intervention may not be effective in all cases. In general, U.S. authorities have thus been reluctant to try to manage dollar exchange rates.

Traditional economic research held that governments could influence exchange rates only by affecting economic fundamentals. However, we found that some recent academic research (using newly available daily intervention data) indicates that, by modifying market participants' expectations, sterilized intervention can affect markets for the short term—that is, weeks or perhaps months.[7] Although this recent empirical research is not definitive, it raises the possibility that conventional wisdom about sterilized intervention may need to be modified to reflect possible effectiveness in influencing short-term exchange rate movements.

This new academic research does not mean U.S. authorities should become "pro-interventionist," however. Intervention must still have clear and reasonable short-term objectives to be effective. Furthermore, strategies to manage short-term exchange rates must often include international coordination.

While the foreign exchange market is now too big for any such government actions to resist economic fundamentals for very long, government intervention can play a limited role as part of broader coordination on macroeconomic policy. Some market participants we

[6]Governments can affect the value of their exchange rates by buying or selling their country's currency in international markets. These actions result in changes to the money supply in the country and can have macroeconomic effects (for example, changes in the rate of inflation). Interventions like this are referred to as "unsterilized" interventions. Attempting to avoid these macroeconomic consequences, countries can conduct "sterilized" interventions in the foreign exchange market. A sterilized intervention takes place when the change in the money supply caused by the intervention is offset by some other government action (for example, buying or selling domestic bonds). Under conventional wisdom, sterilized intervention is thought to have a minimal effect on exchange rates.

[7]See Kathryn M. Dominguez and Jeffrey A. Frankel, Does Foreign Exchange Intervention Work?, Institute for International Economics (Washington, D.C.: Sept. 1993).

spoke to said they do react to, and see a role for, government intervention in some situations. Given the limitations, governments might intervene to (1) calm disorderly markets caused by dramatic events, for example, when Iraq invaded Kuwait in the 1991 Gulf war; (2) smooth the market, or "buy time" for new policies and international coordination to affect economic fundamentals; (3) burst speculative bubbles and remind the market there is two-way risk when momentum builds during sustained market movements; (4) signal confused markets with an interpretation of conflicting indicators of economic fundamentals; and (5) provide needed liquidity during a market crisis and thus ease the market to a new equilibrium level.[8] In all these cases, successfully influencing exchange rates depends on other parts of a government's macroeconomic policy.

Intervention strategy remains a highly judgmental undertaking, and success is always uncertain. In evaluating the effectiveness of government intervention, it is important to look at intended policy outcomes and not focus on the increases or decreases in a nation's foreign currency reserves. Championing profitability as the primary measure of success in foreign exchange policy may encourage authorities to take aggressive market positions and actually speculate with a country's reserves, rather than manage them prudently.

Market Fundamentals Created ERM Pressures

ERM membership committed countries to maintain fixed but adjustable exchange rates as a step toward achieving European monetary integration.[9] However, a crisis occurred in September 1992 when changes in market demand of tremendous size and speed forced some countries to withdraw from the ERM and to devalue their currencies.[10] Market participants reported trading volume 2 to 3 times normal. The dynamics of the ERM crisis paralleled those that the United States faced in the early 1970s when the Bretton Woods fixed exchange rate system broke apart, and the value of the dollar was first allowed to float.

The ERM crisis was precipitated by a series of events, including the Danish rejection of the Maastricht Treaty and anticipation of a similar outcome in

[8]The massive European government intervention in the 1992 ERM crisis had this effect, even though the intent was to maintain the fixed relationship between the currencies.

[9]Currencies were allowed to fluctuate within narrow but adjustable bands relative to a basket of European currencies.

[10]The crisis was generally isolated to European currency trading and did not spread to other financial markets nor to other currencies.

the French referendum.[11] These events eroded institutional investors' belief that these relatively fixed exchange rates could be sustained, given fundamental economic conditions within Europe that combined high interest rates with different national inflation and growth rates. Speculators, like hedge funds, did play a role in leading the market and some certainly profited from events, but their actions did not cause the crisis, according to the International Monetary Fund, G-10, and some market observers.

The enormous movement of investors to sell or hedge their currency holdings forced several European authorities to try to maintain their exchange rates through (1) massive interventions, (2) large interest rate increases, and/or (3) increased capital controls. Examples of each action included the following: (1) Germany purchased British pound sterling and Italian lira equivalent to over $40 billion in September 1992, and while the Bank of England's foreign currency reserves dropped $3.1 billion, to $37.1 billion, the press reported that Great Britain had spent $15 billion to defend the pound sterling; (2) Italy raised its official discount interest rate and allowed overnight interest rates to reach 36 percent; and (3) Spain required domestic banks to deposit funds in the Bank of Spain equal to new foreign currency positions.

These actions were not successful, and the British pound sterling and Italian lira were withdrawn from the ERM. Other currencies, like the Spanish peseta and the Portuguese escudo, were devalued against other ERM currencies.

The 1992 crisis has affected market participants' behavior, making them more cautious. The crisis, together with subsequent events, particularly the summer 1993 attack on the French franc, has prompted policymakers to make changes to the ERM. These changes allow currencies to fluctuate within wider bands relative to a basket of European currencies before governments take actions to influence exchange rates.

One long-term outcome of the ERM crisis may be changes to investment flowing between certain European countries. Spanish and Italian financial markets had previously benefited from increased capital flows associated with investors' belief that ERM membership had eliminated most exchange rate risk. Market participants have since revised their perceptions of the risk.

[11]The Maastricht Treaty establishes a framework for further economic and monetary integration of European Community members.

Both authorities and market participants have pointed out that the foreign exchange market was able to handle the huge volume of currency transactions during the ERM crisis. While there were some irregularities, there was no breakdown in trading as in the 1987 U.S. stock market crisis. Generally, participants were still able to buy, sell, or hedge their currency holdings, though some obviously lost money, and trading costs were high.[12]

One U.S. official told us that because the United States does not restrict movement of the dollar as the ERM countries do for their currencies, such violent adjustments to the dollar were unlikely. Also, dramatic attempts to defend exchange rates are less likely to be needed outside of a "fixed" rate system.

Agency Comments

We discussed the results of our work with officials at the Treasury and the Board of Governors of the Federal Reserve System. They concurred in our analysis and suggested several clarifications that we included.

As you requested, we plan no further distribution of this report until 30 days after its issue date, unless you publicly announce its contents earlier. At that time, we will send copies to the Secretary of the Treasury, the Board of Governors of the Federal Reserve System, the Federal Reserve Bank of New York, and other interested parties. We will make copies available to others upon request.

[12]Bid-ask price spreads widened to 5 to 10 times normal for intra-ERM exchange rates during the crisis; a wider spread indicated that traders were charging more and were less willing to trade because of greater volatility and reduced liquidity in the market.

Please contact me on (202) 512-4812 if you or your staff have any questions concerning this report. The information in this report was developed by James McDermott, Assistant Director; Adam Cowles, Evaluator-in-Charge; and Jane Li, Daniel Coates, and Richard Krashevski, Senior Economists.

Sincerely yours,

Allan I. Mendelowitz

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