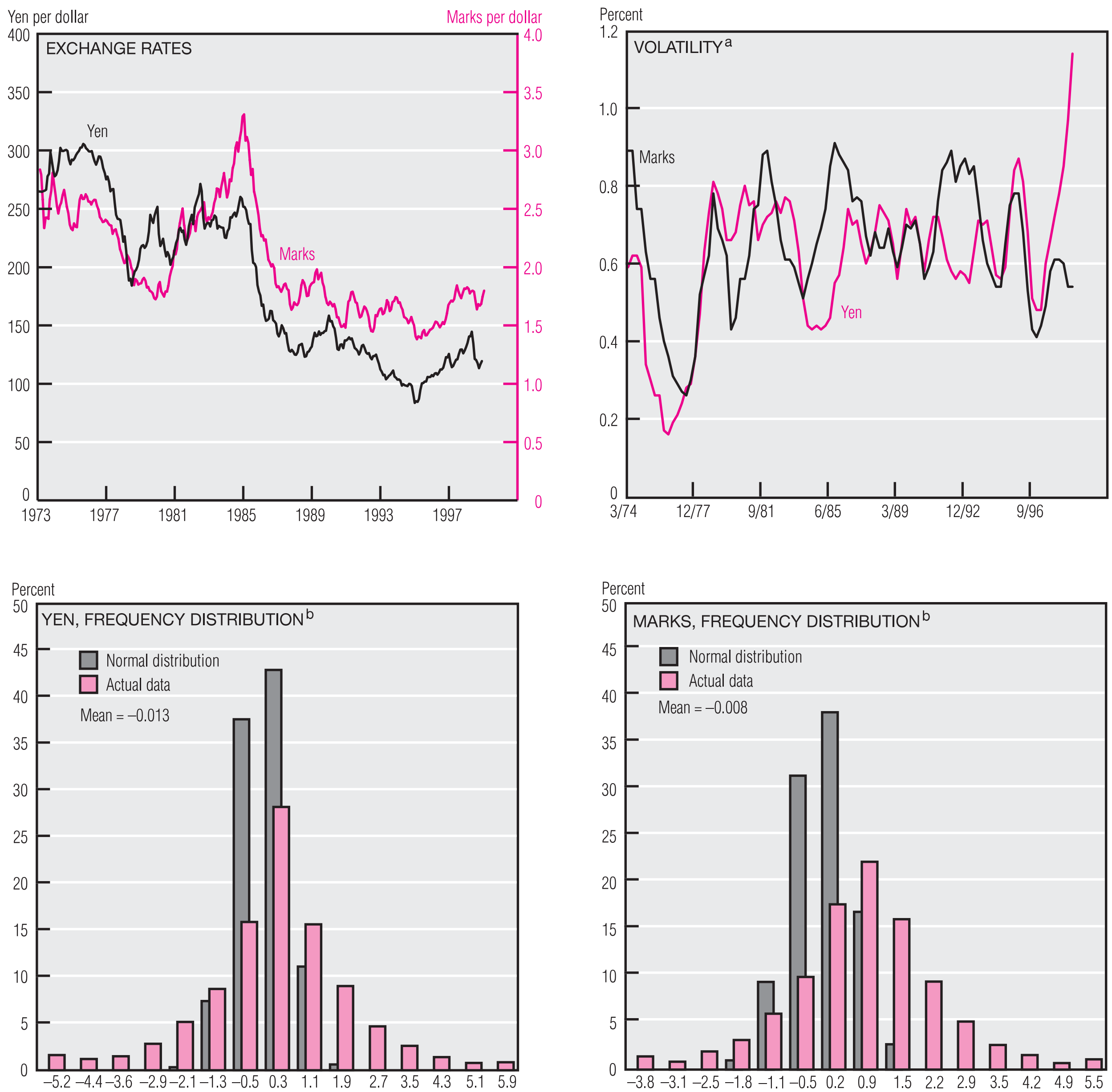
Exchange-Rate Volatility



a. Volatility is measured as the standard deviation of daily exchange-rate percent changes over the preceding year.

b. Compares the actual frequency distribution of daily percent changes with the frequency distribution that would be expected if the daily percent change conformed to a normal distribution. Values shown are the medians of the range in each bar.

SOURCE: Board of Governors of the Federal Reserve System.

Each day, in spot, forward, and swap transactions throughout the world, more than $1.3 trillion in foreign currencies changes hands. The volume seems large relative to the world's trade flows, suggesting that exchange-rate movements do more than just allocate goods and services around the globe. Many of these trades involve speculation, in which parties with different expectations about market conditions essentially bet on the reliability of their knowledge. The process promotes a transfer of information. High market volatility indicates uncertainty and trading on disparate information sets. The past two years, for example, have witnessed a sharp increase in day-to-day yen/dollar volatility, even though overall exchange-rate trends do not seem exaggerated. This volatility is associated with uncertainty about Japan's economic prospects.

Distributions of daily exchange-rate changes typically show higher frequencies of large changes—both positive and negative—than are associated with a normal distribution. Nevertheless, the average exchange-rate change typically is close to zero. Exchange traders seem to be highly efficient information processors who quickly incorporate all available data into current exchange-rate quotations; changes result solely from the receipt of new information.

Of course, persistent movements are often evident, indicating that the market is not perfectly efficient. When knowledge is costly, market prices cannot continuously reflect all information. If they did, speculators could not profit from expending resources on news. Perfectly efficient markets must break down.