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# Currency Trading and Intermarket Analysis

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*To my parents Ahmed & Aisha Laidi*

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# Acknowledgments

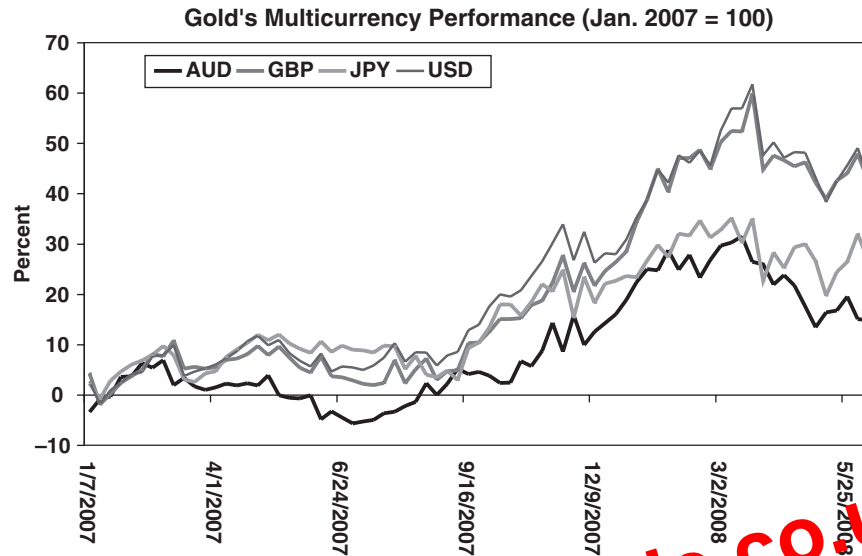
I would first like to express my gratitude to Kevin Commins of John Wiley & Sons, who turned my aspiration of authoring a book into a reality. His command of the markets as well as his flexibility to work through the multi-themed dynamics of this book have proven invaluable for this project. I owe exceptional debt to my editor Emilie Herman, whose patience and understanding of my unfathomable time constraints were vital in maintaining mobility to the book and its frequent revisions. And thanks also to Meg Freeborn and Laura Walsh of Wiley.

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My love and heartfelt gratitude to my parents and sister, Ahmed, Aisha, and Adila, for their love and unconditional support.



**FIGURE 1.6** Gold's performance was weakest against AUD and JPY between January 2007 and May 2008, illustrating the strength of both of these currencies relative to GBP and USD.

yen, which fared significantly better than in Figure 1.5a. The yen's improvement owed primarily to the unwinding of carry trades as traders exited positions in high-yielding currencies and shifted their proceeds back to the lower-yielding yen for safety. Carry trades are discussed in more detail in Chapter 5.

## **GOLD'S SECULAR PERFORMANCE**

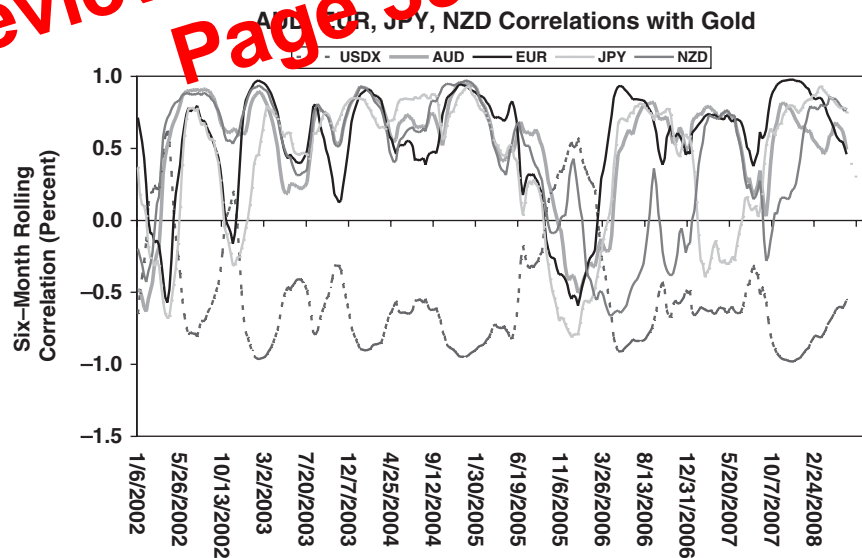
The preceding exercise enabled investors to obtain a clearer picture of currencies' performances by valuing them against gold. Yet we could also aggregate each of the individual currencies' return performance against the price of gold to obtain gold's *total performance* for a specific period.

Figure 1.7 illustrates gold's aggregate annual returns against AUD, CAD, CHF, EUR, GBP, JPY, and NZD from 1999 to 2007 and the first five months of 2008. The chart shows a gradual increase in gold's aggregate annual growth from 1999 to 2001 before slowing the pace of growth in 2002 and 2003. Gold's aggregate growth rate was a negative 8 percent in 2004 before soaring by 239 percent in 2005. Growth was nearly halved in 2006 to 124 percent, then edged up to 145 percent in 2007. Since those returns are

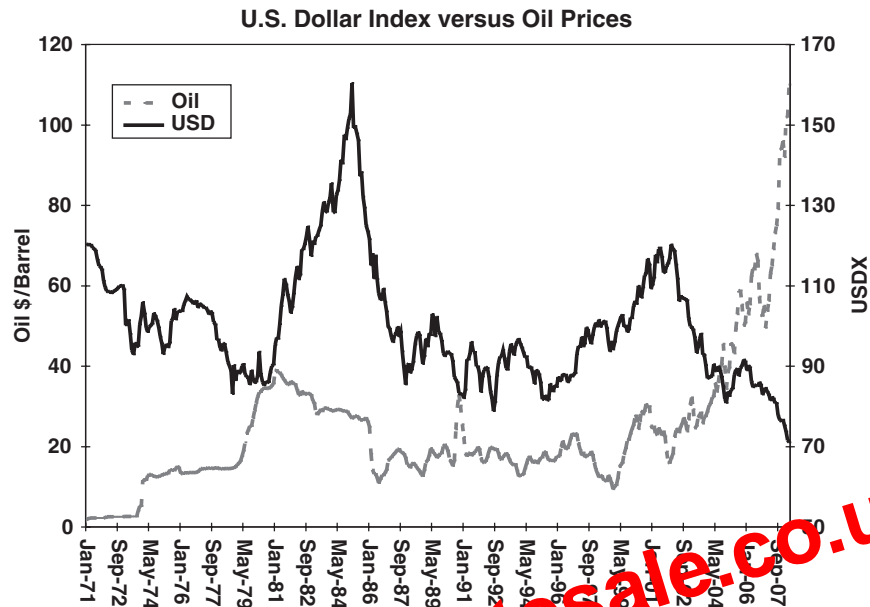
proven to be the most negatively correlated currency against the U.S. dollar due to the fact that EUR/USD is the largest traded currency pair in the foreign exchange market. And because the Eurozone is the world's second largest economy after the United States, its currency is most apt to act as the *anti-dollar*, rallying at the expense of the greenback and selling off to its benefit.

Figure 1.10 illustrates the six-month gold correlations with the dollar index, the aussie, the euro, the yen, and New Zealand dollar from January 2002 to May 2008. The USDX is the only currency with negative territory, illustrating an average rolling six-month correlation of  $-0.53$ . Both EUR and AUD show the highest average positive correlation at  $0.53$  each, with the former acting as the anti-dollar and the latter correlating with its vast mining industry. The JPY had the lowest positive average correlation at  $0.39$ . Notably, NZD's six-month correlation with gold stood at  $0.78$  over the last four months of the measured period. Nonetheless, the *average* of the NZD's six-month rolling correlation from January 2002 to June 2008 stood at a mere  $0.43$ . Any close correlation between the NZD and gold is attributed to the nation's dependence on dairy products as well as lamb and mutton, which have shown considerable proximity to the trend in gold. But the correlation between the agriculture-dependent currency and gold proved insufficient to last through most of the seven-year period.

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**FIGURE 1.10** Gold's correlations are highest with Aussie and Euro.



**FIGURE 2.1** The inverse relationship between the U.S. dollar and oil was most striking during periods of prolonged uptrends or downturns in oil.

oil consumption and production. Finally, we will look at the relationship between the price of gold and oil over the past 30 years and how it helps investors assess the implications for the U.S. economy, interest rates, and the dollar (see Figure 2.1).

### FROM A GOLD STANDARD TO AN OIL STANDARD (1970s–1980s)

The decline in the value of the dollar following the 1971 collapse of the gold-dollar exchange standard set up in Bretton Woods in 1944 played a vital role in fueling the upward spiral in oil prices of the first half of the 1970s.

Recall that during the Bretton Woods period, from 1944 until 1971, central banks converted their surplus dollars into gold in order to adjust for trade imbalances with their trade partners. The conversions were done at the fixed price of gold of US\$35 per ounce. Oil prices, meanwhile, were mostly stable at about US\$3.00 per barrel. But when Richard Nixon shut down the gold window, refusing to pay out nearly \$300 million in ounces of

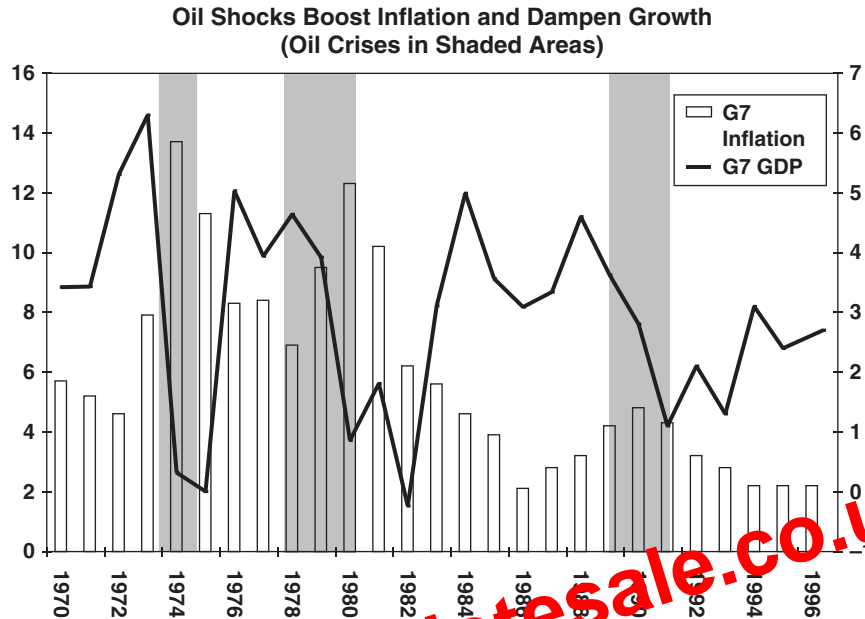
gold to countries holding U.S. dollars, U.S. trading partners were left with mountains of surplus dollars that were no longer exchangeable into gold at \$35 per ounce. Oil producers were forced to convert their excess U.S. dollars by purchasing gold in the marketplace, driving both the fuel and the metal higher and sending the value of the dollar lower.

The resulting devaluation of the surplus dollars around the world was a rude awakening to oil producers who had been receiving gold for their oil since 1933. From January 1971 to July 1973, the dollar index (measured against a basket of six currencies) lost 25 percent of its value, prompting the Organization of the Petroleum Exporting Countries (OPEC) to initiate its first price-boosting campaign. In October 1973, oil became a weapon when Arab oil producers set up an oil embargo against supporters of Israel in the Arab-Israeli war, cutting exports and reducing output by over 25 percent, thus producing the first oil shock in history. By the time the embargo was lifted against the United States in March 1974, oil prices had quadrupled to nearly \$12 per barrel, triggering a global economic slowdown and inflation over the next three years.

In 1975, OPEC agreed to sell its oil exclusively for U.S. dollars, giving the depreciating U.S. currency the new role of world reserve currency and establishing oil as the preeminent energy resource of the world. While the Bretton Woods era of the 1950s to 1970s was known as the gold-backed standard, the 1970s and 1980s ushered in a de facto oil-dollar standard. It is no coincidence that the dollar value of the world's petroleum imports as a percent of total fossil fuel imports fell from an average of 61 percent in the 1950s to 52 percent in the 1960s, before soaring to 70 percent in the 1970s. Unlike in the 1950s to 1960s when oil prices remained steady below \$2.00 per barrel, partly due to the stable dollar/gold relationship of \$35 per ounce, oil prices shot up in the 1970s as a result of the dollar's break from its fixed price against gold.

### **Oil Price Shocks Fueled by Mounting Inflation, Falling Dollar**

Up to this day, many still attribute the quadrupling of oil prices in 1974 to OPEC's oil embargo and its increased political dominance. But in fact, it was the surging inflation of the late 1960s into the early 1970s and the falling value of the U.S. dollar that drove OPEC's decision to raise prices so as to make up for changes in real purchasing power. Recall that the pressure on the dollar escalated as early as the late 1960s when the cost of financing the Vietnam War and the Cold War drove up the balance of payments deficit. As dollars poured out of the United States and liabilities to foreign central banks soared, the world was flush with dollars while the U.S. gold stock was being depleted. Nixon's decision to shut the gold window in August

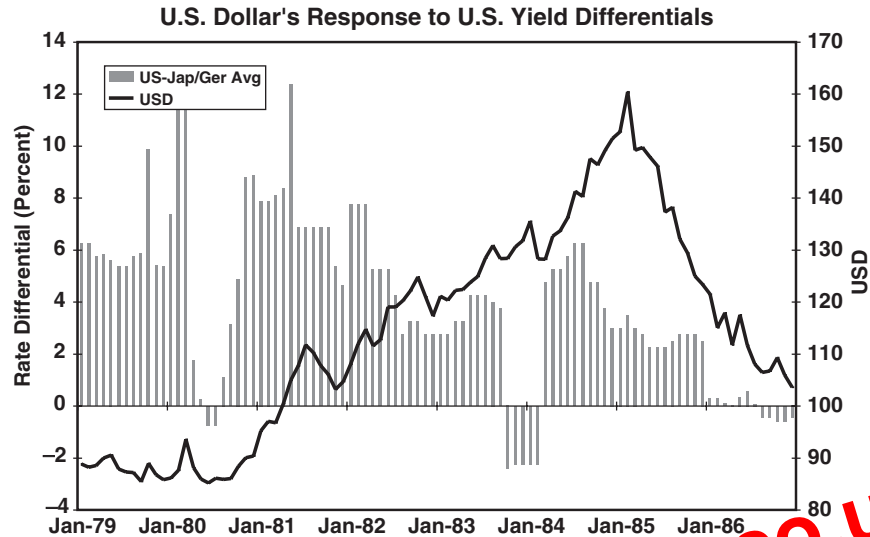


**FIGURE 2.5** The pattern of soaring inflation rates followed by contractionary shocks in G7 economies (United States, Japan, Germany, Canada, United Kingdom, France, and Italy) was consistent throughout the three oil shocks, denoted in shaded areas.

Iran's annual oil production was cut by half, dropping from an average of 19 percent of OPEC's annual production in the first half of the decade to 10 percent of total production in the second half. Figure 2.6 illustrates the 1978–1981 oil price increase resulting from escalating uncertainty in the Middle East, which was followed by a 74 percent plunge in the ensuing six years.

The other main reason for OPEC's concerted price cuts was the gradual collapse of the world economy in 1980–1982. As the dollar began its five-year ascent in the first half of the 1980s, resulting from soaring U.S. interest rates (see next section), falling currencies outside the United States meant rocketing prices of imports from the United States and of higher-priced oil from OPEC. The double whammy of escalating import and oil prices triggered double-digit inflation in Europe and Japan, causing their central banks to embark on aggressive rate hikes at a time of already slowing growth and rising unemployment. The result was an economic slump in the industrialized world, giving rise to an unprecedented six consecutive annual declines in world imports for crude oil between 1981 and 1986. Global demand plummeted and so did consumption. The impact on oil

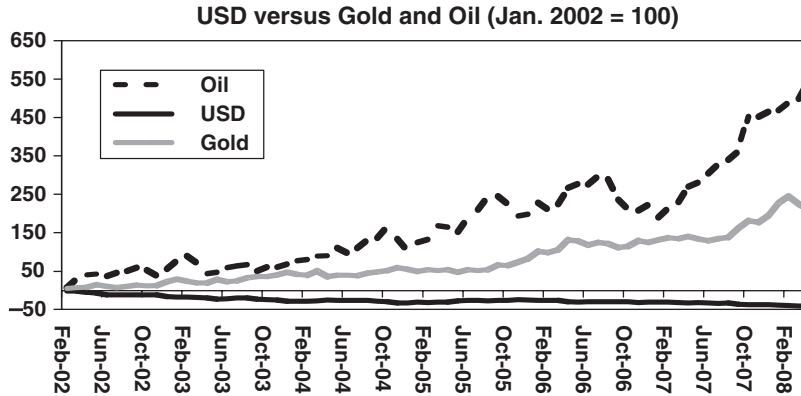




**FIGURE 2.9** The U.S. dollar soared as rapid rate hikes increased appetite for holding dollars. The USD Index is plotted against a graph representing the Fed funds rate minus the average rate of Japanese and West German interest rates.

modest gain against the yen were attributed to the positive impact of Japan's surging exports on its currency and the fact that Japanese rates had ceased falling as fast in the period than had their German and British counterparts.

To the rest of the world, the soaring dollar meant falling currencies and rising inflation. The second oil shock of 1978–1979 was already driving up the oil import bill on world economies. As the dollar strengthened, nations had to spend more of their depreciating currencies to import high-dollar-priced goods. The externally driven inflation forced central banks to maintain interest rates higher than their domestic economies warranted, especially as nations such as West Germany and Japan were tightening their fiscal policies to trim down swelling budget deficits. Already in a campaign to fight the inflationary pressures of soaring oil, West Germany further raised rates from 3.5 percent in 1979 to 9.5 percent in 1980, causing a two-year contraction in economic growth, which included a doubling of unemployment to 2.3 million by 1982. Of the unemployed 32 million in OECD nations, half were from Europe. There was no growth contraction in Japan, largely due to the nation's burgeoning exports industry cushioning the overall economy. But GDP growth did enter the range of a *growth recession*, which is defined as a growth rate below 3 percent.

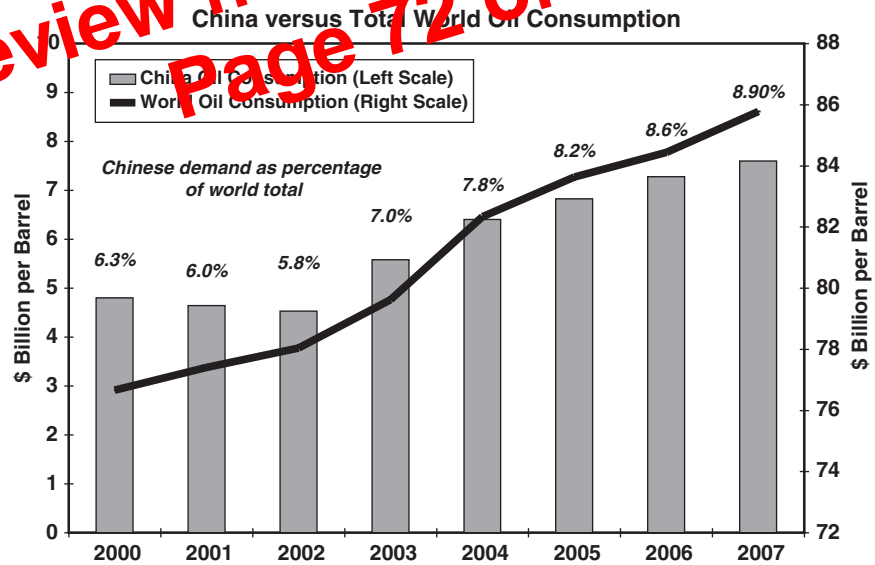


**FIGURE 2.15** The 40 percent decline in the U.S. dollar index during 2002–2007 was closely correlated with the surging prices of oil and gold.

increase of more than \$120 billion in China’s current account surplus gave China the newly acquired status of world’s leading consumer of coal, copper, and iron ore.

China’s growth rate has become synonymous with global demand for commodities. Figure 2.16 shows that China’s oil demand stood at

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**FIGURE 2.16** China’s oil consumption grew from less than 6 percent of the world’s total in 2002 to 9 percent in 2006.

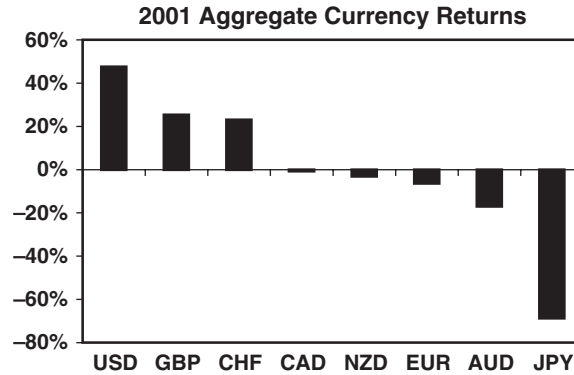
- British pound (GBP)
- Swiss franc (CHF)
- Canadian dollar (CAD), also known as the loonie
- Australian dollar (AUD)
- New Zealand dollar (NZD), also known as the kiwi

Currency returns are based on a yearly percentage return aggregating each currency's bilateral returns against all other seven currencies. These performances are then measured against the backdrop of variables like world, regional, and national GDP growth, interest rates and central bank action, capital flows, current account balances, and commodities markets.

### **1999: Risk Aversion, Bottom Fishing Boosts Japanese Stocks and the Yen**

The year 1999 witnessed the simultaneous recoveries of East Asian and Russian economies following the market crisis of 1997–1998, and the continued boom into the equity markets of industrialized economies. Global fund managers exhibited a high degree of risk aversion toward the emerging markets of Asia, Eastern Europe, and Latin America, opting to capitalize on higher growth in more developed economies. The Japanese yen was the highest-performing currency of 1999 as Japan offered the combination of *industrialized economy* status and cheap valuation, as the country was widely expected to finally recover from its decade-long economic slump. The buy-the-Japanese strategy mobilized massive flows of funds into Japanese equities, propelling up the yen across the board. While the introduction of the euro to currency trading replaced the national currencies of 11 European nations, U.S. equity markets were busy absorbing foreign flows chasing an increasingly solid bull market in high-growth technology stocks. (See Figure 3.1.)

The commodity currencies of Canada and Australia ranked second and third respectively in their rankings as the aussie benefited from high crop and copper prices and the loonie gained from a 134 percent increase in oil prices. Meanwhile, the euro found no other way but down after the currency was inaugurated at an uncompetitive exchange rate against the dollar, yen, and pound, while devaluations of Asian currencies of 1997–1998 exacerbated Europe's already lackluster exports foundation to the Far East. In its first year of trading, the euro registered what would become its worst performance out of the eight years that followed. But the euro was not the worst performer in 1999. The New Zealand dollar held that title due to a swelling trade deficit, falling dairy prices, and a slowing economy. Figure 3.2 provides a summary of how the currencies fared against each other in trading pairs.



**FIGURE 3.9** U.S. dollar retains top position in 2001 as Fed rate cuts are seen as most pro-growth policy among major central banks.



**FIGURE 3.10** U.S. dollar and Japanese yen were on opposite sides of the 2001 return spectrum.

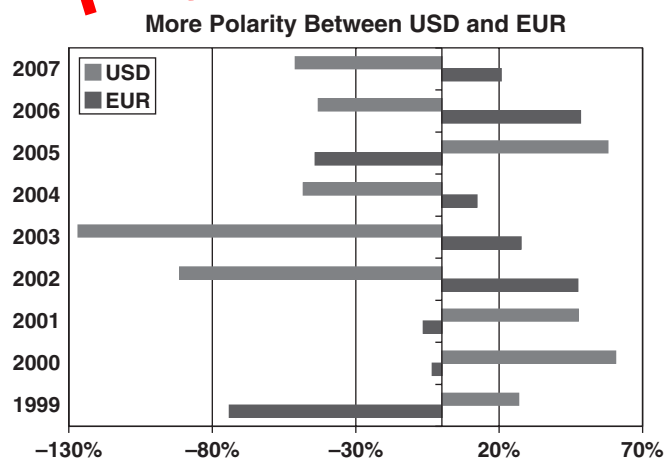
**U.S. Dollar: +48 percent** Contrary to conventional theory stating that currencies are favored by higher yields and vice versa, the U.S. dollar's out-performance of 2001 resulted from aggressive rate cuts, signaling to markets that the U.S. economy may be the first to recover from the global slowdown. Two business days into the beginning of January 2001, the

a green light to sell the dollar, as international trade actions are associated with nations increasing the competitiveness of their products abroad. Also by spring 2002, the European Central Bank had successfully accomplished its mission of ensuring that each of the 13 nations in the Eurozone made a smooth transition into making the euro the legal tender in all commercial and retail transactions in 2002. The ECB allayed public concerns of notes and coins shortages and worries about the spread of counterfeit currency.

In its third year of life, the euro had already cemented its role as the so-called anti-dollar, reacting to each and every dollar-specific development and benefiting from the downtrend in the greenback. Just as the euro suffered from the dollar's solid performances in 2000–2001, it exploited the dollar's woes quite thoroughly. The EUR-USD polarity was already seen in 1999–2000, but was magnified in 2001 and beyond, as the two currencies consistently moved in opposite directions. Figure 4.4 illustrates the persistently opposing directions between the two currencies, with the dollar's outperformance in 1999, 2000, 2001, and 2005 being accompanied by negative euro returns, while the euro's outperformance in 2002, 2003, 2004, 2006, and 2007 was accompanied by negative dollar returns.

The main reason for the EUR-USD duality is related to the growth of trading volumes in the EUR/USD pair. The creation of the euro meant that the EUR/USD pair eliminated trading in individual currency pairs against the dollar, one of which was US dollar/deutsche mark (USD/DM), which accounted for 22 percent of global foreign exchange

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**FIGURE 4.4** The diverging paths of the dollar and the euro reflect the increased duality between the two currencies.

turnover in 1995. In 2004, trading in the EUR/USD pair accounted for 28 percent of all transactions, compared to 17 percent and 14 percent for USD/JPY and GBP/USD. In 2007, the share slipped to 27 percent, but it remained clearly the top traded pair versus 13 percent and 12 percent for USD/JPY and GBP/USD.

The euro's dominance in the U.S. Dollar Index, a futures instrument traded at the New York Board of Trade, also explains the polarity between the two currencies. The euro's weight in the six-currency index is 57.6 percent, followed by the JPY, GBP, CAD, the Swedish krona (SEK), and CHF at 13.6 percent, 11.9 percent, 9.1 percent, 4.2 percent, and 3.6 percent respectively.

The other reason for the EUR/USD polarity is the euro's potential to threaten the dollar's role as the world's reserve currency. In 1999, the euro's share of global foreign exchange reserves stood at 25 percent versus over 70 percent for the U.S. dollar. In 2002, the euro's share edged up to over 26 percent. Meanwhile, more central banks have already started diversifying their currency holdings, including more euros as a percentage of reserves at the expense of the U.S. dollar. Later in this chapter we consider how this relationship is maintained during both positive and negative phases for the two currencies.

#### **British Pound — 4 percent**

Sterling's cumulative return against the seven major currencies was negative due to losses against NZD, EUR, and CHF, but gains elsewhere were partially a result of the currencies' losses against European currencies. The year 2002 was the only year when the Bank of England made no change in interest rates since the central bank gained independence in May 1997. It was also the only central bank besides the constrained Bank of Japan to hold rates unchanged in 2002. GDP growth rate slowed further, reaching 2.1 percent from 2.4 percent in 2001.

One noteworthy development weighing on GBP in late 2002 was that of geopolitics. As then British Prime Minister Tony Blair stepped up his support for a U.S.-led attack in Iraq, the UK position began to weigh on sterling as the market punished currencies whose nations were pursuing an increasingly isolated pro-war position. Aside from the economic costs of a prolonged involvement in the war, participating countries were at risk of reprisal and terrorist attacks on their own soil. In November 2002, the United Kingdom was the only G7 nation and permanent member of the UN Security council supporting the United States in drafting a UN resolution supporting war. Sterling's tenuous position was exacerbated when Prime Minister Tony Blair faced heightened opposition by his own party and the majority of the British public.

exports and a falling trade surplus dragged GDP growth from 2.5 percent in 2001 to 2.3 percent in 2002.

### U.S. Dollar: –91 percent

The aforementioned shift of currency policy by the Bush administration toward that of a benign neglect (indirectly encouraging a dollar decline) as well as the imposition of trade tariffs on foreign steel producers was a green-light signal to sell the U.S. dollar regardless of fundamentals in other economies. The Fed cut rates by 50 bps to 1.25 percent, while the broad equity indexes tumbled to five-year lows on a combination of continued fallout from overvalued valuations in technology and escalating news of corporate malfeasances such as Enron, WorldCom, and Arthur Andersen.

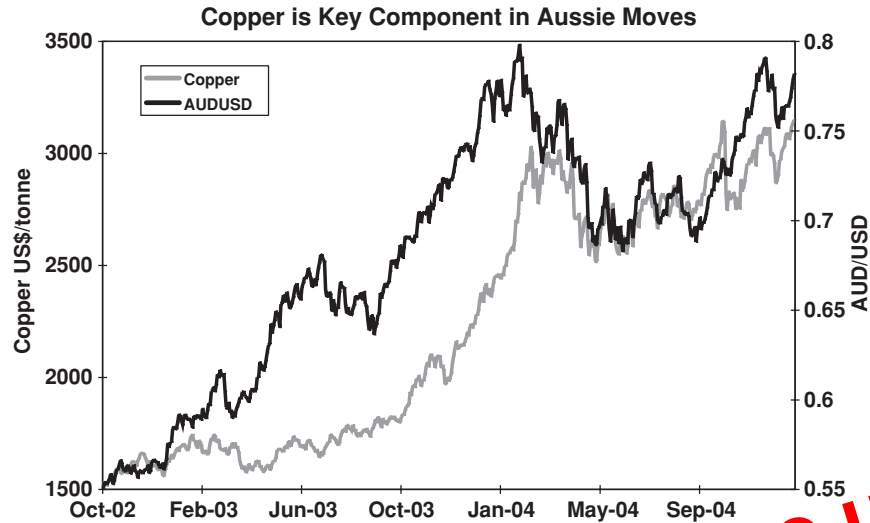
### 2003: DOLLAR EXTENDS DAMAGE, COMMODITY CURRENCIES SOAR

The major differences distinguishing the global economic/market environment surrounding the 2003 dollar sell-off from that of 2002 were (1) the breadth of the commodity rally; (2) increased geopolitical uncertainty weighing on the U.S. dollar and U.S. assets after the outbreak of the Iraq war; and (3) deteriorating budget deficit and current account deficit balances. Prolonged interest rate cuts by the Federal Reserve to a 45-year low of 1 percent also accelerated the dollar decline and boosted commodities as the Fed vowed to inject the liquidity to allay the risk of deflation. This readiness to debase the currency via aggressive rate cuts and injection of liquidity was likened to dropping money from helicopters, a metaphor that would earn its author, former Fed Board governor Ben Bernanke, the moniker “Helicopter Ben.” The Fed’s so-called *reflationary* monetary policy—boosting liquidity to lift inflation above zero—was a significant negative for the U.S. dollar and a windfall for commodities as investors fled the low-yielding currency for the high-growth commodities as these appreciated against their principal invoicing currency.

The September 2003 G7 meeting in Dubai proved a highly eventful development for currency markets, when the seven most powerful economies urged China and Japan to refrain from intervening by maintaining their competitive currencies. The reaction to the unusual request was a rapid decline in USD/JPY, which is explored later in this section under JPY.

The three major commodity currencies—AUD, CAD, and NZD—were the top three performers on a cumulative return basis in 2003, returning their biggest gains versus the dollar at 34 percent, 18 percent, and

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**FIGURE 4.7** Copper prices are instrumental in aussie price action.

#### Australian Dollar: +122 percent

Although Australia's GDP growth slowed to 3.1 percent in 2003 from 4.1 percent in 2002, the aussie rallied aggressively as China, the world's largest importer of copper, stepped up its demand, benefiting Australia, the world's largest copper exporter. The resulting 45 percent increase in copper prices prompted currency traders to automatically bid up the aussie, lifting it against all seven other currencies, while taking advantage of the USD's woes and dragging it down by 34 percent. (See Figure 4.7.) Ultimately, 2003 was a year with a rare triple boost for the Aussie:

- Reserve Bank of Australia (RBA) hikes rates to two-year high.
- Fed cuts rates to 45-year lows.
- Copper rallying to multiyear highs.

In trade-weighted terms, the aussie reached its highest since January 1989.

#### New Zealand Dollar: +63 percent

The price acceleration in agricultural raw materials and food items of 3.7 percent and 5.2 percent following 1.8 percent and 3.4 percent gains in



investors were willing to chase the higher-yielding kiwi as a carry-trade investment. Carry trades involve borrowing funds in low-yielding currencies such as JPY and CHF and investing the proceeds in higher-yielding currencies. Consequently, investors reap the benefit of the interest rate differential as well as the appreciation of the target currency. As we shall see in subsequent chapters, carry trades can involve investing not only in high-yielding currencies but also in high-growth assets such as appreciating stock indexes, gold, and oil.

Rising commodities was another factor behind the soaring kiwi. Prices of nonfuel commodities rose 18.5 percent in 2004 after 6.9 percent and 1.7 percent in 2003 and 2002, respectively. Food prices rose 14.3 percent after 5.2 percent and 3.4 percent, while prices for agricultural raw materials increased 5.5 percent from 3.7 percent and 1.8 percent. With over 50 percent of New Zealand's exports coming out of the agriculture sector, and with dairy products accounting for 20 percent of total exports, the continued price growth was a clear windfall for the nation's GDP growth and currency. The currency was also boosted by the growth rebound in the newly industrialized Asian economies (NIAEs), attaining 2.4 percent GDP growth rate after 3.5 percent in 2003.

#### **Swiss Franc: +19 percent**

Though not spectacular, the cumulative returns of the Swiss franc were sufficient to place it in second position in the 2004 ranking due to a robust export-led recovery following the 2003 recession. GDP growth rose to 2.5 percent from 1.2 percent, while growth in its major trading partners, the Eurozone and the United Kingdom, rose to 2.0 percent from 0.8 percent and to 3.3 percent from 2.8 percent. Battling the risk of deflation, the Swiss National Bank held rates unchanged, which increased demand for currency deemed to have been undervalued, relative to the nation's GDP growth rate.

#### **Euro: +12 percent**

Although its returns were well below those of the strong cumulative gains of 47 percent and 28 percent in 2002 and 2003, the euro managed to rank third-best performer in 2004 with a 12 percent cumulative gain versus the other seven major currencies. Gaining from a jump in GDP growth to 2.0 percent from 0.8 percent in 2003, and from the absence of ECB policy tightening, the euro accumulated a strong boost of confidence in its sixth year of operation. Bank of France president Jean-Claude Trichet's assumption of the ECB presidency in November 2003 added a vital vote of confidence to the young central bank due to his proven record as a credible

for carry trades, appreciating 10 percent against JPY and CHF. At some point in January, the kiwi soared to a 14-year high against the U.S. dollar before the Fed rate hikes triggered a broad run-up in the greenback.

### **Australian Dollar: +11 percent**

The aussie managed to stand out as a net gainer in 2005 as the Australian economy struggled to recover from the housing correction. Although GDP growth had slowed from 3.7 percent in 2004 to 2.8 percent in 2005, the aussie benefited from a 76 percent increase in copper prices as China stepped up its consumption of minerals and commodities with the help of its appreciating currency. And despite slowing GDP growth in Australia and the NIAEs, the bulk of the aussie's gains were a result of broadening carry trades as the RBA raised rates to 5.50 percent. The central bank kept the door open for further tightening as inflation rose to 2.7 percent from 2.3 percent.

### **British Pound: –22 percent**

The sterling's declines were largely a result of fears that the 10-year-old housing bubble was finally about to burst. The slow down of 2004 grew more pronounced in 2005, and annual home price growth hit its lowest in nine years. While month-to-month rates were showing declines, the sterling's losses were magnified by the fact that the Bank of England was the only central bank among those analyzed to have cut interest rates, which proved to be a pausing outcome in a year when FX speculative flows thrived on carry trades. Sterling's worst performances were against the CAD and USD and –13 percent and –10 percent respectively.

### **Euro: –44 percent**

The euro sustained its first decline in three years as a result of weak Eurozone growth, political uncertainty, and the euro-dollar duality obtaining the best of the single currency. Eurozone France's rejection of a proposed European Union Constitution dealt a blow to confidence in the European Union and the future of its currency, especially with France being the second-largest economy of the Eurozone. The rejection raised questions about the political unity of the Eurozone, adding to speculation that some member-nations would exit the currency area and trigger a crisis of confidence in the seven-year-old currency. The slowdown in Eurozone GDP growth to 1.5 percent from 2.0 percent as well as that in the United Kingdom and Switzerland also weighed on the region's net external trade.

The euro-dollar polarity was once again in play, as gains in one currency shed losses in the other. The euro's dominance in the U.S. Dollar Index caused the polarity between the two currencies. The euro's weight in the six-currency index is 57.6 percent, followed by the JPY, GBP, CAD, SEK, and CHF at 13.6 percent, 11.9 percent, 9.1 percent, 4.2 percent, and 3.6 percent respectively. As the dollar rallied strongly against most currencies, the euro took the short end of the stick.

### Swiss Franc: –55 percent

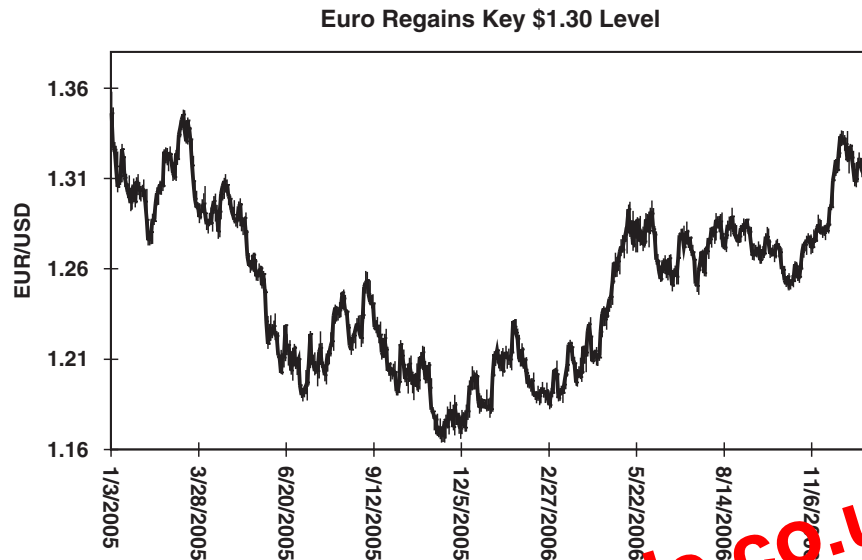
The low-yielding CHF was hit across the board as 2005 marked an escalation of carry trades, with investors showing risk appetite in leveraging their trades in high-yielding assets by borrowing in lower interest rate CHF and JPY. The Swiss franc's woes were magnified by the fact that the Swiss National Bank had kept rates unchanged around their 0.75 percent target since July 2002 while the rest of major central banks—other than the Bank of Japan—had pushed rates higher. As global growth picked up and equity indexes recovered to five-year highs, investors developed higher risk appetites, using low-yielding currencies as funding vehicles.

### Japanese Yen: –53 percent

The Japanese yen fell 14 percent in the re-weighted terms, the biggest decline on record. The 57 percent cumulative decline against the group of seven currencies was the second biggest in this 1999–2007 period as investors borrowed in ultralow Japanese interest rates to finance higher-yielding investments. Such investments included currencies with higher interest rates and those with the greater potential for appreciation without necessarily any substantially high interest rates, such as CAD, whose rates were lower than those for USD, GBP, NZD, and AUD (see Figure 4.14).

## 2006: DOLLAR VULNERABLE AS FED ENDS TWO-YEAR TIGHTENING

The conclusion of the Federal Reserve's two-year tightening campaign in summer 2006 was one of the most important developments in financial markets, as investors braced for the policy implications of the deteriorating U.S. housing market. No longer obtaining a boost from Fed rate hikes and repatriation flows, the U.S. dollar gave back most of its 2005 gains to end among the big losers in 2006. (See Figure 4.15.)



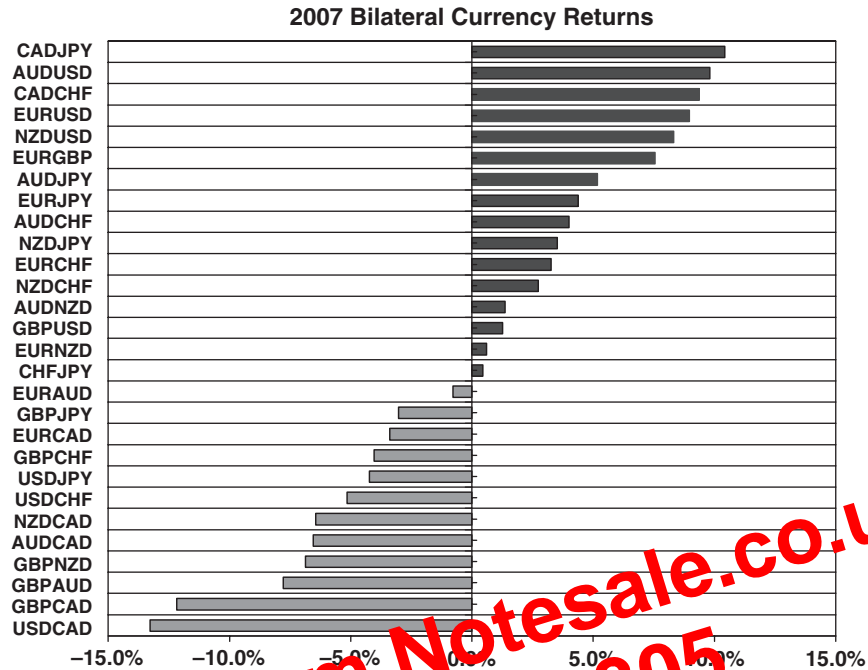
**FIGURE 4.17** The euro regained the psychologically important \$1.30 level in October 2006 on reports that German growth would surpass that of the United States.

counterpart and the ECB maintaining its preoccupation with rising inflation. Markets anticipated more ECB rate hikes and prolonged narrowing in the U.S. yield advantage.

The euro also benefited from increased speculation that global central banks would reduce their buildup of USD-denominated currency reserves in favor of the euro. (See Figure 4.17.) China's central bank had already reduced the proportion of its USD reserves from over 90 percent in 2000 to less than 70 percent in 2005. Central banks from Arab Gulf nations made several statements signaling their willingness to diversify reserves into non-USD currencies and gold. Chinese officials also made comments about the need for reserve diversification. Although such pronouncements meant that central banks would slow their future accumulation of U.S. dollars, rather than dump their U.S. reserves, they triggered various bouts of selling in the greenback.

### Australian Dollar: +21 percent

The aussie's strong 2006 performance emerged on the heels of a continued favorable environment for commodities prices, robust GDP growth, falling unemployment, higher interest rates, and rising inflation. An emerging drought pushed up prices of wheat by over 50 percent, boosting



**FIGURE 4.19** The euro's presence among the commodity currencies in the top performers of 2007 reflects its broadening trend.

(CAD, AUD, and NZD) were clearly in command in the ranking of currencies' performance against gold, no currency registered any gains versus the metal, illustrating the secular rally in gold and other commodities. (See Figure 4.19.)

### Canadian Dollar: +62 percent

Record levels in oil prices gave the Canadian dollar a cumulative 61 percent return against the seven major currencies, as energy exports made up over 20 percent of total exports and 10 percent of GDP. Crude oil soared 60 percent to a new all-time high of \$96 per barrel, propelling the CAD to 50-year highs against the USD, 14-year highs against GBP, and 6-year highs against EUR. Especially favorable for the CAD were continued signs of expansion in Canada's economy despite the sharp slowdown south of the border. Canada's unemployment rate dipped to a 33-year low of 5.8 percent, while GDP growth rate cooled to 2.5 percent from 2.8 percent. The Bank of Canada raised rates on one occasion to a six-year high of 4.5 percent. The

## CHAPTER 5

# Risk Appetite in the Markets

Managing risk has become an increasingly integral part of the risk/return trade-off in financial markets over the years as participants seek to improve the profitability of their investments while attempting to reduce their downside. Increasing risk can adopt one of the following forms: (1) concentrating assets in securities with similar risk/return attributes; (2) holding securities with the probability of high rates of return and correspondingly high probability of losing the initial investment; (3) selling securities with relatively high volatility or variability of returns; and finally, (4) borrowing funds with the intention of enhancing the rate of return at the risk of magnifying the potential of a loss.

The latter type of investment risk is most relevant to this chapter as it involves risk appetite in the way funds are raised and where they are invested. *Speculation* may be more apt to describe this type of endeavor due to the high potential of losing all of one's initial capital in a relatively short period of time as well as the use of borrowed funds. Yet, regardless of the likelihood of recouping one's initial investment, the principal idea is underlined by the notion of minimizing the use of one's own funds with the hope of maximizing the rate of return.

The following example can be used to illustrate risk appetite relevant to this chapter. Let's say Jane purchases 200 shares of a pharmaceutical company priced at \$50 each with the intention of selling them in two weeks based on her expectation of a favorable ruling by the Federal Drug Administration. Jane evaluates two options to go about her \$10,000 investment: (1) Use her own funds to pay \$10,000 for the shares, or (2) borrow \$10,000 from a bank at a 7 percent interest rate repayable in one year. Assuming the

providers have been around. The same principal is also the basis of currency carry trades, whereby hedge funds, asset managers, or individuals borrow funds in low-yielding currencies (funding currencies) to convert and deposit the proceeds in bonds or certificates of deposit in higher-yielding currencies, aiming to reap the return from the interest rate differential. An extra return can be obtained during the appreciation of the high-yielding currency, while in other cases the currency depreciation is greater than the interest rate differential, making the carry trade a losing investment. The two components on which carry trades rest are therefore currency- and yield-related.

Carry trades are also used in bond investing within the same currency by borrowing (selling) bonds at short-term interest rates to finance the purchase of long-term bonds at higher rates. The difference between the coupon received from the higher-yielding bond and the interest cost paid on the shorter-term bond is called the *carry return*. The downside risk entails an unexpected decline in the price of long-term bonds (and rising long-term interest rates), and a rise in the price of short-term bonds (falling short-term rates). As investors unwind these positions (i.e., sell their holdings of long-term bonds and repay their short-term borrowing), they accelerate the decline in the price of long-term bonds, exacerbating the rise in their yield and triggering the opposite reaction in the price and rates of short-term bonds.

Let's return to carry trades in currencies. Suppose an investor borrows 100,000 yen from a Japanese bank at 0.70 percent interest and deposits the proceeds in a U.S. dollar-denominated 10-year government bond worth \$1,000, paying 4.3 percent interest. The investor stands to make 4.3 percent from the interest differential plus or minus the exchange rate risk. If the U.S. dollar appreciates by 5 percent over the duration of the investment, the investor makes 9.3 percent (4.3 percent yield differential plus 5 percent currency gain). If the dollar loses 5 percent against the yen, the investment nets a loss of 1.3 percent (4.3 percent yield differential minus 5 percent currency loss).

This example illustrates that currency carry trades have interest rate and currency elements. While higher interest rate differentials play a major role in spurring interest in carry trades, the potential for currency appreciation or depreciation is also essential in sustaining the viability of the trade.

Such a straightforward investment endeavor is the basis of hundreds of billions of dollars worth of daily carry trades by foreign exchange dealers, proprietary traders, and hedge fund managers. As these players aim at reaping the gains from the interest rate differential, they tend to leverage their positions to magnify their returns from what appears to be an assured investment. Accumulating over \$2.3 trillion in daily turnover,

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## USING RISK APPETITE TO GAUGE FX FLOWS

The aforementioned cases illustrate the straightforward nature of carry trades. Borrowing in lower-yielding currencies to invest in higher-yielding currencies requires a sufficient interest rate differential and/or appreciation of the target currency. As will be seen later in this chapter, carry trades are also used to invest in higher-yielding assets, beyond interest-bearing accounts denominated in foreign currencies. Such alternatives can be equities, commodities, or even real estate. But, as we also have seen, regardless of the target investment, investors will always run the risk of sustaining a decline in the value of the target currency (currency risk), a rise in the funding currency, or a decline in the interest rate differential (yield risk).

As was seen in the first example in this chapter, Jane's purchase of the pharmaceutical firm's shares would have been riskier had it been via credit from a bank rather than using her own funds. Just as she bore the risk of a decline in the price of shares, carry trade investors bear the risks of a falling yield, a declining target currency, and/or a rising funding currency. In both cases, the investor exhibited a desire for risk in order to reap the rewards of an increase in the stock price, currency, and yield differential.

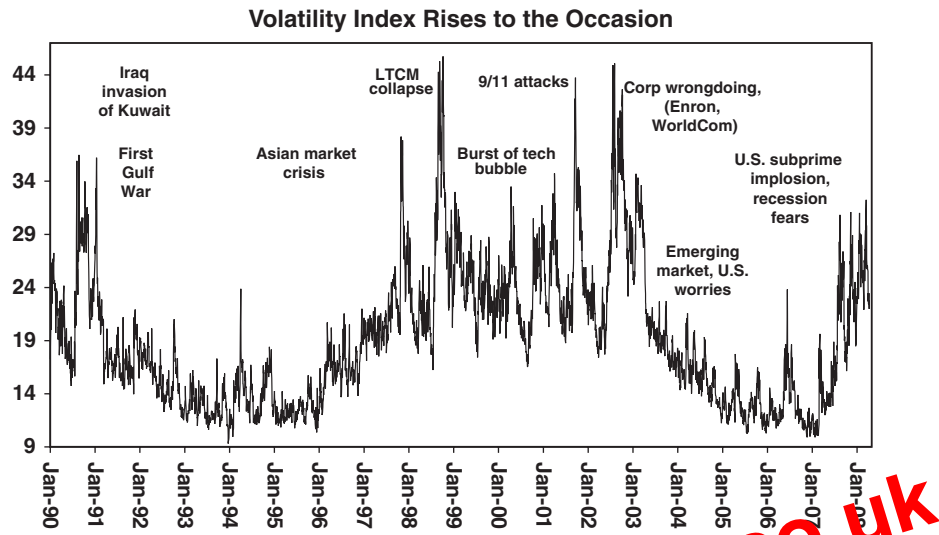
Understanding in various gauges of risk appetite is essential in grasping the dynamics dictating currency movements in the short and medium term. Once these dynamics have escalated near excess levels, one can become prepared for an unwinding of these positions and a potentially speedy unwinding of carry trades. The four measures most often used as yardsticks in assessing risk appetite shaping currency markets are (1) equity indexes, (2) the volatility index (VIX), (3) speculators' futures commitments, and (4) corporate bond spreads.

### Equity Indexes

Equity markets can serve as a basic and straightforward yardstick of risk in financial markets during periods of sudden sharp losses, protracted declines, or frequently recurring selling. Such cases reflect eroding market confidence arising from worries about the economy, negative geopolitical events, and mounting systemic risk.

During the U.S. trading session, the S&P 500 Index is the preferred gauge of equity markets due to its broad coverage of the market. Although it focuses on companies with large capitalization, the index covers about 75 percent of U.S. equities, making it a suitable proxy for the total market. After 4 P.M. Eastern Time, traders can use equity futures as an indication,



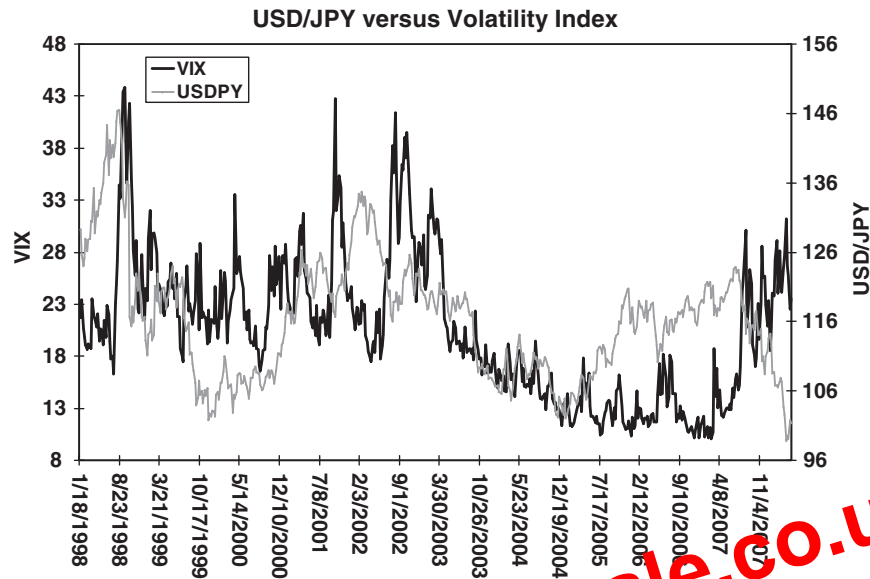


**FIGURE 5.7** The VIX rallied during all major risk-triggering events.

the S&P 500 or the Nikkei-225 can be useful in detecting significant developments, which may trigger similarly important moves in currencies. But the main advantage of the VIX over equity indexes is its use as a benchmark reference for risk, hence offering a neutral perspective on market risk and a benefit without referring to the price equities, and therefore the ability to pinpoint how sell-offs or rallies evolve.

Say, for instance, that stocks are falling across the board, down 2.5 percent. A greater and more useful perspective would be added to the moves in the event of a 2 to 3 percent jump in the VIX. But if the same equity developments are accompanied by more modest gains in the VIX, then there may be little inferred from the pullback in equities. The fact that the VIX is expressed in percentage terms allows it to be distinguishable and easily comparable to previous highs or lows regardless of time.

**Using VIX in Exposing Complacency** While much has been said about the efficacy of the VIX to expose rising fear in the market, the index also deserves at least the same amount of ink spilled for its ability to expose rising risk appetite, sometimes also known as rising complacency. Figure 5.8 illustrates how the most prolonged periods of relatively low volatility coincided with a phase of rising equities, characterized by rising bullishness and heightened investor confidence in the stock market. These phases are prominently identifiable in August 1998, January 1999 through February 2000, and May 2003 through January 2007.

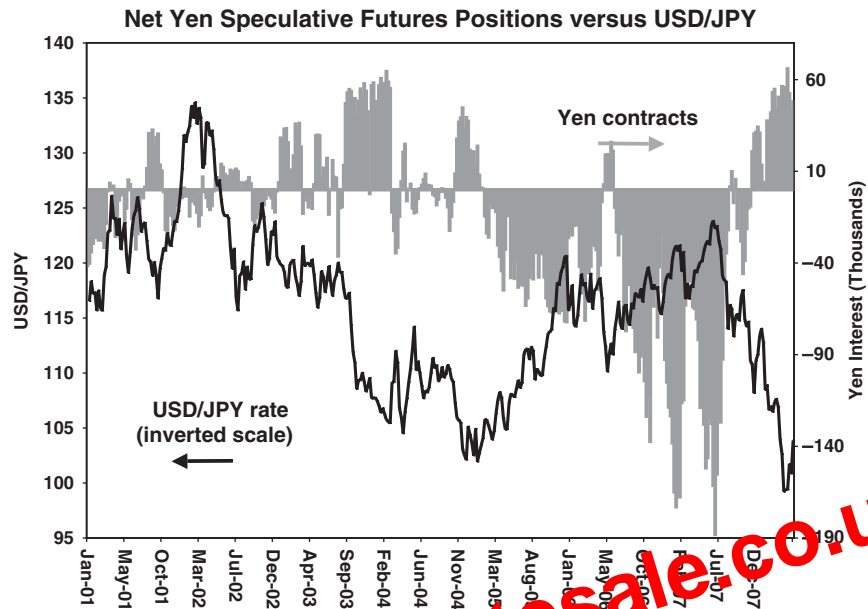


**FIGURE 5.9** USD/JPY and VIX hand in hand as yen is sold against the dollar to scale up on risk appetite.

with the exception of the European Central Bank and Bank of Japan had begun raising interest rates following the easing campaign of 2001–2003. As they announced rate hikes, the Federal Reserve, Reserve Bank of Australia, and Reserve Bank of New Zealand were signaling further increases as part of their commitment to contain inflation. This further emboldened investors to reap the widening interest rate differential relative to the paltry 0.25 percent in Japan.

By the end of 2006, interest rates in the United States, Canada, Australia, New Zealand, and the United Kingdom were raised to 5.25 percent, 4.25 percent, 6.25 percent, 7.25 percent, and 5.00 percent respectively. Even the European Central Bank and the Swiss National Bank had joined the global tightening campaign, lifting their rates to 3.5 percent and 2.00 percent respectively.

Eventually, in July 2006, the Bank of Japan delivered its first rate hike in six years, raising the benchmark overnight rate target to 0.25 percent from 0.15 percent, a decision that had minimal effect in staving off speculators from selling the yen after the central bank had widely telegraphed the rate change that was long overdue. Traders were especially enthusiastic in opening fresh yen carry trades as officials from the Japanese government and central bank talked down the currency extensively so as to



**FIGURE 5.12** Fed hikes in 2004–2006 affected USD/JPY gain by lifting interest in short JPY contracts versus USD. As volatility surged in 2007, JPY shorts turned to net longs, dragging USD/JPY lower.

The low-yielding Swiss franc is another currency used for funding carry trades and is thereby subject to considerable gains during the unwinding of carry trades. Figure 5.13 highlights the deviation of commitments in the yen and the Swiss franc (“swissy”) from commitments in other currencies between January and September 2007 as JPY and CHF were sold to finance the rise in equities and risk appetite. This explains why excessive gains in equities are accompanied by extensive shorts in the yen and swissy, which calls for cautiousness ahead.

The relationship between risk appetite and the low-yielding CHF and JPY stands out in Figure 5.14 with the two currencies plotted against the VIX. In 2004–2007, market volatility fell to multiyear lows, reflecting heightened investor confidence in global equities. As a result, both CHF and JPY were sold to finance carry trades in higher-yielding currencies and higher-return investments such as equities.

One drawback to using futures speculators’ commitments report is the one-week lag of the data and, hence, the possibility of falling behind the trend and chasing a runaway market. Yet in fact what may be a drawback could be turned into an advantage if one were to look for a breaking point and a reversal in the trend. Say, for instance, that net yen shorts

and bank reserve requirements. The longer end of the yield curve is partly determined by the auctions that governments use to make the initial sale of 5- to 30-year bonds to banks. Once these bonds are resold in the secondary market, their supply and demand determines prices and yields.

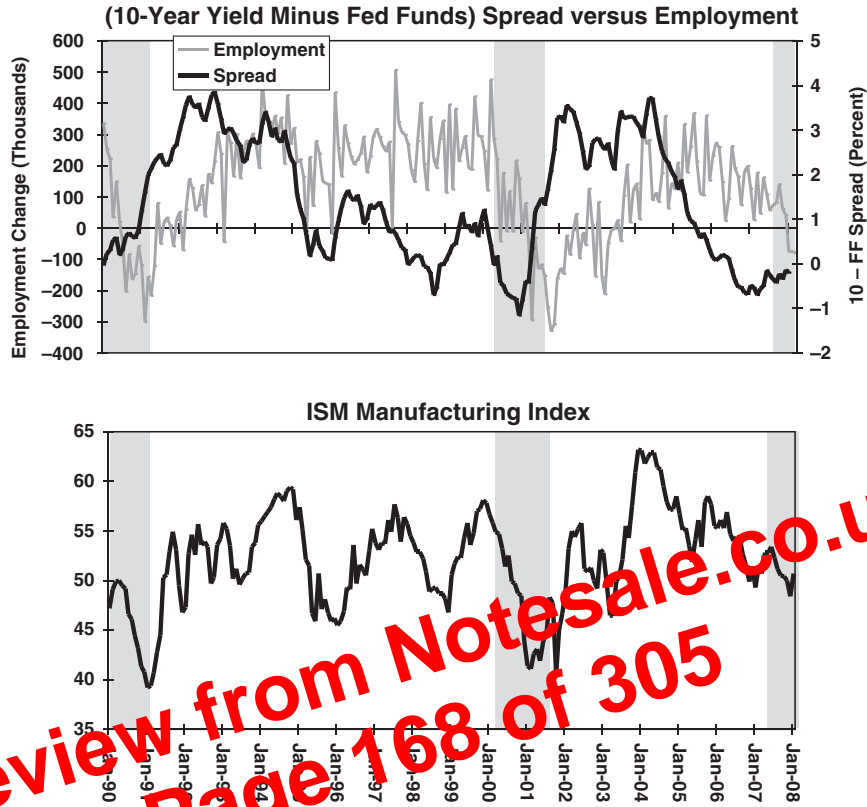
Bonds are also determined by traders' assessment of the economy, with inflation being the main economic determinant of their price and yield. Rising expectations of inflation or an actual increase in inflation outstrips the fixed income of bonds' coupon payments, thereby reducing the value of the bonds and boosting their yield to maturity. The same applies during releases of stronger than expected economic reports, which increase the risk of inflation. Conversely, falling inflation and/or weak economic reports are usually favorable for bond prices and negative for their yields.

Since graphic illustrations of yield curves are not always readily available to investors, the shape or steepness of the yield curve can be easily determined by the difference between selected short- and long-term interest rates. A popular measure is the difference between yields on 10- and 2-year government securities, known as the 10-2 spread. In the case of the United States, another viable measure is the difference between the Fed funds rate and the 10-year rate, where the Fed funds rate is the overnight rate charged between commercial banks.

#### TYPES OF YIELD CURVES

Due to the time value of money, bonds with longer maturities pay higher interest rates than bonds with shorter maturities. Creditors willing to lend funds for longer periods of time will demand higher interest rates than those willing to lend for shorter durations. As a result, the shape of the yield curve is positively or upward sloping. Figure 6.1 illustrates an upward-sloping or normal shaped curve dated July 18, 2007, and a less steep or flatter yield curve on June 6, 2007. Upward-sloping yield curves have normally preceded economic expansions as bondholders demand a higher rate of return from the inflationary risks accompanying economic upturns. In this case, however, the buildup of the upward-sloping curve in July 2007 was a result of worsening economic conditions, which were priced in the flatter yield curve. As markets fell and the risks of an economic downturn accelerated, bond traders sent short-term rates lower, pricing in coming Fed cuts.

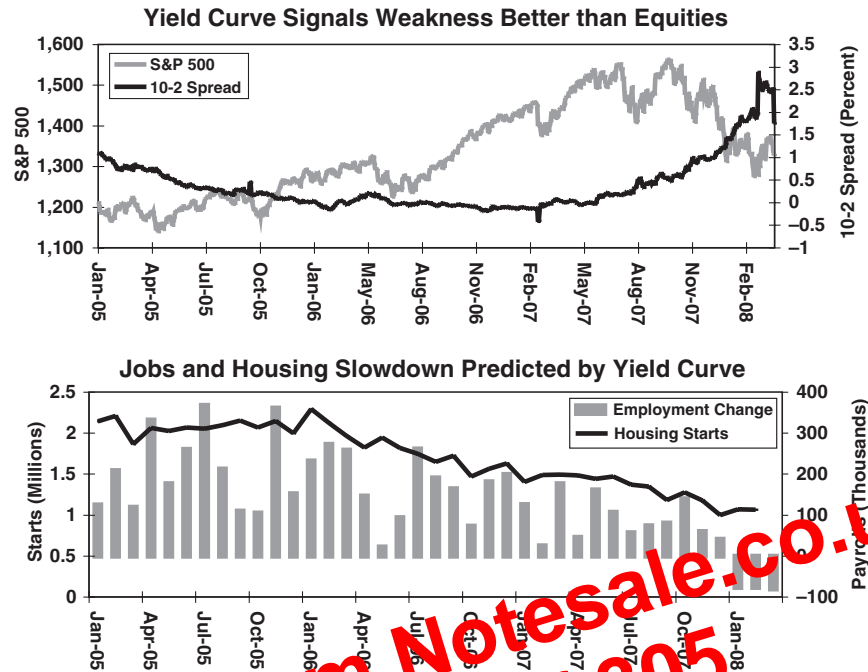
Flat yield curves usually signal an approaching economic slowdown or expansion, depending on which stage of the economy had initially prevailed. As the economic expansion prevailing over a steep yield curve takes hold and the Federal Reserve raises interest rates, the short end of the curve shifts upwards. Figure 6.2 shows such an example when a flat yield



**FIGURE 6.5** Yield curve's track record is validated by developments in employment and manufacturing.

Source: Federal Reserve Bank of San Francisco Economic Research Department (<http://www.frbsf.org/publications/economics/et/index.pdf>).

The relatively low rate of appreciation in long-term interest rates despite the Fed's rate hikes and aggressive talk against inflation was referred to by former Fed chairman Alan Greenspan as a "conundrum" during his late days in office before his departure in February 2006. Greenspan then introduced an explanation that was later expounded on by his successor, Chairman Ben Bernanke. They postulated that the decline in long-term interest rates stemmed from the global savings glut accumulated by developing nations as a result of the growing U.S. current account deficit, which was partly boosted by a deteriorating trade deficit, rising domestic consumption, and negative savings. As the U.S. current account deficit soared from \$300 billion in 1999 to over \$800 billion in 2006, the imbalance was increasingly translated into rising surpluses in developing countries. The

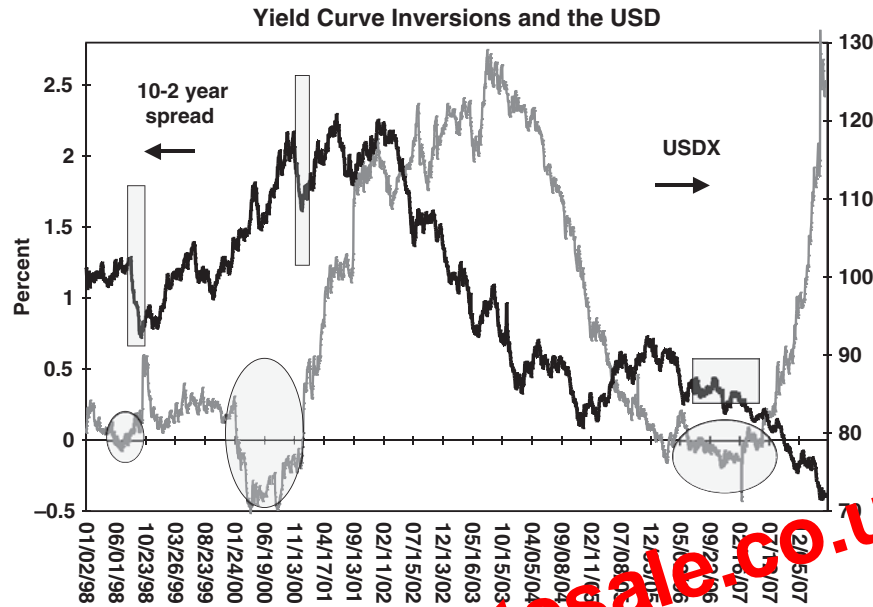


**FIGURE 6.7** Yield curve is more robust predictor of economy and helps detect stocks-economy divergences.

new heights, jobless claims soared, and risk appetite pushed carry trades to new heights at the expense of multiyear lows in the Japanese yen. Meanwhile, housing-related indicators continued to deteriorate, with new home sales tumbling 25 percent over their prior year levels, monthly construction employment dipping under its three-month average, while building permits and housing starts tumbled 25 to 30 percent over their prior year levels to reach their worst levels in 10 years.

In July 2007, financial markets eventually gave in as credit rating agencies downgraded tens of billions of securities, which were backed by loans and mortgages with poor credit quality. Hedge funds announced losses of 30 to 40 percent in a single month, while others closed shop as they eroded clients' money. In August, market interest rates soared as credit institutions lacked the confidence to lend and borrow, bringing interbank lending to a virtual halt. Broad equity indexes registered weekly declines of 4 to 7 percent, while the VIX index soared to levels not seen in four years.

Just nine days after the Federal Reserve announced holding rates unchanged at 5.25 percent and described rising inflation as its "predominant



**FIGURE 6.8** Yield curve inversion has generally signaled dollar weakness as short term yields weaken relative to long term yields.

markets' expectations for a looming Fed cut, which start to drive down short-term yields (two-year yields) toward longer-term rates (10-year yields). As these yield developments are manifested into the market, currency traders begin selling the dollar on the argument that lower U.S. rates will erode the dollar's yield differential with other currencies.

Table 6.1 dissects the currency and stock market impact of yield curve inversions from a timing perspective. The U.S. economy slipped into

**TABLE 6.1** Timing of Dollar Peak, Stocks Peak, and Rate Cuts from the Start of Yield Curve Inversions

Yield Inversion	Time Elapsed for Peak of USDX after the Inversion	Time Elapsed for Peak of S&P 500 after the Inversion	Time Elapsed for Start of Rate Cuts after the Inversion
January 1989 to January 1990	5 months	18 months	18 months
June to July 1998	11 days	1.5 months	3 months
February to December 2000	9 months	2 months	11 months
January 2006 to June 2007	2 months	18 months	19 months

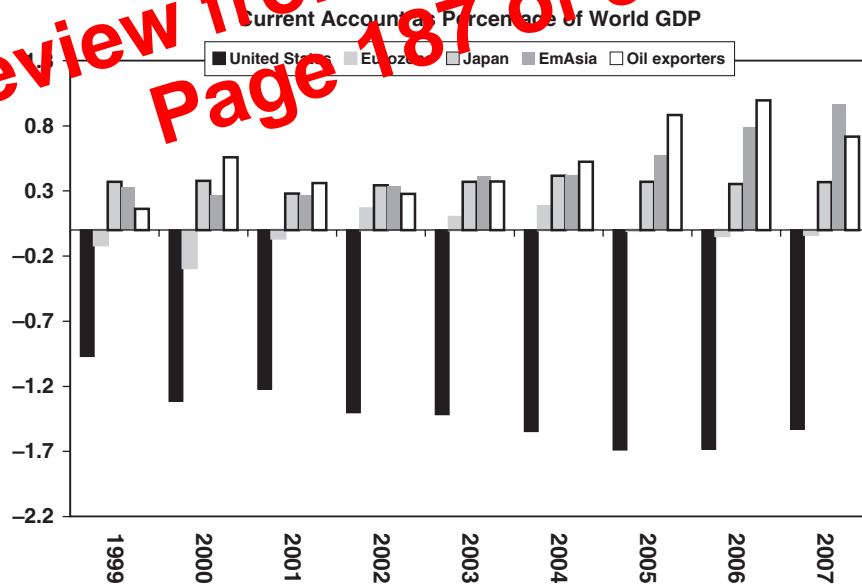
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the public when referring to the trade gap. Since 1995, the exports-imports balance has accounted for about 90 percent of the overall current account.

Figure 7.1 compares the U.S. current account deficit as a percentage of the world GDP to that in the Eurozone, Japan, emerging Asia (EmAsia), and oil-exporting nations. Aside from the United States, only the Eurozone has a modest current account deficit. The rest of these nations enjoy substantial surpluses due to substantial exports revenue (in the case of oil-producing nations and emerging Asia) and due to relatively higher savings (in the case of emerging Asia and Japan).

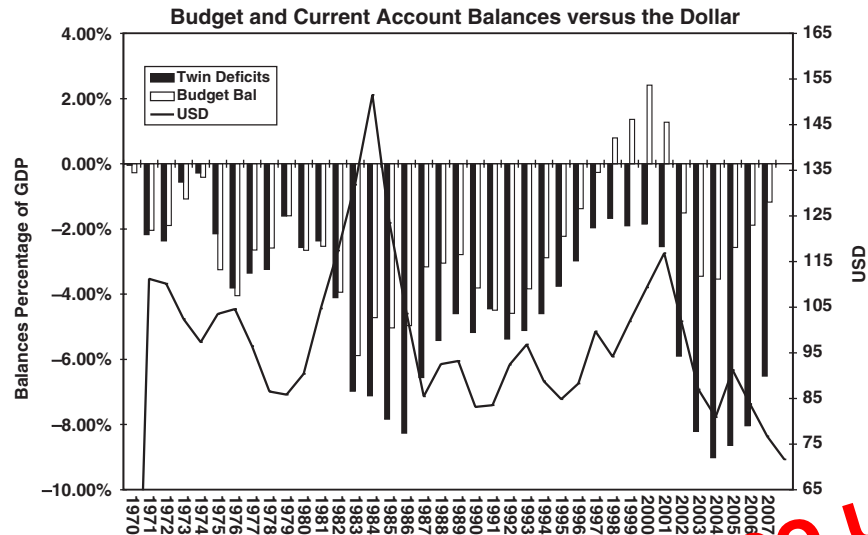
The financial account measures a nation's investment position, balancing all transactions between domestic and foreign residents involving a change of ownership of assets. It is the net result of private and public international investment flowing in and out of the country, including foreign direct investment (ownership of lasting interest in companies, such as at least 10 percent of total capital), portfolio investment (minority ownership of stocks or bonds), and other investments. A positive investment position means a nation is a net creditor, while a negative position means the nation is a net debtor. The financial account is discussed further in the next section.

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**FIGURE 7.1** High current account deficit nations are characterized by lower savings and higher interest rates.





**FIGURE 7.6** Fiscal balance and USD relationship has proved mixed.

the dollar to its highest level in 15 years. The current account remained positive after 2002 when the dollar entered a seven-year bear market and the Bush tax cuts as well as rising budget spending produced swelling deficits.

### FINANCING THE DEFICITS: THE PATH TO UNSUSTAINABILITY?

As was mentioned earlier, a nation's balance payment includes three major components: the current account, the financial account, and the capital account. The current account deficit means the United States is a net consumer of goods and services, and the financial account surplus shows the United States to be a net seller of assets such as stocks, bonds, and equity stakes in companies. While in the previous section we examined the current account, this section tackles the financial account and its position vis-à-vis the current account as well as the implications for the dollar and the U.S. economy.

Figure 7.7 shows the United States' financial account, illustrating a net external debt of more than \$2.5 trillion in 2007. This is represented by the excess of foreign-owned assets in the United States over U.S.-owned assets abroad, as seen by the dotted line. This figure fell below zero in

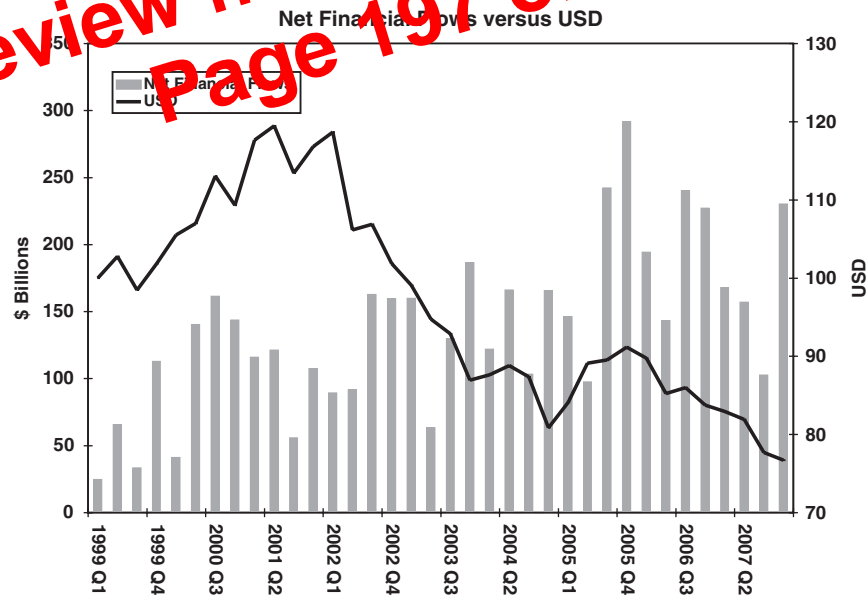
in net purchases of foreign assets by U.S. residential investors. We will see later how U.S. interest in foreign investments is increasingly playing an important role in determining net international capital flows.

It is also worth noting the currency element in gauging these net financial inflows. Holding other factors constant, such as equity prices and the economy, the value of the dollar has played a key role in determining foreign flows into U.S. assets. Figure 7.9 shows that the sharp increase in net foreign holdings in 1999 and 2000 may have been partly fueled by the dollar's climb to 15-year highs. It is more plausible that substantial foreign inflows into U.S. assets, such as the 1999–2000 tech bubble, were a cause of dollar strength, rather than an effect of it. But as the dollar began its prolonged decline in 2002, 2003, and 2004, net foreign holdings formed a plateau, before lifting 40 percent in 2005 on a one-time dollar rally that year. As the greenback resumed its decline in 2006 and 2007, net inflows again peaked out before heading lower.

**U.S. STOCKS AND BONDS VIE FOR FOREIGN MONEY**

This section examines foreign inflows into the United States, breaking them down by asset class. According to the data on net foreign capital

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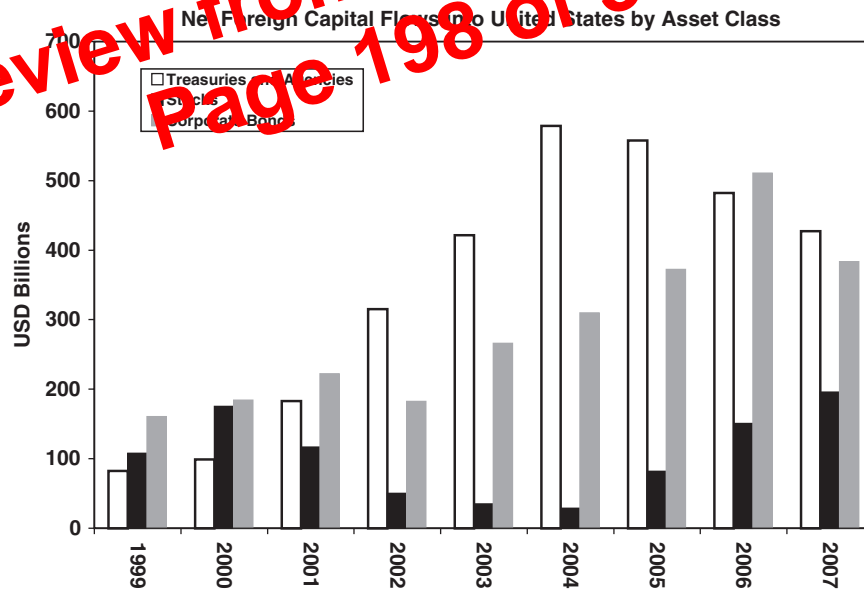
**FIGURE 7.9** Foreign capital flows were a key component to the dollar's 1990s rally.

flows from the U.S. Treasury Information Capital System (TICS), the flows of 2005–2007 have shown an emerging pattern that could spell trouble ahead for the financing of the swelling budget deficit and the trade gap. Figure 7.10 shows net foreign inflows into U.S. securities since 1989, breaking down the purchases by three asset classes: bonds issued by the U.S. Treasury and government-sponsored agencies (such as Fannie Mae and Freddie Mac), corporate bonds, and corporate stocks. The analysis applies only to portfolio flows and excludes foreign direct investment stakes.

Figure 7.10 illustrates that U.S. equities were the only asset class to have amassed an increase in net foreign buying in 2005, 2006, and 2007. This asset shift by foreign investors can easily be explained by the global market recovery of 2005–2006, which led to record high equities in 2007. The question becomes whether a prolonged bear market in global stocks will keep foreign investors on the sidelines in general, and out of U.S. markets in particular, considering the broadening slowdown across all segments of the U.S. economy.

In contrast, net foreign purchases of agency and Treasury securities fell 4 percent, 14 percent, and 11 percent in 2005, 2006, and 2007, respectively, while net purchases of U.S. Treasuries alone fell 4 percent and 42 percent in 2005 and 2006, before rising 4 percent in 2007. These

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**FIGURE 7.10** U.S. equities were the only asset class receiving increasing foreign purchases since 2004.

only by a weak dollar but also by a far stronger economic position amid exporters of oil, gas, iron ore, and outperforming commodities.

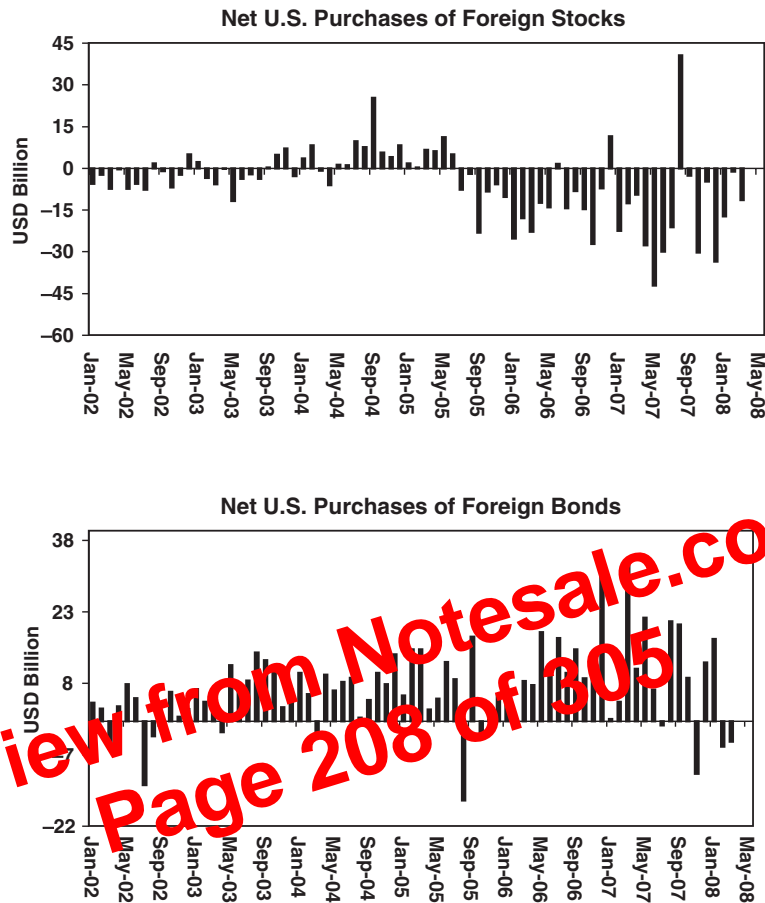
But a major difference from the 1980s or the 1990s is the multiplicity of investment opportunities beyond the United States and Europe. Oil-rich Gulf states are already earning big dividends from channeling oil wealth into diversifying their economies into global hubs of financial services, high tech, and even entertainment. East Asian economies have used their hard-earned armory of vast currency reserves to further invest mostly at home, but have yet to transform their consumption capacity into a global investment vehicle. Later in this chapter, these emerging markets' holdings of individual U.S. securities are broken down by country.

### **HOW LONG WILL FOREIGN CAPITAL BE AVAILABLE ON THE CHEAP?**

An integral element to the sustainability of the growing U.S. current account deficit has been the cost of financing it. The rate of return on U.S. investors' direct investment abroad has continued to exceed the rate of return on foreigners' direct investment in the United States. This renders the United States a net creditor from a cost-of-capital basis, despite being a net debtor on its overall investment position. In other words, the United States is paid for borrowing from abroad. Interest rates are a major driver of this cost differential. Falling U.S. interest rates reduce interest payments to foreign investors, thereby raising the net interest expense flow in the United States' favor.

Figure 7.16 illustrates that periods of falling U.S. interest rates generally provide a boost to net interest rate income, which is the return received by U.S. investors from foreign investment minus the return to foreign investors from their U.S. investments. Conversely, falling net interest income has prevailed during monetary policy tightening, such as in 1979–1981, 1994–1995, and 2004–2006. The sharp rebound in net income receipts in 2007 was a result of the Fed's aggressive interest rate cuts. Note that total income also includes flows from foreign direct investment.

In addition to having an implicitly lower cost of debt, the United States has the luxury of printing the currency of denomination of its own debt, a rare privilege enjoyed by a country whose gross external debt stands at more than \$17 trillion. Thanks to this privilege, which is a result of the currency's world reserve status, the United States seems to face no difficulty in extending its twin deficits. But, as will be seen later on, this assumption is increasingly being challenged.



**FIGURE 7.18** U.S. investors have increasingly turned to foreign stocks and bonds since 2003 in search of growth and diversification opportunities. Negative figures reflect purchases by U.S. residents of overseas assets because they denote outflows from the U.S.

Without a doubt, the dollar continues to be the reserve currency of choice as well as the most popular invoicing tool for international commerce. (See Figure 7.19.) Despite its 80 percent increase against the dollar from its 2000 lows, the euro has charted modest progress in its share of the world's currency reserves. But these statistics include only those reserves reported by global central banks, and exclude the +\$1.7 trillion in reserves held by the People's Bank of China. And as we shall see in the next section, currency rebalancing decisions by the central banks of the Gulf could trigger a sea change in FX proportions.

policy by betting on price surges in the futures market. As farmers rushed toward corn, soybeans lost in favor and so did their price. This explains the weaker trend in speculators' net long positions in soybeans relative to corn futures.

**Rising Fuel Prices** Higher oil prices have driven up the cost of agriculture inputs, such as tractors and other farming equipment, while rising natural gas prices have boosted the price of fertilizers. Farm-related machinery also becomes more expensive due to higher costs of steel and raw materials, as well as surging demand from China and other developing nations.

Nitrogen fertilizers, used in enhancing farm productivity, are largely dependent on the price of natural gas. Rising energy prices have driven up prices of natural gas, which in turn lifted prices of fertilizers by 120 percent between 2005 and 2007. Farmers in the developing world face the double whammy of soaring fertilizer prices from abroad as well as higher prices of grains used for animal feed. Escalating shipping costs have also added to the burden of importing nations. The Baltic Dry Index measuring freight rates for most commodities quadrupled in value between 2005 and 2007. These costs were mainly faced by countries whose costs are denominated in weakening U.S. dollars or whose currencies are tied to the dollar.

**Elevated Dairy Products** Rising dairy prices have been a result of the emerging middle class frequently buying the surge of supermarket chains, where imported cheese and ice cream have become popular dairy products. India is the biggest producer of milk but its farmers struggle to meet demand due to weak infrastructure. As a result, milk prices are hiked in the export market. Dairy prices rose 200 percent in 2007 alone.

The shift of corn toward biofuel production and away from cattle feed has also contributed to the elevated price of dairy cows and dairy products. In 2007, New Zealand, the world's largest maker of dairy products and the fourth-largest milk producer, has seen farm wages rise 20 percent while the average price of a dairy cow doubled to \$1,900. The resulting impact on New Zealand's currency has been noticeable.

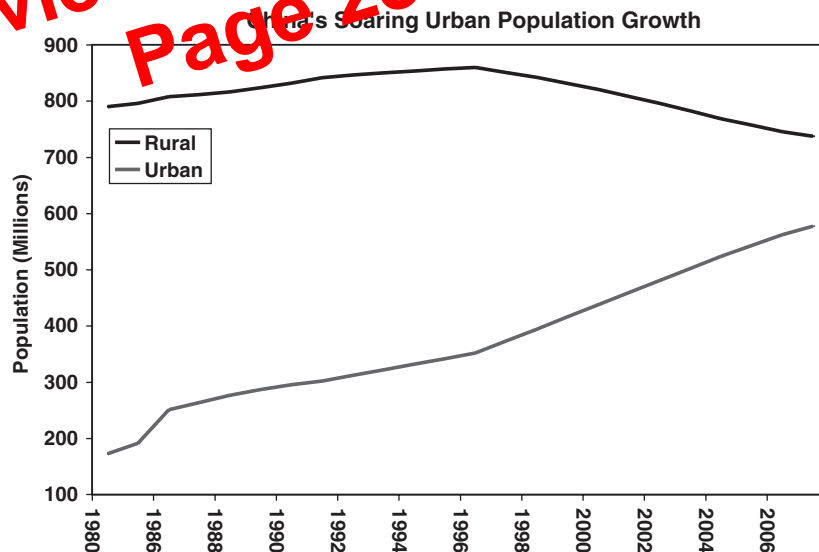
**Tariffs** While tariffs on imports designed to protect domestic industries are more common in international trade, many countries have adopted another form of food-trade protectionism. Barriers on exports were imposed as a way to contain food prices domestically and preserve self-sufficiency. The matter of urgency became figuring out how to limit foreign demand of local grains and crops and preserve limited resources, rather than how to encourage the selling of local crops. In the case of rice, supplies fell to 25-year lows, prompting India to ban exports of non-basmati rice. Egypt discontinued rice exports for six months as of April 2008 after a 50 percent

At odds with these demand factors in China are the supply constraints of arable land (Figure 8.15). As China's population becomes more urban and the rural areas are steadily converted to industrial and residential use, the future outlook for agriculture appears highly uncertain. In 2007, China's arable land fell to 470,000 square miles, nearing the 463,000 square miles level considered by the government as the bare minimum required for feeding the country. Aside from cracking down on unauthorized land expansion projects, Chinese authorities have not reached any solutions for the eroding land problem. China's soaring appetite and shrinking agricultural land shall remain a textbook example of dual supply and demand drivers of rising corn prices.

As long as these demand and supply constraints continue to lift agricultural commodities higher, export tariffs are expected to remain a long-term reality, further driving up prices. China, Egypt, India, Indonesia, and Vietnam have all stated they will not export any rice surpluses cultivated in 2008. Such restrictions on the global flow of rice will be one of the many underpinnings for higher commodity prices.

### Currency Plays in Food and Grains

The aforementioned dynamics underpinning the rally in agriculture and food products has brought about a boom in commodity currencies of



**FIGURE 8.15** China's rising urbanism threatens arable land.

begin to anticipate an increase in the Fed funds rate benchmark, prompting the short end of the yield curve higher. As this takes place, rising 2-year yields begin to narrow the difference between 10- and 2-year yields and the preceding increase in the spread begins to lose steam—hence the peak.

In order to better understand the peaking formation of the yield spread, we observe how the chart shows interest rate cutting cycles being accompanied by rising yield spreads (positively sloping curves), which reflect falling 2-year yields relative to their 10-year counterparts. Once the Fed concludes its easing cycle and makes the transition toward a policy of steady interest rates, the post-easing decrease in 2-year yields begins to wane, followed by a gradual turnaround that narrows the difference with 10-year yields. The result is a peak in the 10-2 yield spread. As 2-year yields gain further, the peaking 10-2 yield spread turns gradually lower, at which point is the timing of the interest rate hike.

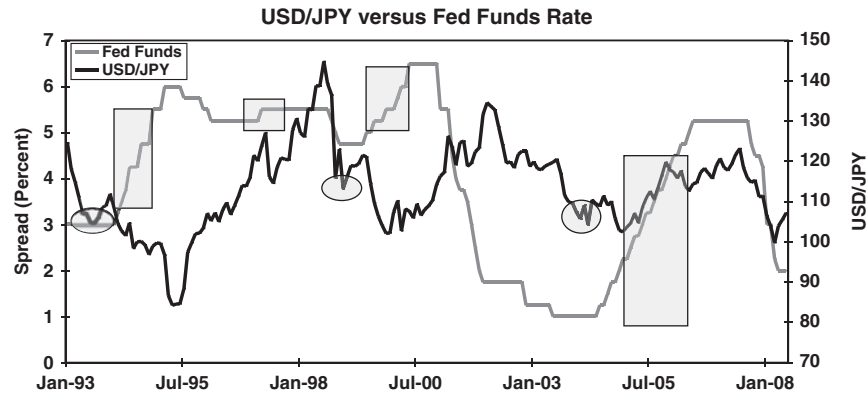
For each of the past four rate hike cycles, the duration between the peak of the respective 10-2 yield spread and the start of each rate hike were as follows: The February 1994 through February 1995 cycle took place 10 months after the 10-2 yield spread had peaked; the March 1997 rate hike took place 13 months after the peak of the spread; the June 1999 through May 2000 hikes started 8 months after the peak; and the June 2004 through June 2006 started 11 months after its peak. Determining the peak of the 10-2 yield spread may prove challenging in its use to predict the first rate hike in each of the four examples illustrates, the peak has either occurred in the midst of a period of steady Fed funds rates (April 1993 and June 2003) or has coincided with the bottoming of the Fed funds rate—in other words, at the same time as the last rate cut (February 1996 and October 1998).

### Can USD/JPY Help Anticipate Rate Hikes?

The preceding examples illustrated how investors could use the relationship between 10- and 2-year Treasury yields to anticipate the timing of Federal Reserve interest rate hikes. In order to help improve the accuracy of this anticipation, one more tool is added. Figure 9.3 illustrates the relationship between the Fed Funds and the USD/JPY exchange rate. The chart revisits the past four interest rate hike phases of February 1994–February 1995, March 1997, June 1999–May 2000, and June 2004–June 2006, with each of the phases marked by a rectangular box around the Fed funds rate graph. The Fed funds rate is overlaid against the USD/JPY exchange rate, which represents the number of yen per U.S. dollar.

Note how the beginning of each interest rate hike was preceded by a bottoming in the USD/JPY rate (highlighted by circles) due to the



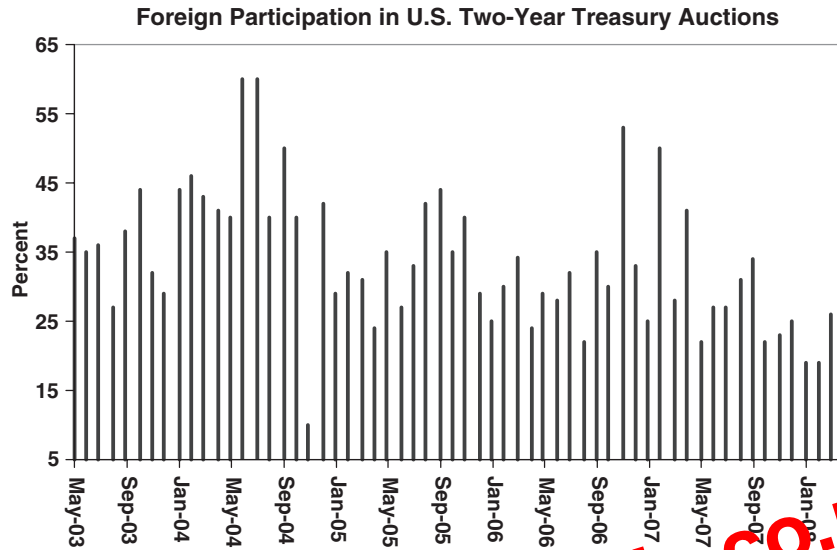


**FIGURE 9.3** Bottoming formations in USD/JPY rate have preceded tightening cycles from the Federal Reserve.

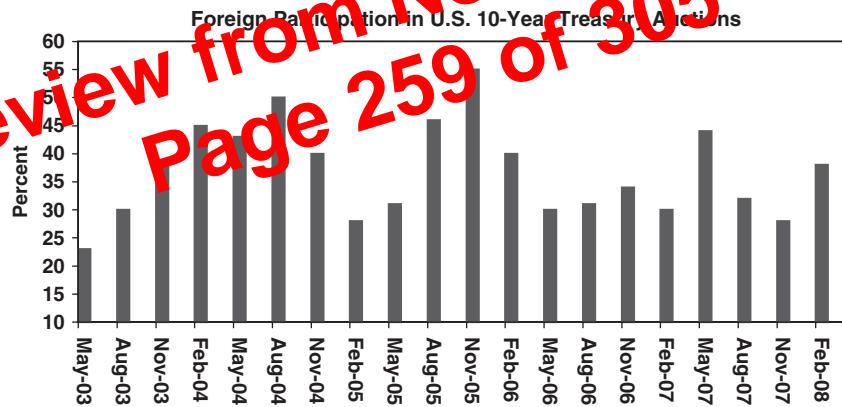
anticipatory nature of currency markets. Over the years, Federal Reserve policy has grown more transparent to the public to the extent that shifts in monetary policy are increasingly being telegraphed. Thus, as economic figures show marked improvement, and the broad sector and policy makers shift toward a hawkish rhetoric emphasizing inflationary risks, bond yields begin to push higher and the dollar starts to strengthen. The bottoming process in USD/JPY is best used as a signal for higher U.S. rates as traders rush in to take advantage of anticipated carry trade opportunities, selling low-yielding yen and investing the proceeds in higher-yielding U.S. dollar investments.

Table 9.1 summarizes the various time durations elapsing between peaks in yield spreads and interest rate hikes, as well as the duration between bottoms in USD/JPY and Fed hikes. As mentioned earlier with the relationship between the 10-2 spread and Fed hikes, the four most recent rate hikes were preceded by a signal in the yield spread with time lags ranging from 8 to 11 months. The duration is fairly comparable and effective for figuring out future Fed hikes. But it is important to note that the effectiveness of the 10-2 spread signal serves best when it occurs during extended periods of steady interest rates.

The last column of Table 9.1 summarizes the duration between the lows in USD/JPY and the beginning of interest rate hikes. The effectiveness has grown stronger over time as currency markets have become more responsive to the increasingly transparent Federal Reserve. Aside from the interest rate hike of March 1997, where the bottom in USD/JPY preceded it by as long as 21 months, the other three tightening cycles saw a lag of only two to six months between the bottoming dollar and the rate hike.



**FIGURE 9.5** Foreign participation in U.S. government 2-year Treasuries began to wane in 2005.



**FIGURE 9.6** Foreign participation in U.S. government 10-year Treasuries descended into a notable downtrend despite occasional recoveries.

led by the domino effects of the subprime credit crisis in the United States, many of these SWFs' holdings lost as much as 15 to 20 percent within one year of their initial investments in U.S. banks and companies.

Several economists have backed the thesis that Gulf State funds will continue to direct their focus toward U.S. markets as long as they are bolstered by rising oil revenues. But one should not confuse the current

fifth column and the state of the economy in the sixth column. The data for 2008 are valid through July 3, 2008.

Here are some of the conclusions drawn from the patterns observed over the past 38 years. (The current year, 2008, is included even though the year has not ended at the time of this writing.)

### Dollar Performance

Of the 38 years analyzed, 20 years saw negative dollar performance versus 18 years of positive performance. Seven of the 20 negative years occurred when the White House and Congress were controlled by the same party. And in all but 2 of the 20 negative dollar years, the dollar declines occurred in series of at least two consecutive years. The years 1990 and 1998 were the only negative dollar years where the decline was preceded and followed by an increase in the currency. The 1990 dollar decline occurred due to the recession caused by the savings and loans crisis and soaring oil prices resulting from Iraq's invasion of Kuwait. The subsequent Fed rate cuts dragged the dollar across the board. The 1998 dollar decline emerged from sharp unwinding of yen carry trades away from the dollar in the midst of a liquidity crisis in capital markets in the aftermath of the collapse of hedge fund Long-Term Capital Management. Similarly, only one of the 18 years of dollar gains occurred in a string of at least two consecutive years. The year 2005 was the only year in the period 1971–2008 in which the dollar delivered a stand-alone rising performance, as a result of the Fed's interest rate hikes as well as the temporary reduction of taxes on U.S. multinationals' repatriated profits.

Such patterns reinforce the notion that currencies move in trends, particularly a widely traded currency such as the dollar. As fundamental dynamics build up and are accentuated by shifts in asset managers' portfolios, traders' flows, and speculative sentiment, the trend grows increasingly established in the market.

The impact of U.S. presidential and midterm elections on currency markets was especially prominent during the controversial 2000 presidential elections and the 2006 midterm elections. In November 2000, the already tumbling euro sustained a severe blow from the dollar at the announcement of a victory for President George W. Bush. The dollar rally emerged on the tax-cutting agenda by Republicans, which was considered a boon for the markets, especially after a series of tax hikes from former Democratic president Bill Clinton. Inaccurate media reporting of the 2000 election, erroneously declaring candidate Al Gore the winner, prompted sharp but short-lived declines in the U.S. dollar. In the 2006 midterm elections, Republicans' full loss of power of both the Senate and the House of Representatives sped up the pace of an already declining greenback as

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the Democrats planned to phase out the Republican-led tax cuts after their expiration in 2010.

### **Stock Market Performance**

The stock market's performance is measured by the S&P 500, which is a broad and frequently used index for benchmarking fund performance. Of the 10 years of negative stocks performance, 7 occurred during a Republican-controlled White House versus 3 under Democratic control. Of the 28 years of positive stock performance, 19 occurred during bipartisan control between the White House and Congress.

Regarding the relationship between the dollar and stocks, 7 of the 10 negative years for stocks coincided with negative years for the dollar when 2008 is included. At time of this writing, the dollar is down 6 percent and stocks are down 15 percent year-to-date. Fundamentally, the relationship between stocks and the dollar had been prominently positive during the early 1980s and the second half of the 1990s. In the early 1980s, the Fed's staunch anti-inflation war under the command of Paul Volcker booted interest rates toward 20 percent, rendering the dollar an attractive return on foreign investors' funds, while stocks recovered as inflation was dampened and oil prices retreated. In the second part of the 1990s, U.S. equities attracted persistent growth in foreign capital flows while European economies floundered in stuttering recoveries and Japan remained in a deflationary spiral.

### **Economic Performance**

The criteria used to determine whether the economy fell in a recession in a given year is the number of quarters showing negative GDP growth. The years 1973, 1974, 1980, 1981, 1982, and 2001 each showed two quarters of negative growth, though not necessarily consecutive quarters; 1990 and 2000 were also recession years even though they had only one negative quarter. At the time of this writing, economic reports are increasingly pointing to a recession in 2008, but the organization in charge of officially declaring U.S. recessions has not yet done so. The National Bureau of Economic Research usually announces recessions about two or three quarters after they start. Due to this formality, 2008 is excluded from the recession count, leaving us with eight recessions between 1971 and 2007. Six of these eight recessions occurred under a Republican administration versus two occurring under the Democrats, in 1980 and 2000. Regarding the sharing of power between Congress and the White House, seven of the eight recessions took place during a bipartisan split (1973, 1974, 1980, 1981, 1982, 1990) while one occurred in 1980 during dual control by the Democrats.

performances occurred under the tenure of secretaries with backgrounds other than Wall Street. Michael Blumenthal (1977–1979), James Baker (1985–1988), Paul O'Neill (2001–2002), and John Snow (2003–2006) had significant experience in policy making and industry rather than banking or financial services; their tenure as Treasury secretary saw mostly dollar weakness. This 35-year pattern broke in 2005–2008 as former Goldman Sachs CEO Hank Paulson led the Treasury during protracted dollar declines.

The underlying rationale is that secretaries with a background other than banking have generally preferred a weaker dollar in order to boost the priorities of U.S. exports, domestic industry, and employment. Treasury secretaries from the financial services industry have served during periods of general dollar strength, in line with Wall Street's priority to draw foreign capital toward U.S. financial assets and exchanges. Naturally, the performance of the dollar has largely been a function of U.S. economic growth and interest rates relative to the major economies. But the aforementioned patterns between the value of the dollar and U.S. currency policy as part of overall economic priorities have been far from coincidence, when factoring in the appointment of Treasury secretaries.

#### The Breaking of a Pattern

Yet, just as prominent as the relationship between U.S. Treasury secretaries and the value of the dollar has proven to be over the past 40 years, so has the break in the relationship during the term of Secretary Hank Paulson, a former CEO of Goldman Sachs, arguably the world's most successful investment bank. From his nomination on May 2006 to the end of June 2008, Mr. Paulson served during one of the worst two-year periods in the history of the dollar, which fell 15 percent in trade-weighted terms, 24 percent against the euro, and 18 percent against the yen.

Paulson's nomination coincided with the end of the Fed's two-year tightening campaign and the emergence of a rare divergence between the monetary policies and growth rates of the United States and major industrialized nations. Those cyclical problems have compounded the damage in the dollar due to a prolonged slowdown in the U.S. economy, which was accompanied by deepening erosion in the capital structure of U.S. banks and continued instability in the overall financial system. Such are the prominent dynamics in the current foreign exchange market that they trigger the break in multidecade-long patterns, whether the relationship between the currency and the background of U.S. Treasury chiefs, or the gradual transition toward a multidimensional world economic order that is no longer dictated by the pace of the U.S. economy. While one cannot disregard the considerable impact of a U.S. slowdown on the world economy,

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the cyclical and structural advancement of emerging economies in Asia, Eastern/Central Europe, and South America has increasingly shielded capital and trade flows from the repercussions of a U.S. recession.

Earlier in this chapter we addressed the advantages for the United States and the rest of the world to be gained from attaining stability in the value of the dollar. As long as the greenback remains the world's reserve currency used for invoicing oil and other major commodities, stabilizing its value is paramount in averting a global inflationary spiral at a time of slowing world growth. Failure to secure a soft landing in the U.S. dollar could land the world economy in protracted supply and inflationary shocks, while dealing renewed corrosion in U.S. financial markets as the world loses confidence in the currency. When President Bush appointed Mr. Paulson at the helm of the U.S. Treasury in May 2006, his main priorities consisted of bolstering confidence in the U.S. economy and financial markets via preserving the tax cuts beyond 2010, expanding access for U.S. businesses in China, and pushing Beijing to bring about faster appreciation in the renminbi. From a strict currency perspective, the goal of the appointment was to further pursue a competitive dollar without compromising the world's confidence in it. But not even Mr. Paulson could avoid the currency impact of the Fed's aggressive interest rate cuts resulting from what is increasingly becoming the most penetrating credit crisis of the last sixty years.

This chapter has revisited a few themes already tackled throughout the book, while turning to a new page concerning the role of U.S. politics in shaping the long-term dynamics of the dollar and the U.S. economy. Whether evaluating the case for a Fed rate hike, questioning the relevance and importance of dollar stability, or assessing the long-term direction of commodities relative to equities, such topics are likely to comprise part of the long-term thinking in financial markets in general and currencies in particular.

## **CONCLUSION**

The scope of this book has extended beyond listing the mechanics of foreign exchange markets or breaking down the various methods of analyzing them. The main goal has been to incorporate the flows in commodity, equity, and bond markets into currency dynamics, with a detailed look at the principal drivers of central bank policy. It is not a coincidence that the dollar has fallen below parity against the Swiss franc and Canadian dollar at the same time that gold prices have surged above \$1,000 per ounce for the first time in history. Nor is it a matter of chance that the secular

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