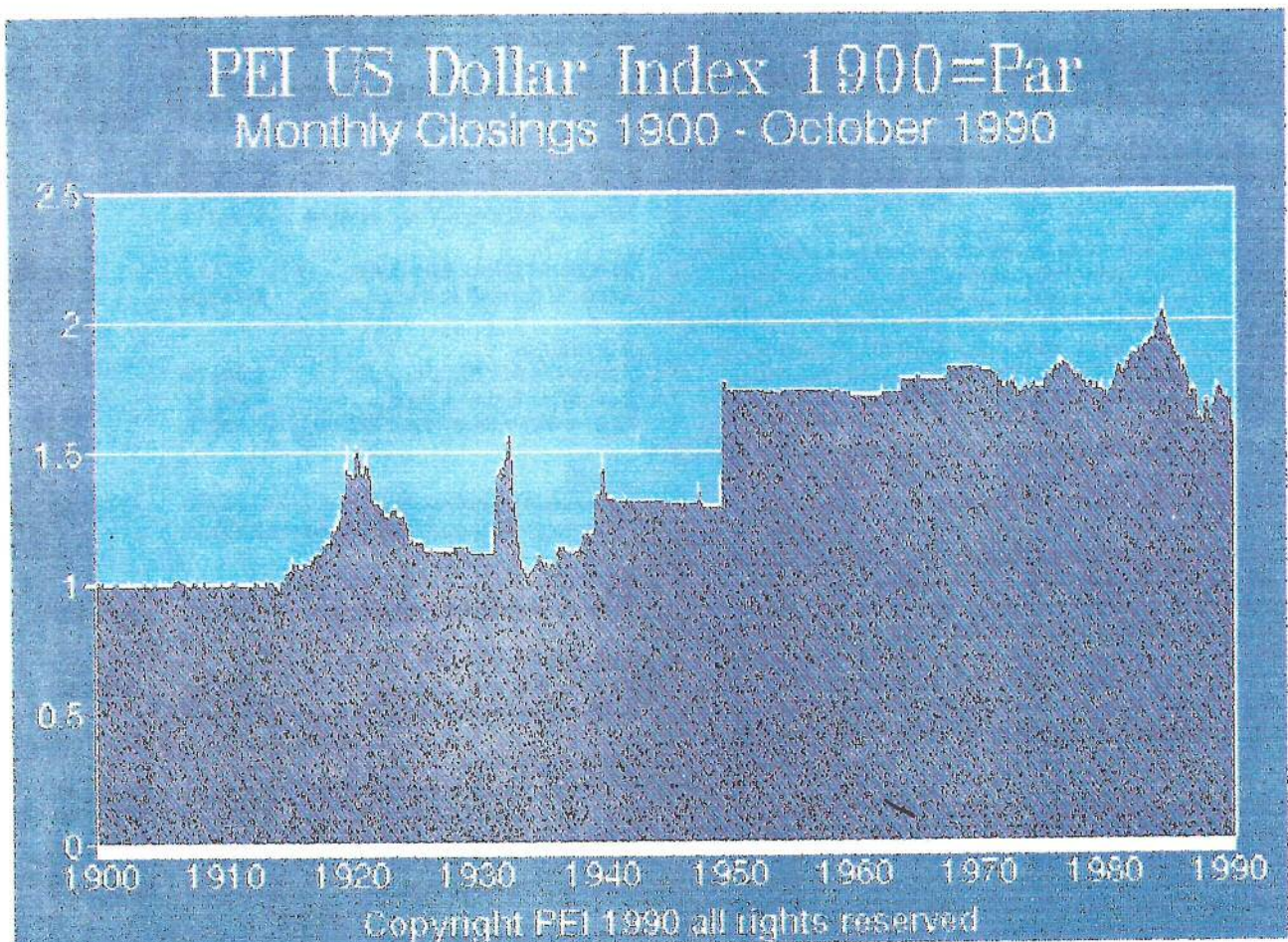


Princeton International Economic Report

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Foreign Exchange The Long -Term



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Foreign Exchange A Vote of Confidence

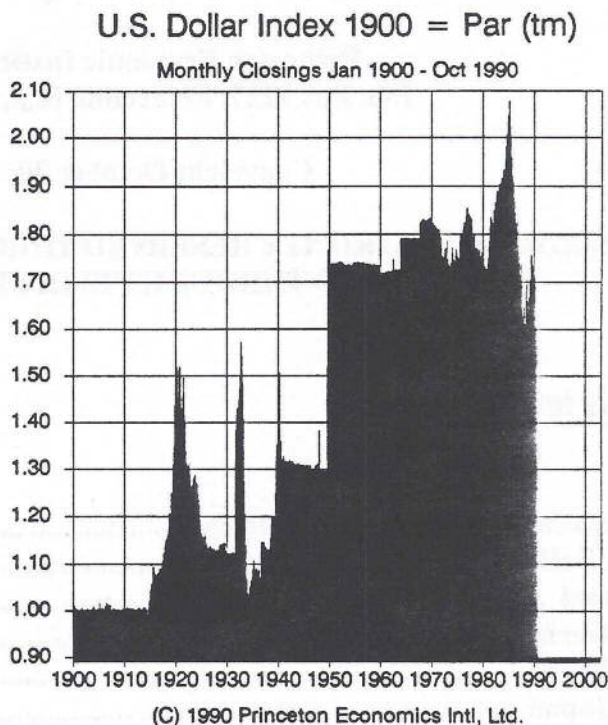
While many people attempt to analyze the FOREX markets using trade statistics or the latest round of employment numbers that may or may not influence a change in interest rates, the markets themselves move along with little or no regard to what the fundamentalist expect. In FOREX trading, the typical fundamentalist trader who relies on the rumor mill and gut feelings are a dying breed. Although it is true that many of the big banks are still fundamental traders "officially" speaking, the emergence

of greater interest in technical models has taken hold. Many traders in the large money center banks are smart enough to realize that whatever the fundamentals may imply, the market is quite capable of moving in the opposite direction once the flurry of news is over.

The old maxim of interest rate differentials driving foreign exchange rates has been blown out the door. Only very short-sighted traders are unable to see this trend for what it honestly is today. True, whenever a nation raises its interest rates the FX dealers will bid the currency higher in most cases. However, momentary relationships that may affect intraday trading cannot be applied when it comes to analyzing the broader trends of the marketplace.

We must eventually ask the question; If higher interest rates are supposed to support a currency, then why are the South American currencies worthless when in some cases interest rates are as high as 300% per month? Only a stubborn fool or a sublimely ignorant optimist refuses to constantly question the interworkings of his environment.

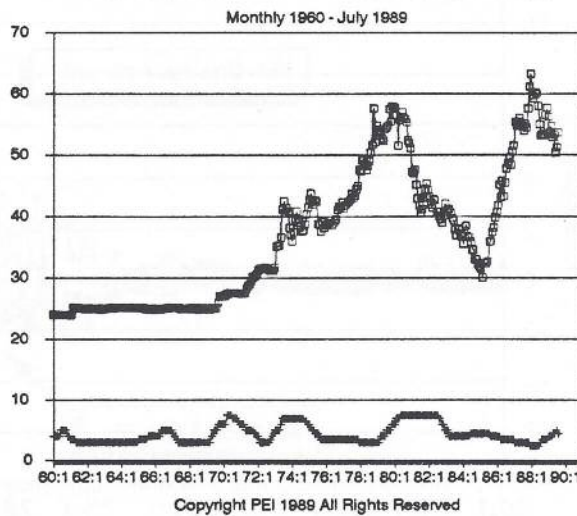
Interest rate differentials are meaningless fundamentals even within the major industrialized currencies. Alone, they are NOT sufficient to change the broad long-term trends. An extra half or full percentage point does not outweigh the risks on the foreign exchange itself. Unless



confidence in the currency prevails, even interest rate differentials of 3-7% have failed to reverse a downtrend within the major currencies throughout this century.

This relationship of interest rates to the currency is best illustrated by our charts on the trend of the Deutschmark versus the Bundesbank discount rate from 1960 through 1989. Going into the major high of 1980, the bottom in the central bank discount rate came with the peak in the D-mark itself. Although the interest rates were raised from 1979 on into 1983, the downtrend in the currency prevailed. The central bank intervention

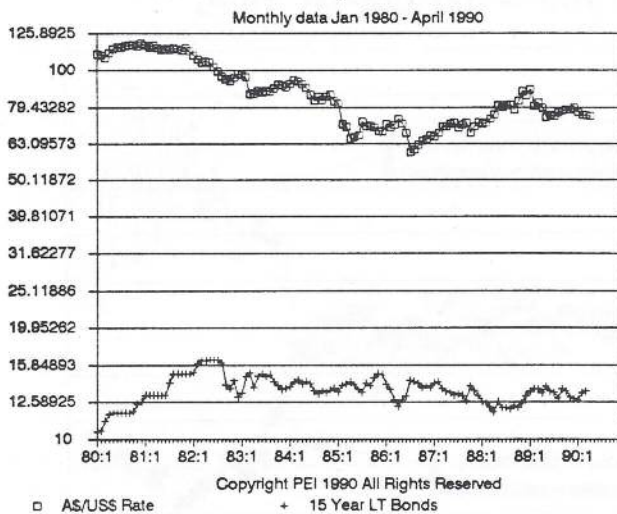
West German Mark vs Central Bank Rate



along with the hike in interest rates FAILED to act as support for the currency. If we look at

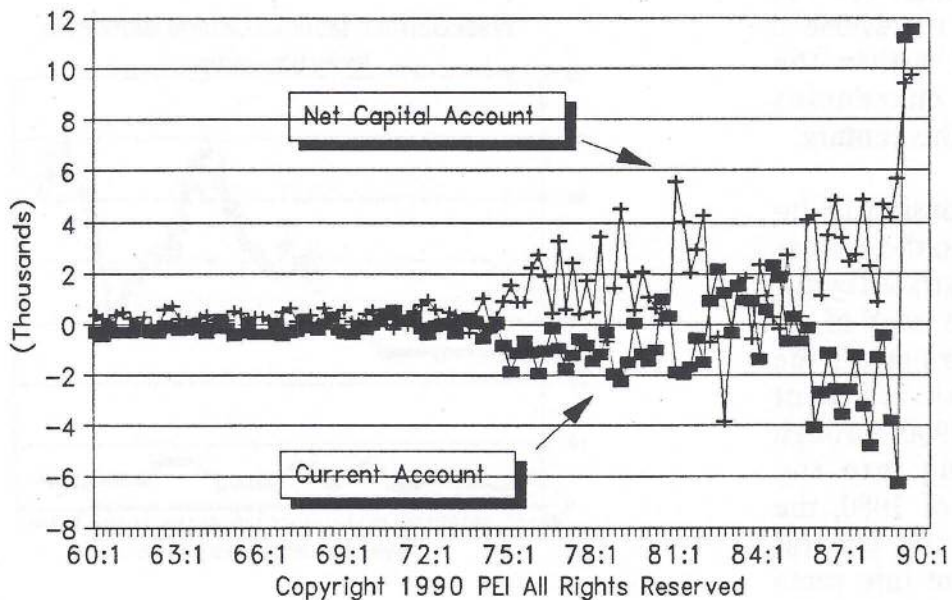
the contrasting trends of the Australian currency vs long-term interest rates, we find no correlation that would suggest that higher interest rates are responsible for the strong A\$ since 1986.

Australia Currency vs LT Interest Rates



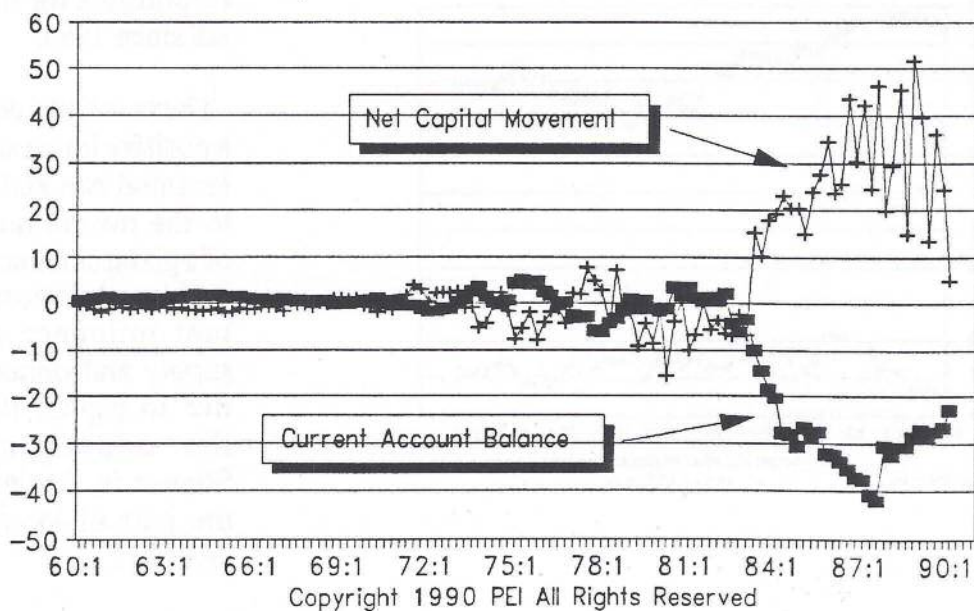
There is little doubt that a positive interest rate differential can and will add to the overall bullishness of a given currency. Nonetheless, the most important influence is sheer supply and demand relative to capital flows and the underlying confidence in that nation on the part of international investors.

Canada Net Capital Movements Mils C\$ Quarterly Data 1960 - 1990



Australia and Canada are perfect examples of how fundamentalists have simply gotten the trend wrong on the currencies of these two nations for the majority of the last 4 years. In both cases, the amount of foreign capital investment in their respective economies (bonds, stocks & real estate) have been far greater than the outflows of capital due to trade. In the case of Canada, the recent surge to test the 89 US cents level came on the back of a sharp swing toward a current account surplus combined with sizeable net inflows of capital both from Europe and namely Hong Kong.

US Net Capital Movements Bilns US\$ Quarterly Data 1960 - 1st Quarter 1990



Even when we look at the Current Account vs the Net Capital Account position of the US, we find justification for the decline in the greenback moving into 1987 and a subsequent rise moving into 1989. The Current Account deficits going into the end of 1987 were exceeding the net capital inflows from investment. On a supply-demand basis, according to capital flows, the dollar should have declined. The period going into the low in the dollar during 1980 was also accompanied by a net outflow of capital from the US even when the current account deficit turned positive.

Although technical models may be criticized by some, such models merely point out the trend from an unbiased perspective. This is the main advantage of technical models over purely fundamental decision making. Whenever the market moves opposite to what the fundamental view claims should happen, it is NOT the market that is confused or wrong, it is the fundamental logic.

Collectively, currency trends are formed by confidence. The value of any currency reflects the international vote of confidence in the fate of that nation. Such confidence can at times center around trade, budgets and geopolitical trends or events. They are NEVER the sole product of only one fundamental. This is the fallacy that drives fundamental analysts crazy and why the majority are always wrong. It is common to find the market consensus of opinion attempting to reduce the trend to a single cause. You can pick up any newspaper and read how gold declined due to high interest rates and the next week find another excuse as to why it rallied even though interest rates may have moved higher again.

While the vast majority of corporate, business, investment and speculative decisions are based upon fundamental news, this same majority remains quite skeptical about fundamental economic forecasts. One can find the usual joke posters hanging around trading rooms. A popular slogan that normally adorns many walls simply reads: "The same people who believe in economists believe in astrologers." Although this is perhaps merely one of those funny signs posted in all offices, it also takes a stab at a perceived truth.

Fundamental analysis has one major draw back - human interpretation. It is not that the facts about supply or demand are necessarily incorrect, the true culprit lies in human judgemental forecasting. As a human being, there isn't a soul alive or dead who has ever been able to forecast the future consistently based upon personal gut feelings, interpretations or with ESP. Nevertheless, judgemental forecasting still remains the number one method of planning for the future.

Ben Franklin, while in his '70s, was asked by his colleagues for his opinion on a matter of state. He replied that with all his wisdom and experience he had arrived at the conclusion that he should not trust his own judgement. For with each passing year, he came to realize how little he knew the year before.

There have been several important studies undertaken to determine the performance of various types of forecasting. One of the best known papers on the subject was published in 1981 by R.M. Hogarth and S. Makridakis (The Value of Decision Making in a Complex

Environment). Hogarth and Makridakis arrived at some very interesting conclusions after studying a variety of forecasts rendered during the 1970s. They reported their findings along these lines:

1) Forecasts beyond the short-term (three months) can be very inaccurate due to changes in long established trends, systematic bias or errors, and that historical data may provide conflicting scenarios with future trends.

2) Forecasts based upon different methods, systems, assumptions or models usually vary considerably. The problem which this introduces comes back to the evaluation of which forecast shall be used. This can often present insurmountable problems in decision making or even take longer than the process of forecasting itself.

3) Objective approaches to forecasting have performed as well or better than judgemental forecasts, which was also the conclusion of Camerer 1981 and Dawes 1976.

4) Short-term forecasts tend to be more reliable due to the considerable inertia which prevails during the course of a given trend.

One example which Hogarth and Makridakis provided was a study of oil forecasts. In 1972 the generally accepted forecasts called for a continued trend in oil prices with no substantial rise. Oil was trading at the time under \$2 per barrel. Following the OPEC situation, sentiment began to turn very negative, meaning that oil prices were perceived to be on the advance between 1974 and 1979 with no end in sight. Forecasts during this period for \$100 a barrel oil by 1990 were in the majority. During 1979-1982, the oil glut perception emerged and forecasts were revised to \$20-15 a barrel by 1990. Of course we all know how bearish the general crowd became on oil in October, 1988. One so-called "oil industry specialist" forecast that oil would drop to \$5 and stay under \$10 until the end of the century.

In 1976, V.A. Mabert published his paper "Statistical Versus Sales-Force Executive Opinion Short Range Forecasts: A Time Series Analysis Case Study." Mabert took sales forecasts which had been based upon the opinions of corporate and sales force personnel. He then studied the accuracy of these fundamentally based forecasts and compared them with three different quantitative methods. The comparisons were conducted on a mean absolute deviation basis and on a mean absolute percentage error basis. He found that over the case study period of 5 years, the judgemental forecasts proved to be the most inaccurate, while the Box-Jenkins method provided the best forecast of the four methods involved.

There have been numerous studies on this subject and the single conclusion which one finds is that judgemental forecasting is inherently the worst. The human emotion tends to cloud the perspective. Whenever a market or economic trend is falling rapidly, fear wins over reason. Hence, the fundamentalist cannot see any reason why the current trend will change. This emotional basis provides the error in judgement.

Regardless of how many case studies reveal that judgemental forecasting produces the least accurate result, judgemental analysis is the accepted norm. Technical or quantitative models are gaining in popularity worldwide because the financial community is starting to demand something other than traders who operate by the seat of their pants driven by rumor and the latest statistic which is destined for major revision next month.

The foreign exchange markets are clearly being driven by capital flows - not merely trade or interest rate differentials. If forecasting the future were as easy as the fundamentalists try to make it sound, then we would all be billionaires overnight. The single most important maxim at the end of the day is that if the market direction does not match the fundamentals - it is the fundamentals that are wrong - NOT the market!

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