

The Collapse in Gold Prices: A New Perspective

by Eric Kades

"If all men were rational, all politicians honest and we had a world central bank issuing a single currency that was universally acceptable, then gold would drop to \$20 an ounce—and be overvalued at that."

— Andre Sharon, gold analyst, quoted in *Newsweek*, Dec. 16, 1974; as quoted by George Seldes in *Quotable Quotations*.

Introduction

The daily summaries and analyses of the gold market that appear in most newspapers support Mr. Sharon's assertion. The press invariably attributes gold price movements to political uncertainty, gyrating monetary policies, inflation hedging, and international liquidity concerns. This view implies that the demand for gold is highly volatile, subject to coups, sudden shifts in central bank behavior, oil flow interruptions, and other jolts to the world economy.

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Brian Gendreau of Morgan Guarantee Trust Company, Stephen Salant of the Rand Corporation, and Mark Sniderman of the Federal Reserve Bank of Cleveland for helpful comments and corrections.

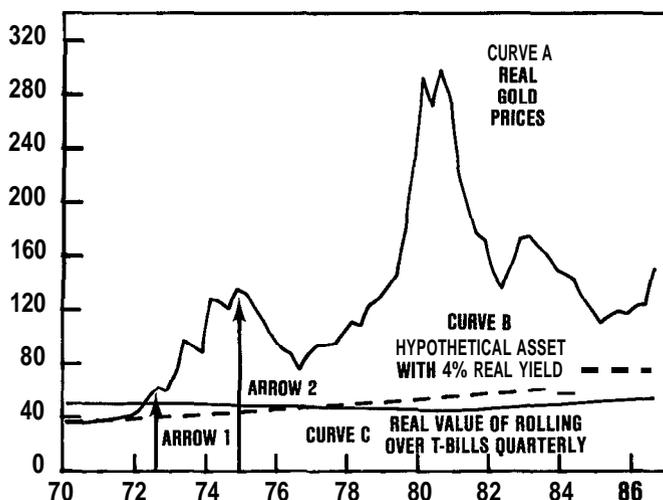
If Mr. Sharon and the press were right, then economists would have little to contribute to an analysis of even long-term movements of gold prices, or to forecasts of price trends. These activities would be better left to political experts, to central bank analysts, and to other savvy observers in areas that are likely to generate surprises affecting gold prices. There would be no point in statistically estimating a demand function for gold, since demand for gold would be always be fluctuating randomly, not moving systematically.

This conventional explanation of gold price movements is essentially a superficial one. While unexpected political and economic events undoubtedly influence daily gold prices, such events cannot explain long-run trends in gold prices. Before the Bretton Woods international monetary system began to crumble in 1968, the price of gold was fixed at about \$35 an ounce. The real price of gold, that is the nominal, or observed price divided by a price index, has followed two distinct trends since 1968 (see curve A in figure 1).¹

From 1969 to 1981, the real price of gold rose rapidly, except for a few brief, but sharp, price dips, and for one extended slide. From 1981, until this year, the real price of gold fell —

GOLD PRICE AND INTEREST RATE TRENDS

Real value of assets, in 1970 dollars



SOURCE: London P.M. Gold Fixing; Consumer Price Index: U.S. Department of Labor, Bureau of Labor Statistics; and Board of Governors of the Federal Reserve System.

FIGURE 1

1 The price index in this case is the CPIU. We study the real price to correct for changes in the purchasing power of the dollar,

not pay extraction costs (and assuming storage costs are constant), competition among them will prevent the rate of gold price increases from exceeding the riskless rate of interest.⁵ The gold market unquestionably includes many speculators.

Another salient feature of the gold market is South Africa's dominant, almost monopolistic role in gold production. Since the price of gold began to rise in 1968, the South African share of production has averaged near 75 percent, although it has fallen moderately in recent years. Such hegemony can raise prices above competitive levels, but, like rising production costs, cannot account for observed rapid increases in gold prices. Any attempts by South Africa to raise prices faster than r_b would create arbitrage opportunities that would force prices back down. Speculators would buy gold in one period and then, being willing to accept a rate of return r_b , would undersell the South Africans in the next period.

Salant and Henderson conclude that the only valid special factors in the gold market are the huge stocks governments hold and, particularly, the perceptions of speculators about what buying or selling actions governments will take. This, they argue, causes the price of gold to move systematically at variance with the simple exhaustible resource explanation.

To see how this matters, think about the amount of gold available to satiate demand in a given period. Production levels will be relatively stable, because construction of large mines takes a long time. However, governments hold huge stocks of gold (now about 40 years' worth of current industrial, artistic, and jewelry demand; in 1970, governments held 25 percent more). If they decide to sell a significant amount of gold in a given period, the price will drop sharply.

The "threat" of government sales means that *gold can no longer be considered a riskless bet*, since there is a chance that government actions will have a severe impact on its price. Risky assets must give higher yields, on average, to compensate their owners. Comparing curve A (actual real gold price) with C (actual price trend for real return to three-month Treasury bills), strikingly illustrates that gold did indeed command a return higher than the riskless interest rate from 1968 to 1981.

There were a few exceptions, when the price dropped precipitously for short periods of time. These occasional price dips, however, fit precisely into the scenario that Salant and Henderson present. They are the announce-

ment dates of government sales or news leaks of the likelihood of such sales. These events illustrate the riskiness of holding gold in the presence of government stocks that can depress prices temporarily. For example, arrow 1 in figure 1 marks the first announcement of possible International Monetary Fund (IMF) nation sales; arrow 2 shows the price decline caused by the first U.S. Treasury auction of gold since World War II. The price decline that lasted from 1975 to 1976 occurred while gold's role in the international monetary system was being revised. These changes included provisions for large sales of IMF gold, permission for member nations to sell significant quantities of gold on the free market, and a major de-emphasis of gold's monetary function. All these factors held down gold prices during most of 1975 and 1976. When direct depressing effects ended, prices rose again, and gold achieved superior rates of return—much higher than r_b .

Salant and Henderson's explanation for the trends in gold prices is an elegant and convincing one for the period from 1968 (which marked the end of gold price-fixing) until 1981, but it breaks down after 1981. There has been a striking change in the behavior of gold prices since 1981. They fell, first sharply, then more gradually, with only short-lived reversals. In 1986 they again began to rise sharply. How, if at all, can these trends be reconciled with the relationship between the price of gold and with sales of government supplies of gold described above? The starting price of an exhaustible resource holds the key to our explanation.

V. Initial Price and Expectations of Demand

The *initial* price of a depletable resource plays an important role in its price behavior. The price must increase at the rate r_b (a risky asset like gold, of which governments hold large stocks, increases at a rate higher than r_b). In a "perfect world," the initial price will be set so that the last ounce of gold is used via transactions completed up along a unique price path starting at the initial price and increasing at the set rate.

A low initial price would result in greater demand at every date along the price path and the supply of gold would be depleted at a price that didn't extinguish demand. Conversely, a high initial price would mean less demand for gold in each period; demand would drop toward zero, and gold stocks remain. Profits for owners in both cases would be lower than if the equilibrium price path were to emerge, so market forces tend to seek this unique initial price and price path.

To calculate the correct initial price, it is essential to estimate the demand curve

for gold—that is, what demand will be for all prices. Incorrect estimation of the demand curve would lead to incorrect setting of the initial price and would necessitate later adjustment of the price to reflect the true demand.

VI. An Unexpected Price Path

Suppose that, in 1968, market participants estimated a demand curve for gold, based on past demand and existing world stocks. In doing so, they implicitly calculated that if prices began to rise at a rate equal to r_b (plus some risk premium), the world's supply of gold would be exhausted just as the price rose to levels that would choke off demand.

Market participants had many opportunities to observe demand in the price range from \$35 to \$100 an ounce (in real 1977 dollars) from at least the beginning of the twentieth century until 1978. Although we do not have the data to plot these points precisely, we assume for this example that they fit a linear demand curve fairly well, as shown in figure 4. Based on these observations, gold speculators postulated that the same solid line that approximated

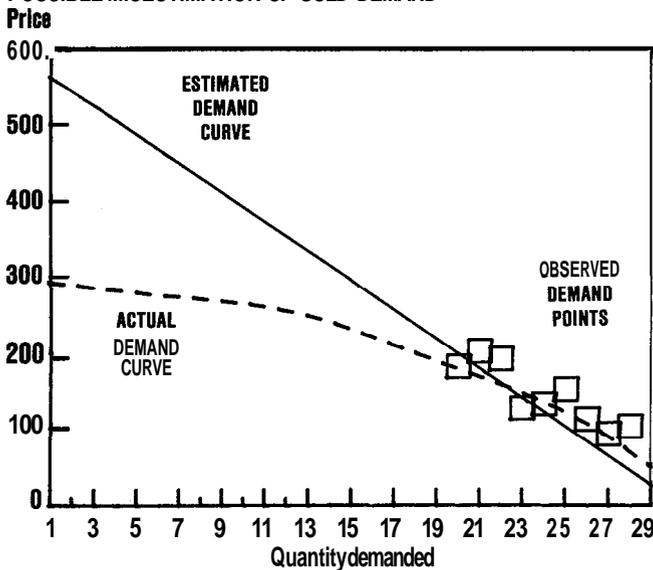
estimated the demand curve for gold, given that demand at the very high prices that prevailed in 1980-81 had no precedent. But why has the decline in the real (as well as the nominal) price of gold been so extended? Market participants are actively revising their estimates of demand at the prices where they first began to make serious errors, in the \$200 to \$400 range. First, the price fell precipitously as all speculators temporarily liquidated stocks in the knowledge that prices would fall. Most speculators were surprised when, after this initial price drop, demand was still too weak to support new price increases (consistent with the exhaustible resource model).

Since 1983, when the price fall moderated, the market may be said to have been groping for a price path that would lead to a depletion of gold just as demand chokes off. Demand was weaker than expected in the intermediate price range, and so the price continued to edge downward. The recent rise in gold prices may indicate that the bottom has been found, and that gold will yield superior returns.

Perhaps a more fundamental question is: why did people misestimate the demand for gold in the first place? Certainly there are many plausible explanations, and this paper does not attempt to establish one as being more correct than another. However, one possible explanation is that their information was inadequate and inappropriate. People had virtually no basis for estimating the entire market demand curve, since the price had been more or less fixed for over 25 years. People did not even have estimates of the average expected demand at higher prices, let alone the variation to be expected about this average. Their estimate of market demand proved correct for prices that were not too far from observed values, but people systematically overestimated demand at higher prices. Oil market analysts undoubtedly had similar difficulties forecasting demand after OPEC suddenly tripled prices in the early 1970s.⁶

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POSSIBLE MISESTIMATION OF GOLD DEMAND



SOURCE: Author.

FIGURE 4

demand for prices from \$35 to \$100 an ounce would also be valid at higher prices. However, if true demand were represented by the broken curve, then it is obvious how this misestimation could produce an unexpected flagging in demand that would, in turn, cause the price decline in gold observed since 1981.

Figure 4 illustrates just one of many ways that agents could have incorrectly

6 Salant notes that rising real interest rates, along with incorrect demand forecasting, can help explain why gold prices dropped after 1980. We have implicitly assumed a constant real interest rate. Salant points out that if, for whatever reason, the real interest rate rises, the price of gold would initially fall before increasing at a faster rate. Why is this so? A higher real interest rate implies that gold prices must rise more rapidly. If no price decline occurred when real interest rates rose, the new higher gold price path would induce lower demand at every date than the original price path. But the original price path was set such that supply would be depleted just as a sufficiently high price choked off demand. If no price drop occurred when a higher interest rate prevailed, the stock of gold would not be exhausted; some owners would be left holding gold when high prices extinguished demand. This is not an equilibrium; such a prospect forces prices to jump down when the interest rate rises.

Conclusion

Two distinct regimes explain the unique behavior of gold prices since 1968. Between 1968 and 1981, prices increased according to the Salant and Henderson analysis; based on prices actually prevailing during the 1968 to 1981 period (as high as \$200 an ounce in real 1977 dollars) estimates of the demand curve for gold were roughly correct. However, incorrect forecasts of gold demand at higher prices meant that the price had to fall. The initial precipitous decline reflects the first reaction to this prediction. The continued mild slide indicated that the market was edging down the demand curve in search of the price that fits the Salant and Henderson explanation of gold price determination. The turnaround in gold prices may well be telling participants that demand has been reestimated with enough confidence to justify a renewed upward trend in gold prices.