SOUTH AFRICAN EQUITIES AS INFLATION HEDGES: A NOTE

WILLIAM ROOME

ABSTRACT

Equities have traditionally been said are to offer a hedge against inflation. During the latter years of the twentieth century, South Africa provided a good test case for establishing the veracity of this claim, as a high rate of inflation was the norm. Accordingly, this note examines the empirical evidence, with most studies finding South African equities to have served as a good hedge against inflation over the long term.
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INTRODUCTION

During the latter half of the twentieth century, circumstances in South Africa were ideal for testing the proposition that equities provide a hedge against inflation. Whereas the 1950s and 1960s had seen inflation at a low level, all this was to change with the onset of the 1970s. Thus, over the 42-year period from 1960 to 2001, the official rate of inflation (CPI) averaged 9% per annum. Furthermore, for almost half that period (1974 to 1991) the annual rate exceeded 10% per annum, at times reaching almost 20%!

Just why the Republic suffered from so severe an inflationary problem is a subject beyond the scope of this short paper, as is the question of why equities should be inflation hedges. What does need to be considered, however, is a definition of what constitutes an inflation hedge. In other words, how does one measure whether or not equities have served as inflation hedges?

Since equities are held in order to receive a return in the form of dividends and capital gains, the real rate of return has become the generally accepted yardstick for an inflation hedge. According to this criterion, equities serve as an inflation hedge if the real rate of return is positive, or, at the very least, equals zero. If several years are being considered, then the average real rate should be positive. In this regard, it is widely argued in the literature of finance that the geometric mean return rather than the arithmetic mean is more
appropriate when dealing with investments (Jacob & Petit 1984; Woods 1989).

It should perhaps be mentioned that some early work in this field sought to deal with the issues raised by Fisher (1930), who postulated that nominal interest rates consist of a ‘real’ return plus a premium for anticipated inflation. For example, in a study of US equities, Reilly et al (1970) argued that investors require a ‘normal’ return, which consists of the risk-free rate plus a premium for business and financial risks. A complete hedge would therefore have to offer a return which covered both this ‘normal’ return and the rate of inflation. However, as explained in the previous paragraph, most studies have merely sought to establish whether or not equities achieved a real return.

THE EVIDENCE

The pioneering work in respect of South African equities may be attributed to Bethlehem (1972), who examined the returns obtained by a randomly selected sample of twenty industrial shares quoted on the Johannesburg Stock Exchange during the period January 1951 to January 1971. Assuming an initial investment of R10 000 in each security, and that dividends were withdrawn, internal rates of return were found for all possible holding periods of one year or more. Bethlehem’s calculations took into account capitalization issues, share splits and rights issues, and were based on the prices ruling on the first business day of January each year. Brokerage and taxation were ignored.

Over the entire 20-year period, the sample achieved an average real return (internal rate of return) of 9.65% per annum. Furthermore, in only three years were real returns negative. Thus Bethlehem’s work would suggest that South African equities were very good
inflation hedges during the two decades reviewed, but rates of inflation were also very low at this time.

Against a background of double-digit inflation, Roome (1986) employed the JSE-Actuaries Financial and Industrial and All Gold indices to calculate annual real returns over the 26-year period 1960 to 1985, as well as geometric mean real returns for various periods. These returns included both capital gains/losses and dividends, but ignored taxation. With the gold price at an historic high during this period, gold shares achieved an average real return of 9.7%, outperforming industrials with a return of 7.8%. Table 1 shows this work extended to cover the 42-year period 1960 to 2001, thereby capturing the international stock market boom of the 1990s as well as South Africa’s transition to majority rule. Over this period, the market outperformed both sectors, with an average real return of 7.6%.

Although several international comparative rate of return studies have been undertaken over the years, these have generally not been particularly informative as far as South Africa is concerned. For example, Ibbotson, Carr and Robinson (1982) compared equity and bond returns for 18 countries over the period 1960 to 1980, but no African markets were included in the sample. In a study covering the period 1970 to 1990, Ibbotson and Brinson (1993) compared the nominal returns in 19 developed stock markets, including Johannesburg. These returns were calculated from the Morgan Stanley Capital International Index, but, in the case of South Africa, the FT-Actuaries World Indices were used, and only the period from 1980 to 1990 was covered. The study shows South Africa to have been one of the poorer performers, with a compound annual nominal return of 8.8%, and negative figures in foreign currency terms.

The end of white minority government has clearly seen renewed investor interest in South Africa as an emerging market.
Accordingly, in a comprehensive study of global stock markets, Jorion and Goetzmann (1999) present evidence on the performance of South African equities from January 1947 to December 1996. Using monthly stock price index and wholesale price index data published by the International Monetary Fund, average annual returns were calculated in local currency, real and US dollar terms. In contrast to Bethlehem and Roome, Jorian and Goetzmann show South African equities in a poor light, with negative average returns. Thus, a geometric mean real return of \(1.76\%\) was recorded, whilst the arithmetic mean was found to be \(0.46\%\), figures which put South Africa at the lower end of the international performance table. However, in addition to using the wholesale price index rather than the consumer price index, the calculations excluded dividends. As the authors demonstrate in respect of a number of industrial countries, dividends may make a substantial difference to the average returns achieved.

The most recent work on South Africa equities, and other financial assets, takes the form of two related studies. In the first, Firer and McLeod (1999) followed the lead of the US research team of Ibbotson and Sinquefield (1976), examining the performance of equities, bonds, cash and inflation from 1925 to 1998. For equities, this entailed using a number of indices and other sources to construct both a linked price index and an annual dividend yield series, although the data prior to 1960 did not include mining shares. Over the entire 74-year period, equities were found to have achieved an average (geometric mean) real return of \(7.39\%\). Dimson et al (2002) amended the database of Firer and Mcleod so as to include mining and financial shares in the period prior to 1960, extending the series to cover the 101 years from 1900 to 2000. A slightly lower geometric mean return of \(6.8\%\) was recorded over this longer period.
COMMENT

With the exception of the work by Jorian and Goetzmann, the empirical evidence discussed in this paper shows South African equities to have been good inflation hedges, with a long-run average real return of some 7%. Furthermore, as Table 1 shows, and Dimson et al confirm for earlier periods, on a decade-by-decade basis, a diversified portfolio has invariably provided a positive average real return, albeit at times well below the long-run figure. Of course, as would be expected, over shorter periods some phenomenal positive average real returns have been recorded, and, equally, substantial negative returns, the period 1969 to 1976 being a case in point. In short, the empirical evidence would seem to confirm the adage that those investing in equities should take a long-term view.

From an international perspective, an average real return of 7% in local currency terms places South Africa near the top of the performance table for developed markets over the past century. Although the post-apartheid period has seen a somewhat lower average real return, this is, perhaps, not surprising, given the political and economic changes now taking place. In any event, as explained in the preceding paragraph, average returns have varied substantially from one decade to the next. Accordingly, on the strength of the historical record, it seems reasonable to expect that South African equities will continue to serve as good inflation hedges over the long term, although a more competitive environment, and the complete elimination of exchange control, may well see more modest average real returns in future years.
REFERENCES


TABLE 1
Average Annual Real Rates of Return on South African Equities, 1960 to 2001 (%)

<table>
<thead>
<tr>
<th>Period: January to December</th>
<th>All Shares</th>
<th>Financial and Industrial</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960 to 2001</td>
<td>7.6</td>
<td>7.0</td>
<td>4.7</td>
</tr>
<tr>
<td>1960 to 1968</td>
<td>14.8</td>
<td>19.3</td>
<td>6.0</td>
</tr>
<tr>
<td>1960 to 1969</td>
<td>11.6</td>
<td>15.8</td>
<td>2.8</td>
</tr>
<tr>
<td>1960 to 1970</td>
<td>7.1</td>
<td>8.6</td>
<td>3.6</td>
</tr>
<tr>
<td>1960 to 1989</td>
<td>8.6</td>
<td>8.2</td>
<td>8.9</td>
</tr>
<tr>
<td>1961 to 1968</td>
<td>18.9</td>
<td>24.2</td>
<td>7.0</td>
</tr>
<tr>
<td>1969 to 1976</td>
<td>(5.4)</td>
<td>(9.7)</td>
<td>6.3</td>
</tr>
<tr>
<td>1970 to 1979</td>
<td>5.8</td>
<td>0.6</td>
<td>17.7</td>
</tr>
<tr>
<td>1971 to 1980</td>
<td>11.7</td>
<td>8.4</td>
<td>20.0</td>
</tr>
<tr>
<td>1977 to 1983</td>
<td>17.6</td>
<td>18.9</td>
<td>18.8</td>
</tr>
<tr>
<td>1977 to 1989</td>
<td>13.8</td>
<td>13.0</td>
<td>12.7</td>
</tr>
<tr>
<td>1980 to 1989</td>
<td>8.5</td>
<td>8.8</td>
<td>6.8</td>
</tr>
<tr>
<td>1990 to 1999</td>
<td>4.6</td>
<td>7.3</td>
<td>(9.8)</td>
</tr>
<tr>
<td>1990 to 2001</td>
<td>5.0</td>
<td>4.1</td>
<td>(5.1)</td>
</tr>
</tbody>
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