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Notes on oil, gold and inflation

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Contents

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Notes on oil, gold and inflation*

1. Introduction

The so-called "third oil crisis", which hit the world when Iraq invaded Kuwait on 2 August 1990, gave rise to major uncertainties and raised a number of problems and questions for the South African as for the world economy. What would be the effect of substantially higher oil prices on the cost of living, i.e. on the general level of consumer prices? More important: could higher oil and petrol prices spark off a reacceleration of *inflation*, i.e. bring about not merely a once-and-for-all rise in the general price *level*, but also a new speeding-up of – and possibly even a renewed upward trend in – the *rate* of price *increases* over a *prolonged period*?

Since South Africa is a net importer of petroleum products, would the higher foreign currency cost of oil imports mean a new set of problems on the balance of payments, and therefore a need for more domestic "austerity" and for a further tightening of our monetary and fiscal policies? Or would the gold price come to the rescue (and actually bring about an *easing* of monetary and credit conditions), as it did in 1973-74 and 1979-80? From August to December 1990 the modest strengthening of the average dollar price of gold was clearly not providing adequate compensation for the oil price increase. What accounted for its failure to do so?

Higher world prices of oil *per se* impinge unfavourably on the South African terms of trade: they lower the ratio of the general level of the prices of South African exports to the general level of the prices of South African imports. This means that an increased quantity of South African goods and services exports has to be exchanged for a given quantity of imports, including oil. Since the terms of trade, in conjunction with real domestic production per head of the population, are a major determinant of *real income* of South African residents *per capita*, it is pertinent to ask what effect higher oil prices will have on the average level of the welfare or general economic well-being of the people of this country.

Other effects of higher oil prices could reach South Africa more indirectly through the impact of these price increases on the world economy. In the rather vulnerable cyclical condition of some of the major industrialised economies in late 1990, the third oil price shock could conceivably cause the international economy to slip into a pronounced recession – with dire results for the world demand for South Africa's commodity exports. Also, because of the oil price shock, the measured inflation rates in the countries of origin of South Africa's merchandise imports were bound to be somewhat higher in 1990 and 1991 than they would have been in the absence of this event, thereby imparting another (mild) upward twist to the South African inflation rates. Finally, in 1979-80, the then trebling of oil prices brought with it major redistributions of income and wealth between nations and gave rise to unprecedented international lending and borrowing transactions and movements of capital. Eventually, this contributed greatly to the world debt crisis of the 1980s, the after-effects of which are still being felt today. Could something similar happen this time around?

Not all of these and related questions can be answered readily, with confidence, or at all, and the following notes will not attempt to give conclusive answers to many of them. At the time of writing (the third week of December 1990), much obviously still depended on both the timing and the nature of the outcome, if not the final resolution, of the Middle East conflict, which at that juncture was looking more threatening again. It has been suggested, however, that even if the worst were to come to the worst – i.e. even if the present tension around the Persian Gulf were to erupt in a large-scale and destructive clash of arms within the next two to three months – the dollar price of crude, after an initial violent upward reaction, might well fall back within a reasonably short period to levels not notably higher (and possibly lower) than those which prevailed in July 1990. This would be the combined result of factors such as an increased output of crude by oil-producing countries outside the area of armed conflict; new measures and techniques for conserving oil and for economising on liquid-fuel consumption; increased recourse to oil substitutes; more intensive oil exploration and exploitation, and the re-opening of mothballed oil production facilities; a drawing-down of emergency oil reserves in countries maintaining such reserves; and a slowing-down of the world economy.

As regards South Africa, data concerning this country's imports, domestic production and consumption of crude oil and liquid fuels are classified

*The text of this paper was compiled by Dr E.J. van der Merwe and Dr J.H. Meijer. Valuable assistance in the preparation of this paper was provided by Mr M.C. Bester, Mrs S. Dippenaar and Miss C. Jaunich of the Balance of Payments Division and by staff members of the Graphical Section of the Information Division of the Reserve Bank's Economics Department.

information. This precludes a quantification, for public discussion, of many oil-related phenomena, forecasts and simulations. A view may be posited, however, that although the effect on the current account of the South African balance of payments of, say, a US$10 increase in the world price of Brent crude per barrel – from an average of US$17 per barrel in July 1990 to, say, a fairly conservatively estimated average of US$27 per barrel in 1991 – would certainly not be "negligible", it would not be "unmanageable" relative to the current account surpluses South Africa can reasonably be expected to attain in 1991.**[1]** Some assumption as to the volume of South Africa's oil imports would obviously also have to be made if one were to calculate the increase in the average dollar price per fine ounce of South Africa's current gold production (of some 19-20 million fine ounces per year) that would be needed to "compensate" in a direct manner for every $1 increase in the average world price of oil per barrel over any given period.**[2]**

Useful insights may, however, also be derived from a comparison of the third oil crisis with its two predecessors, and from an inspection of *relative* price movements. After describing briefly the events of the third oil crisis and the position of Iraq/Kuwait in world oil production, the notes and graphs in this article trace the course of the world price of oil since approximately the 1950s and compare the movements in this price with those in the price of gold, in the prices of South Africa's merchandise exports, and in "production prices in general" in South Africa's main trading partner countries (as a proxy for world inflation). Our notes refer to the part played by the earlier oil price shocks in the world inflation of the 1970s and early 1980s and allow some impression to be gained of the extent to which the members of the Organisation of Petroleum Exporting Countries (the "OPEC" countries) have had the world "over a barrel". Finally, they observe the third oil crisis to be different from its predecessors. They conclude by noting that although the third oil crisis currently appears manageable from a South African balance-of-payments point of view, it has undoubtedly been a complicating factor in the conduct of South Africa's economic policies.

2. The third oil crisis

Iraq's unprovoked invasion of Kuwait on 2 August 1990 was followed by the annexation of Kuwait and its incorporation in Iraq as that country's nineteenth province. A substantial number of people – including groups of citizens of Western countries and the USSR – were taken into custody and interned and, according to the stated intentions of the Iraqi authorities, were to be used as "human shields" in the defence of Iraqi strongholds and installations against enemy attack; various groups, and eventually all, of the non-Iraqi/ non-Kuwaiti hostages were, however, subsequently released.

In the non-Iraqi world, resolutions condemning Iraq's actions were passed by the United Nations Security Council, and embargoes were imposed on Iraq's imports and exports (the latter consisting almost entirely of oil). From 7 August onwards, a large fighting force, comprising troops, armaments and equipment from the United States and several other countries, was assembled in Saudi Arabia under the auspices of the United Nations for safeguarding the Arabian peninsula and the Saudi oil fields against further Iraqi aggression ("Operation Desert Shield") and for compelling the eventual withdrawal of the Iraqi forces from Kuwait. At the same time, various – but thus far unsuccessful – diplomatic initiatives were launched for finding a peaceful solution to this new Middle Eastern crisis situation.

International oil prices began to harden from mid-July 1990 to high points in October, partly because of stockpiling by oil-buying countries out of fear of impending shortages and partly because of the elimination of Iraq's and Kuwait's current production (estimated at some 4,4 million barrels per day) from the day-to-day flow of world oil supplies. The price of Brent crude roughly doubled from a monthly average of $17 per barrel in July 1990 to $26 in August, $33 in September and $35 in October. A peak price of $40,90 (the highest price since the fourth quarter of 1985) was reached on 28 September 1990. From late October 1990, oil prices fluctuated downwards in the light of a better-than-expected supply and demand situation and because of hopes at that time that armed hostilities could yet be averted.

Threats to peace and stability in the area surrounding the Persian Gulf derive their importance for the world energy markets from the significant share of this region in current oil production and its relatively very large share in the world's proven oil reserves; from the relatively inflexible nature of the world's energy needs; and from the high *short-term* price inelasticity of both the demand for and supply of oil as an energy source. At the end of 1989, the proven oil reserves of Kuwait and Iraq amounted to nearly 95 billion and approximately 100 billion barrels respectively. Between them, these two countries therefore con-trolled some 19,2 per cent of the total proven world-wide oil reserves of some 1 012 billion barrels – "proven reserves" being defined as those quantities of sub-surface petroleum deposits which, in the present state of geological knowledge and engineering skills, are known with reasonable certainty to be recoverable in future under the now existing economic and operating conditions. In addition, the oil reserves of Saudi

Arabia as at the end of 1989 were estimated at 255 billion barrels, or at 25,2 per cent of proven world reserves. Conflict involving Saudi Arabia as well as Iraq and Kuwait would therefore affect an area containing from two-fifths to one half (44,4 per cent) of the world's known reserves of exploitable oil; war in the entire Middle East (which, in addition to the oil-bearing regions of the three countries mentioned, also comprises the oil resources of Iran, the United Arab Emirates, Bahrain, North and South Yemen, Oman, Syria and Qatar) would affect an area accounting for some 660 billion barrels, or nearly two-thirds (65,2 per cent), of proven reserves.

Current oil *production* of the Middle Eastern countries, although of major importance, is substantially less than proportionate to these countries' share in the world's known subterranean oil stocks. Aggregate output by Iraq and Kuwait in 1989 amounted to 4,4 million barrels per day, or to 7,1 per cent of world oil production. This was fairly significantly less than the Saudi Arabian production of 5,3 million barrels per day. Total production by Saudi Arabia, Iraq and Kuwait as in 1989 contributed 15,4 per cent to the world total; total production by all Middle Eastern countries accounted for a share in world output of 26,3 per cent.

Iraq/Kuwait's fairly modest share in current oil production *in conjunction with* the Middle East's relatively very large share in proven world oil reserves, means that it will be "rational" for countries contracting a major part of their oil supplies from Middle Eastern sources (which include the United States and Japan) to accept a temporary interruption of the flow of Iraqi/Kuwaiti oil (and possibly to incur important other costs) for the sake of ensuring that oil from the Middle East shall reach the world markets steadily, assuredly and at "reasonable" prices in the years and decades to come. Several major industrial countries therefore have an interest in not allowing the provision of Iraqi, Kuwaiti, Saudi and other Middle Eastern oil to be subjected to strict Iraq-dominated OPEC "discipline" and in preventing these oil resources from being brought under the monolithic control of a single (anti-Western, unfriendly or openly hostile) Middle Eastern power.

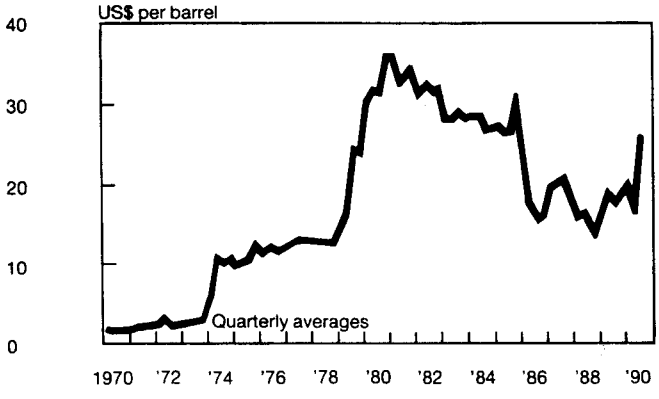
3. Oil price movements since the 1950s

During a substantial part of the first 25 years or so after the Second World War, i.e. in the 1950s and 1960s, world oil production rose at a notably faster pace than total world energy consumption. This resulted, firstly, in an increasing proportion of the world's energy needs being met by oil-based fuels; by the beginning of the 1970s the consumption of oil accounted for nearly one half of the world's total use of energy.

Secondly, the tapping of easily accessible new sources of oil meant downward pressure on its price. Data on oil price movements in the 1950s and 1960s are not easy to come by, because most of the oil moved through the integrated channels of the major multinational oil companies. However, such information as can be obtained indicates that international oil prices fluctuated moderately around a stable level in the 1950s, declined mildly in the 1960s, and amounted to some $1,30 per barrel by the beginning of the 1970s – a price which clearly appears minimal by present-day standards.

Graph 1 shows the behaviour of the dollar price of oil (Brent crude) from 1970 to 1990. It is clear from this graph that this 20-year period can be divided into several sub- periods. These include the three oil "crises", or oil price "explosions", of 1973-74, 1979-80 and 1990, as well as the price "implosion" of 1986.

Graph 1. World oil price



• **The years from 1970 to late 1973.** The downward drift of the oil price in the 1960s petered out and began to reverse itself in 1970. This was a result of various longer-term factors, such as oil exploration being discouraged by the then low prices of oil and oil-based products, diminishing returns to oil exploration in countries where such exploration had already moved into more marginal areas, declining growth of petroleum output in some of the "older" oil-producing countries, and the ever-expanding use of oil as the basic energy source for heating, industrial and household purposes. In addition, growing awareness of the relative inexpensiveness of oil in an increasingly inflationary world, a resurgence of economic nationalism in various OPEC countries, and growing resentment in these countries of the self-seeking actions of the large foreign-controlled

concessionaire companies in the exploitation of their natural resources, caused the authorities in these countries to concern themselves increasingly with oil price-setting decisions and with the conduct of oil-producing operations. Although still very modest by current standards, the price of oil nearly doubled from the beginning of 1970 up to October 1973.

• **The "first" or "Yom Kippur" oil shock.** The Yom Kippur War, which itself lasted only from 6 October 1973 to the signing of a ceasefire in November of the same year, gave rise to oil production cut-backs by major Arab oil-producing countries and to attempts at boycotts and embargoes on oil exports to countries (the United States, the Netherlands) that were perceived as being too strongly pro-Israel. The war accordingly resulted in a termination of negotiated financial arrangements between the oil companies and the governments of the petroleum-producing countries concerned; it also led to oil prices, as quoted by OPEC countries, being fixed unilaterally and in concert. The price of oil rose to an average of more than $9 per barrel in 1974. At this price level, oil was some four times as expensive as immediately before the Yom Kippur War, and roughly seven times as expensive as in 1970.

• **Relative oil price stability, 1975 - 1978.** After the Yom Kippur oil price shock, the price of oil drifted upwards from its average of somewhat more than $9 per barrel in 1974 to nearly $13 per barrel in 1978. This period now appears as an interlude of relative oil price stability; it may be noted, however, that the *increase* in the oil price over the four years concerned actually exceeded the oil price itself as it had been as recently as late 1973.

OPEC's actions at the time of the Yom Kippur War aroused apprehensions, not only about that organisation's powers to manipulate the oil price and to control international oil supplies, but also about eventual exhaustion of the world's reserves of petroleum and other fossil fuels and about the future adequacy of alternative sources of energy. Programmes for stockpiling oil and for economising on its use were set afoot in several countries. Up to 1978, however, the effects of stockpiling and of OPEC's hold over its member countries on the world price of petroleum outweighed the effects of increased fuel efficiency, shifts to oil substitutes, and the growing absolute and relative importance of non-OPEC sources of oil supply.

• **The "second" or "Iranian" oil price shock.** The 1978-1979 revolution in Iran, which resulted in the flight and deposition of the Shah and in the assumption of power by the Ayatollah Khomeini, was followed in 1980 by border clashes and eventually by full-scale war between Iran and Iraq. These events caused Iranian oil production and exports to be brought to a complete halt; Iran, at that time, had accounted for nearly one-fifth of total oil production by the oil-exporting countries. These developments, moreover, took place in an unusually tense and restless world situation, which also included the Soviet Union's invasion of Afghanistan (at the end of 1979) and the ill health and subsequent death (in May 1980) of Marshal Tito of Yugoslavia. Conditions in 1979 and 1980 therefore appeared to harbour a potential for large-scale international friction, conflict and war. In addition, world oil inventories at that juncture were relatively low.

Panic buying and hoarding in the face of diminished oil production (rather than the manipulative powers of the oil-producing nations) caused the oil price to rise through 1979 and 1980 to a peak quarterly average of $35,80 per barrel in the fourth quarter of 1980 and the first quarter of 1981. The second oil crisis accordingly resulted in an approximate threefold increase in the oil price over a two-year period.

• **The slackening oil price years, 1981-1985.** The five-year period 1981 to 1985 saw the results, on the one hand, of relative shifts to less energy-intensive forms of economic activity and to non-oil sources of energy, and of the adoption of less fuel-intensive production techniques and of energy- saving procedures in general.**[3]** On the other hand, it saw the results of slippage of OPEC's control over the output-restricting and price-maintaining behaviour of its member countries. Members of OPEC had little difficulty in finding reasons why they should be permitted to exceed their quotas and were not averse to "cheating" on them.

Thirdly, the high oil prices that had emanated from the second oil crisis allowed the re-opening of certain previously de-activated oil production facilities and encouraged exploitation of new (but higher-cost) oil fields in (among other areas) Mexico, the North Slope of Alaska and the North Sea.

Non-OPEC producers rediscovered the benefits of being on the outside of a cartel in a cartelised industry. As OPEC producers tried to lean against the wind of rising non-OPEC petroleum production, OPEC's shares in total world and total non-communist world oil output (which had amounted to 56 per cent and 68 per cent, respectively, in 1973) shrank to 30 per cent and 42 per cent in 1985. The price of oil weakened by an average of 5 per cent per year from 1981 to 1985 and reached an annual average of slightly less than $28 per barrel in 1985.

• **The price slide of 1986.** Having amounted to an average of nearly $28 per barrel in 1985, the oil price fell by more than one-third (35,7 per cent) in 1986 (to an annual average of $18 per barrel, including a low point in the quarterly average of

$15,50 in the third quarter). This "price implosion" or "inverse oil crisis" - "the steepest oil price slide in history" – was mainly related to OPEC's abandonment of production quotas for its members. Specifically, Saudi Arabia (which had traditionally acted as "swing producer", varying its output to maintain price stability) sought to reverse the steady downward trend in the volume of its oil sales: it offered discounts to buyers on the established OPEC price and in 1986 increased its oil output by 45 per cent.

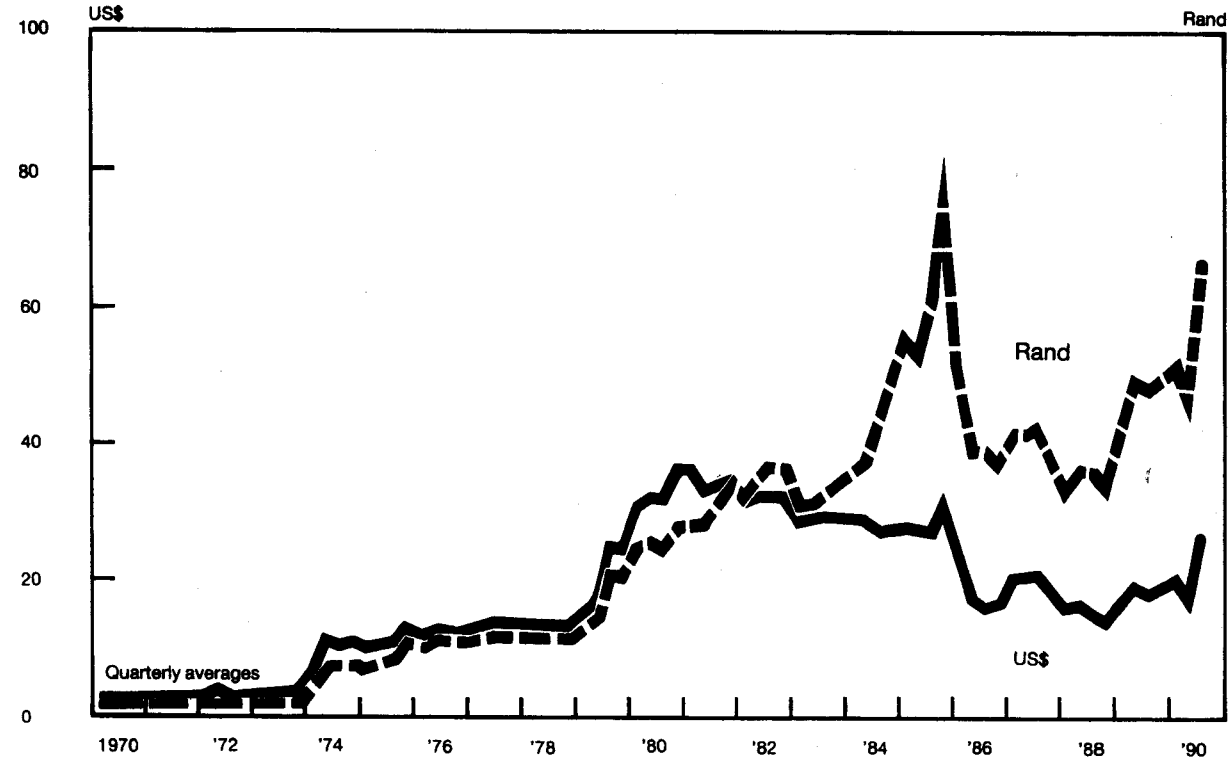
The 1986 oil price slide occurred at a time when the American dollar, which had strengthened greatly in the foreign exchange markets during the Reagan years from 1981 to early 1985, was depreciating rapidly against several major and some minor currencies. For many oil-importing countries, therefore, the oil price decline was even more pronounced when expressed in terms of their own monetary units.

• **The fluctuating oil price years, 1987-1990.** After its drop in 1986, the price of oil fluctuated around an average of close to $18 per barrel from the final quarter of 1986 through the first half of 1990, or at marginally less than half its peak quarterly average price of $35,80 in the fourth quarter of 1980. Oil price fluctuations during those years were mostly related to OPEC's greater or smaller success in holding down aggregate output by its member countries. OPEC's aim in this period was to limit production to the levels needed for giving effect to its "reference price" of $18 per barrel. However, when member countries pumped oil in excess of their agreed quotas, oil prices normally fell quite sharply.

An upward tendency in the oil price became apparent from the beginning of 1989 as a reflection of a steady mild rise in world demand in conjunction with certain hitches in production and transportation logistics, which have occasionally troubled the oil industry.

• **The third oil crisis, 1990.** As noted earlier, the approximate doubling of the oil price from $17 per barrel in August 1990 to $35 in October 1990 was also essentially unrelated to OPEC price and output manipulation. Instead, it was due to the falling-away of oil supplies from Iraq/Kuwait, and to "panic" buying for fear of future oil shortages and of imminent oil price rises. Saudi Arabia and certain other countries, in fact, volunteered to step up their pumping rates to make up for the loss of Iraqi/Kuwaiti production.

Graph 2. Oil price per barrel in US$ and South African rand



What about the history of the oil price *in rand*? Graph 2 makes it clear that movements in the rand price of crude per barrel broadly followed movements in the dollar price from 1970 up to the advent of the second oil crisis in early 1979. During the second oil crisis, however, the strengthening of the rand/dollar exchange rate (reflecting the rising dollar price of gold and South Africa's very strong overall balance of payments position) muted the effect of this crisis on the rand price of oil. Whereas the *dollar* price of oil rose by 184 per cent from the fourth quarter of 1978 to the fourth quarter of 1980, the *rand* price rose by a more limited 145 per cent.

Conversely, depreciation of the rand/dollar exchange rate from the first quarter of 1981 meant that the rand price of oil generally failed to reflect the slackening of the dollar price of oil in the 1981-1985 period. The dollar price of oil declined, on balance, by some 13½ per cent from the fourth quarter of 1980 to the fourth quarter of 1985. In contrast, the rand price of oil *rose* over this five-year period by a very large 205 per cent, to a peak in the fourth quarter of the balance of payments crisis year 1985.

The differential between the rand price and the dollar price of crude per barrel narrowed during 1986. From 1988, however, renewed weakening of the rand vis-à-vis the dollar caused the rand price of oil to drift away again from the dollar price to generally higher levels. On the brink of the third oil crisis, i.e. in July 1990, the rand price of oil averaged R46 per barrel. It then rose to a monthly average of R90 per barrel in October 1990 and on a few occasions exceeded all earlier records at levels of more than R100 per barrel.

4. Oil price increases and inflation

As was indicated above, an increase, for whatever reason, in the relative price (in domestic currency) of an imported good such as oil *ceteris paribus* means a decline in the standard of living of residents of the importing country: more goods and services produced by the residents of the importing country have to be given up to pay for a given quantity of the imported good. More goods and services must therefore be *produced* by the residents of the importing country if they are to continue to enjoy the same level of real consumption (or of real consumption plus real investment) per head of the population as they did before.

Simple neo-classical analysis suggests that when the real wage of workers declines in the importing country (as it must under the "other things being equal" assumption), fewer workers will be willing to work. Total real output will therefore tend to decline. In addition, the higher relative price of imported oil (or of energy generally) will reduce the real quantities demanded of energy intensive goods and services both relatively and absolutely. It will also render a number of energy- intensive (specifically oil-burning) production processes uncompetitive, and may reduce to its scrap level the value of specialised and inconvertible oil-burning machinery and related capital equipment. Workers employed in the firms or industries concerned, or engaged in the operation of the relevant machinery and equipment, are likely to lose their jobs. They may be made at least temporarily unemployed even if they are willing to work for the new (lower) equilibrium real wage remuneration of labour. Attempts by these "involuntarily" unemployed workers to regain employment should eventually drive the real wage per worker down to its new equilibrium level; in the meantime total real output will be lower by the marginal production of the newly unemployed workers and of the now unprofitable oil-burning (or high energy consuming) capital equipment, until such time as the pattern of output can be adjusted and production processes reorganised.

The decline in total real output in the afflicted oil-importing country means that, *even if the money supply is frozen by the monetary authorities at its previously prevailing level*, the general level of prices must rise. Statistics will measure this rise in the general price level. Although essentially of a once-and-for-all nature, it will (erroneously) be called "inflation".

Workers who have *kept* their jobs are, however, unlikely simply to accept the necessary reduction of their real wages and to acquiesce in the lowering of their standard of living. They will almost certainly insist on money wage increases that will compensate for the rise in their "living costs" (or in the consumer price index). Since the average real wage of workers must nevertheless be brought down, most employers will have no option but to pass on these increases in unit labour costs, fully or more than fully, into higher money prices for their products. If the monetary authorities prove willing to "accommodate" this sequence of price increases, money wage increases and further price increases by expanding the money supply, the result will be a process of true inflation.

Certain groups of workers, to be sure, will succeed in continually negotiating higher real wages for themselves than can be justified in the now prevailing conditions. (They may even succeed in warding off a reduction of their real wages altogether.) To the extent that they do so, however, more workers will be unemployed than would otherwise be the case.

Governments will become concerned at the high and/or rising level of unemployment in their economies, and may be more concerned about this unemployment than about the (accelerating)

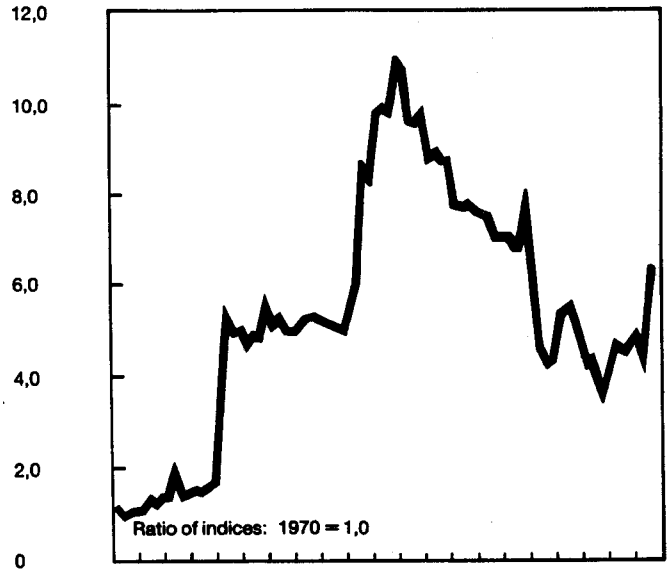
inflation. To counteract the rise in unemployment, they may introduce expansionary monetary and fiscal policies. Such policies are likely to have their usual short-term stimulatory effect on employment and real production. However, since the "fundamentals" of the situation imply that total real output, if anything, shall be adjusted downwards for some time at least, the *eventual* effect of the authorities' restimulatory policy measures is likely to be only a (further) rise in the inflation rate.

The above description broadly and in a somewhat stylised manner fits the events of the first oil price crisis in particular.**[4]** The inflationary impact on the world economy of both the first and the second oil crisis can hardly be disputed. The top panel of Graph 3 shows the course of the ratio of the index of the dollar price of oil to a weighted average index of the general level of production prices in the economies of South Africa's eight most important trading partner countries (the movements in which may also be taken as broadly representative of "world inflation"). This graph therefore shows the rises and declines in the *relative* expensiveness of oil, of the expensiveness of oil in terms of a representative selection of goods, or of oil's expensiveness in "real" terms. Unsurprisingly, Graph 3 shows that oil had become relatively very expensive by the time the second oil crisis had exerted its full oil-price-raising effect; however, oil internationally clearly remained considerably more expensive than in 1970, in real or relative terms, at all times in the seventeen-year period from 1974 to 1990.

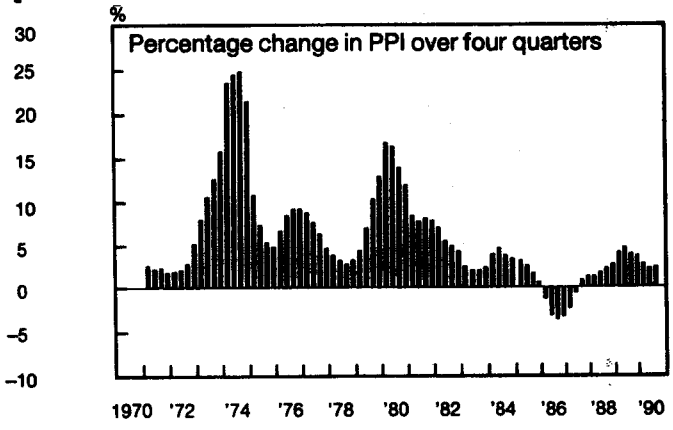
The lower panel of Graph 3 shows the rate of inflation in production prices in the eight trading partner countries, measured as the percentage change in the quarterly average of the weighted production price index in these countries over four-quarter periods. Again unsurprisingly, it shows inflation to have accelerated sharply during, and in the wake of, the two oil crises, but less so during the second oil crisis than during the first.

Both the Organisation for Economic Cooperation and Development (the OECD) and the International Monetary Fund (the IMF) found in their investigations of the effects of the first two oil crises, firstly, that these crises had resulted in "substantial" deteriorations of the terms of trade of oil-importing and other energy-importing countries, and, secondly, that the rise in import prices concerned had proved "highly inflationary". In its *Economic Outlook* of July 1983 the OECD stated that each of the two oil crises "directly raised the OECD general price level by about 2 percentage points relative to what it would have been otherwise". In addition, however, "the induced wage/price spiral multiplied this figure several-fold over the next few years". These secondary effects, to be sure, were less pronounced after the second oil crisis episode than after the first.

Graph 3. Ratio of world oil price to weighted average of production prices in trading partner countries



Rate of inflation (production prices) in trading partner countries



The depressing effects of the oil price increases on employment and real output in the oil-importing countries were, however, not limited to only those that flowed from the need for adjustment and reorganisation, from the need for a transformation, reallocation or re-application of resources, and from the work-discouraging effects of lower real factor rewards. Added to all these influences was the effect of the oil-*exporting* countries' relatively low "marginal propensity to spend" out of the additional real income that was accruing to them. At the same time these countries did not *lend out* at all fully (to potential spending countries) the unspent portions of these income increments. Oil-*importing* countries, in other words, from dire necessity cut back on the volume and value of their non-oil

imports, so as to avoid as much as possible the creation or aggravation of balance-of-payments problems; the oil-*exporting* countries, on the other hand, did not commensurately *increase their* demand for non-oil goods and services. Along these channels, the redistribution of the world's real income that arose from the oil crises contributed also to diminished growth in total real world spending and in aggregate world demand for internationally traded goods and services and, therefore, to lower growth in total real world production and in real world income itself. Partly for this reason and partly because of the restrictive (anti-inflationary) policies with which the major economies responded to the second oil crisis, the rate of increase in the volume of world trade fell back sharply in 1980 and 1981 and turned negative in 1982. The rate of growth in real world output shrank in 1980 and 1981 and was reduced to only 0,5 per cent in 1982.**[5]**

The decline in the *relative* expensiveness of oil from 1981 onwards was partly a matter of world inflation in non-oil prices and partly of the absolute cheapening of oil (in dollars per barrel) from 1981 through most of 1986, as referred to earlier. The *decline* in the tempo of world inflation from approximately mid-1980 was, of course, assisted by the downward tendency in the absolute cost of oil, but was by no means fully explained by it.

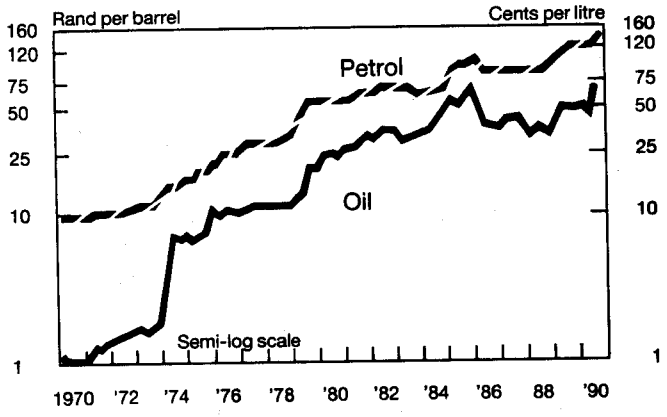
5. Oil prices and prices of importance in the South African economy

5.1 The oil price and the petrol price

Changes in the international price of oil obviously affect prices in the South African economy most directly and immediately in the case of petrol, diesel and other oil-based liquid fuels. Graph 4, which is drawn on a semi-logarithmic scale, shows that increases in the price of petrol (measured in cents per litre) followed fairly closely, but with a slight lag, increases in the rand price of oil (measured in rand per barrel). The time lag between the oil and petrol price increases varied from three to six months in the 1970s and early 1980s, but has since declined to about two months at the most.

However, being drawn in logarithmic form (meaning that equal *slopes* of line pieces indicate equal *rates of increase* in the data in the time series displayed), Graph 4 also makes it clear that from 1970 through 1985 the rand price of oil rose at a much higher average *rate* than did the domestic price of petrol. This was true in particular during the first and (to a lesser extent) the second oil crisis. Graph 5 shows accordingly that the index of the rand price of oil *relative to* the index of the rand price of petrol rose dramatically, on balance, from

Graph 4. Oil price (rand/barrel) and petrol price (cent/litre) in South Africa

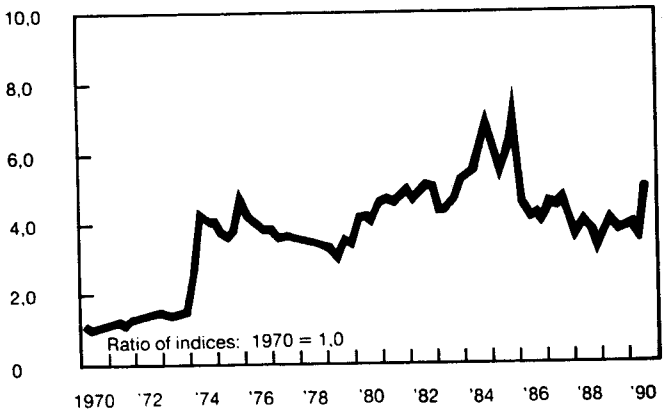


1970 through 1985. Against this, the decline in the rand price of oil in the years from 1986 through 1988 (as also displayed in Graph 4) failed to bring down the petrol price in South Africa at all dramatically. As a result, the ratio of the index of the rand price of oil to the rand price of petrol *declined*, on balance, during this period.

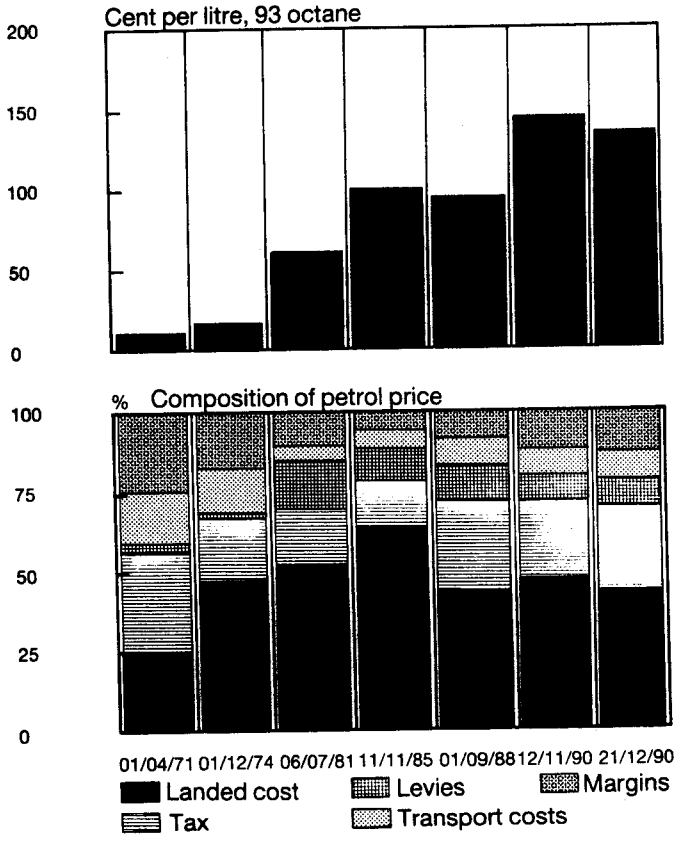
Conversely, of course, the ratio of the rand price of petrol to the rand price of oil declined sharply, on balance, from 1970 through 1985, and rose, on balance, from 1986 through 1988. Thus, whereas the rand price of petrol per litre was more than ten times as high as the rand price of oil per litre before the first oil crisis, it was only 3½ times as high at the end of 1974. Having returned to 4 immediately prior to the second oil crisis, the ratio of the price of petrol to the price of oil had declined again to only 3 in 1980. Depreciation of the rand vis-à-vis the dollar and its effect on the international price of oil in terms of rand then caused the ratio of the petrol price to the oil price to shrink even further to an average value of only about 2 in 1984-1985: however expensive petrol may still have seemed to the motorist even in 1985, it had, in fact, become uncommonly cheap relative to the cost of the crude oil from which it was manufactured. The ratio of the petrol price to the oil price then rose from 1986 to 1988 to 4 in 1988, but fell back to 3 in the third quarter of 1990, because of the early effects of the third oil crisis on the rand price of oil.

The sharp net *rise*, as depicted in Graph 5, in the ratio of the index of the oil price in rand to the petrol price in rand from 1970 to 1990 (and from 1970 to 1985 in particular) was, of course, a reflection of the fact that the *non-oil* constituents of the petrol price did not rise proportionately to the price of oil during this period. Cost components which make up the price of petrol to the motorist at the filling station (in

Graph 5. Ratio of oil price to pump price of petrol in South Africa



Graph 6. Petrol price (93 octane) in PWV Area



addition to the landed cost of petrol, which itself comprises crude oil and refining costs), consist of: (1) taxes, including customs and excise and the fuel levy; (2) levies, comprising those on behalf of the Multilateral Motor Vehicle Accident Fund, the National Road Safety Council and the Equalisation Fund; (3) transport costs; and (4) the wholesale and retail trade margins.**[6]**

Graph 6 shows how the share of the landed cost of petrol in the generally rising pump price of petrol grew from 1971 to 1985, shrank somewhat up to 1988, but expanded modestly again in 1989 before returning in 1990 to about the same level as in 1988.

5.2 The petrol price and the consumer price index

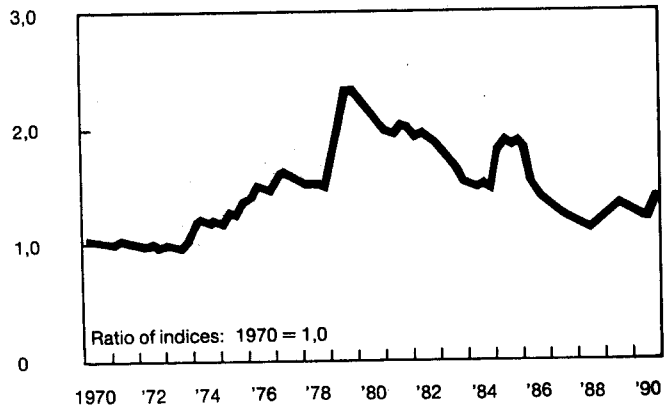
As in other oil-importing countries, the oil price shocks of 1973-1974 and 1979-1980 contributed directly to increases in the South African consumer price index through their effect on the rand prices of petrol, other oil-based fuels and other oil-based household products. The oil shocks undoubtedly also played a part in the acceleration of consumer price inflation to double-digit rates from 1974 onwards. Unlike the experience in the major industrialised economies, however, inflation in consumer prices in South Africa generally did not slow down from approximately the middle of 1980. In fact, it continued to accelerate on a longer-term basis up to 1986 and, with few and short-lived exceptions, has not regained single-digit levels in year-on-year terms since 1974.

As a result, the price of petrol over the full period from 1970 up to the third oil crisis in 1990 did not increase *substantially* more, percentagewise and on *balance*, than did the prices of consumer goods and services in general: petrol (93 octane in the PWV area) was 12,3 times more expensive, on average, in 1989 than in 1970; the consumer price index, however, was 9,5 times higher, on average, in 1989 than in 1970.

Graph 7 shows the ratio of the index of the petrol price to the consumer price index from 1970 to 1990. It makes clear that immediately prior to the third oil crisis, the relative expensiveness of petrol in South Africa could no longer have been a major deterrent to the fairly liberal use of petrol for personal and household purposes.**[7]** Graph 7 also shows that, after the petrol price reductions of 12 November and 21 December 1990, petrol to the motorist was no more expensive again in "real" terms than it had been at the beginning of 1975 and was significantly cheaper than in, say, 1985.

Relative dearness of petrol and related products during much of the 1970s and 1980s (in conjunction with the price inelasticity of the demand for these spending items by households, and for households' personal transport needs in particular) nevertheless caused the consumption of petroleum products (and therefore of the price of oil) to assume increased importance in the determination of the average of South African consumer prices over the past twenty years. The weight of petrol and related products in the calculation of the consumer price index was

Graph 7. Ratio of petrol price to consumer prices in South Africa



raised from 2,9 per cent in the early 1970s to 4,7 per cent at present. On the basis of this present weight, an increase of $10 per barrel in the world price of oil will – according to the econometric model of the South African Reserve Bank, and at present oil price levels – result in a *direct* increase of 0,5 percentage points in the consumer price index. The *indirect* effects of such an increase, as the higher prices of liquid fuels and other oil-based inputs permeate the production and distribution system, would raise the CPI by another 0,5 percentage points – bringing the total effect of a $10 increase in the oil price on the average level of South African consumer prices to about 1 percentage point.

5.3 The oil price and the gold price

Very large increases in the dollar price of gold at the time of the first and the second oil crisis did several things to and for the South African economy and influenced decision-makers in the South African economy. Firstly, these gold price increases effectively cushioned the adverse effects of the first two oil price shocks on the balance of payments and the "real" economy and, in fact, caused the oil crisis years to be transformed into gold boom years. Secondly, these gold price surges inspired unduly optimistic views of the long-term prospects for the price of gold as a panacea for the problems of the South African economy in any adverse world political or economic situation.

Thirdly, the strength of the gold price in much of the 1970s and early 1980s contributed to overvaluation of the exchange rate of the rand and gave South Africa a prolonged if comparatively mild bout of the so-called Dutch disease (in which strength of the exchange rate, because of fortuitously high world demand for a single export product, works to the disadvantage of all other export and import-replacement industries and may actually cause weakness in the economy generally).

Finally, the high gold price in the gold boom years, the resultant balance of payments strength and too much confidence in the future dollar price of gold, fostered too slack an overall stance of monetary, credit and fiscal policies and (at times, as in 1982) invited premature relaxations of these policies. They thereby contributed to a need for occasional sharp policy reversals and, in the course of time, also to major structural deficiencies (as well as to deeply entrenched inflationary tendencies) in the South African economy.

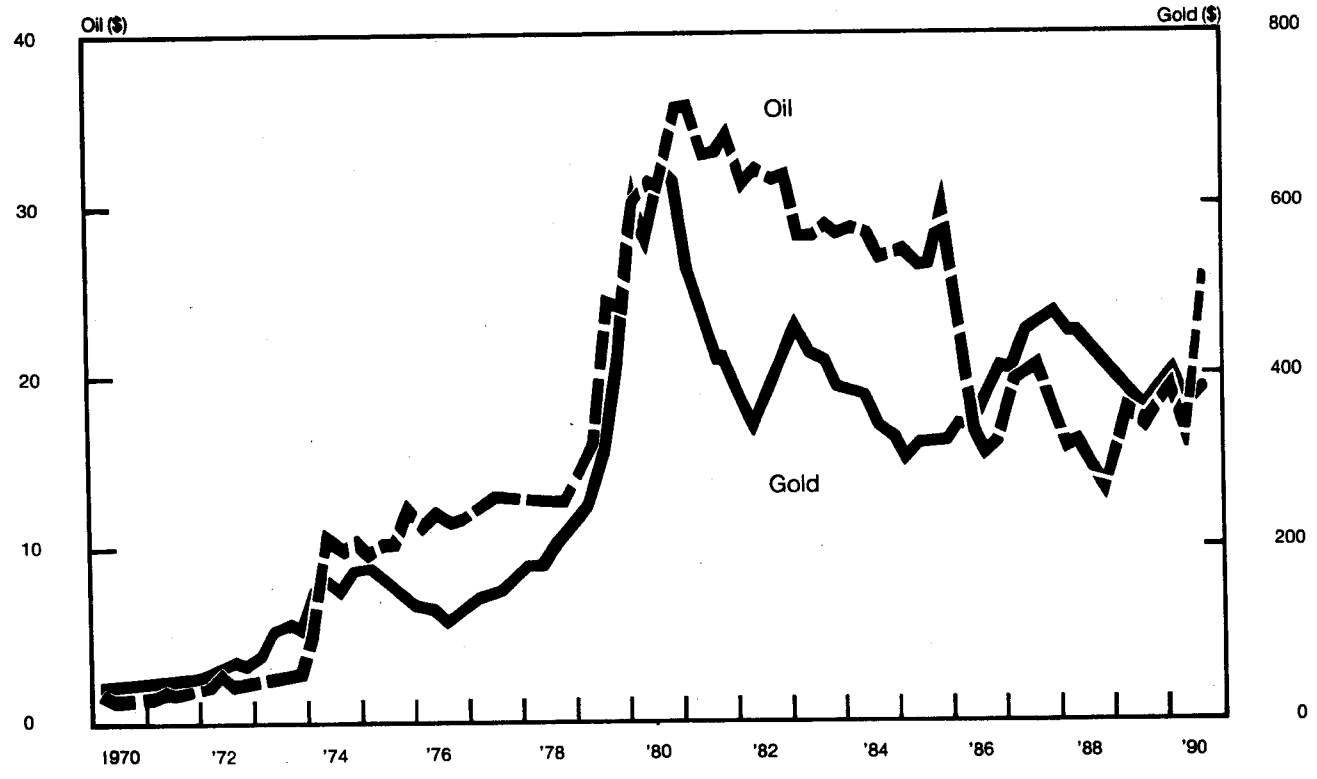
Graph 8 shows a broad correspondence between movements in the dollar prices of oil and gold during the 1970s and early 1980s. A closer inspection of Graph 8, however, unsurprisingly shows that the gold price, even in those years, also responded to forces that had no bearing on the oil price, and *vice versa*. A lack of any close, durable, systematic and, therefore, reliable relationship between these two prices also made itself quite conspicuous in the third oil crisis to date.

As in the case of the oil price itself, an exposition of the oil price/gold price relationship during the past twenty years is aided by distinguishing various sub-periods:

- **The first oil crisis.** The free-market dollar price of gold actually started to rise steeply from well before the advent of the first oil crisis, namely from the official level of $35 per fine ounce which it had not exceeded up to April 1968, to a monthly average price of slightly more than $120 per fine ounce in July 1973. This rise occurred on the basis of events such as the termination of the so-called Gold Pool arrangements in 1968 and of President Nixon's abolition of the dollar's convertibility into gold (the so-called "closure of the gold window") in August 1971. The Yom Kippur war and its accompanying oil price hikes, the sharpening of inflation fears that were aroused by these events and by governments' restimulatory policy responses in an already inflationary environment, and various other developments (such as the US Congress's passing of legislation to permit private ownership of gold in bullion form), then led to a further major increase in the investment demand for gold. The gold price accordingly rose further to $183 per fine ounce in December 1974.

The quantity of oil that could be bought for one ounce of gold rose from approximately 26 barrels in the period 1970-1972 to an average of 39 barrels in1973; as displayed in Graph 9, it reached a quarterly peak of some 45 barrels in the second quarter of 1973. However, the quantum jump in the oil price as the first oil crisis was sprung upon the world then brought the oil-purchasing power of

Graph 8. Oil price per barrel and gold price per fine ounce (US$)



gold down abruptly to an average of only 18½ barrels per fine ounce in 1974.

• **The period of relative oil price stability, 1975-1978.** The mild upward drift of the oil price during those years and weakening of the gold price to a low point of $110 per fine ounce in mid-1976, caused the oil-buying power of gold to be reduced further to marginally less than 10 barrels per fine ounce in the third quarter of 1976.

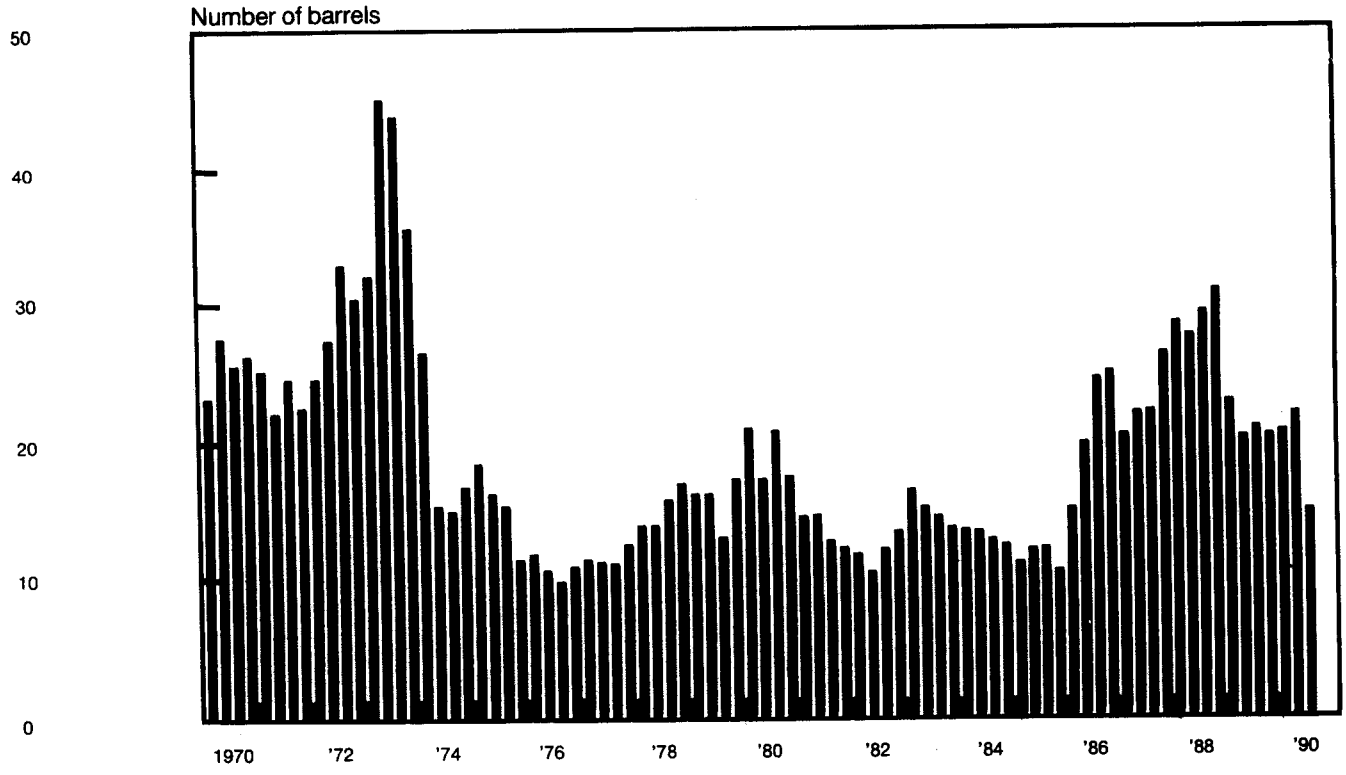
• **The second oil crisis.** Like the first oil crisis, the second oil crisis of 1979-1980 was preceded by a strong recovery of the gold price, which advanced from $110 per fine ounce in August 1976 to $227 in October 1978. Pre-revolutionary disturbances in Iran, rising tension and increasing Soviet interference in Afghanistan, and an IMF/US Treasury decision to reduce the quantity of gold on offer at the regular IMF gold auctions, then caused the gold price to soar to an all-time daily high of $850 per fine ounce in late January 1980, and to a peak monthly average of $676 per fine ounce in September 1980. The oil-buying power of one ounce of gold rose from an average of 13 barrels in 1975-1978 to 18 barrels in 1980. It may be noted, therefore, that because of close synchronisation of the greater part of the gold price and oil price increases in the second oil crisis, gold's highest purchasing power in terms of oil in 1979-1980 was, in fact, less than half as great as its peak oil-buying power in 1973.

• **The slackening oil price years, 1981-1985.** During this period as a whole, the slide in the gold price was steeper, in relative terms, than the decline in the oil price. The oil-purchasing power of gold accordingly retreated to an average of only 11½ barrels per fine ounce in 1985, and to low points in the quarterly averages of some 10 barrels per fine ounce in early 1982 and late 1985.

• **Recovery, 1986-1989.** The sharp drop in the oil price in 1986, *plus* weakening of the dollar in the foreign exchange markets from February 1985 to the end of 1987 and the concomitant strengthening of the dollar price of gold, caused the oil-purchasing power of gold to recover to more than 20 barrels per fine ounce during most of 1986 and 1987. From the beginning of 1988 through the first half of 1990, a combination of the mostly downward trend in the gold price during that period and of fluctuating oil prices nevertheless kept the value of gold in terms of oil mostly well above the 20-barrel level. (A level of 30 barrels per fine ounce was reached in the fourth quarter of 1988.) The average oil-buying power of gold in the four years 1986-1989 amounted to some 23½ barrels per fine ounce.

• **The third oil crisis.** Contrary to the developments that had preceded the first two oil price

Graph 9. Oil equivalent of gold, in barrels of oil per fine ounce of gold



shocks, the dollar price of gold was relatively weak (being mostly below $400 per fine ounce) in several quarters before the third oil crisis. This was partly the result of supply-side factors, including increased gold production in countries such as Australia, Canada, Brazil and the United States, a stepped-up recourse by gold producers to gold loans, and increased sales of gold by the USSR for replenishing the Soviet Union's dwindling foreign exchange reserves.

In addition, gold, in common with other precious metals and "hard" assets with a rarity value or of a collectors' nature, had since the early to mid-1980s lost an important part of its "safe-haven" characteristics and of its properties as a hedge against inflation. This was a result of the major industrial countries' success in subduing inflation, ameliorating inflation expectations and establishing public confidence in their anti-inflationary resolve. The new policies of the monetary authorities in these countries generally took care to maintain positive real interest rates.

The international debt crisis broke in August 1982 and caused a revival in the gold price which is clearly visible in Graph 8.**[8]** Despite the international debt situation, however, various conditions – such as the prolonged cyclical upturn of the world economy from late 1982, a relatively stable and trouble-free world-political environment, and fairly easy monetary and credit policies in the major economies in a newly non-inflationary climate – brought with them alternative financial investment opportunities (as in the share markets, banking services, fixed property and fixed-property development) which impinged unfavourably on the investment demand for gold.

The diminished safe-haven properties of gold in a notably less inflation-troubled world also helped to account for the relative weakness and short duration of the flurry of the gold price in the first several weeks of the third oil crisis. As noted earlier, the monthly average fixing price of gold rose from $362 per fine ounce in July 1990 to slightly less than $395 in August 1990, but sank back to about $381 in October. The oil-purchasing power of gold *fell* sharply from close to 21 barrels per fine ounce in July 1990 to only about half as much (10½ barrels per fine ounce) in October.

In these conditions, South Africa in 1991 would clearly be poorly advised – in the short term at least – to put its faith in gold as a source of compensation for its increased oil- import bill. As in other oil-importing countries, the higher cost of South Africa's oil imports will, for as long or as short as the

present "crisis" may last, have to be approached as a general charge against the country's overall foreign exchange-earning capabilities. This will call for cautious monetary-fiscal policies, "sensible" exchange rates, and a general attitude of export-mindedness and export-orientation. The Reserve Bank's econometric projections and simulations suggest, however, that with an average gold price at present levels (of around R380 per fine ounce) and an average oil price of, say, some $30 per barrel in 1991, the current account surplus that may reasonably be foreseen for 1991 should be adequate for meeting that year's foreign debt repayment obligations and other capital outflows.

Graph 10 shows the oil equivalent (in millions of barrels) of South Africa's *total* net gold exports from 1970. The over-all appearance of this graph, of course, closely resembles that of Graph 9 (which shows the number of barrels of oil per fine ounce of gold). However, Graph 10 also incorporates the effect of the downward trend in South Africa's physical gold production from 1 002 tons (or 32,2 million fine ounces) in 1970 to 603 tons (or 19,4 million fine ounces) in 1989.

5.4 The oil price and the terms of trade

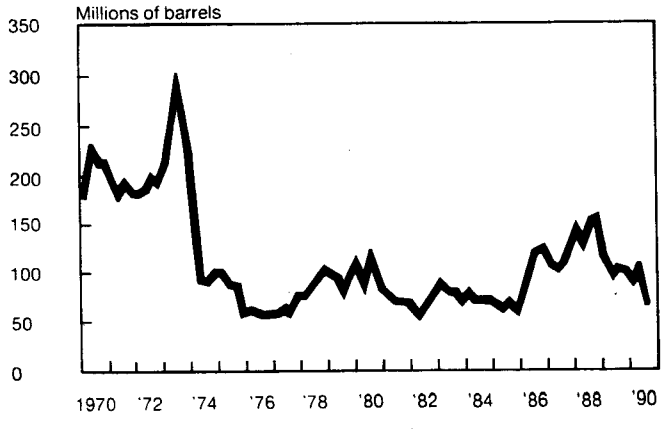
South Africa's terms of trade (i.e. the ratio of the weighted average level of this country's export prices – in which the gold price may or may not be included – to the weighted average level of its import prices) deteriorated markedly soon or immediately after both the first and the second oil crisis. This is true whether the price of gold is included in the average of South African export prices or not. When the full period from 1970 to 1989 or 1990 is considered, however, the inclusion or non-inclusion of the price of gold in South Africa's export prices understandably makes a major, very considerable and, in fact, almost crucial difference: *including* gold the South African terms of trade improved quite substantially on balance (by some 25½ per cent) from 1970 to 1989; *excluding* gold the South African terms of trade worsened over this period by some 38 per cent and, after the first oil crisis, never even came close to regaining the levels that had prevailed in the first few years of the 1970s, i.e. prior to the first oil price shock. The two panels of Graph 11 show the movements in the terms of trade as conventionally calculated, when including and excluding gold respectively.

As regards the South African terms of trade, therefore, the roughly elevenfold increase in the average dollar price of gold from 1970 to 1989 more than made up, not only for the adverse effect on the terms of trade of the rise in the international (dollar) price of oil, but also for other negative influences, such as the comparatively weak performance of the international prices of South Africa's non-gold non-oil export commodities over this period. The dollar price of oil did, however, play an important role in the terms-of-trade determination: if, for the sake of quantifying this importance, it were assumed that the dollar price of oil was no different in 1989 from the dollar price of oil in 1970, but that all other international prices of South Africa's exports – including gold – and imports had nevertheless behaved as they actually did, South Africa's terms of trade including and excluding gold would have been better by some 7½ and 8 per cent, respectively, than they actually were. Under this (unrealistic) "other things being equal" assumption, South Africa's real gross *national* product in 1989 would have been some 7 per cent higher than it actually was.

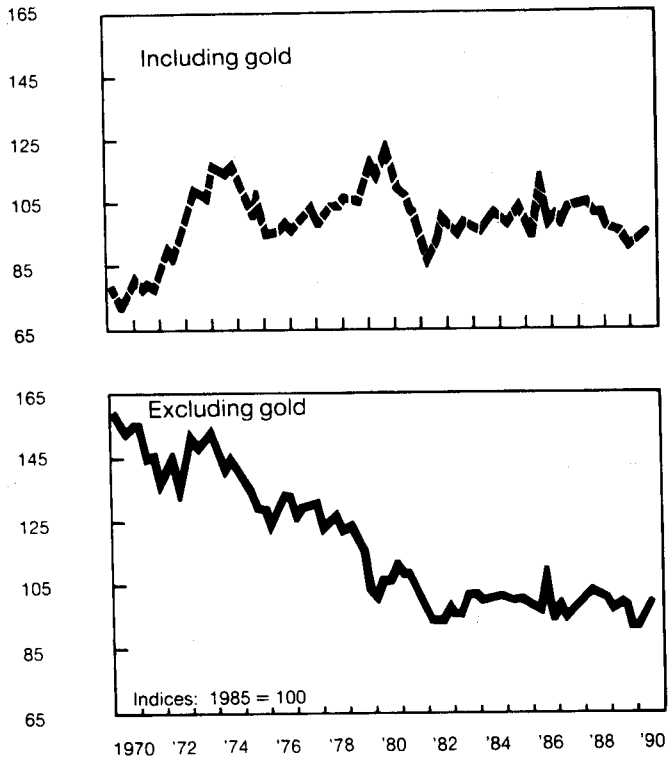
Oil and non-oil commodity prices in the international markets moved broadly hand in hand in the opening years of the 1970s, but saw a permanent parting of their ways at the time of the first oil crisis. Non-oil commodity prices, to be sure, were some 2,3 times higher in domestic (rand) currency in late 1979 than in mid-1973, and – after having exhibited certain cyclical fluctuations – were an approximate three times higher, on average, in mid-1990 than in late 1979. In comparison, the rand price of oil was some 13 times higher in late 1979 than in mid-1973, and another 2,2 times higher in mid-1990 than in late 1979.

Special and exceptional cases among the non-oil commodity prices were, of course, presented during the oil crisis years by commodities such as coal and uranium, which serve as alternative sources of energy. In 1974 power from nuclear fission was seen as a possibly important substitute for energy from oil. The price of uranium accordingly rose (in a rather sluggish and long-drawn-out response to the

Graph 10. Oil equivalent of South Africa's total net gold exports



Graph 11. South African terms of trade



first oil crisis) from $6,4 per pound in 1973 to $11,4 per pound in 1974, and to no less than $40 in 1977.

The high price of uranium boosted uranium exploration and called forth a rise in world uranium production. In conjunction with the after-effects of the Three Mile Island scare in the United States in 1979, the Chernobyl disaster in the USSR in 1986, and growing opposition to nuclear power generation by environmentalists and ecologists (the "Greens"), this caused the price of uranium to fall back sharply to its current level of some $10 per pound.

In a similar manner, the price of coal was boosted by the first two oil price shocks. The price of coal advanced in the world markets by 64 per cent in 1973-1974 and by 40 per cent in 1978-1981. As in the case of uranium, however, the consequent rise in world coal production eventually resulted in international oversupply. The world price of coal accordingly showed a declining trend from 1982 onwards.

The average level of the world prices (dollar prices) of South Africa's commodity exports moved downwards from mid-1973 through 1975, and again from the end of 1979 through most of 1982, despite the initially favourable impact of the first two oil crises on the prices of South Africa's energy-export products. This was a reflection of the recessions in the main industrialised countries which followed these two oil crises and which reduced these countries' demand for raw materials and other primary inputs. Export commodity prices (in dollars) weakened again from early 1984 to mid-1985, mainly because of supply developments in the world markets, and from early 1988 to early 1990, partly because of the slowing-down of world economic growth. This most recent slackening of commodity prices therefore *preceded* the third oil crisis by a fairly long period.

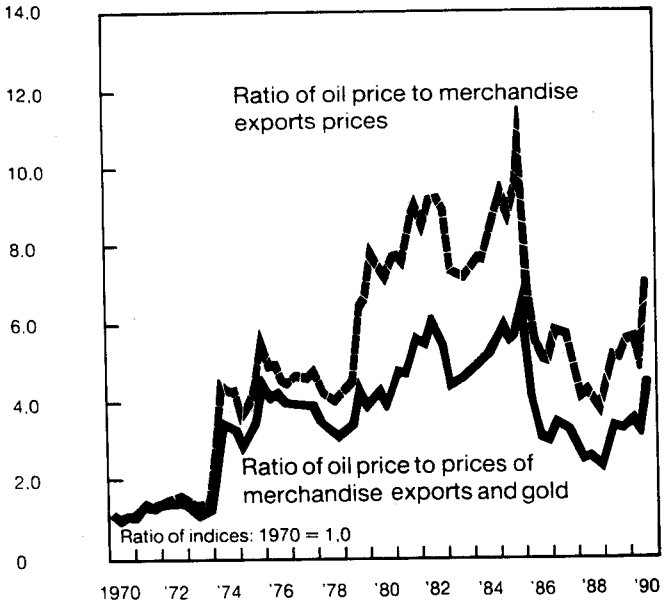
"Terms of trade" may be calculated *in respect of oil only*, i.e. it is possible to calculate the ratio of the average level of South African export prices (whether including or excluding gold) to the price of imported oil, and to plot the course of this ratio over time. Since oil from 1970 to the present has become expensive *relative* to most other internationally traded or tradeable goods and services – as was also implied by the top panel of Graph 3 – the South African "terms of trade" in respect of "oil only" have behaved substantially less favourably than the terms of trade as conventionally defined. In fact, the terms of trade for "oil only" deteriorated badly, on balance, from 1970 to 1989, even when the price of gold is included in the average of prices of South African export goods.

In line with earlier graphs in these notes, however, Graph 12 shows the *inverse* (or reciprocal) of the "terms of trade" for oil only. This means that it displays the ratio of the index of the price of oil to weighted indices of the prices of South Africa's merchandise exports plus gold and of merchandise exports only. Expressed in this way, Graph 12 shows the "size" of the physical "packages" of South Africa's merchandise exports and gold, and of merchandise exports only, that have had to be offered in exchange for one imported barrel of oil (as compared with the "unit" sizes of these "packages" in 1970 as the base year for the relevant price indices).

The trajectories described by the two ratios in Graph 12 from 1970 to 1989 or 1990 are remarkably similar. It is clear, however, that from 1974 onwards the inclusion or non-inclusion of gold caused substantial differences in the *levels* of these two ratios. For example, the "package" of "merchandise exports only" that had to be surrendered for one barrel of imported oil was some 11,5 times as large in the fourth quarter of 1985 as in 1970; in contrast, only about 6,7 times more "merchandise exports plus gold" were needed for such an exchange in the fourth quarter of 1985 than in 1970.

Graph 12 also shows that the size of the quantity of merchandise exports plus gold that was payable for one barrel of oil increased nearly threefold, or by 196 per cent, in the first oil crisis from the third

Graph 12. Ratio of oil price to average price levels of South African exports



quarter of 1973 to the fourth quarter of 1974; rose by a much more moderate 22,5 per cent in the second oil crisis from the fourth quarter of 1979 to the first quarter of 1981 (when the rise in the gold price afforded more concurrent and effective compensation for the oil price increase); and rose by some 104 per cent from its low point in the fourth quarter of 1988 into the initial stages of the present or third oil crisis in the third quarter of 1990.

6. Summary and concluding remarks

Summarising the aforegoing notes, oil became expensive *on balance* over the entire period from 1970 to 1989 or early 1990 (which included the first two oil price shocks), *relative to* (1) production goods internationally, (2) petrol at the filling station in South Africa, (3) gold, and (4) South African exports in general, whether including or excluding gold.

In South Africa as elsewhere, the sharply rising relative expensiveness of oil during the first two oil shocks in particular, contributed materially to the general inflation but by no means fully accounted for it. Similarly, the weakening of the international price of oil, in absolute terms, from early 1981 through 1988 contributed to the slowing-down of inflation in the major industrial economies (South Africa not included) during this period, but by no means fully accounted for it. In very broad terms, the slide in the oil price internationally from 1981 through 1988 served to roll back most, or all, or even somewhat more than all, of the increase in the relative expensiveness of oil that had occurred during the second oil crisis, but still left the relative price effects of the first oil price shock essentially intact.

Like the international price of oil, the dollar price of *gold* also rose substantially, *on balance*, from 1970 to 1989 or early 1990. The oil price rise, however, outpaced on balance the increase in the dollar price of gold, as was reflected in a net decline in the oil-purchasing power of an ounce of gold over this period. Because of the large size of South Africa's net gold exports relative to the country's oil imports, other imports and non-gold exports, however, the gold price rise nevertheless outweighed the effects of both the oil price increase and the relatively slack performance of the world prices of South Africa's export commodities. As a result, the South African terms of trade, including gold, actually strengthened significantly, on balance, from 1970 through 1989 or early 1990.

Petrol, as distinct from oil, was not *notably* more expensive in South Africa (relative to consumer goods and services in general) in 1989 or early 1990 than in 1970. This was a reflection, firstly, of the fact that the price of petrol at the filling station was not raised in proportion to the landed cost of imported petrol, and secondly, of almost uninterrupted double-digit inflation (on a year-on-year basis) in the prices of consumer goods and services in general since 1974. The lack of a stronger price deterrent against the fairly liberal use of motor fuels is likely to have increased somewhat South Africa's "vulnerability" in the *third* oil crisis.

At the time of writing (the third week of December 1990), the course which this third oil crisis would take still remained a matter of anxious speculation. The outcome of the confrontation in the Middle East still appeared almost wholly unpredictable; most recently, the possibility of a recourse to arms in that region seemed to have been increasing again. If a "shooting war" were to break out, this could result in large-scale destruction or incapacitation of oil production facilities in the Persian Gulf area.

Also as at the time of writing, however, the magnitude of the oil price shock produced by the Iraqi/Kuwaiti crisis situation was still very moderate when compared with the oil price rises of 1973-1974 and 1979-1980. The oil price as on 20 December 1990 was reported to have sunk back to $26 per barrel, or to have been only some 50 per cent higher than before the Iraqi invasion of Kuwait. This could be compared with the approximate quadrupling of oil prices from 1972 to 1974 and with the approximate trebling of these prices from 1978 to 1981, referred to earlier. Oil prices in December 1990 were also still well below their historical peak

levels in *real* terms: the oil price would have to reach $50 per barrel if oil were to return to the real price it commanded (in terms of the weighted average of production prices of South Africa's main trading partners) at its peak in November 1980.

Another difference between the third oil crisis and its predecessors was that the world economy in late 1990 was in a better position to withstand or overcome an oil crisis than was the case in 1973 and in 1978-1979. This was partly a matter of reduced oil-dependency of the major industrialised economies in particular. Oil consumption in the European Community, for example, amounted to slightly less than 47 per cent of total energy consumption (excluding non-traded fuels, such as wood and peat) in 1989, against approximately 56 per cent in 1979. Among member countries of the European Community, oil consumption had increased in absolute terms from 1970 to 1989 only in Portugal and Greece.

Thirdly, shortfalls in oil exports that had resulted from the embargo on the exports of Iraq and Iraqi-occupied Kuwait were being made good by stepped-up oil production in other OPEC member countries to an important extent. Increased pumping rates by these countries were effectively authorised by an OPEC agreement concluded on 29 August 1990, which carried the consent of most OPEC members. This agreement provided for extra output of some 3,5 million barrels per day, to accommodate most of an oil export shortfall then estimated at some 4 million barrels per day. Non-OPEC oil-producing countries were also raising their production. Moreover, more serious disruption of the daily flow of oil to the world markets could be met, for some time at least, out of several countries' strategic oil reserves.

Fourthly, growth in the world economy slackened in 1990 and, even before Iraq's invasion of Kuwait, was expected to slow down somewhat further in 1991, with a possibility of a "true" recession in the so-called Anglo-Saxon economies (the USA, Britain, Canada, Australia) in particular. The oil crisis seemed likely to have added somewhat to these recessionary tendencies. Public opinion in the major economies was, however, unlikely to expect the authorities concerned to ease up materially on their monetary and fiscal policies, which presumably would continue to be guided by the perceived need for holding down inflation and for maintaining positive real interest rates. Inflation expectations in these countries had, therefore, probably not been affected adversely to a major degree.

South Africa's position in the current oil crisis was observed to be different from that in 1973-74 and 1979-81 in that gold has lost most of its characteristics as an inflation hedge, a safe-haven investment, or an investors' bolt-hole in any stressful or fear-provoking world political or economic situation. The downward tendency in world commodity prices, which had started well before the current oil crisis, could be aggravated by a further, oil-price-induced, weakening of world economic growth; cooling of the world economy would also impinge unfavourably on the jewellery and industrial demand for gold. However, as was also noted earlier, South Africa's prospective current account position in 1991 should still prove sufficiently sturdy to permit full compliance with the country's 1991 foreign debt repayment obligations and possible other capital outflows, without undue strain on the foreign reserves or the exchange rate of the rand.

Substantial increases in the domestic prices of petrol and related liquid fuels from 4 September and 20 October 1990 caused upward shifts of the domestic price level and contributed materially to reacceleration of the measured rate of inflation in consumer prices over twelve-month periods from a low point of 13,3 per cent in July 1990 to 15,3 per cent in November; the rate of inflation in production prices rose from 10,3 to 15,8 per cent over the same period. Although by no means unexpected, this worsening of the measured inflation rates carried a risk of imparting new vigour to existing price-wage-price (or, more generally, price-cost-price) spirals, restimulating inflation expectations, fostering "inflation cynicism" and undermining confidence in the authorities' anti-inflation strategies. As such, it was undoubtedly a complicating factor in the authorities' policies.

At the time of writing, the beneficial effects of the fuel price *reductions* which became effective from 12 November and 21 December 1990 still had to find their way into the statistically recorded price indices and measured inflation rates. By the close of 1990 appropriately conservative monetary and fiscal policies therefore still remained indicated, for curbing inflation as well as for ensuring balance of payments strength and for effecting longer-term changes in the fabric and structure of the South African economy.

Footnotes

[1] An estimate by *The Economist* (1 September 1990) shows South Africa to be the third-most "vulnerable" country, or potentially the third-biggest "loser", of an oil price increase (after Turkey and Czechoslovakia) in a sample of sixteen net oil-importing countries. This assessment is based on a foursome of factors comprising *oil self-sufficiency* (= net oil imports relative to the gross domestic product), *energy efficiency* (here defined as consumption of energy relative to the gdp), *oil dependency* (= consumption of oil relative to total consumption of energy), and *trade with OPEC countries*. It may be noted that the outcome of a rating exercise such as this depends crucially on (1) the choice of countries in the sample, (2) the weighting assigned to the various factors in the vulnerability assessment, and (3) the accuracy of the basic data used, which in South Africa's case are not supposed to be publicly available.

[2] The average "fixing" price of gold amounted to US$362 per fine ounce in July 1990, and to $395, $389, $381 and $382 per fine ounce in August, September, October and November 1990 respectively.

[3] Some of these results were dramatic, notably (for example) in Britain and Japan. *The Economist*, in its article of 1 September 1990 referred to earlier, notes that in Britain the consumption of energy (in tons of oil equivalent) as a ratio of gross domestic product declined by 44 per cent from 1973 to 1989; this amounts to an approximate 79 per cent increase in energy efficiency (= real gross domestic product per unit of energy consumed). *The Economist* notes that this should be attributed partly to the relative importance of manufacturing production having shrunk more rapidly in Britain than in the other economies included in its survey.

[4] By the time of the second oil price crisis, certain lessons had already been learned. In the wake of this second crisis, most governments in the major Western economies and in Japan proved considerably more willing to accept the untoward "real" (income-reducing and unemployment-raising) effects of the increased real cost of oil, and took very seriously the importance of curbing inflation and of bringing it under control. However, the *restrictive* policies that were consequently put in place by these authorities inevitably made themselves felt only with the customary lags in their effects on the real economies and on the inflation rates in the countries concerned, respectively.

[5] Hardest hit, in several ways, were the oil-importing, commodity-exporting countries, who became triple victims of the high oil prices as well as of the recession and of the anti-inflationary high interest rates in the major industrialised economies. Notable deteriorations of the terms of trade of these countries were recorded in 1980, 1981 and 1982.

[6] For example, as from 21 December 1990 the petrol price of R1,35 per litre (93 octane, in the PWV area) is made up as follows:

			Cents per litre
Landed cost			59,24
Tax:	Fuel levy	31,90	
	Customs & Excise	4,00	35,90
Levies:	Multilateral Motor Vehicle Accident Fund	4,00	
	National Road Safety Council	0,20	
	Equalisation Fund	7,00	11,20
Transport costs:			
	Transport	9,20	
	Delivery	2,40	11,60
Margins:	Retail sale	11,50	
	Wholesale sale	5,56	17,06
Total			**135,00**

[7] Note, in this context, the very substantial difference between Graph 7 and the top panel of Graph 3: whereas *oil*, even in 1989, was still relatively very expensive (by historical standards) in the economies of South Africa's main international trading partners (i.e. in the "world economy"), *petrol* by 1989 had ceased to be relatively expensive to the motorist in South Africa. Petrol's relative inexpensiveness in South Africa will almost certainly have played some part in South Africa's relatively high rate of fuel and energy consumption (as identified by *The Economist*: see footnote 1 above), despite the presumed relatively high price inelasticity of energy consumption in the short term at least. This, in turn, means that South Africa's high domestic inflation (and failure of the exchange rate to decline more than it did) contributed to South Africa's relatively high vulnerability in the third oil shock.

[8] Ironically, one of the first "casualties" in the world debt crisis was Mexico. Rich petroleum deposits had been discovered in Mexico in the early 1970s, which within a decade had transformed that country from a net oil-importing nation into the world's fourth-largest oil producer. Large foreign credits were raised, on the strength of this sudden wealth, to finance a complete overhaul of the

country's basic infrastructure. Mexico then fell victim to the weakening of the oil price from early 1981 onward. By mid-1982, Mexico owed an estimated $80 billion abroad (the largest foreign debt – at that time – of any Third World nation) and found itself forced to defer payments for the servicing of its foreign debt obligations.