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Effects of exchange rate variability on the production cost and profitability of avocados

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INTRODUCTION

Concern about the condition and future of agriculture is no new phenomenon. Trends should therefore regularly be observed and analysed in order to forecast and understand crises. Only then is proper and timely remedial action possible.

The agricultural sector is presently struggling with problems that have their origin in the structure of the South African economic system (Van Zyl & Groenewald, 1988). South Africa has undergone a structural transition that is a part of the normal economic development in which the industrial sector overtook the agricultural sector in its contribution to income. Agriculture nevertheless, supported the ailing South African economy throughout the business downswing of the seventies. With the prevailing good rains of the decade, farmers who, even in normal years produce in excess of domestic needs, improved their export performances substantially.

The comparative advantage of the agricultural sector, relative to some other sectors in the South African economy, was eroded by inflation during the seventies (Groenewald, 1982; 1985). The Jacobs Committee (1985) concluded that the financial position of farmers deteriorated due to increasing costs and higher risks in farming and that this resulted in liquidity problems for farmers.

Table 1 shows that inflation, as measured by the general consumer price index, has been higher than 10% since 1973. During this period prices of agricultural inputs and outputs did not increase proportionally. Before 1968 inflation rates were lower than has been the case since then. The period 1968/69 to 1972/73 was characterised by moderate inflation with larger increases in product than input prices. Since 1973/74 highly inflationary conditions prevailed. Input prices have risen faster than product prices and a cost-price squeeze has been experienced.

TABLE 1 Average annual growth rates in certain prices and quantities, 1960-1988 (%)

Period	Consumer prices		Producers prices of Agricultural products	Prices of farming requisites	Land prices	Farming Debt
	All items	Food				
1960-68	2,4	2,7	2,4	1,2	5,9	*
1968-73	6,0	6,7	10,4	5,6	6,1	7,8
1973-88	13,5	14,8	11,6	16,8	12,5	15,0
1960-88	9,0	9,9	8,9	10,3	9,5	*

The cost-price squeeze obviously exerts considerable pressure on income and also therefore on the purchasing power of producers (Van Zyl, 1986; Van Zyl & Groenewald, 1988). The period needed for net income of farm businesses to become negative, is a function of the differences in rates of increase between input and output prices, as well as the original margin of income above cost. With an original margin of 20% and a 7,5% faster increase in input than in output prices, it will take only four years (Louw, 1981).

The structural dimensions of the inflation process in the South African economy are basic to the abovementioned problems of the agricultural sector. All imported intermediate inputs and capital goods become more expensive due to inflation, but so also wages and domestic administered prices of transport and electricity. These changed the pattern of South African secondary industries. Their growth used to be mainly extensive, and was based on the utilisation of more inputs rather than on increased productivity. Import substitutable growth could thus be sustained only at a higher cost. The disruptive result of increasing costs was reinforced by the restriction of a small domestic market and the strong trend towards monopolisation that is characteristic of the South African economy. The success of the new conservative governments in the USA and England in their battle against inflation also resulted in the loss of the competitiveness of South African products (Van Zyl & Van Rooyen, 1990).

The higher gold price in the seventies, together with cost disadvantages to other traditional export sectors, increased South Africa's dependence on foreign gold earnings. Economic activity was also stimulated, and in 1980 a record gold price coincided with a general economic growth rate of 7,3%. Increases in the supply of money followed. Because little has been done to control the growth of expenditure, the inflationary effect of a high gold price continued even after the price of gold dropped. Inflation increased the prices of industrial inputs. Prices were increased according to the cost/plus principles, thereby increasing the competitiveness of imported manufactured articles. Tariff protection against the competition resulted in additional costs for the agricultural sector and farmers' profit margins between revenue costs decreased drastically. The structural change that accompanied the movement in comparative advantage towards gold and coal mines therefore had an important negative influence, especially on agriculture. For example, under conditions of tariff-free trade, agriculture would have been able to save R221 million in 1982 (BEPA, 1983).

The faster increase in input prices in South Africa relative to foreign countries, especially the USA, weakens the competitive position of the South African export-orientated farmer, with the result that his revenue suffers (Groenewald, 1985; Liebenberg, 1990). In addition, exports usually go to highly competitive markets where government intervention is fairly general.

The terms of trade of agricultural products have not only weakened relative to inputs, but also relative to most foreign countries. If this phenomenon is common for the majority of expert sectors, exchange rate changes tend to overcome these problems. In South Africa the price of gold, however, has a substantial influence on the exchange rate and such corrections do not occur automatically (Van Zyl, 1986).

Against this background, the potential effect of exchange rate variability on the individual avocado farmer, as well as on the avocado industry as a whole, is of utmost

importance for the survival and continued existence of both. This paper examines these effects in greater detail.

GENERAL INTERNATIONAL FACTORS

Schuh (1985) points out that in particular four factors have seriously influenced and destabilised world trade in agricultural products:

- There has been a worldwide dramatic increase in dependence on world trade.
- A well-integrated international capital market has developed.
- There has been an emergence, since 1974, of floating exchange rates. One result is that changes in monetary policy are now mainly reflected in a country's trade sectors. If a country decides on a strict monetary policy, the upward pressure on interest rates may — unless effectively counteracted by powerful international political forces — induce a strong influx of foreign capital, accompanied by an appreciation in the country's exchange rate, and problems on the export front. The monetary authority perhaps succeeds in reaching its goal, but the effect can be very destabilising on import and export sectors — often agriculture.
- Within this framework, there has, in addition, been an increase in international monetary instability since 1968 —as will be borne out by any interest rate graph.

Foreign relationships are becoming more complex, and a revised theory of comparative advantage is now needed — one which will include exchange rates and monetary factors (often politically determined).

Two results arise from the above:

- Efforts to achieve stability of income through price policy may become extremely destabilising in a situation of surplus production.

EFFECTS OF EXCHANGE RATE VARIABILITY ON INPUT PRICES

The cost-price squeeze exerts considerable pressure on the income and on the purchasing power of producers. This has resulted in changes in farm receipts, expenses and balance sheets which has important effects on farm structure, mainly concerning size and the ratio of capital to labour (Van Zyl, Fenyes & Vink, 1987).

Of specific importance is the fact that input prices consistently increased at a faster rate than product prices during the past decade. Input costs have escalated to such an extent, relative to product prices, that many farmers do not find it viable to continue with their operations. This is especially true for cropping regions, particularly in the more marginal areas which are also more risky. Recent studies by amongst others BEPA, NAMPO, the Department of Trade and Industry, the Department of Agricultural Economics and Marketing, and the SAAU place specific blame on the weak and deteriorating exchange rate of the South African Rand against other foreign currencies for these rocketing increases in input prices. This section examines these findings.

Trends in input prices

Table 2 gives an indication of how prices of different farming requisites escalated during the period 1975 to 1988. Starting with an index value of 100 in 1975, no input group has increased by less than 280% in the 13 years under consideration. Further, only dips and sprays increased by less than 400%, while tractors, lorries and irrigation equipment increased by more than 600%. Although it is common knowledge that input prices have increased drastically, figures of this magnitude may surprise even hardened campaigners for more moderate price increases. Price increases of this magnitude also place a heavy burden on the farming community.

Exchange rates

In a report by a Committee of Enquiry (1986) into the high input prices it was found that these price increases were not unreasonable, given the weak Rand and unfavourable exchange rate in general. In order to examine this hypothesis or statement, it is first of all necessary to have a closer look at how the exchange rate of the Rand varied against other currencies. Table 3 depicts this situation.

As shown in Table 3, the effective exchange rate of the Rand declined from an index value of 100 in 1975 to only 40 in 1988, a decline of 250%. This is much lower than the increase in input prices. The question, however, of the effects of exchange rate variability on input prices is still largely unanswered. The evidence in this regard seems conflicting.

Effects of the exchange rate on different input categories

The exact effects of the exchange rate variability on prices of different input categories were recently determined by Liebenberg (1990). Advanced econometric and statistical methods were used to quantify the relevant relationships. Time series data for the period of 1975 to 1988 were used for this purpose.

Tables 4 and 5 give some of the results obtained in this regard. Table 4 shows the percentage variation in different input prices that is explained by changes in the exchange rate, while Table 5 gives the percentage effect of a one per cent change in the exchange rate on input prices.

According to Table 4, exchange rate changes explain less than 50% of the price variations or increases in all input categories, except for tractors. In some instances, eg livestock feeds, less than 10% of the price variation is explained by the exchange rate. These results seriously question the validity of the findings mentioned earlier and of the hypothesis that the exchange rate can be blamed for the lion's share of the increases in input prices.

TABLE 2 Price indices of farming requisites, 1975-1988

Year	Machinery and Equipment				Fixed Improvements		Intermediary Inputs					
	Tractors	Lorries	Implements	Irrigation Equipment	Building Equipment	Fencing Materials	Fertilisers	Fuel	Livestock Feeds	Dips and Sprays	Packaging Material	Maintenance and Repairs
1975	100	100	100	100	100	100	100	100	100	100	100	100
1976	124	115	118	109	122	116	107	132	111	105	108	117
1977	135	135	130	124	139	136	120	146	131	111	118	131
1978	163	155	146	136	158	146	140	152	151	120	131	150
1979	176	179	163	157	181	168	159	278	178	124	147	167
1980	191	198	178	186	202	194	187	356	215	160	168	186
1981	218	226	201	208	222	237	199	371	245	160	195	217
1982	285	262	243	234	253	269	228	430	293	176	216	262
1983	326	302	272	273	297	331	260	422	364	196	232	299
1984	369	353	299	306	334	391	272	399	395	214	248	316
1985	468	440	371	367	388	453	363	501	430	267	263	359
1986	615	560	467	429	487	518	418	542	476	332	313	452
1987	692	693	562	545	551	603	417	491	523	355	392	509
1988	785	836	627	715	621	739	516	505	554	389	461	547

Base year = 1975

TABLE 3 Effective exchange rate of the Rand against other currencies, 1975-1988

Year	Effective Exchange Rate
1975	100
1976	91
1977	91
1978	86
1979	86
1980	92
1981	89
1982	78
1983	81
1984	68
1985	48
1986	42
1987	44
1988	40

Base year = 1975

TABLE 4 Percentage variation in input prices explained by changes in exchange rate

Input Category	Price Variation Explained by Exchange Rate (%)
Tractors	64,3
Lorries	44,3
Implements	47,9
Irrigation equipment	27,1
Building equipment	36,6
Fencing materials	16,2
Fertilisers	17,8
Fuel	18,3
Livestock feeds	6,9
Dips and sprays	25,4
Packing material	27,5
Maintenance and repairs	46,4
Railfreight	39,9

According to Table 5, a 1% weakening of the Rand's exchange rate results in changes of between 20 and 70% in the

• All international commodity agreements will be extremely unstable and fragile.

It appears therefore that some developments, particularly concerning the international capital market and floating exchange rates, have a serious depressing effect on prices of inputs. Only the price of tractors is influenced within three months of the weakening of the exchange rate. The effect of exchange rate on input prices generally occurs from four to nine months after the initial change in the exchange rate took place. The exception is building equipment, livestock feeds and maintenance and repairs, where the effects can take up to a year to work through. The table accentuates the relatively large effect of exchange rate decreases on the prices of inputs. Tractor and fuel prices especially increase by 0,69% due to a 1% weakening of the Rand against other currencies. The effect, however, is much smaller on building equipment (0,3%) and fencing material (0,26%).

The relatively large effect of exchange rates on railfreight is alarming. It is clear that the exchange rate should affect prices of tractors, fuel, etc, because these inputs international markets for agricultural products. Agricultural policy as practised by the USA and EEC — the two major economic powers in the non-communist world — is another source of world trade instability. Are imported to a large extent. It is not clear, however, why the same applies to railfreight. The lack of competition and the power of monopoly of the South African Transport Services (SATS) may greatly contribute towards this tendency.

CONCLUSION

Although it is often said that input prices are increasing due to the exchange rate variation and specifically a weak Rand, it is not necessarily the whole truth. It also does not apply to all inputs. From the above analysis it seems that tractors and fuel prices are

severely and negatively influenced by the weak Rand. Prices of other products are influenced to a lesser extent by a decline in the value of the Rand relative to that of other currencies. It can therefore be concluded that the weak Rand is often just an excuse for increasing prices. As has already been pointed out, the competitive structure of the South African economy, or rather the lack of competition, may to a large extent be to blame.

EFFECTS OF EXCHANGE RATE VARIABILITY ON AVOCADO PRODUCTION

From the previous section it is clear that exchange rate changes will influence the production cost of agricultural enterprises, and the profitability of avocado production. To determine the effect of these changes in exchange rate on the production cost of avocados is fairly easy when the figures supplied in the previous section are used. However, these figures are only valid when the exchange rate is deteriorating. Experience has shown that prices of inputs do not decline when the exchange rate of the Rand appreciates, even when the Rand strengthens considerably against other currencies. The effects of the exchange rate changes on income is also fairly easy to determine: Export earnings increase in direct proportion to the change in exchange rate, while domestic revenues are not effected. These tendencies hold at least over the short to medium term (Van Zyl, 1990).

TABLE 5 Percentage effect of a one per cent change in exchange rate on input prices

Input Category	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Tractors	-0,167	-0,328	-0,195	*	-0,690
Lorries	*	-0,171	-0,143	*	-0,314
Implements	*	-0,193	-0,150	*	-0,343
Irrigation equipment	*	-0,264	-0,444	*	-0,708
Building equipment	*	-0,201	-0,011	-0,090	-0,302
Fencing materials	*	-0,262	*	*	-0,262
Fertilisers	*	-0,492	*	*	-0,492
Fuel	*	-0,698	*	*	-0,698
Livestock feeds	*	*	*	-0,204	-0,204
Dips and sprays	*	-0,368	*	*	-0,368
Packing material	*	*	-0,632	*	-0,632
Maintenance and repairs	*	-0,171	-0,150	-0,127	-0,448
Railfreight	*	*	-0,408	*	-0,408

*Insignificant at the 5 per cent level of significance

Income and costs of avocado production

In order to calculate the effects of the exchange rate variability on avocado production it is necessary to determine the income and cost structure of a typical avocado orchard (on a per unit basis). This was done for every year of the orchard's productive economical life. Data provided by the Department of Agricultural Development (COMBUD, 1990) and Toerien (1989) were used for this purpose. Fixed costs were also calculated and included. Table 6 depicts the results.

TABLE 6 Receipts and costs of avocado production for different years after establishment, July 1989 (R/ha)

YEAR:	1	2	3	4	5	6	7	8	9	10	11	12	13
Gross receipts from production:													
— export market			633,66	2 814,00	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40
— fresh market			37,20	159,30	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00
— reject													
GROSS RECEIPTS FROM PRODUCTION	0,00	0,00	670,86	3 000,30	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40
Fertilisers	1 141,35	58,68	111,93	152,65	171,66	171,66	171,66	171,66	171,66	171,66	171,66	171,66	171,66
Maintenance and repairs	167,94	82,52	90,28	99,45	271,61	271,61	271,61	271,61	271,61	271,61	271,61	271,61	271,61
Freight and transport	0,00	0,00	121,55	542,40	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31
Packing material	0,00	0,00	192,17	857,55	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74
Chemicals	151 20	166,15	796,12	1 286,09	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18
Other variable costs	2 577,96	159,08	188 30	363,20	371,96	371,96	371,96	371,96	371,96	371,96	371,96	371,96	371,96
Labour	194,33	87,80	94,33	153,83	318,94	318,94	318,94	318,94	318,94	318,94	318,94	318,94	318,94
Other fixed costs	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82
Interest on operating capital	346,75	58,33	196,20	341,82	865,80	865,80	865,80	865,80	865,80	865,80	865,80	865,80	865,80
TOTAL COSTS	5 643,35	1 676,38	2 854,70	4 860,81	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02
Net cash surplus (R/ha)	-5 643,35	-1 676,38	-2 183,84	-1 860,51	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38

YEAR:	14	15	16	17	18	19	20	21	22	23	24	25
Gross receipts from production:												
— export market	13 958,40	13 958,40	13,958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40	13 958,40
— fresh market	3 612,00	3 612,00	3 162,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00	3 612,00
— reject												
GROSS RECEIPTS FROM PRODUCTION	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40	17 570,40
Fertilisers	171,66	171,66	171,66	171,66	171,66	171,66	171,66	171,66	171,66	171,66	171,66	171,66
Maintenance and repairs	271,61	271,61	271,61	271,61	271,61	271,61	271,61	271,61	271,61	271,61	271,61	271,61
Freight and transport	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31	3 636,31
Packing material	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74	5 646,74
Chemicals	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18	2 564,18
Other variable costs	371,96	371,96	371,96	371,96	371,96	371,96	371,96	371,96	371,96	371,96	371,96	371,96
Labour	318,94	318,94	318,94	318,94	318,94	318,94	318,94	318,94	318,94	318,94	318,94	318,94
Other fixed costs	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82	1 063,82
Interest on operating capital	865,80	865,80	865,80	865,80	865,80	865,80	865,80	865,80	865,80	865,80	865,80	865,80
TOTAL COSTS	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02	14 911,02
Net cash surplus (R/ha)	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38	2 659,38

From Table 6 it is clear that a profit or net cash surplus is obtained from the fifth year after establishing the orchard. It is also clear that the receipts from production, as well as the production costs, vary between years.

In order to facilitate the determination of the effect of the exchange rate variability on the profitability of avocado production, an annual "average" or "typical" income and cost structure was determined by discounting the annual figures and obtaining the present values. These present values were again amortised over 25 years to get a constant annual value for the different income and cost items. A real interest rate of six per cent was used for the discounting and amortisation. Table 7 and Figure 1 show the final results.

According to Table 7, it seems that the constant annual gross receipts from production equal R13 034,42 per hectare. Constant annual total costs equal R11 891,73/ha, giving a constant annual net cash surplus or profit of R1 146,69 per hectare. Packing material, freight and transport, and chemicals constitute the major portion of total costs, contributing R4 182,11 (35,29/o), R2 692,39 (22,6%) and R2 023,94 (17,0%) per hectare, respectively. Fixed costs, including labour and interest on capital investments, constitute a relatively minor share, namely R1 332,56 per hectare (11,2%). It is further important to note that these revenues and costs represent the situation in July 1989, and are subject to various assumptions, the most important being that it depicts an "average" or "typical" situation under above average management which is not necessarily applicable to any particular orchard. The figures, however, can be used for purposes of determining the effects of the exchange rate variability if the analysis is

concerned with **relative** rather than **absolute** changes.

TABLE 7 Constant annual receipts and costs of avocado production, July 1989 (R/ha)

	(R/ha)
Gross receipts from production:	
— export market	10 393,04
— fresh market	2 645,38
GROSS RECEIPTS FROM PRODUCTION	13 038,42
Fertiliser	230,27
Maintenance and repairs	228,23
Freight and transport	2 692,39
Packing material	4 182,11
Chemicals	2 023,94
Other variable costs	507,36
Labour	268,68
Other fixed costs	1 063,88
Interest on operating capital	694,87
TOTAL COSTS	11 891,73
Net cash surplus (R/ha)	1 146,69

TABLE 8 Effect of a 10% increase and decrease in the exchange rate on profitability of avocado production

	(R/ha)		
	Base Value	Weaker Rand 10%	Stronger Rand 10%
Gross receipts from production			
— export market	10 393,04	11 432,34	9 353,74
— fresh market	2 645,38	2 645,38	2 645,38
GROSS RECEIPTS FROM PRODUCTION	13 038,42	14 077,72	11 999,12
Fertiliser	230,27	241,60	230,27
Maintenance and repairs	228,23	238,45	228,23
Freight and transport	2 692,39	2 802,24	2 692,39
Packing material	4 182,11	4 446,42	4 182,11
Chemicals	2 023,94	2 098,42	2 023,94
Other variable costs	507,36	542,77	507,36
Labour	268,68	268,68	268,68
Other fixed costs	1 063,88	1 137,29	1 063,88
Interest on operating capital	694,87	730,81	694,87
TOTAL COSTS	11 891,73	12 506,68	11 891,73
Net cash surplus (R/ha)	1 146,69	1 571,04	107,39

(Base period = July 1989)

Effects of changes in the exchange rate on the profitability of avocado production

By using the figures supplied in the previous sections, the effects of the exchange rate variability on the production cost and profitability of avocados can be quantified. Table 8 shows the effects of a 10% increase and decrease in the value of the Rand on the different revenues, cost and profit of avocado production. July 1989 serves as the base period.

According to Table 8, a 10% depreciation in the exchange rate causes the gross receipts from production to increase by R1 039,30 per hectare (7,8%), total costs to increase by R614.95 per hectare (5,2%) and the net cash surplus or profit to increase by R424,25 per hectare (37,0%), respectively. It is clear that a weaker Rand is to the advantage of an export-orientated industry like avocados. An appreciation of the exchange rate, however, will place increasing financial pressure on the avocado industry, mainly due to lower export earnings and higher costs. According to Table 8, a 10% appreciation in the exchange rate will result in gross receipts from production being R1 039,30 per hectare lower (7,8%), resulting in a drop in profitability of R1 039,30 per hectare (90,6%). Table 8 clearly shows the sensitivity of the profitability of an export-orientated avocado industry to exchange rate variation. This is also illustrated by Figure 2.

EXCHANGE RATE EXPECTATIONS

The negative effects of protectionist policies on the competitiveness of agricultural exports have inevitably resulted in a weaker Rand exchange rate. It also indirectly contributed towards a higher sensitivity of the exchange rate to variation in the price of gold (Van Zyl & Groenewald, 1988). As shown, the exchange rate will also increasingly be influenced by international events. All these factors point to increasingly unstable exchange rates.

The exchange rate of the South African Rand will in future largely be determined by factors such as the domestic economic situation, economic policy, the gold price, international economic events and South Africa's internal political situation.

The gold price, which has recently firmed, caused an improvement in the Rand's exchange rate. It seems that the gold price will vary between $405 an $425 per ounce over the short term, with a probable increase in price over the medium term. This will cause the Rand to strenghten further. This trend will be strengthened by the recent political events in South Africa where especially the ANC has been unbanned, giving rise to increased expectations of solving South Africa's political problems in the near future. This will definitely contribute towards greater international confidence in the ability and future of the South African economy, which will lead to a much needed inflow of foreign capital into the country. The increased demand for Rands will cause the exchange rate to strengthen. Privatisation and the abolishment of statutory monopolies, especially the South African Transport Services (SATS), will contribute towards greater economic efficiency, also probably resulting in a stronger Rand. These factors, however, are all focused on the medium to longer term and will, therefore, probably not contribute substantially towards a relatively stronger Rand in the near future.

On the other hand, several factors will cause the Rand to weaken, specially over the short to medium term. The high inflation rate relative to South Africa's major trading partners, present competitive structures in the South African economy and the high unemployment figures will definitely cause the exchange rate to weaken over the short term. The current economic downswing or recession will further strengthen this trend. Recent announcements by Dr Chris Stals (1990), governor of the Reserve Bank, that South Africa's two-tier exchange rate system is to be abolished in the near future, wHI

also contribute towards a weaker Rand as the financial Rand is a better indicator of the international exchange value of the South African currency than the commercial Rand. In this regard it is important to note that the value of the financial Rand is 25 — 35% lower than that of the commercial Rand. These factors and especially the latter, will probably cause the exchange rate of the South African Rand to weaken in the near future. Although it is difficult to predict what the magnitude will be, decreases of between three and 10% over the next six months seem probable. This is notwithstanding the present relatively stable exchange rate.

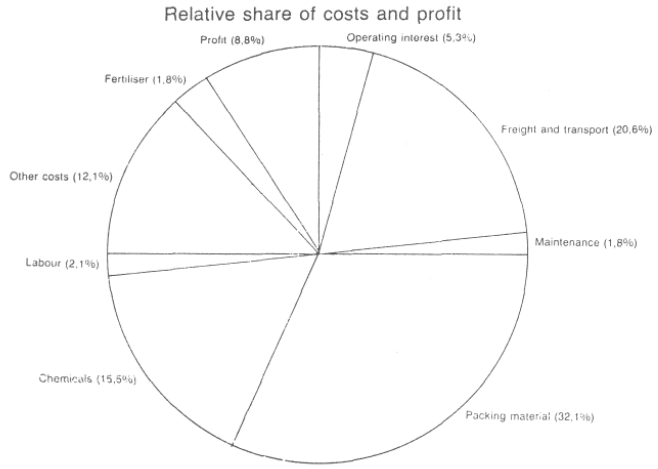

Fig 1 Relative share of cost-items and profit in gross receipts of avocado production, July 1989.

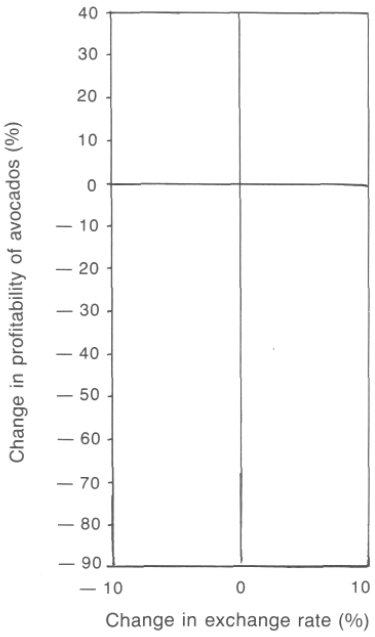

Fig 2 Effect of exchange rate variability on profitability of avocados.

CONCLUSION

The exchange rate variability has a large effect on the gross receipts from avocado production and total production costs, and therefore also on profitability. Exchange rate changes may even be crucial to the viability of avocado production, given present profit margins.

Under these conditions of increasing financial pressure it is necessary to increase managerial inputs into the avocado industry. Better management will have a positive influence on efficiency and therefore also on the profitability of the industry (Toerien, 1989). Export quality should be raised from the present 55% to 80% or higher. The present mean avocado yield of 5,0 tons per hectare should also be raised to 7,5 tons per hectare or higher. Management factors which should receive attention in this regard include the following:

- Extensive vs intensive farming methods;
- Soil preparation;
- Plant density and control of vegetative growth;
- Quality trees;
- Budwood (quality and genetic potential);
- Irrigation systems and tensiometer management;
- Fertilisation;
- Insecticides and pesticides; and
- Chemical or biological control.

Indications are that the exchange rate of the Rand will probably weaken over the short to medium term. This will hold definite advantages for export-orientated industries, including the avocado industry. These trends will alleviate some of the financial pressures experienced by the industry and will increase profit margins.

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