FLOOR PRICES AND THE FREE MARKET: AN ALTERNATIVE APPROACH

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If floor price is to play a role in a future South African agricultural marketing policy it should be aimed at providing a safety net to producers. Developments in international agricultural policy adds the prerequisite that such a floor price policy should be relatively resource and trade neutral. As an alternative it is proposed that floor prices should rather be coupled with deficiency payments at times when the market price falls below the floor price. This floor price should be set according to a set formula based on historical trends in real price fluctuations, adjusted by the standard deviation. This scheme has the advantage that it gives the farmer risk insurance and that it will not distort market prices as market boards will not have to intervene in the market.

Indien vloerpryse 'n rol gaan speel in 'n toekomstige Suid-Afrikaanse landboubeleid moet dit slegs daarop gemik wees om 'n veiligheidsnet vir boere daar te stel. Ontwikkelinge in internasionale landboubeleid voeg die vereiste by dat so 'n vloerprys beleid relatief hulpbron en handelsneutraal moet wees. As 'n alternatief word voorgestel dat 'n vloerprys eerder uit tekort betalings moet bestaan in tye wanneer pryse onder die vloerprys val. Hierdie vloerprys moet gebaseer word op 'n vasgestelde formule wat gebaseer is op historiese fluktuasies in reële pryse, aangepas met die standaard afwyking. Hierdie skema het die voordeel dat dit die boer versekering teen prys risiko gee en dat dit nie mark pryse sal verwring nie aangesien bemarkingsrade nie direk tot die mark sal toetree nie.

1.   Introduction

Since the Marketing Act of 1937 was first implemented, changes in the economic, social and political climate in South Africa have led to a situation where the interest of the consumer and the taxpayer have become a significant factor in agricultural policy making. Issues, such as the affordability of food to low income consumer groups in the urban areas, have become an important concern for policymakers, while budgetary pressures in the face of important alternative national economic development objectives have reduced the ability to support agriculture. Consequently, consumers' indifference to a minimum price mechanism coupled with a surplus removal scheme, which in effect results in an absolute minimum market price to the consumer, have disappeared.

The question on the affordability of food and other consumer interests is in conflict with minimum prices coupled with surplus removal aimed at supporting producer's income. If minimum prices are to play any role in a future South African agricultural marketing policy it should be aimed at providing a low-slung safety net to producers. Developments in international agricultural policy adds the prerequisite that such a floor price policy should be relatively resource and trade neutral.

2.   The effects of floor prices

One of the basic problems with the application of a floor price is the level at which it should be set. Government policy which stabilise prices at too high a level can lead to increased supply, accumulated stocks and pressure for intervention in the form of price support and/or supply control (Lipsey, 1989).

A study on the effect of price underwriting on EEC producers found that a price support policy has mainly two effects (Fraser, 1991). Firstly it results in an increase in the *ex post* mean price - the price which results from the support; and secondly it results in a decrease in the variability of prices. The magnitude of the effect is related to the ratio of the intervention price to the mean *ex ante* price - the price which would have prevailed in the absence of intervention (taken as the import price in the study of Fraser). The higher the ratio, the greater the effect.

Notwithstanding its effect on prices and stability, floor price control also has an effect on production. In the absence of information on the distribution of attitudes to risk among producers, this is difficult to quantify. It can however, be expected that the reaction to high levels of support would be positive (Fraser, 1991).

Estimates by Fraser (1991) indicate that there is a substantial welfare impact on consumers in terms of food prices and consumer expenditure. However, Ritson (1991) argues that when viewed against the broader perspective of consumer interest, the verdict is a little better.

With regard to the welfare impacts of a decrease in intervention prices on producers, Fraser (1991) found it to be relatively unimportant. Supply responses, on the other hand, were found to be uniformly inelastic with respect to reductions in intervention price and expected world prices. Moreover, the distortion of the world price signal caused by the operation of the price-support policy was so extreme that elasticities of supply with respect to expected world prices were in all cases reduced to less than 20% of their values in the absence of the policy. Thus concluding that the problem with price-support policies is not just the artificial stimulus to production they induce, but also the extent to which they distort the impact of market signals on producer behaviour.

Even if the floor prices are not set above the equilibrium level, it still has an effect on prices and quantities. In Canada floor prices on hogs and pork distorted the spread of prices by making it more skew and shifting it to the right - a higher mean (Moschini & Meilke, 1992). As a result the expected price increased even if the floor

price was not binding. This result indicate that the impact on the market is relatively small due to the way in which floor price control operates in Canada (Meilke and Warley, 1990). Under the earlier Canadian Agricultural Stabilisation Act of 1975 (and its post-1985 tripartite variant) floor prices are set at a level not less than 90 percent of the mean market price of the previous five years, adjusted for the change in cash production costs from the previous five years. If the market price fell below the floor price a deficiency payment is made to the producers involved. An important factor which should be kept in mind is that these products are not subject to supply control or strict import control (Sanderson, 1990). This program are to be replaced by the new Gross Revenue Insurance Program and the Net Income Stabilisation Act. The above examples are extremes in floor price control.

3. The free-rider

One of the Kassier committee's recommendations is that participation in a marketing scheme should, in future, be voluntary and that such an organisation be exposed to competition in the market. This introduces the problem of the 'free-rider' in the system, who benefits from the market development and the stabilising actions of the marketing body. Opting for a marketing policy that allows competition to play a greater role, the committee argues that the free-rider has a positive contributory role to play in a free market. The committee contributes very little advice as to how the participants to a voluntary organisation can restrict the benefits of participation to themselves, other than that the 'free-rider' "will keep them on their toes and will ensure that progress, growth and development takes place in the industry" (Kassier, 1992).

The issue here is in which way does the free-rider gain from the actions of the voluntary organisation. The benefits resulting from market development is to some extent unavoidable in the medium to the long term, even under strict control, when viewed from an international perspective. The international market for ostrich products is an example of this. It is a common phenomena and unavoidable. The same applies to some extent to after sales costs. However, the benefits flowing from stabilising actions taken by a voluntary organisation is a controllable factor. In this regard a new approach to stabilisation of the market should be adopted by the South African marketing institutions. Instead of stabilising market prices the approach should be to concentrate on stabilising the price received by the producer, while leaving the price mechanism as unaffected as possible.

An example of such a method is a floor price administrated by a voluntary organisation based on deficiency payments at times during which prices fall to unforeseen low levels. The free-rider can hardly benefit, since he faces competition in the absence of such a price floor. Thus, while participants benefit from stabilisation and market development of the free-rider and the voluntary organisation, the free-rider benefits only from the latter.

One of the main arguments for continued government intervention in agriculture is the so called characteristic instability in the agricultural produce markets. As more farmers move into agriculture, as is expected under a new dispensation, pressure on the government to intervene and to stabilise prices or income may even increase in the future. From the perspective of the consumer this will have to be achieved by means of policies that put less of a burden on the shoulders of the rest of society.

Against this background the policy maker will have to accept that instability will continue to be an important issue, whether realistically arrived at or not. The way in which it is fought will, however, have to be changed from the current approach which places a heavy burden on all the role players and creates the perception that farmers have to carry very little burden at all.

4. Lines of defense for an alternative floor price

Given these constraints producers will have to accept that their first line of defence against price uncertainty lies in their own hands. It is the responsibility of producers to base their production decision on rational expectations of market trends. Voluntary organisations can, perhaps, play a role in the supply of such information to its members. However, it is important to note that the floor price cannot and should not fulfil the role of a market indicator. A floor price can only be a worst case scenario price, indicating the lowest price the participant to the voluntary organisation will receive in a declining market during a set period for which the floor price is binding. Statutory stabilisation programs thus form the second line of defence against uncertainty, protecting producers against unexpectedly low prices or decreases in income that could not otherwise have been forecasted. Under a market orientated agricultural policy this is the only role a stabilisation policy could play.

The third line of defence against uncertainty is fulfilled by policies such as disaster funds. The purpose of these is to assist farmers and their workers during periods of drought and natural disasters.

5. The performance and working of the current floor price system

In determining the floor price Control Boards make a calculated estimate of what they expect prices to be in the new marketing year. Based on the expected variance in prices and quantities, and the limitations of certain physical and financial factors a floor price is arrived at. The floor price proposal is then submitted for approval by the Minister of Agriculture, who is advised on the matter by the National Marketing Council.

The method of price determination differs between the various surplus removal schemes, the specifics of which will not be dealt with here. A problem of the process is that it is relatively time consuming and it leaves room for political influence. Furthermore, results indicate that as in the case of meat, price stabilisation by means of the floor price mechanism has not achieved its goal (Lubbe, 1992). Though not tested against instability in international meat prices Lubbe's study does raise a question on the efficiency of the current system.

The answer may be partially found in the fact that Control Boards are expected to set prices in terms of prevailing market conditions and that the floor price should preferably be set at a fixed level under the mean market price of the year for which it is applied. The use of a moving average method of estimating the market price was greatly discouraged in the past, as this "introduces a measure of unresponsiveness to current price movements" (National Marketing Council, 1977).
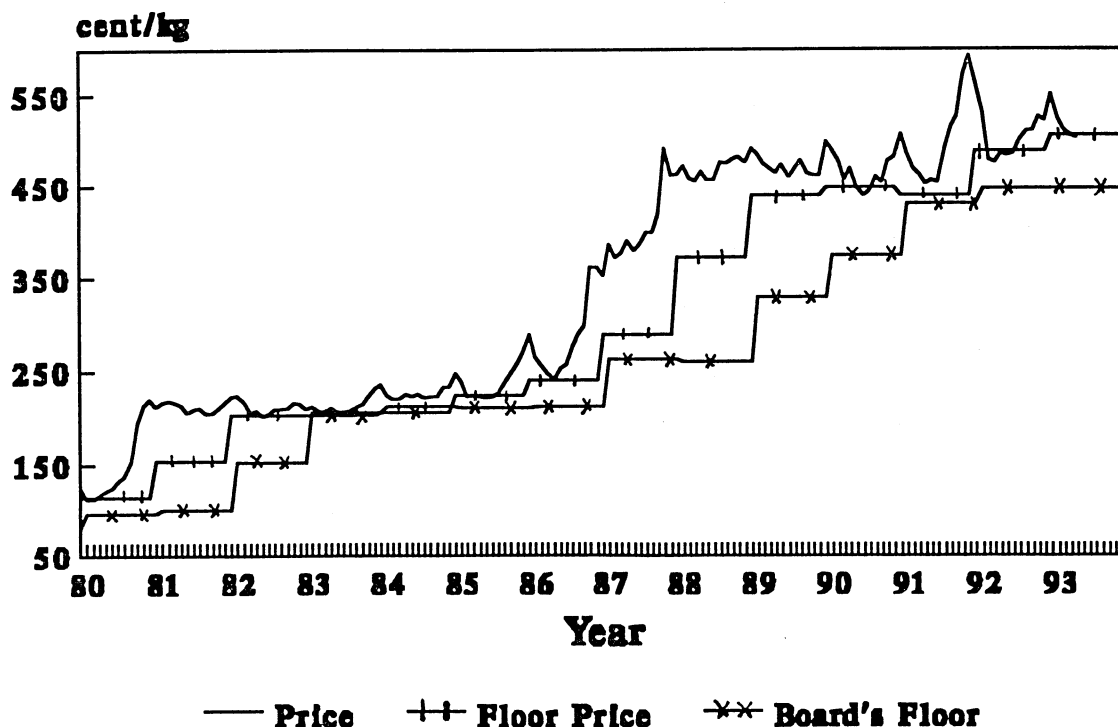
cent/kg

Figure 1:   Floor Price on Beef, 1980 to 1993.

The question can be asked whether these directives are not in itself responsible for introducing restrictions on the Control Boards' ability to stabilise prices, since stabilisation in itself implies that the band within which prices fluctuate are narrowed down. This introduce a measure of unresponsiveness to changes in the market. This does not necessarily mean that prices should not be responsive to long term trends in the market. In addition, since the prices are not known beforehand, the prerequisite that the floor price should be set at a certain level under the mean of prices of the year for which it is applied is a near impossibility. This gives rise to a tendency to set prices too low in a rising market and too high in a declining market, which introduces a measure of uncertainty amongst participants in the market.

6.   Alternative methods of determining floor prices

6.1   The Canadian Approach

In deriving a method for the calculation of a floor price for the South African beef industry the formula used by the Canadian Federal Government was used as a basis. The formula proposed is as follows:

$$FP = NP - s$$

Where:

FP = the Floor price

NP =   the national average real monthly price calculated for the past five years.

s =   standard deviation in real monthly prices during said period

The coefficient of variation (s/NP) depicts the degree of variation in prices that occurred and that could be expected to occur in the forthcoming year if the trend continues.

The standard deviation is measured on real prices for the current period in order to work on a comparable basis in an inflationary economy. Measurements on beef prices also indicated that the coefficient of variation in real prices is typically less than that measured on nominal prices. An added advantage of using the standard deviation for the downward adjustment of the average price is that the mode of prices could be expected to lie above the derived floor price. This signifies that the stabilisation fund would be able to build up sufficient funds to bear the cost of unforeseen dips in prices below the lower range, *cet par*. However, if it is decided that the downward adjustment should not be lower than a certain minimum percentage, ie. 90 percent, the need to raise the level of producer levies to the maintain the stabilisation fund, increases. Figure 1 shows an example of derived floor prices for the beef industry for the period 1980 to 1993. Prices were deflated by the producer price index (PPI) for stock slaughtered. The results show that the proposed formula yields a floor price that follows the market trend (in nominal prices) more closely than floor prices set by the Meat Board. In addition, it exhibits the tendency to follow market trends more closely in a declining market, as indicated during the 1990 - 1992 period. Although the Meat board's floor price was lowered twice during this period, these adjustments were out of step with market trends.

Instead of surplus removal a deficiency payment, equal to the difference between the floor price and the market price, is made to producers at times when the market prices fall below the floor price. This would leave the prices free to fluctuate around equilibrium levels. Since no costs will be spent on storage facilities by the board the full amount of producer contributions is available for deficiency payments.
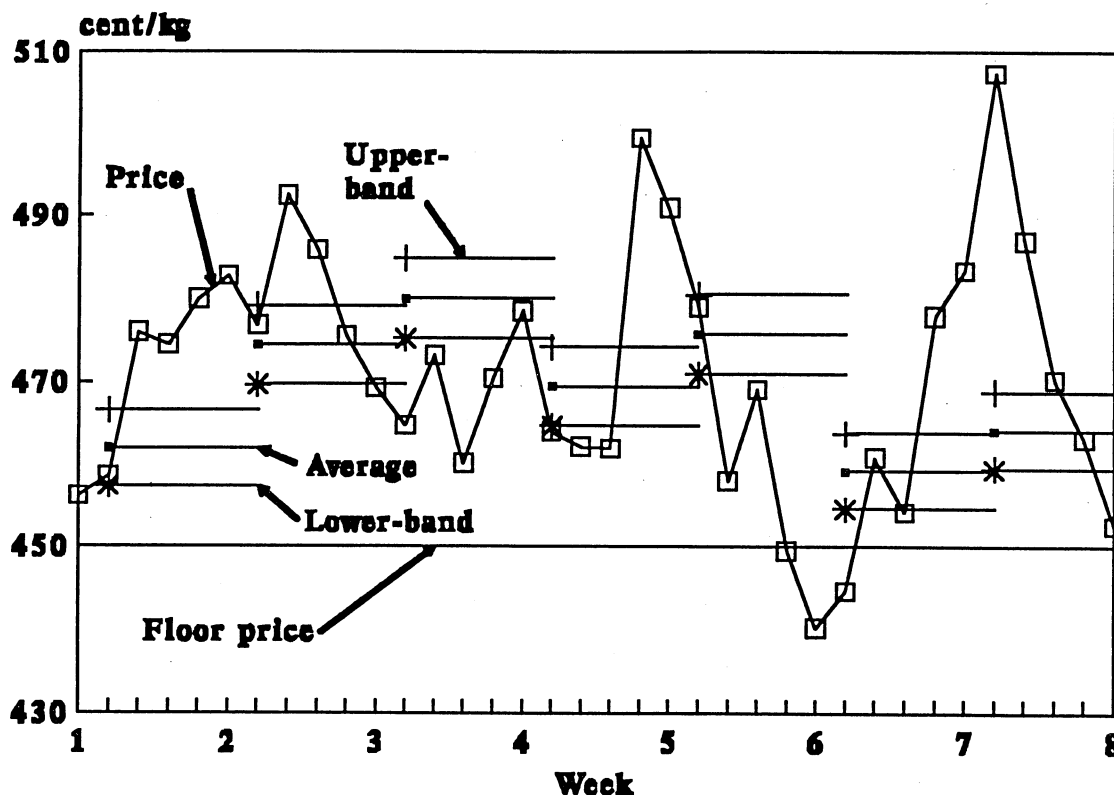
Figure 2:   **Band-price Operation: An Illustration.**

In designing the model questions arose about the length of the period used in calculating the moving average, and the intervals at which it should be set. Using too long a period would result in too little responsiveness in the formula to pronounced changes in year-to-year market prices. As a result the sustainability of the fund would be at risk. One would thus be well advised to determine this period according to the needs of each individual industry, although a period no longer than five years is favoured for reasons of affordability during successive years of adverse market conditions.

6.2   The Band-Price approach

In the past, price variations on a daily basis were sometimes found to be unacceptably wide. The Egg- and Meat Board took measures to address this. The Egg board used weekly floor prices, whilst the Meat board used basis prices at which "surpluses" were removed by the Board to even out fluctuations in prices.

A formula approach introduces the opportunity to adjust the floor price on a continuous basis. For this to be possible an upper-band should be introduced in the formula, set equal to the average plus the standard deviation. When the mode of prices move beyond either the lower-band or the upper-band, these are then adjusted to reflect the new situation. This approach looses sight of the objective to provide a low-slung safety net to producers. It also gives little protection to producers against wide divergences from the long-run market trend.

As an alternative it is proposed that the floor price is set on an annual basis. In addition, upper and lower price bands are set according to the average price of the

previous week to avoid too long a lag in the stabilisation mechanism, adjusted by the standard deviation determined in calculating the floor price.

Figure 2 illustrates how such a mechanism, based on weekly adjustments, would operate. In this example the bands were set at 10 percent above and below the average price of the previous week. Producers would receive a deficiency payment equal to the difference between the lower-band and the market price, if the latter falls below the lower-band. If the market price falls below the floor price, the producer receives a deficiency payment equal to the difference between the floor price and the market price '

7.   Some Issues For Consideration

Policing and control of the proposed approach to floor price stabilisation could be more complicated than the current approach, due to its need for accurate and timeous information. Although this may not be a problem amongst commercial farmers, the developing farmers are poorly served by current structures of data collection and dissemination. Provision should be made and means put in place to address this problem if this program is to be adopted. It may be necessary for government to play an active role in this respect.

It should be considered whether such a stabilisation fund should be adopted for the industry as a whole or whether different regions should adopt their own systems. This is especially important because of price differences that may result between regions after the deregulation of the single channel marketing schemes.

The question arises as to whether contributions to the fund, as well as receipts from the fund should not be capped. This as an insurance against large scale or low cost producers acting as "premium pirates" at the cost of smaller farmers. A system to keep track of a producer's contributions to the fund may also be implemented in order to pay back the moneys received from the producer - after deficiency payments have been deducted - on termination of membership of the voluntary organisation. This has the added advantage of ensuring that producers do not manipulate information provided to the organisation in order to increase deficiency payments.

Closely related to the above is the matter of the level of the levies paid to the fund. Currently the practice is for producers to pay a fixed levy per unit. In order to make provision for the built up of the fund after a period of payments to producers it may be more advisable to base the level of the levy on a fixed percentage of the price the producer receives. The question also arises as to what should be done in the event of the fund reaching too large figures. The obvious answer would be to adjust the level of the levy but care should be taken that a sufficient safety margin be set in order to make provision for adverse structural shifts in the market. Alternatively, provision could be made in the national agricultural policy to provide for the creation of *ad hoc* programs to deal with this situation should it arise.

Provisionary measures should be made in the event of the fund being too small in the formative years of the program. In the transitional phase after adopting the program the situation may well occur where payments from the fund might exceed the size of the stabilisation fund, even if the stabilisation fund of the current scheme is taken into account. In the planning phase attention should be paid to this possibility, as well as how new entrants to the program should be provided for.

8.　　Conclusions

Due to changes in the economic, social and political spheres in South Africa, as well as developments in the international policy arena, there is a shift favouring policies that are relatively trade and resource neutral. Support programs that distort the domestic and international markets will continue to experience increased pressure for change. Thus, a move towards more market related programs is called for. In order for a floor price mechanism to be applied in a free market the aim thereof will have to be changed to that of providing a low-slung safety net under the long run market equilibrium price with deficiency payments not affecting market prices.

Since surplus removal schemes places a burden on the consumer in terms of higher prices, it is proposed that a system of floor prices coupled with deficiency payments should be adopted. Producers will still receive assistance in periods of unforeseen low prices. In the

absence of storage and accompanying maintenance and administration costs, this program may be less costly than the current programs run by for example the Meat board.

However, many considerations have to be taken into account in the design of such a program. These will differ from industry to industry according to the specific characteristics of each industry's market. An example of which may be the sensitivity of an industry's domestic market to the vagaries of international market instability and the type of tariff policy adopted to deal with this

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