

State Trading Enterprises: What Analyses are Required?

Donald MacLaren
University of Melbourne

Prepared for the Workshop:

*Achieving Food Security in India:
Improving Competition, Markets and the Efficiency of Supply Chains*

24 November 2009, New Delhi, India

Introduction

Agricultural markets in developing countries display two important market failures:

- the buying power of middlemen downstream from the farm sector
- risk and uncertainty with incomplete or non-existent markets for risk.

Together, these two failures, unless corrected, give rise to vulnerability of poor households with respect to livelihood security and food security.

The typical response of governments is to intervene through:

- input and output price manipulation or
- through market manipulation in the form of statutory marketing boards, hereafter referred to as state trading enterprises (STEs).

The variety of objectives of STEs and the ways in which they go about achieving them do not make them straightforward to analyse.

2

Introduction

Where they exist, STEs are a pivotal part of the agri-food supply chain, being one of the interfaces between farmers and consumers.

What do we know from the research literature about the ability of STEs to correct the two market failures already noted and thus improve the functioning of this supply chain?

On correcting for downstream market power and for exploiting the country's terms of trade, we know a good deal about STEs in importing and exporting countries.

For example:

- in importing countries, it is known that STEs generally act like an import tariff
- in exporting countries, they generally act as an export subsidy
- they may or may not raise social welfare relative to some imperfectly competitive benchmark.

3

Introduction

It is also known that, quantitatively, the differences between an STE and a downstream industry that is composed of private firms depends on four characteristics:

- the number of firms
- the objectives of the STE
- the extent of the exclusive rights that the STE enjoys
- the efficiency in procurement and sales of the STE relative to the private industry.

What is not so well understood is the effect of an STE as a means of correcting the market failure caused by risk and uncertainty where other mechanisms, such as minimum farm-gate price, are absent.

4

Preliminary Analysis

Typically, risk arises for farmers because of variable input prices, output prices and yields.

Uncertainty follows because production decisions are made without certain knowledge about the selling price received some time in the future.

Under risk aversion, it is known that the optimal level of output is smaller than it is under certainty.

Together, these features may create livelihood insecurity and food insecurity for both farm and non-farm households through inducing risk-averse behaviour.

5

Preliminary Analysis

How does an STE differ from a private sector middlemen in affecting price risk along the supply chain?

The approach taken initially is to compare a pure middleman (i.e., a monopsony/monopoly) with an STE and to do so in a market closed to international trade.

The source of risk is a fluctuating domestic supply function.

This set-up provides a starting point from which to draw some preliminary conclusions.

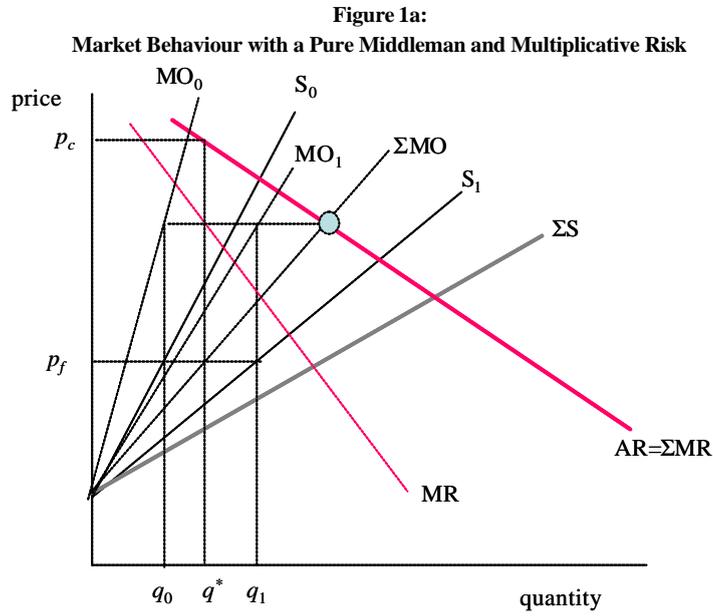
The next step is then to see what other conclusions can be drawn under more general conditions.

From the existing literature, it is known that these two entities will behave differently because they have different objectives:

- the pure middleman maximises profit
- the STE's objectives are more varied.

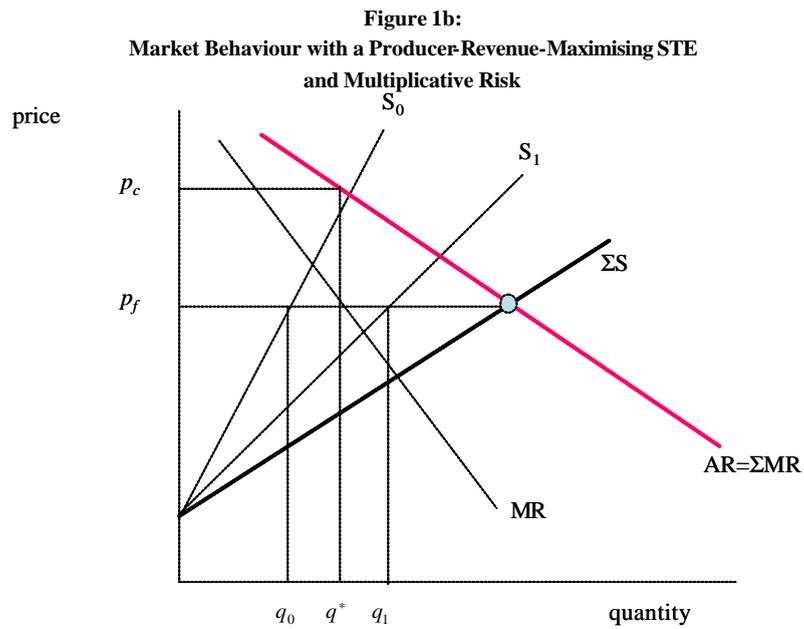
6

Preliminary Analysis



7

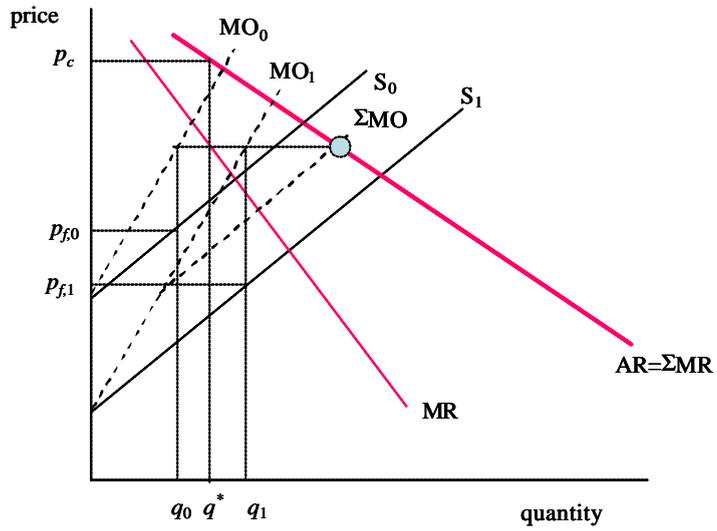
Preliminary Analysis



8

Preliminary Analysis

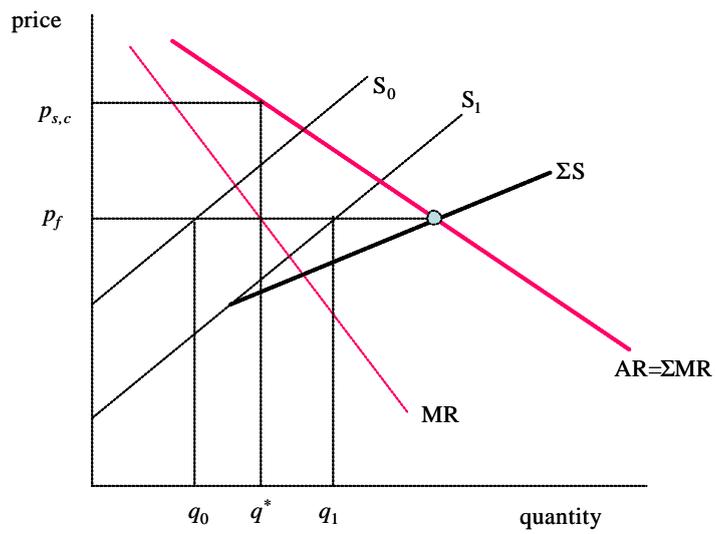
Figure 2a:
Market Behaviour with a Pure Middleman and Additive Risk



9

Preliminary Analysis

Figure 2b:
Market Behaviour with a Producer-Revenue-Maximising STE and Additive Risk



10

Preliminary Analysis

Preliminary Conclusions

The principal conclusion to draw from this preliminary analysis is that it is important to know the nature of the stochastic process when evaluating the role of an STE in removing producer price risk:

- if the supply-side risk is multiplicative, then an STE plays no role that a pure middleman cannot in moderating producer price risk – both stabilise price
- if the supply-side risk is additive, then the STE removes the producer price risk whereas the pure middleman does not.

Each stabilises the consumer price, only the levels differ.

Even where the STE has no role to play in affecting producer price stability, it does procure more and at a higher price than the pure middleman does and thus improves livelihood security and food security compared with the pure middleman.

11

What Analyses are Required?

However, before accepting these observations as a basis for public policy, it is necessary to analyse how robust these findings are under more general assumptions.

From the foregoing preliminary analysis, it is clear that there are several issues that need to be explored before any conclusions are drawn about the benefits and costs of using an STE to correct for the joint market failures of downstream market power and risk.

These issues include the following.

- 1. it is known that producers cannot adjust production (or sales) once price uncertainty is resolved because of production lags – how does this alter the conclusions just arrive at?
- 2. the nature of the stochastic process on the supply side turns out to be important in theory but, in practice, how can we determine which it is?

12

What Analyses are Required?

- 3. the functional forms of the demand and supply functions matter under imperfect competition and under buffer stock price stabilisation – how can we determine which are the most appropriate forms to choose?
- 4. what happens to the analysis and the conclusions drawn from it in a market that is open to international trade, which is another source of risk?
- 5. there is a distinction between *ex ante* and *ex post* measures of welfare – which should be used to assess public policy?
- 6. what is the effect of the number of downstream private firms that would exist in the absence of the STE and how might government avoid anti-competitive behaviour in this sector should the STE disappear?
- 7. what is the potential role for government to correct the market failures that are caused jointly by uncertainty, risk aversion and downstream market power and how should that role be defined?

13

What Analyses are Required?

- 8. what is the correct sequencing of the process of reform of the STE should it be shown that a private downstream sector, operating under competition law, would increase efficiency and social welfare relative to that generated by the STE?

These questions help to define the research agenda for this project in dealing with STEs in the agri-food supply chain.

However, there may be no unambiguous, general answers.

Nevertheless, answers are needed before realistic conclusions can be drawn about improving efficiency of agri-food supply chains in which an STE is currently a part.

14