

Justifications for Compulsory Minimum Standards

Peter Bowbrick

ABSTRACT

Objections to compulsory minimum standards have been set out elsewhere (Bowbrick, 1977). Here it is shown that there are justifications for compulsory minimum standards, for some products, for some markets. The key factors are identified.

INTRODUCTION

Governments and trade associations are frequently put under heavy pressure to impose compulsory minimum standards for a good, banning the sale of any item that does not meet the criteria. In a previous paper (Bowbrick, 1977), I set out the case against compulsory minimum standards in a market where consumers can readily assess the quality of the product. I then applied this analysis, with much of the rest of the economics of grading, to one of the most important agricultural markets, fruit and vegetables (Bowbrick, 1981). The conclusion was that under the assumptions of the model, compulsory minimum standards produced large, certain and immediate costs, whereas any benefits were distant, uncertain, and, in all probability, small. Bockstael (1984), using more restrictive and less realistic assumptions about a similar market, concluded that minimum quality standards *cannot* increase total social welfare where the characteristics are discernible to the customers before purchase. Besanko *et al.* (1987) show one situation where minimum standards can cause total social welfare unambiguously to decrease.

However, compulsory minimum standards are widely used in situations where few people would object - aeroplane safety or food' hygiene for instance. This article aims to show why some standards are justifiable, and to identify the factors that should be examined before imposing standards.

The following reasons are often given for introducing compulsory minimum standards:

- (1) shifting the balance of bargaining power from producer to consumer;
- (2) reducing the search cost and effectively reducing the price to the consumer;
- (3) reducing risk, and so effectively reducing cost to the consumer, or even changing the nature of the project;
- (4) facilitating trade;
- (5) enabling producers to restrict supply and so earn a monopoly profit, on the grounds that removing one quality, usually the lowest, from the market has a bigger effect on price than removing the same amount

randomly chosen (Price, 1967a, 1967b, 1968; Waugh, 1971);

- (6) giving special advantages to certain groups of producers or consumers;
- (7) stopping monopolists from reducing quality standards to make monopoly profits (Besanko, *et al.*, 1987).

This article shows how these objectives link up, and how benefits to certain groups may be offset by costs to others.

WHAT MINIMUM STANDARDS?

In this analysis it will be assumed that the product has a single, vertical, quality attribute. It is sold item by item. Each item is classified into class A, class B or class C, by the level of that attribute (the use of only three grades simplifies the analysis and does not change the conclusions). It is assumed that the production process is agricultural and that each crop contains classes A, B and C. The process may be altered, at a cost, to move the mean higher or to reduce the variation about the mean.

A minimum standard is introduced which forbids the sale of class C. The effect of this is to *change* all supply and demand functions, rather than to cause movements along fixed curves:

- (1) The demand for class A and class B will rise, as class C is no longer a substitute.
- (2) The demand for goods which are substitutes will change (and the good which is a substitute for class A is not necessarily the one that is a substitute for class C). The cross-elasticities between each grade and its substitutes will change.
- (3) The cross-elasticity between class A and class B will change.
- (4) The elasticities and cross-elasticities will change over time, as consumers get used to the new product range and their expectations change. (See for instance Tellis and Fornell (1988) and Parsons (1975) on changing cross-elasticities during a product life cycle.)
- (5) Unit production costs will rise, and will rise most for those farmers who produce most class C. It is assumed that class C must be disposed of at a lower price, being sold to manufacturers rather than being sold on the fresh market for instance. It may be dumped, with the producer having to pay to get rid of it.
- (6) The minimum standards may increase or decrease distribution cost, and the effect will tend to be greatest on those distributors who previously handled class C.
- (7) The minimum standards, which are assumed to be relevant to the consumers' wants, may reduce search and effectively change consumers' demand curves (discussed below).
- (8) The minimum standards may reduce consumers' risk and increase producers' risk, so altering supply and demand curves.
- (9) Demand and supply curves can be expected to change shape as well as shifting, when, for instance, the demand by those who previously bought class C becomes clustered about the bottom of class B.

These changes in supply and demand impose serious restrictions on the analysis that can be carried out.

The assumptions made here permit a clear look at one type of situation, but they

assume away most of the complexities of real life. Many other common situations are described in Bowbrick (1981). For example, class C specifications often permit mixed consignments of classes A, Band C to go into this category, and the minimum standards would then prevent the sale of mixed consignments that it was previously uneconomic to sort. Items may be sold in packages, especially at wholesale, and the item-by-item approach must be replaced by one that takes uniformity within and between packages into account. Tolerances may be permitted. Once it is accepted that there are several relevant attributes, the problem becomes multidimensional. Yet another scenario exists where there were classes A, Band C and the minimum standards removed only the lower part of class C, effectively changing the average quality of class C.

The scenario where the minimum standards affect all grades might also be considered. Here one might, for example, remove the small cherries from classes A, B and C (where they had been classified by attributes other than size, but where size is a meaningful attribute). This is an appropriate model where, for instance, one is introducing minimum standards of hygiene, pesticide residue, etc. Here it is even clearer that the demand and supply of each grade changes. The extreme case of reducing supply by a minimum standard of a wholly irrelevant attribute is sometimes met (see Price (1967)). Nguyen and Vo (1985) implicitly assume in their model that *inter alia* the product is a completely homogeneous bulk product, such that removing the lowest quality increases the quality of all the rest. Carley (1983) discusses a practical example, milk, where the quality of all produce is increased, by adding solids rather than discarding low quality milk, and he is "guarded about" the net benefits.

The impact of minimum standards will also vary, depending on whether all produce is covered or only that produce sold by one group of producers, Dutch exporters selling on the British market for instance. This in turn will depend on the package of quality control, labelling and advertising used to support the minimum standards.

The more realistic the scenario gets, the less reason there is to believe that shifts in supply and demand are predictable.

FULL INFORMATION

The situation where the consumer can readily assess the quality before purchase has been discussed by Bowbrick (1977). Bockstael (1984) and Besanko, Donnenfeld and White (1987). The analysis concludes that in the short run, and to a lesser extent in the longer run, consumers are worse off, either having to pay a higher price for the same product or not being able to buy their preferred product at all. Some farmers and traders clearly benefit, but some are unequivocally worse off. The position is not very different where consumers cannot inspect before purchase, but where they habitually buy from a single retailer, and know the normal quality.

COSTLY INFORMATION SEARCH

We move on now from the situation where full information is available at a glance to one where it is readily available but costly. It takes time to examine every cabbage on a supermarket shelf to determine which is the best; it takes time to read the list of ingredients to determine whether bread is wholemeal or not. Consumers must conduct a lengthy search to find the information needed to arrive at the optimum purchase. Since searching is time-consuming, they compromise with less search and a suboptimal, though satisfactory,

purchase. (There is now an extensive literature on the economics of information, with some relevant to the quality of durable consumer goods, some to advertising and quality, a little relevant to price as an indicator of quality, and almost nothing relevant to grades as a method of conveying information.)

Consumers search as part of the process of buying a product. That search may involve no more than going to a shop which they believe stocks goods of average to superior quality most of the time. It may, however, involve" a detailed examination of the products of 20 potential suppliers, including a detailed examination of the specifications, observation of the production process and destructive testing. Naturally, the time a buyer will spend on search will depend on the expected benefit from that search. The buyer can be expected to spend longer when some items are dangerous or badly defective, or when there is a wide range of qualities (or rather value for money) in the market. The time taken to make a decision will depend on factors like the quantity of data needed for a particular decision, the difficulty of getting this data, the difficulty of processing it without a computer, and the number and location of suppliers.

A very common strategy to reduce the amount of search is to buy from a range of retailers, then buy only from the one who has proved most satisfactory. This habitual purchase strategy may be adopted only for the good for which the experiment was carried out, or it may be assumed that the chosen shop will be equally satisfactory for all goods.

If the search cost can be reduced, by better labels or compulsory minimum standards for instance, this is equivalent in some ways to a straight reduction in price. However, since customers will value their time differently, and will differ in the optimal amount of search anyway, the impact of a reduction in search will vary, so it is not equivalent to the same price reduction for each customer.

Search is also a cost to the retailer and wholesaler. It is much easier to trade if every item does not have to be inspected. Supermarkets also find that if consumers inspect all items before they buy, aisles must be very wide or they get blocked by crowds of people examining the produce.

HIGH COST OF FAILURE

Obviously, consumers will have little incentive to search if all items on the market offer much the same value for money: the search may produce little more satisfaction, and perhaps none at all. If, however, a substandard item is dangerous, or if a lot of money is at stake - a purchaser losing his life savings if his house falls down - or if a purchaser feels that there is a wide range of value for money on the market, he or she can be expected to search extensively. Here search is a very important cost indeed.

In cases like this, search may be a big cost even when the quality is easily examined or when each item is clearly labelled. When someone poisoned half a dozen bottles of aspirin in Chicago, clearly labelling each' Poison", it stopped all sales of that brand in the United States. There is always the danger that someone will not notice the label or that the bottle was tampered with and will be poisoned, as indeed did happen in Chicago.

This market failure harms the consumer, who has to inspect every purchase carefully, and the producer, who has very low sales. If minimum standards can remove this cost, everyone benefits. Pressure from producers and, less important politically, consumers, has meant that most countries have adopted some minimum standards, on food hygiene for instance. Gold and van Ravenswaay (1984) point out that governments will frequently impose minimum standards which save very few lives, at vast expense. In many of these cases it is certain that most fully informed buyers would be willing to buy the product and take the risk

of a substandard item, but governments will not take the political risk of appearing to let people die by neglecting to take simple precautions. The consumer's perception of danger may be unrealistic, resulting in constant pressure to improve already high standards of air safety, but little pressure to improve motor car safety.

Public Costs

In the aspirin example a key feature is that all the costs were public, except the one death; all potential purchasers and sellers of aspirin throughout the United States suffered. In the same way the farmer who sells apples sprayed with DDT is harming all producers and consumers, not just the people who buy the specific product. Single producers of an undifferentiated product in a large market have no reason to improve their standard as long as other people are selling low quality: the benefit is a public one if all sell to improved minimum standards.

Some products harm people other than the producer or consumer. Society has to pay for treating the cancerous tobacco smoker, and the CFCs in my shaving cream destroy the world's ozone layer. Some manufacturing processes produce harmless products, at the expense of poisoned employees or a damaged environment. With leaded petrol we have an attribute which improves performance, but which harms the general public. A minimum standard of freedom from lead (or a maximum standard of lead content) reduces performance, so harming the individual drivers as it benefits the general public, including the drivers themselves. It does reduce the self-satisfaction of those who now choose to use the ecologically superior, but functionally inferior, unleaded petrol - replacing it with the less intense satisfaction of knowing that the public at large is not being poisoned.

Trade Associations

When governments do not act, producers may combine to set their own minimum standards, using what is in effect a brand to distinguish their product from other people's. In the past most of the effective pressure for minimum standards has come from producers. If the participating producers control nearly all the market this is equivalent to government minimum standards, while if they have a small market share this is equivalent to large producers using a brand and a quality to slot their product into the right market segment - a strategy which is of particular interest to those working on industrial goods.

Similarly, large supermarket chains have come to dominate the market partly because they at least could offer strictly enforced minimum standards on all they sold, as well as some value for money.

Minimum standards for export.

It may be felt that each producer on the home market is sufficiently identified by brand or reputation to make industry-wide minimum standards unnecessary, but that on the export market all producers are lumped together as "British", or "Japanese". In these circumstances one unscrupulous or inefficient exporter can destroy a country's reputation for that product and possibly for related products. For this reason, minimum standards may be introduced so that nobody can harm the reputation of, say, Danish bacon by selling inferior bacon, or of Israeli celery by selling inferior Israeli melons. In effect the national name becomes one of many competing brands on the export market.

However, Carter *et al.* (1986) have shown that the strict standards on Canadian wheat exports have

meant that farmers could not switch to higher yielding varieties with different or lower quality even when they were clearly more profitable.

Industry standards.

Industry standards, such as a standard voltage for electricity and standard plug shapes, may be necessary to develop a market, while others like IBM compatibility provide opportunities for small firms to compete effectively with the market leader. However, these are horizontal rather than vertical attributes, and so should not be discussed in terms of minimum standards.

Addictions.

In many countries the most important agricultural products are addictive drugs like cannabis, tobacco, opium, alcohol and cocaine. The exporting country may turn a blind eye to this as long as the effects in the home country in terms of addiction and the growth of a criminal subculture are acceptable. I myself have worked on tobacco, believing that the benefits to the Tanzanian peasant farmers far outweighed the extra deaths in developed countries.

A case may be made for minimum standards (e.g. purity, freedom from tars) or even for an absolute ban, an extreme form of minimum standard to protect people already addicted, as they do not have a free choice. There may also be maximum standards to prevent addiction - minimum age, advertising bans, no smoking areas, etc., all of which change the perception of the product. The main justifications appear to be (a) that a teenager who considers someone aged 40 to be senile, considers a high probability of death before 50 to be unimportant, an extremely high discount rate which changes sharply in the next month or two and (b) that there are costs to society in dealing with those addicted. Akerlof and Dickens (1982) discuss a similar situation, when people in dangerous jobs refuse to recognise the danger.

Labelling

Better labels are, to some extent, an alternative to minimum standards in reducing search. In some simple markets, for instance, they could transfer the "costly information" situation to the "full information, obvious quality" situation, where the cost and benefit are more clear-cut. The relative advantages of labelling and minimum standards will be discussed below.

Hidden Attributes

The consumer faces a risk when buying a product which may have a hidden defect, one that is not apparent until the product is consumed (or, as in the case of some drugs, long afterwards). An almost identical situation arises when the defect is detectable, but only at a cost that is quite unreasonable, given the cost of the defect.

The situation here is very different from the one discussed in the previous section. In the three-grade, single attribute situation, already defined, the outgrades have already been identified as class C, so there is no hidden risk. In a more common situation, where class C contains everything from the disastrous to the lowish quality, it may be assumed that the product has already gone over a sorting line, and it would be simple to put on another grid to remove the worst of class C. The hidden defect situation arises most obviously when the product is sorted according to one set of attributes, and the defect is another attribute. (This shows how difficult it is to discuss quality problems with a fixed set of definitions, unless one is dealing with a real good in a real market. Far too often abstract analyses use different sets of assumptions, particularly implicit assumptions, on each page.) Improved information here

can do very little to change the situation, except in the unusual case where it proves possible to label each item separately with the level of its characteristics. It will perhaps help if consumers habitually overestimate the risk, though airlines and tobacco companies found it counterproductive to advertise "Our product is less dangerous than our competitors'".

Generally, individual consumers are unlikely to be interested in the statistical chances of getting an inferior product, and are not over-concerned with the difference between risk and uncertainty. It is possible that a consumer will make a different choice if he or she is told that there is a 1 in 500 chance that a house will fall down within the next ten years rather than a 1 in 1,000 choice, but it is by no means certain. Industrial purchasers and the military are more concerned with the statistical risk, and they are likely to think of quality in terms of percentage defects, treating defects as an insurable risk.

Minimum standards can reduce the risk. At one extreme producers may continue to produce the same quality and provide an instant, no quibble, money-back guarantee. This transfers the risk without reducing it. It is appropriate perhaps for electronic goods, houses, etc. It is inappropriate where the cost of failure is high, offering a widow her money back on the poisoned mushrooms her husband ate. Manufacturers would not find a guarantee any substitute for quality: a defective transistor costing 20p can mean expensive repairs on the completed computer. Both retailers and manufacturers find repairs under guarantee very expensive, both in direct costs and in loss of reputation.

At the other extreme, the penalties for selling substandard goods may be so high that producers change their production methods, perhaps just putting a quality control check at one stage of the production line, perhaps redesigning the product¹ perhaps introducing a high degree of quality control. The changes in the production process needed to produce to minimum standards will often make it feasible to identify and label the substandard goods, so labelling becomes a possible alternative. Conversely, if strict labelling regulations are introduced, producers have to alter the production process to measure the attributes, and this means that they could just as easily discard the outgrades.

Actual reduction of the risk has created mass markets where none existed before. The market for air transport was limited when a BEA pilot on the Paris-London run had a life expectancy of four years, and eating wild mushrooms was always an adventure.

The removal or transfer of risk does not affect all consumers equally. For example, the wealthy may be more willing to tolerate a risk of complete failure, but be more irritated by the inconveniences of claiming under guarantee.

Asymmetric information.

It has been argued that the hidden defect problem can be particularly serious when the seller knows which items have the hidden defect. Akerlof (1970) gave a model of a second-hand car market where only the owner knows whether a car is good or a "lemon". If it is a lemon, the owner tries to sell it and replace it with a new one - lemons occur randomly in new cars so the probability is that a new car will be better than the original lemon. Because of lack

¹ Garvin (1988) points out that a totally different production line with higher unit costs often proves cheaper when the cost of taking goods back under guarantee and repairing them is taken into account.

of information, all cars get the same price on the second-hand market. Accordingly, all people with above-average cars will prefer to keep them, while all people with lemons prefer to sell them. This means that few good cars are sold, mainly lemons, and the price of second-hand cars falls with the expected quality of the car. This further reduces the expected price from selling a good car. A situation may arise where only lemons are sold and they get a very low price. The vast majority of buyers and sellers would trade at a price satisfactory to both if either there was perfect information or the seller was as ignorant as the buyer. Akerlof's assumptions are rather restrictive, but a minimum standard of the guarantee type would break the deadlock. This does imply that lemons were clearly distinct and identifiable by an independent assessor ex-post. Empirical tests of the Akerlof model by Bond (1982), Heinkel (1981) and Kambhu (1982) suggest that if there are slight amendments to his basic assumptions, his model does not work in practice.

HOW HIGH SHOULD A MINIMUM STANDARD BE?

Minimum standards may be set to reduce search or risk. There is a declining marginal return to increased minimum standards. The first level, of removing the positively dangerous items, has a large impact and may be a necessary condition of having any trade at all. The next step, of removing the totally useless items, also benefits the producer and consumer - very substantially in the case of expensive items like cars, but only trivially in the case of some very cheap items. Increasing minimum standards beyond this reduces the possibility of purchasing a somewhat substandard item. Indeed, in some markets, supply and demand have meant that the equilibrium price of each quality reflects the same value for money in the eyes of the average consumer. Here the average consumer gets no reduction in risk or search at all, while the others would have to search for a new optimum strategy.

BETTER LABELLING IS A SUBSTITUTE FOR MINIMUM STANDARDS

As the standard rises, it helps fewer and fewer customers. Every time it rises, it means that fewer people are allowed to buy their optimum quality, and they have to switch to other products or to class A or B at a higher price. This effect is aggravated by the fact that the increase in price means that their optimum quality purchase falls - at the new price some of the buyers of B would have preferred to switch to C if it was still available. In many markets the only benefit of a further increase in minimum standards, banning Class B as well, would be to save those buying class A the embarrassment of buying class B by mistake, a Bentley instead of a Rolls. (Here as elsewhere it is important that the assumptions should be explicit and reflect the conditions in the market being examined.)

How does the cost to the consumer rise as the minimum standard is increased? In the market we have assumed there is little or no added physical cost in removing class C because there is a sorting system already in place, but for some products like drugs this elementary protection may be the most expensive. There may be a positive or negative return for the upgrades, depending on whether they are sold or dumped.

There is no demand for the dangerous or useless items, so removing them from the market will not cause any scarcity. The increase in price will come from reduction in risk and search, not in reduction of supply. However, once the standards start removing qualities for which there is a demand there will be a price effect. (It has been assumed that the long-run

supply curve is not perfectly elastic.) Those people who would have bought class C now buy classes A or B, putting up the price, or buy other products. Assuming that quality is normally distributed about the mean, we can expect small price increases as the produce with low level of attribute is banned, and increasingly big price increases as the minimum standard approaches the mean level of attribute.

It seems likely, therefore, that in many markets the first minimum standards, removing dangerous and defective goods, will greatly reduce search or risk, and will do so at little cost, but that progressive increases in minimum standard levels will result in decreasing benefits at increasing costs.

What level of minimum standards benefits the producer? If we could assume that all producers were identical it would be a normal pricing decision, except that withdrawing one grade (not necessarily the highest) would have a bigger effect on price than withdrawing a random selection. If the "elasticity of demand with respect to the supply of class C" were inelastic, and it proved possible to restrict supply, monopoly profits could be made.

Even when this is not the case there is strong pressure from some producers to increase standards. In practice, those who produce classes A and B tend to have more political pull. They press for increased standards because they know that their costs will not change but their prices will rise. They also believe that it takes exceptional skill or high capital to produce classes A and B, and this will make it difficult for other producers to switch to these qualities and compete away their monopoly profit. The losers will be those who produced class C and who have to switch to producing class A or B or another product, all of which give lower profits. There may not be more winners than losers.

MINIMUM STANDARDS OR LABELLING

To a considerable extent better labelling is a substitute for minimum standards. Good labelling transforms the market from one with costly information or risk to one where the consumer can easily see the quality before purchase, a situation where it is difficult to make a case for minimum standards.

Even here, though, labelling may not remove the incentive to search if the product is dangerous or expensive but useless. The costs of a wrong decision are so great that there is an incentive to read and re-read the labels of all purchases just in case. The incentive is particularly great if the labelling is not clear, giving a long list of ingredients with the arsenic ninth or tenth on the list. There is information overload. Few consumers can be familiar with all the poisons, and fewer still can read the detailed specifications of a computer and conclude that it is useless. Allowance must also be made for the one million adult illiterates in Britain and the millions of slow readers. Minimum standards seem most appropriate for the dangerous or useless.

Beyond this basic safety, labelling has a lot to offer. It does not sharply reduce the quantity on the market, though it does impose some costs and manufacturing inflexibilities. Instead, it identifies those qualities most suited to submarkets and permits market segmentation. For example, a minimum standard for food safe for all the population would have no sugar (diabetics), salt (blood pressure), cholesterol (heart disease), tartrazine (allergy), etc. Instead of restricting supply to this extent, manufacturers can make a product which is perfectly safe for most people, and give the necessary information on the label to let the subgroups buy or to avoid the product as they wish. This means less search for the subgroup than when there is no minimum standard or a minimum standard whose

specifications are not known, but much more search than if there were a very high minimum standard. For the great majority of the population it means more variety and very little search, with of course a much lower unit cost.

A MINIMUM STANDARD WHICH REPEATS SOCIAL EXPECTATIONS WILL HAVE LITTLE EFFECT

If labels have to be used to protect the consumer against very low quality, the marginal cost of increasing the amount of information is very low. The labels can be used to inform customers of any special quality features. This, again, increases the possibility of market segmentation, and permits market segmentation with all qualities up to the top.

Informing the Consumer

So far it has been assumed, implicitly, that when minimum standards were introduced, all consumers knew what they were, understood them and believed that all producers had ceased to sell outgrades. This is of course a gross oversimplification.

In most countries there is a core of consumer protection laws offering some very basic assurances. There will normally be laws on food safety and hygiene (see Fallows, 1985); laws like the Sale of Goods Act requiring goods, under certain circumstances, to be "of merchantable quality"; and, in richer countries, laws like the Trades Descriptions Act. In most countries the degree of enforcement is such that there is no real compulsion on the average retailer to conform. However, there is a social expectation on and by the business community to conform to some set of trading ethics - ethics that vary enormously in countries with the same common law and statutes.

The introduction of a minimum standard which merely repeats the social expectation is not likely to have any effect. One that merely duplicates existing hygiene rules or states that the good is of merchantable quality may be effective if there is no enforcement of existing legislation and the consumer can be convinced that, for some reason, the new standards will be enforced. Sometimes meaningless standards may be set for such a scheme by a trade association, when the real message is "Made in Britain".

It is quite common for a minimum standard to be set without the consumer having any real idea that there is a standard at all, much less knowing what it is. It is difficult to believe, though, that this can be an optimal strategy except in unusual situations, or when the standard is not aimed at the consumer at all but at manufacturers and distributors. It may also be done when the minimum standard is clearly just a device for reducing supplies in order to make monopoly profits.

SUPERMARKETS DO ENFORCE THEIR OWN STANDARDS VERY STRICTLY

Sometimes the product is given a label indicating that it has met a minimum standard, which is not defined. There may be a competitive advantage in stating that the product conforms to BS 1234, and using the kitemark, especially when it is obvious to consumers that they would not understand the technicalities of the testing process. If nothing else, it may be seen as an implied smear on competitors who do not have it. There has been a rash of '

'quality assurance' ² schemes for agricultural products in recent years, with a label (usually barely visible) indicating that the product has met certain minimum standards. There is no indication of what the standards mean, and when I wrote asking for clarification, I received nothing of interest on most of the products. The cynical will suggest that the main purpose of such marks is to assure the farmer that the levy is being well spent. In the absence of a lot of publicity on the meaning of the mark and the strictness of the enforcement, combined with a large and distinctive logo on each item, one may wonder what effect it has.

In Britain today a large proportion of the food is sold through a small number of retail chains. Each of these chains has built up its own reputation for quality, and indeed this has been one of the main weapons in the battle of the supermarket giants over the last quarter-century. Each chain has attempted to remove the costs of both risk and search from the customer by ensuring that everything sold in that chain was safe from danger and defect and in addition was of a level of "quality", however defined, appropriate to that supermarket's quality image and image of concern for the environment. This means that a customer can go into a shop like Sainsbury or Marks & Spencer and buy an unbranded item like fruit, an own brand or a strange brand with confidence. In addition, virtually any retailer will give customers their money back on any item they consider unacceptable. (No retailer can afford to lose a regular customer by refusing a refund even if it is unjustified - the margin on a single week's shopping will easily cover the refund. In addition, complaints are a valuable form of quality control.) It seems most likely that any minimum standard imposed by government or a trade association will improve the consumers' position here. In the unlikely situation that the minimum standard is set higher than the standard of the supermarket, there is still a widespread belief that government will not allocate the staff and resources necessary to enforce them, while the supermarkets do enforce their own standards very strictly. The standards would, however, help customers buying from the smaller, independent, retailers. If they see the same quality mark on the bacon or sugar they buy from their local retailer as on that they buy from Safeway, they think that the product at least is of identical quality.

Minimum Standards and the Distributor

Minimum standards can be important for the distributor. In practice it is often the large retail chain that bears the risk of poor quality, rather than the producer, particularly the small producer. Retailers must carry the cost of handling returned goods; must pay for the repairs; must suffer the damage to their reputation when poor quality goods are returned, and they lose customers. There can also be substantial costs from waste, anything accepted into the shop which the shopkeeper finds to be of too poor quality to be sold. Retailers may also have to pay ruinous damages for defective goods.

For these reasons retailers welcome minimum standards and will impose their own when they have the market power and the resources to do so. Again, the enormous market power of the chains and the resources they have available for quality control, including destructive testing and the inspection of factories and packhouses means that minimum

2 "Quality assurance" schemes have a very different meaning in their normal sense, a system of quality control, rather than a branding system. See Garvin (1988).

standards imposed by governments or trade associations may be irrelevant in many markets. Government minimum standards are more likely to be relevant where there is atomistic competition, no product differentiation and no repeat purchases. It is a long time since these conditions applied in any major market in Britain, and those countries where they may appear to apply seldom have the will or the resources to enforce them.

Both manufacturers and retailers welcome minimum standards as a method of keeping out competition. Standards can be set so high that no newcomer will be able to meet them consistently, or so high that a very large capital investment is needed to meet them. Standards for these purposes need not reflect consumer demand in any way.

CONCLUSION

There are so many conflicting reasons put forward for compulsory minimum standards. This article has shown that the analysis required to justify them is very complex indeed. Even when very simple, unrealistic, assumptions are made there are no clear-cut conclusions. It is clearly not possible to make any broad generalisations applicable to all or even most markets. It does seem likely, though, that in many markets minimum standards are most likely to be justified in removing items that are dangerous or expensive and useless, and that they are less likely to be justified for removing slightly substandard goods from the market, and for many products the basic consumer legislation provides just this protection. Labelling, while less effective for this basic protection, has many advantages for providing the fuller protection. Minimum standards do provide the opportunity for some groups of producers to obtain monopoly profits at the expense of fellow producers. In view of the complexity of the analysis and the possibility that neither producers nor consumers will benefit, it is alarming that most "quality assurance schemes" for agricultural products were introduced without any economic analysis.

References

- Akerlof, G.A. (1970), "The Market for Lemons: Quality Uncertainty and the Market Mechanism", *Quarterly Journal of Economics*, Vol LXxxIx, pp. 489-500.
- Akerlof, G.A. and Dickens, WT. (1982), "The Economic Consequences of Cognitive Dissonance", *American Economic Review*, Vol. 72 No. 3, pp. 307-19.
- Besanko, N, Donnenfeld, S. and White, S.J. (1987), "Monopoly and Quality Distortion: Effects and Remedies", *The Quarterly Journal of Economics*, November, pp. 743-67.
- Bockstaal, N.E. (1984), "The Welfare Implications of Minimum Quality Standards", *American Journal of Agricultural Economics*, Vol. 66 No. 4, pp 466-71.
- Bond, E.W (1982), "A Direct Test of the 'Lemons' Model: The Market for Used Pickup Trucks", *American Economic Review*, Vol. 72 No. 4, September, pp. 836-40.
- Bowbrick, P. (1977), "The Case Against Compulsory Minimum Standards", *Journal of Agricultural Economics*, May, pp. 113-17.
- Bowbrick, P. (1981), "An Economic Appraisal of the EEC Fruit and Vegetable Grading System", Dublin.
- Carley, N.H. (1983), *Impact on the Georgia Dairy Industry of Increasing the Minimum Standards for Solids in Fluid Milk Products*, University of Georgia, College of Agriculture Experimental Station Research Report 440.

Carter, C.A., Loyns, R.M.A. and Ahmadi-Esfahani, Z.F. (1986), "Varietal Licencing Standards and Canadian Wheat Exports' " *Canadian journal of Agricultural Economics*, Vol. 34, November, pp. 362-77.

Fallows, S. J. (1985), "Food Standards in Britain: Derivation and Potential", *Food Policy*, May, pp. 145-54.

Garvin, N. A. (1988), *Managing Quality: The Strategic and Competitive Edge*, The Free Press, London and New York.

Gold, M.S. and van Ravenswaay, E.O. (1984), *Methods for Assessing the Economic Benefits of Food Safety Regulations: A Case Study of PCBs in Fish*, Department of Agricultural Economics, Michigan State University, Report 460, November.

Heinkel, R. (1981), "Uncertain Product Quality: The Market for Lemons with an Imperfect Testing Technology", *Bell journal of Economics*, Vol. 12 No. 2, Autumn, pp. 625-36.

Kambhu, (1982), "Optimal Product Quality under Asymmetric Information and Moral Hazard", *Bell journal of Economics*, Vo!. 13 No. 2, Autumn, pp. 483-92.

Nguyen, N and Vo, TT. (1985), "On Discarding Low Quality Produce", *American journal of Agricultural Economics*, pp. 615-18.

Parsons, (1975), "The Product Life Cycle and Time-varying Advertising Elasticities", *journal of Marketing Research*, Vol. 12, November, pp. 476-80.

Price, D.W., (1967a), *The Marketing Order for Washington Apricots*, Technical Bulletin 56, Washington Agricultural Experimental Station.

Price, D.W., (1967b), "Discarding Low Quality Produce with an Elastic Demand", *journal of Farm Economics*, pp. 622-33.

Price, D.W. (1968), *The Washington Sweet Cherry Industry and its Marketing Order*, Bulletin 701, Washington Agricultural Experimental Station.

Tellis, G.J. and Fornell, C. (1988), "The Relationship between Advertising and Product Quality over the Product Life Cycle: A Contingency Theory", *journal of Marketing Research*, Vol. 25, February, pp. 64-71.

Waugh, F.V. (1971), "Withholding by Grade", *American journal of Agricultural Economics*, Vol. 53, pp. 500-1.