

# **ECONOMIC THEORY, APPLICATIONS AND ISSUES**

**Working Paper No. 59**

**Natural Protection from International  
Competition in the Livestock Industry:  
Analysis, Examples and Vietnam's Pork Market  
as a Case**

**by**

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# **Natural Protection from International Competition in the Livestock Industry: Analysis, Examples and Vietnam's Pork Market as a Case**

## **ABSTRACT**

In some countries, local agricultural products (particularly livestock products) are shielded from international competition by 'natural' factors influencing the purchase of products. These factors include strong local tastes (or preferences) that favour the local product and the absence (or relative absence) of complementary retail outlets or home appliances suitable for storing and preparing potential imported substitutes. The desire for fresh meat rather than chilled or frozen meat, the absence or limited accessibility of supermarket outlets and limited refrigeration possibilities in homes can limit imports into developed countries of meat supplied by developed countries. From consumer's perspectives these fresh or raw products are significantly different products from their frozen or processed alternatives, and so face different demand parameters. This product differentiation is nearly always ignored in trade models, which instead assume homogenous commodities. Where local fresh products make up over 90% of sales, such as pork in Vietnam, this unrecognized product differentiation can undermine model results, since raw or fresh products are generally untradeable. Examples of such limitations on trade are given for several developing countries, including some African nations. Religious consideration can also be a factor restricting international trade in livestock products and sometimes, government regulations on food imports reflect the tastes of local buyers, for example their demands for food purity and so on. Some simple economic analysis is provided of how local producers of livestock benefit from natural protection. Drawing on the results of recent research completed in Vietnam and other sources, factors that provide natural protection to Vietnam's pork industry are identified, and particular attention is given to their implications for small-scale household pig producers compared to larger-scale commercial pig producers in Vietnam. It is noted that the current protection of Vietnam's pig industry is not entirely based on preference for pork from local breeds of pigs but arises for other reasons. Some consideration is given to whether the natural protection of Vietnam's pig industry will change in the future.

# **Natural Protection from International Competition in the Livestock Industry: Analysis, Examples and Vietnam's Pork Market as a Case**

## **1. Introduction**

The main focus of this article is on identifying the factors that afford natural protection to livestock products produced in less developed countries from imports, particularly imports from higher income countries. Natural protection refers to economic protection from imports that are not a consequence of government intervention, such as the imposition of tariffs and quotas on imports or qualitative restrictions on imported commodities designed primarily to limit imports. However, in some cases, government restrictions on imported products may merely reinforce local tastes that tend to favour home-grown products.

The next section of this article identifies specifically the type of features that can give natural protection to livestock products produced in less developed countries from imports, especially from higher income countries. Doing this is more complicated than appears at first sight because market acceptability of an imported product depends not only on its inherent acceptability to consumers in terms of the taste, price and so on but also on the availability of suitable networks for its distribution and retailing (such as supermarkets) as well as the presence of adequate ancillary services, such as refrigeration availability. Some economic analysis of factors likely to influence market penetration by imported livestock products is then undertaken. This is followed by a consideration of factors that give a degree of natural protection to Vietnam's pork industry from imports of pork, particularly from North America. The essay is rounded off by a discussion and conclusions. In the discussion, the likelihood of a change in the degree of natural protection of Vietnam's pork industry is considered.

## **2. Factors Contributing to the Natural Production of Domestically Produced Livestock Products in Less Developed Countries from Imports.**

Unless livestock are transported across national borders for slaughter in an importing country, meat for export has to be chilled or frozen or processed, for example tinned or preserved in some other manner e.g., by drying. The export of livestock can be

expensive (for example, the export of livestock from Australia to the Middle East for slaughter). This is one factor restricting this trade. However, international livestock movements are more frequent when countries have land borders, for example, cattle cross the border from India to Bangladesh, that is, from a predominately Hindu country in which most Hindus do not eat beef to a predominantly Islamic country in which most people have no religious prohibition on the eating of beef. Nevertheless, most high income countries exporting meat have to rely on the export of chilled or frozen meat to access markets in less developed countries. Even when these exported products are not expensive, higher income countries can be confronted with several difficulties in accessing these markets. These difficulties give some natural protection to domestic meat suppliers in developing countries.

Tastes play a significant role in influencing the preferences of consumers for products. For many consumers, imported chilled or frozen meat is considered to be a poor substitute for fresh meat. Frozen meat can in particular lose its texture and be less tasty than fresh meat. In some instances, religious convictions may also result in a preference for locally produced meat. Muslim consumers may, for instance, feel confident that meat supplied from domestic sources claimed to be 'halal' is in fact so but may be less sure of this as far as imports are concerned. Thammi Raju and Suryamarayana (2005) from their study of meat consumption in India found that religious sentiments play an important role in the consumption of certain types of meat, such as beef and pork.

It is also likely that the type of red meat that higher income countries are able to export to developing countries is not the most preferred type. For example, goat meat is in high demand in many developing countries (in Guadeloupe, for example, as pointed out by Alexandre et al., 2008) but is not a product exported to any great extent by higher income countries. Again, in some parts of Africa, bushmeat is a preferred product (East et al., 2005) but this is not an export of higher income countries. In some other parts of Africa, rural tribes have a preference for the fresh blood from cattle. This means that not all varieties of red meat that are popular in higher income countries are well received in developing countries. Even when a variety of exported

red meat is popular in a developing country, its preparation for export and its transport can alter its quality and reduce its acceptability in this market.

Established patterns of purchasing meat in developing countries tend to be self-perpetuating. There is a strong preference in most cases for fresh meat not only on the basis of taste but also because it is considered by many purchasers in developing countries to be more 'hygienic' and they feel that they are better able to judge its quality than in the case of packaged, chilled or frozen meat. This is often due to long-established relationships and trust between buyers and local suppliers, leading to a perception of assured sourcing of local fresh product not available to industrialized imports. For example, Thammi Raju and Suryamarayama (2005) found strong empirical evidence in support of this proposition from their fieldwork in India. Where there is little consumer confidence in systems of inspections, food safety assurance and standards, established trust relations with suppliers often provide the main basis for assurance of quality.

A further consideration is that the shopping patterns of most consumers in developing countries (and even in some higher income countries such as Japan) differ from those of most western households. In many developing countries, consumers purchase fresh food regularly (often daily) and store it for little time. By contrast, consumers in Western countries purchase chilled and frozen food, buy food less frequently, and tend to store it in the refrigerator/freezer. The pattern of purchasing by consumers in developing countries is partly a consequence of habit but also reflects (and is reflected in) the lack of or limited availability of refrigerated space in their households.

In Western countries meat (and 'fresh' foods) are mostly distributed through supermarkets but this is not so in many developing countries. In the latter countries, the main outlets for meat and fresh foods are in wet markets, municipal markets, informal markets and from roadside vendors. This is still the case in Vietnam, for example. It is also the case in most parts of Africa (see Figures 1 and 2). While there has been a rapid rise in the number of supermarkets in Africa, Asia and Latin America, the diffusion of supermarkets varies according to region – it is quite high in Latin America, for example, and has expanded rapidly in China and in Thailand (Reardon et

al., 2003) but there is less development of supermarkets in Vietnam (Maruyama and Trung, 2007) and India (Reardon et al., 2003).

**Figure 1** Traditional marketing of fresh meat in Mozambique. Most Africans purchase their fresh meat from traditional market outlets. In this case, the vendors are women and the shop is an impermanent structure (Photograph: ILRI/Stevie Mann).





**Figure 2: Fresh meat being sold in a permanent traditional market in Eastlands, Nairobi, Kenya. Once again female vendors are evident in this case, as in Mozambique, but the market outlet is more substantial (Photograph: ILRI/Daniel Muero).**



Nevertheless, in most developing countries, including Vietnam, supermarkets have not made significant inroads into the fresh food market, including the fresh meat market. For example, Reardon, et al. (2003, p. 1143) observes that ‘the supermarkets’ progress in gaining control of fresh food markets have been slower, and there is a greater variation across countries because of local habits and responses by wet markets and local shops.’ In relation to their study of supermarkets in Vietnam, Maruyama and Trung (2007, p.19) found that “shopping habits related to purchase of fresh produce in traditional markets, combined with the proximity and low prices these outlets provide, act as a major deterrent to supermarket development”. Similarly in a study of fresh food sold in Kenyan supermarkets, Ayeiko et al (2007). found that fresh fruits and vegetables, and livestock products, were the least likely food products to be bought in supermarkets, and consumers instead relied mostly on traditional market outlets.

Most meat exported by developed countries is intended for supermarket outlets or for processing in the importing country. It cannot, because of the transport and

preservation requirements, be fresh. This gives locally produced meat in developing countries a competitive advantage. The growth of supermarkets in developing countries has done little to alter that situation, except possibly in Latin America where the food habits of most Latin Americans are European in origin. Supermarkets in developing countries appear to have greater import-intensity than other food outlets in developing countries and are overwhelmingly dominated by multinational corporations (Reardon et al., 2003, p.1343). This suggests that many local producers of fresh foods (particularly small producers) in developing countries are unable to obtain any significant levels of sales to supermarkets in their country. However, they have alternative outlets for their produce because consumers have a strong preference to purchase fresh food from these outlets. This helps to protect the markets of domestic producers of fresh food in developing countries.

Table 1 provides a summary of factors that help to protect suppliers of fresh meat in developing countries from exports of meat from higher income countries, together with a list of relevant comments.

**Table 1: A summary list of natural factors that can help protect meat suppliers in developing countries from imports from higher income countries.**

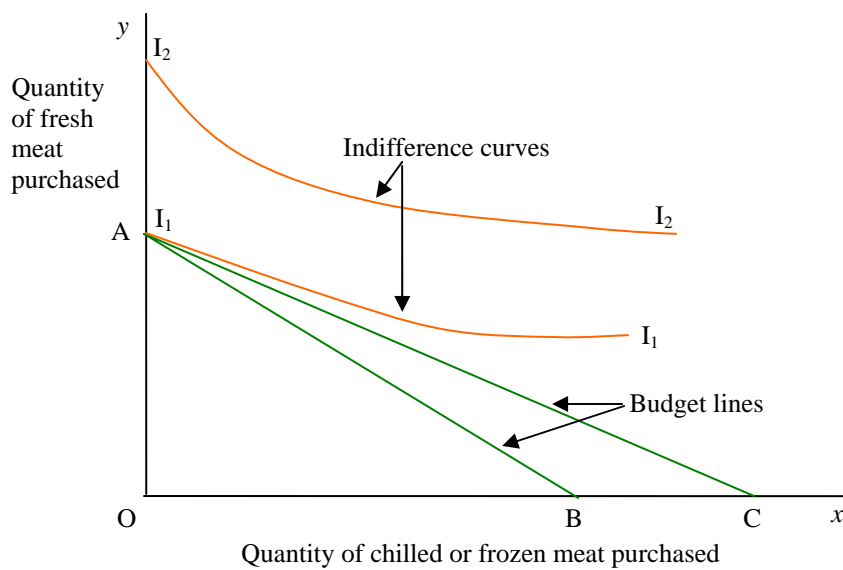
<b>Factor</b>	<b>Comment</b>
Imported product not fresh	Consumers in most developing countries have a strong preference for fresh meat.
Religious beliefs	Limit imports of some types of meat as well as imposes certain slaughter requirements
Preference for particular types of meat	In some countries there is a preference for meats not supplied by higher income countries to any extent, e.g. goat meat, camel meat, bushmeat.
Preferred substitute meats available	For example, bushmeat in some African countries.
Buying habits	In many developing countries, quantities of fresh food are purchased frequently – little demand for chilled and frozen meat.
Convenience	Given the above habit, consumers may find it more convenient to buy from traditional outlets than from supermarkets.
Hygiene and Quality	Many consumers in developing countries believe that fresh food is more hygienic than chilled or frozen food. They can check its quality more easily and suppliers are often known and trusted.
Supermarkets	Meats from Western countries are usually distributed through supermarkets. The extent to which these have become established in developing countries varies. In any case, they have only made limited inroads into the fresh food market.
Price	Naturally, the price of imported meat is a consideration. This is influenced by transport and storage costs.

### **3. Economic Analysis and the Natural Protection of Meat Suppliers in Developing Countries**

Traditional economic analysis (neoclassical economics) throws only a limited amount of light on the factors that influence the demand for locally produced meat in developing countries compared to the demands of their consumers for imported beef. From the above discussion, it seems that most consumers in developing countries regard imported and locally produced meat as imperfect substitutes because of their

strong preference for fresh meat which can only be supplied locally. However, there does not seem to be any available research which has mapped (or closely specified) the willingness of consumers in less developed countries to substitute chilled and frozen meat for fresh meat. In the extreme case, there would be no possibility of substitution, but this seems to be unlikely.

For most consumers in developing countries, their economic situation appears to be like that depicted in Figure 3. There the curves marked  $I_1I_1$  and  $I_2I_2$  are representative indifference curves of a consumer and show some possibility of substituting chilled or frozen meat for fresh meat and maintaining the level of a consumer's satisfaction. However, because these lines have a small negative slope, they indicate that the typical consumer has a strong preference for fresh meat in comparison to chilled or frozen meat and would only be prepared to forgo a unit of fresh meat in return for a considerable extra amount of chilled or frozen meat. Given this situation, it is highly likely that this typical consumer will obtain a maximum level of satisfaction by buying only fresh meat given his/her fixed budget for meat. For example, if this budget line is  $AB$ , the typical consumer would come into equilibrium at point  $A$ , spending all his/her meat budget on fresh meat. A reduction in the price of chilled or frozen beef that swings the budget line around to  $AC$  does not result in any increase in purchases of chilled or frozen meat by the consumer. These purchases are price insensitive. Note also that lack of substitutability of products can also be reflected in a greater degree of curvature in indifference curves.



**Figure 3: Because the typical consumer appears to have a strong preference for fresh meat purchases of chilled and frozen meat may not be very sensitive to relative price changes. This can make it difficult for meat exporters to access markets in developing countries.**

The above discourse does not mean that exporters of meat to developing countries can make no gains in selling meat to these countries. However, their sales may be limited to sales for the production of manufactured meat and this market may not be large.

Note that Figure 3 does not imply the impossibility of substitution of chilled and frozen meat for fresh but the price differential must be large for substitution to occur. In Kenya for example, where consumers prefer to fresh raw milk to pasteurized milk in rural areas where the price differential between raw to pasteurized is large (50% higher), over 90% of purchases are for raw milk. However, in urban Nairobi where the price differential is smaller (22%), raw milk purchases only comprise 25% (SDP, 2006).

It may also be that some consumers are more willing to substitute chilled meat for fresh meat than others. Market analysis would be required to identify the different segments involved. In this regard Vu (2003, pp. 24-25) states the following:

“Imported meat, it is believed, might not sell in Vietnam because Vietnamese like fresh and not frozen meat. Yet there has been no study of

the possible effects of trade liberalization on the domestic market. Culture may be mistaken for prices, quality and availability. First, if the prices of frozen meat are reduced and if it becomes more available thanks to the removal of import taxes, the (urban) poor may accept it. An analysis of price elasticities of meat products indicates that consumers will respond strongly to price cuts. With occasional outbreaks of food poisoning, well preserved frozen meat has its own appeal. Second, if imported frozen meat is viewed as inferior and is consumed only by the urban poor, this may have no effect or even help raise the prices of locally produced *fresh* meat, now perhaps to be consumed only by the wealthier. Imported meat in this case may not affect and even benefit poor farmers as producers. Finally, imported meat can be processed to make canned meat, (Chinese-style) sausage and frozen eggrolls that Vietnamese favor.”

However, the observation which Vu makes in footnote 110 on page 25 in support of this view seems tenuous. He says:

“Many shops that serve cheap pho bo (the popular Vietnamese beef noodle dish) on the streets in Hanoi are now substituting horse and water buffalo meat for beef (which is more expensive but tastier). This case suggests that price may be more important than taste.”

This may be so but usually pho bo is prepared from fresh meat chopped on the spot. It seems that Vu’s suggestion is probably influenced by traditional neoclassical economics. It tends to emphasize the sensitivity of levels of consumption to relative prices.

While neoclassical economics is useful in understanding the way in which markets operate in very general terms, it is limited in its ability to analyze the manner in which markets evolve. It also gives little attention to the factors that influence the preferences of consumers, such as cultural factors and the attributes of characteristics of products that they feel to be important. Traditional institutional economics puts more emphasis on the importance of such considerations. Furthermore, neoclassical

economics abstracts from transaction costs involved in purchasing products, for example, differences in the convenience of purchasing products from different types of retail outlets. Again, the influence of psychological factors such as habit and inertia are given little attention but are important considerations in psychological economics (Katona, 1975). Many of these factors appear to affect the demand for pork in Vietnam.

#### **4. Features of the Demand for Pork in Vietnam and their Economic Implications**

A survey of urban households was undertaken in Vietnam in 2007 by the Center for Agricultural Policy (Vietnam) and the International Livestock Research Institute (ILRI) to identify features that influence purchases of pork by Vietnamese consumers. Household heads (or if unavailable, their representatives) were interviewed to determine the household's shopping habits in relation to the purchase of pork. In all, 600 households were represented (270 from Hanoi and 330 from Ho Chi Minh City) the two largest cities in Vietnam. The former city is located in Vietnam's north and the latter in its south. Random selection was done along the lines described in Lapar et al. (2009). While Hanoi and Ho Chi Minh City (HCMC) do not account for all of Vietnam's urban population, they include the bulk of it. Selected results from the survey are reported here and interpreted. More details are available in Lapar et al. (2009).

From the sample, it emerged that households had a strong preference for purchasing fresh meat (including pork) from meat retailers in permanent open markets and in temporary neighbourhood markets. They had a much lower preference for buying fresh meat from grocery shops/convenience stores and supermarkets. The comparative coverage overall ranking (in descending order of preference for buying) was as follows:

- (1) meat retailers in a permanent open market (see Figure 4);
- (2) meat retailers in a temporary neighbourhood market;
- (3) meat retailers of branded meat (see Figure 5);
- (4) mobile vendors;

- (5) supermarkets; and
- (6) grocery shops/convenience stores.

This order of preference is probably a reflection of the convenience of shopping at different types of outlets, price and that meat in more modern outlets is not (or is not perceived to be) as fresh as in traditional outlets.

**Figure 4: A fresh meat stall in a permanent open market in Hanoi, Vietnam. Vietnamese consumers mostly purchase their meat from marketing outlets of this type (Photograph: ILRI/Ma. Lucila Lapar).**





**Figure 5:** A modern meat retailer of branded meat in Vietnam, in this case, VISSAN meat. Such outlets as yet only account for a small proportion of total sales of fresh meat in Vietnam. Most Vietnamese consumers still prefer to purchase their fresh meat from traditional market outlets (Photograph: ILRI/Ma. Lucila Lapar).



These preferences are reflected in the distribution of the types of outlets from which respondents stated that they most frequently purchase fresh pork. This distribution is specified in Table 2 and ranked in decreasing relative frequency for the whole sample.

**Table 2: Distribution of the sampled households based on the relative frequency with which they reported that they mostly used different outlets for their purchases of pork (%)<sup>a</sup>.**

<b>Outlet Type</b>	<b>Hanoi</b>	<b>HCMC</b>	<b>Combined</b>
Permanent open market	49	77	64
Temporary neighbourhood market	48	15	31
Meat retailer of branded meat (e.g. VISSAN)	0	4	2
Supermarket	1	3	2
Mobile (street) vendor	1	1	1
Grocery shop/convenience store	1	0	0

*Note:* (a) Rounded to the nearest unit

*Source:* Based on Table 3 in Lapar et al (2009).

From Table 2, it can be seen that very few households purchase fresh meat from modern retail outlets, including supermarkets. There is, however, a slight tendency for these to be a more frequent source of purchases in HCMC than in Hanoi. Also in HCMC, fresh meat is much less frequently purchased from temporary neighbourhood markets than in Hanoi.

In this sample, a high proportion of respondents owned a refrigerator and this was true whether they purchased fresh meat usually from traditional temporary outlets, permanent open markets or modern retail outlets (see Table 3). However, the proportion of households owning a refrigerator was a little lower for those who relied mostly on traditional temporary outlets for their fresh meat purchases and highest for those who relied on mostly modern retail outlets for their purchases compared to those relying on traditional permanent markets (see Table 3). Lack of refrigeration is probably not the main reason in urban areas for not purchasing meat from modern retail outlets even though refrigerator ownership is relatively the highest for those who purchase meat from modern retail outlets. Nevertheless, the average size of refrigerators in Vietnam appears to be much smaller than in Western countries. To some extent (but not entirely), this may reflect the Vietnamese habit of purchasing fresh food frequently.

**Table 3: Selected attributes of households surveyed in Hanoi and Ho Chi Minh City classified by the type retail outlet from which they usually purchase meat. The percentage of respondents having each of the attributes is shown.**

Attribute	Traditional Temporary Outlet	Permanent Open Market	Modern Retail Outlet
Own a refrigerator	88.2	91.24	96.88
Consider food safety important	98.88	97.16	96.88
Consider demand for meat important	80.90	85.82	84.38
Female/head/spouse completed high school	51.12	48.71	71.88
Female/head/spouse in full time employment	70.22	71.13	78.13

*Source:* Extracted from Lapar et al. (2009) Table 1.

Inspection of Table 3 indicates little relationship between the concern of food buyers for food safety, and the type of outlet they use to purchase meat. If anything, there is a slight tendency for the proportion of buyers concerned about food safety to decline as in turn traditional temporary outlets, permanent open markets and modern retail outlets are considered. Although the differences are not large, a lower proportion of buyers who rely on traditional temporary outlets believed that disease free meat was important.

Education of female heads or the spouses of heads of households appears to be related to the type of outlet they use to purchase meat. Table 3 indicates that households with female heads or wives of household heads are more likely to purchase their fresh pork from modern retail outlets than other outlets if they have completed high school. Education, therefore, seems to influence choice of the type of outlet from which fresh pork is purchased. Education may also be a proxy for household income level. Buyers from higher income households may value their time more highly, and so may prefer outlets where shopping is more convenient, and multiple products can be purchased at the same point, such as at supermarkets.

There also appears to be a weak positive relationship between whether the female head of household or the wife of a male head of a household has full-time employment and choice of the type of outlet for fresh pork purchases. In such cases the household is less likely to purchase pork from a permanent open market and more likely to buy it from traditional temporary market or a modern retail outlet.

The survey data collected was formally analyzed by Lapar et al. (2009) using a multinomial logit model, and the main results from this analysis are presented in Table 4. It was found that residents of Hanoi have a greater tendency to use traditional temporary retail outlets to purchase pork than residents of Ho Chi Minh City, and that there is a slightly greater tendency of residents of HCMC to purchase it from modern retail outlets compared to permanent open markets. Both relationships are statistically significant at the 1% level. It was found (at a 5% level of statistical significance) that if the household head happened to be male, the household was more likely to purchase fresh pork from a traditional temporary outlet. It was also found that the older the female head of a household or the wife of a male household head, the slightly less was the probability of purchasing fresh pork from a modern retail outlet. The level of education of a female head of household or of the wife of a male head (based on whether or not high school had been completed) showed only a very weak positive relationship with the likelihood of a household purchasing fresh pork from a modern retail outlet. The employment status of a female head of household or of the wife of a male head of household showed a rather stronger relationship. When these persons were in full time employment, the likelihood of the household purchasing fresh pork from traditional temporary markets increased (this relationship was statistically significant at the 1% level) and the household was less likely to purchase pork from a modern retail outlet, although this relationship was not statistically significant. This relationship is at odds with the hypothesis of Reardon et al. (2003) that as more women enter the workforce, the demand to use supermarkets rises. This is not true yet for fresh pork purchases in Vietnam. Ownership of refrigeration made it less likely that a household would purchase meat from a temporary market.

It was found that poor households were more likely to purchase fresh pork from traditional temporary market outlets than from permanent ones. However, being

relatively rich seems to have little influence on the source of purchases by rich households – the outlets from which they purchased fresh pork did not differ substantially nor with statistical significance from that of other households.

**Table 4: Highlights of the Results from Multinomial Logit Analysis of Factors Affecting Choice of Type of Outlet from which to buy Fresh Pork<sup>(a)</sup>**

<b>Influence</b>		<b>Statistical significance</b>
<b>1</b>	<b>Location</b> Residents of Hanoi are 39% more likely to purchase pork in traditional temporary outlets than those in HCMC. Residents in Hanoi are 4% less likely to buy pork from modern retail outlets.	Both relationships significant at the 1% level.
<b>2.</b>	<b>Gender of household head</b> Households headed by males are 11% more likely to purchase pork at traditional temporary outlets.	Significant at the 5% level
<b>3.</b>	<b>Age of females</b> The older a female head of household or the wife of a male head, the less likely the household is to buy pork at a modern retail outlet.	Significant at the 5% level
<b>4.</b>	<b>Education of females</b> If the female head (or wife of head of a household) has completed high school, they are slightly more likely (1%) to buy pork from a modern retail outlet.	Significant at the 10% level
<b>5</b>	<b>Female employment</b> If a female head of household is employed or the wife of the head is, they are 11% more likely to purchase pork from a traditional temporary outlet.	Significant at the 1% level
<b>6.</b>	<b>Ownership of a refrigerator</b> This reduced the likelihood of buying pork from a traditional temporary market by 19%.	Significant at the 10% level
<b>7.</b>	<b>Disease free is important to respondent</b> Concern for disease-free pork by a household reduced the likelihood by 19% that it would purchase pork from a temporary market	Significant at the 10% level
<b>8.</b>	<b>Hygiene is important to respondent</b> This increased the likelihood of buying pork from a modern retail outlet by 1.5%	Significant at the 10% level

<p><b>9.</b></p>	<p><b>Poor vs. other households</b>  If a household is relatively poor, it is 9% more likely to purchase from a traditional temporary market.   Being rich makes little difference to the type of outlet from which fresh pork is purchased.</p>	<p>Significant at the 5% level   No significant relationship</p>
<p><b>10.</b></p>	<p><b>Other Results</b>  Household size, ownership of a motor bike, concern for form of meat or for food safety,   Distance of outlet from household.</p>	<p>Not statistically significant   Significant influence on use of temporary markets at 1% level – only at 10% level for modern retail outlets</p>

*Note:* (a) Permanent open market is the base category for comparative purposes.

*Source:* Derived from Lapar et al. (2009) Table 6.

From the analysis, it was also found that household size, the possession of a motorbike, whether the household head was concerned about the form of the meat and food safety had no significant influence on the choice of outlet from which fresh pork was purchased. In those households that rated disease-free meat important, there was less likelihood of them purchasing pork from traditional temporary outlets but this was only significant at the 10% statistical level. Rather surprisingly, those households who rated hygiene important were less likely to buy fresh pork from modern retail outlets. However the relationship was slight and only statistically significant at the 10% level.

## 5. Discussion

### 5.1 Implications of results from the multinomial logit model

What are the implications of these results for the continuing access of small-scale producers of pigs in Vietnam to local markets and the possibility of increased market penetration of pork imports into the Vietnamese market? Firstly, the fact that Vietnamese households prefer fresh pork and strongly prefer to purchase it from traditional permanent open markets and traditional temporary outlets rather than from modern retail outlets is favourable to the continuing access of smallholders of pigs in

Vietnam to Vietnam's pork market. [The majority of pig producers in Vietnam have few pigs; typically less than 5 head (see Tisdell, forthcoming).] This also makes it difficult for imports of pork to gain a significant share of Vietnam's pork market. Consequently, imported pork in Vietnam mostly seems to be used for processed pork products. These may not comprise a large share of Vietnam's market for pork. How likely is this situation to alter in the foreseeable future?

On the basis of the cross sectional results reported in Table 4, a rapid change in the current situation does not seem to be likely. For example, if Vietnam continues to develop economically, there is likely to be an increase in females in employment and in the proportion of females completing a high school education. Neither of these factors appear to have much impact on the likely purchasers of fresh pork from modern retail outlets. While more widespread ownership of refrigerators would possibly reduce the likelihood of fresh pork being purchased from traditional temporary outlets, this factor appears to have little impact on the likelihood that fresh pork will be purchased by householders from modern retail outlets. On the other hand, the fact that older females are associated with a low likelihood of purchase of fresh pork from modern retail outlets may indicate that an age-related change in preferences is occurring. With the passage of time, this could increase the extent of sales of fresh pork by supermarkets. The ownership of cars in Vietnam is still limited. If car ownership rises, this may increase sales from supermarkets in Vietnam. However, it is by no means certain that supermarkets will become the major outlets for fresh produce in Vietnam. To the extent that household income is closely tied to several of these influencing factors, increased levels of disposable income are likely to contribute to increased market share of modern retail outlets. Nevertheless, the results from the cross sectional data (item 9 in Table 4) suggest only a weak income influence on choice of outlets for purchases of fresh pork. From these results, one might expect use of temporary traditional markets to decline as income rises but the decline in purchasing of pork from traditional permanent markets may be slight.

Maruyama and Trung (2007 p.23) point out that even in developed Asian economies such as Japan, Hong Kong, Taiwan and South Korea, there is a tendency for consumers to "buy fresh food in traditional markets and purchase processed and

packaged food, as well as non-food products, in supermarkets or at traditional mom-and-pop stores”. In fact, the share of supermarkets in these countries in fresh foods appears to have peaked at less than 50% according to Goldman et al. (2002). Therefore, Maruyama and Trung (2007) suggest that a dual system of retail marketing is likely to persist in these countries. This may also be the case in Vietnam, especially the north of Vietnam, because of its shared cultural attributes with many of the Asian countries mentioned.

Nevertheless, Vietnam has some way to go before achieving an equilibrium in the composition of its outlets for food retailing. The number of supermarkets in Vietnam has increased rapidly but in 2004 there were estimated to be only 210 supermarkets nationwide (Maruyama and Trung, 2007, p.25). Maruyama and Trung (2007) identify the following as likely major influences in the spread of supermarkets in Vietnam: increased income, growing urbanization, younger and more knowledgeable consumers, various weaknesses of traditional markets and supportive policies of the Vietnamese Government. The Vietnamese Government is providing economic incentives to selected retailers to develop supermarket chains. This policy appears to be similar to the one adopted earlier by China. Maruyama and Trung (2007, p.30) point out that in Vietnam “supermarkets have also benefited to some extent from government regulations attempting to control hygiene and congestion in traditional markets. It is clear that under this orientation, this modern network is set to grow and continue growing for the foreseeable future”. Nevertheless, it is still possible that traditional markets will continue to dominate the sale of fresh foods in Vietnam, a result favourable to the survival of small-scale agricultural producers, and one which makes it more difficult for imported ‘fresh’ food to increase its market share in Vietnam.

## 5.2 *Other issues*

The access of domestic agricultural producers to the national food market is, of course, not entirely dependent on the type of outlet from which consumers prefer to purchase food. As the size of the modern retail sector expands, new opportunities may arise for sales by local agricultural producers. Normally, however, expansion of modern retail networks favours larger domestic suppliers of agricultural produce who are able to



ensure continuity of supply according to a uniform quality standard. Dealing with larger suppliers substantially reduces the market transaction costs of retail networks. If, however, Vietnamese concepts of what constitutes fresh food change or if demand for convenient prepared food increases, this is likely to broaden consumer acceptance of food imports and increase market competition experience by large domestic suppliers of food. For example, 'fresh food' sold in supermarkets in Western countries as often been stored for lengthy periods of time under controlled environmental conditions but many buyers still believe that it is 'fresh'. This suggests that perceptions of what food is fresh are liable to change with the passage of time.

If there is a local demand for specialty meat items peculiar to a particular country, then it is possible that local producers of these items could benefit from the expansion of the modern retail sector. For example, if there happened to be a latent unfulfilled demand for pork from *local* breeds of pigs raised under non-intensive husbandry conditions, modern retailers could cater for this by appropriately branding these goods. Currently, pork from local breeds of pigs does not appear to attract a price premium in the Vietnamese market but with promotion and adequate certification that situation might alter. For example, it is reported that free range chickens command a price premium in the Vietnamese market (Vu, 2003). Such preferences can be favourable to local small-scale producers of livestock.

The extent to which consumers in developing countries have loyalty for products based on the geographical origin of their production is unclear. To the extent that such loyalty exists, modern retail outlets can take advantage of this by their product identification. In Europe, the geographical origin of agricultural products is considered to be an important influence on sales, and the European Union has adopted laws to ensure that claims about geographical origins of many of these products are authentic (Loureiro and McCluskey, 2000; Reithmuller et al., 2009). Of late, retailers in Australia (such as the Aldi retail chain and some independent retailers) have started to promote their beef by stating that it is *Victorian* grain-finished beef. Aldi states that this beef is from cattle that are initially grass-fed and then grain-fed in the last few weeks. Aldi also makes much of the fact that their meat is not well hung. Modern

retailers can potentially promote specialty agricultural products in a manner beneficial to their domestic suppliers.

## **6. Concluding Comments**

In this article, several factors have been identified that can provide natural protection to producers of food, especially fresh food (meat in particular) from imports. A strong preference for fresh meat (as in Vietnam) combined with the perception that traditional markets rather than modern retail outlets are more capable of providing this product help to shield local markets from imports of meat. This has been of economic benefit to Vietnam's pig producers, most of whom rear pigs on a very small scale.

Just how the situation will evolve in the future is uncertain because market conditions rarely remain static. It has been predicted (for example, by Maruyama and Trung, 2007) that supermarkets in Vietnam will increase their market share of food sales in the future. However, they may fail to obtain a dominant share of fresh food sales, including fresh meat sales. As pointed out, a dual system of marketing food, as in several other countries in East Asia, seems likely to evolve. This is a different pattern of retailing to that which has emerged in the USA and many other Western countries. This pattern should still continue to provide a significant level of protection to local producers of pork from imports. However, the share of small-scale Vietnamese producers of pigs in the domestic market compared to larger-scale producers is likely to be significantly influenced by the policies of the Vietnamese Government for the development of its livestock industry. Its currently announced policy favours the development of pig producing units of increased scale. In the longer term, Vietnamese Government policy and stricter health and hygiene regulations may tend to squeeze small-scale pig producers out of the industry, restrict traditional marketing practices, and promote the growth of modern retail outlets.

At a more general level, this article underlines the importance of taking into account institutional and psychological factors in assessing markets. In particular there is no reason to believe that markets for food in non-Western countries will develop in exactly the same manner as in western countries. While some convergence in the nature of these non-Western markets to those in Western countries seems likely as

economic development occurs, exact replications seems unlikely. This is indicated by the continuing existence of dual market systems in more developed parts of Asia. This in turn, has implications for imports of food.

## 7. References

- Alexandre, G., Asselin de Beauville, S., Shitalou, E., and Zebus, M.F. (2008). An overview of the goat meat sector in Guadeloupe: conditions of production, consumer preferences, cultural factors and economic implications. *Livestock Research for Rural Development*, 20(1). Accessed 30 June, 2009, from <http://www.Irrd.org/Irrd20/1/alex20014.htm>
- Ayieko, M.W., Tschirley, D.L., and Mathenge, M.W. (2007). *Fresh Fruit and Vegetable Consumption Patterns and Supply Chain Systems in Urban Kenya: Implications for Policy and Investment Priorities*. Working Paper No. 19. Tegemeo Institute of Agricultural Policy and Development, Egerton University, Nairobi, Kenya.
- East, T., Kumpel, N.F., Milner-Gullard, E.J., and Rowcliffe, J.M. (2005). Determinants of urban bushmeat consumption in Rio Muni, Equatorial Guinea. *Biological Conservation*, 126(126), 206-215.
- Goldman, A., Ramaswami, S., and Kridor, R.E. (2002). Barriers to the advancement of modern food retail formats: theory and measurement. *Journal of Retailing*, 78, 281-295.
- Katona, G. (1975). *Psychological Economics*. Elsevier, New York.
- Lapar, M.L.A., Toan, N.N., Que, N.N., Jabbar, M., Tisdell, C.A., and Staal, S. (2009). *Market outlet choices in the context of changing demand for fresh meat: Implications for smallholder inclusion in pork supply chain in Vietnam*. Contributed paper presented at the 27th Conference of the International Association of Agricultural Economists, Beijing, 16-22 August, 2009.
- Loureiro, M.L., and McCluskey, J.J. (2000). Assessing consumer responses to protected geographical identification labeling. *Agribusiness*, 16, 309-320.
- Maruyama, M., and Trung, L.V. (2007). Supermarkets in Vietnam: Opportunities and obstacles. *Asian Economic Journal*, 23, 19-46.
- Reardon, T., Timmer, C.P., Barrett, C.B., and Bordegué, J. (2003). The rise of supermarkets in Africa, Asia and Latin America. *American Journal of Agricultural Economics*, 85, 1140-1146.
- Reithmuller, P., Bodman, P., and Yamada, M. (2009). *European Agricultural Policies: Protected Geographical Indications, Protected Designated Origins*

*and Australian Agriculture*. Rural Industries Research and Development Corporation, Barton, ACT, Australia.

SDP, (Smallholder Dairy Project). (2006). *SDP Policy Brief 1: The Demand for Dairy Products in Kenya*. Smallholder Dairy Project, Nairobi, Kenya.

Thammi Raju, D., and Suryamarayama, M.V.A.N. (2005). Meat consumption in Parakasam district of Andhra Pradesh: an analysis. *Livestock Research for Rural Development*. Accessed 24 June, 2009, from 17(11).<http://www.cipau.org.co/Irrd17/11/raju17830.htm>

Tisdell, C.A. (forthcoming). The survival of small-scale agricultural producers in Asia, particularly Vietnam: General issues illustrated by Vietnam's agricultural sector, especially its pig production. in *Sustainable Agriculture: Technology, Planning and Management*. Nova Science Publishers, New York.

Vu, T. (2003). Political Economy of Pro-Poor Livestock Policymaking in Vietnam, *PPLPE Working Paper No.5*. Animal Production and Health Division, Food and Agriculture Organization, Rome.

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