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Developments in the Japanese Beef Market Following Import Liberalisation

Doren Chadee and Hiroshi Mori*

Over the last several years there has been increasing pressure on most western industrialised countries to liberalise trade for food and agricultural products and yet the full implications of freer trade are not always well understood. This paper attempts to fill this gap by reviewing the developments in the Japanese beef market following import liberalisation. We conclude that the Japanese beef market has experienced major structural changes over a relatively short period as a result of liberalising beef imports. The most apparent impact has been on Japanese consumers who have benefited from lower retail beef prices and a greater variety of beef cuts to choose from. The types and quality of beef imported have also changed and consequently major suppliers have adapted their production systems and their products to the changing taste and preferences of Japanese consumers. Beef exporters to Japan, on the other hand, have experienced declining wholesale prices but have, nevertheless, benefited from the growing size of the market. Developments in the wider economy, such as changes in the retail distribution systems and the exchange rate have also influenced the beef sector.

1. Background

Attempts to liberalise world trade is not new and dates back to the inception of the General Agreement on Tariffs and Trade (GATT) following World War II in 1944. Since then, major reductions in tariff and non tariff barriers affecting manufactured goods have been achieved. During the same period, however, most western nations have increased protectionist trade barriers for primary products. This was possible because primary products have historically been excluded from GATT rules.

It was not until the Uruguay Round of GATT (1986) that agricultural products were explicitly included in GATT negotiations for the first time. Indeed, the main focus of the Uruguay Round was on reducing import barriers for agricultural products. One of the outcomes of the Uruguay Round includes a commitment by signatories to the GATT to gradually liberalise trade for primary products over the next five to ten years, depending on the type of product. Although numerous studies exist on the economic impacts of free trade in general, the effects of freer trade for primary products, in particular, are still not well understood.

Japan is one of the few advanced industrialised nations to have experimented with import liberalisation for primary products in a substantial way. Examples of agricultural products subjected to import liberalization in recent years include oranges, frozen orange juice, citrus products, apples, cheese, ice cream, soy bean, rapeseed oil, rice and beef. Japan started to gradually relax import regulations on beef in JFY[1] 1988. Prior to this, Japan had one of the most highly regulated and protected beef sectors in the world. The structure of the Japanese beef sector and beef import system is well documented elsewhere (see Hayami, Alston *et al.*, Wahl *et al.*, Longworth, Chadee and Mori (1993, a, b), Mori and Lin, Coyle and Dyck, Takahashi), and therefore only a brief background of the main features of the market are provided in this paper.

Japan has traditionally relied on imports to meet its domestic beef requirements. The Livestock Industry Promotion Cooperation (LIPC), a quasi government agency, had the responsibility of controlling overall Japanese beef import through a system of quotas and tariffs. The LIPC controlled the quantity, types and various specifications of beef that Japan imported. As a result, retail beef prices in Japan have traditionally been substantially higher than world beef prices and consumers only had limited choices of cuts available to them[2].

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[1] Throughout this paper JFY refers to Japanese Fiscal Year which is from April 01 to March 31.

[2] See Longworth for a comprehensive documentation of the Japanese beef market and its import system prior to import liberalisation.

During the 1970s, Australia and New Zealand were the two main suppliers of beef to Japan. In 1970 for example, Australia accounted for 86 per cent of the Japanese market for imported beef and New Zealand's share was approximately 10 per cent. Both Australia and New Zealand produce beef from cattle raised on pasture, an area in which these two countries have a comparative advantage. Such beef is more commonly known as *grass fed* beef. Starting in the early 1980s the US also started to export beef to Japan and competed directly with Australian and New Zealand beef. As a result, the market shares of imported beef in Japan for both Australia and New Zealand have declined steadily since. Beef from the US is commonly known as *grain fed* beef and in Japan grain fed beef is generally considered to be of superior quality than grass fed beef for many uses, especially for table beef. Grain fed beef usually contains a higher degree of marbling[3], a characteristic considered to be particularly attractive to Japanese consumers.

Japan started to liberalise beef imports in June 1988 after signing the Beef Market Access Agreement (BMAA) with the United States and soon after with Australia[4]. Under the BMAA, Japan agreed to provide greater market access for imported beef by initially increasing import quotas and replacing them by tariffs in JFY 1991. Import tariffs were set at 70 per cent (CIF) in JFY 1991 and subsequently reduced to 60 per cent and 50 per cent in JFY 1992 and JFY 1993 respectively. Currently, import tariffs on beef are still at 50 per cent but are expected to be reduced to 38.5 per cent by JFY 2000.[5] In addition, the involvement of the LIPC in beef trade was also discontinued in JFY 1991.

The policy changes above have had profound implications on most aspects of the Japanese beef sector. Unlike under the regulated quota system, beef traders can import any amount of beef they wish and they can also negotiate the price, quality, types and various specifications under the present tariff system. As a result, beef disappearance and imports have increased substantially, retail and wholesale beef prices in general have declined and the types and specifications of beef imported by Japan have become greatly diversified. Thus, beef business in Japan has experienced substantial changes over a relatively short period and a review of the main developments is timely. Understanding the changes in the Japanese beef sector may provide valuable insights to marketeers and policy makers on the dynamics of the Japanese market following trade liberalization.

The overall objective of this paper is to review the major changes in the Japanese beef market since JFY 1991 when substantive policy changes came into effect. The next section reviews some of the main developments followed by a discussion of their overall implications for future beef trade.

2. Main Developments Following Market Liberalisation

There is no doubt that changes in import regulations have contributed significantly to the phenomenal increase in beef import since JFY 1991. However, other fundamental changes are also occurring simultaneously in the Japanese economy at large and their effects on beef imports have been largely overlooked. Two such examples include institutional and regulatory changes affecting the retail distribution system and the appreciation of the Japanese currency against the currencies of its trade partners. Following the review of the main developments in the Japanese beef sector, the paper also discusses the effects of some of the external factors on beef imports and their implications for future beef trade.

2.1 Beef Disappearance, Production and Import

The per capita consumption of beef in Japan has historically been low by world standard when compared to beef consumption in other advanced industrialised economies with similar levels of per capita disposable income. One immediate explanation for this discrepancy lies in the fact that beef prices in Japan have historically been well above world market prices due to market imperfections caused by import regulation, among other things. Not surprisingly, the abolition of

[3] Marbling refers to the intramuscular fat content in meat. Japanese prefer highly marbled beef with white intramuscular fat similar to the domestic Japanese Wagyu beef. Imported grass fed beef usually has yellowish fat which is less well accepted than white fat.

[4] Details of the BMAA can be found in Chadee and Mori (1993b), Wahl *et al.* (1991).

[5] Concurrently with the above import tariffs, the Japanese government reserves the right to trigger additional tariffs of 25 per cent under its 'emergency safeguard' measures whenever the volume of beef import exceeds 20 per cent of the previous years import volume.

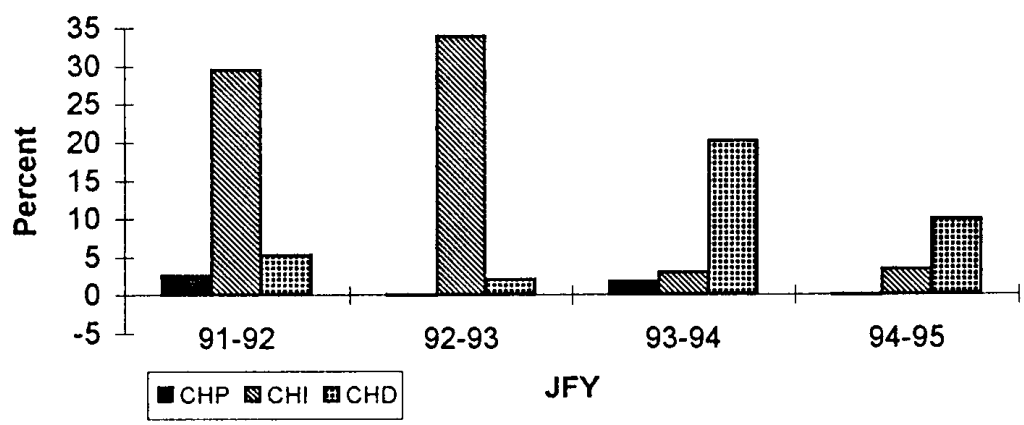
import quotas and subsequent lowering of import tariffs led to lower retail prices which in turn led to overall higher beef consumption in Japan. Between JFY 1991 and JFY 1995, total beef disappearance in Japan has increased by approximately 42 per cent (Figure 1). The third column shows total beef disappearance in Japan and indicates that growth in domestic disappearance has been particularly strong between JFY 1993 -1994 when disappearance grew by 20 per cent. However, in recent years, the domestic disappearance of beef has grown at a slower rate; perhaps as a result of the downturn in the Japanese economy.

During the same period overall domestic beef production has remained more or less static with only relatively small cyclical changes noted since JFY 1991. Interestingly, however, the proportion of high quality, heavily marbled beef which is the most expensive type of beef in Japan has actually declined in the post liberalisation period as beef farmers attempt to minimise production costs by reducing the fattening period (Riethmuller *et al.*). Competition at the higher end of the beef market has been particularly strong with increasing consumer acceptance of high quality imported grain fed beef as a substitute for domestic Wagyu. Changes in domestic beef production are shown in the first column in Figure 1 and appears to have been negligible throughout the entire period under consideration.

Static domestic production and steady growth in domestic disappearance have resulted in rapid increases in beef imports since JFY 1991. Between JFY 1991 and JFY 1995, the volume of beef imported by Japan has grown by approximately 80 per cent with imports in JFY 1995 estimated to reach approximately 600,000 tons. However, as shown in Figure 1 (column 3), most of this growth occurred in JFY 1992-1993. In recent years, growth in import has been slower. Nevertheless, static domestic production and continued increases in domestic disappearance indicate that Japan's self sufficiency in beef is declining and its reliance on imports increasing.

Although Japanese consumers have increased their beef consumption as a response of lower beef prices, an important question that arises relates to the extent to which Japanese consumers will increase their future consumption of beef. Riethmuller *et al.*, presents data which shows that by JFY 2005 Japanese beef consumption is likely to increase to 1820-2140 thousand tons annually and that imports will grow to 800 thousand tons. This suggests increases in disappearance of approximately 35 per cent over the JFY 1995-JFY 2005 period. Although this estimate appears to be plausible, the question that it raises is whether Japanese consumers will increase their consumption of beef indefinitely. Furthermore, as beef prices in Japan continue to decline to reach levels similar to those in Australia, will Japanese consume the same amount of

Figure 1: Change in Domestic Disappearance, Production and Import



beef as Australians? To answer this question, Chadee *et al.,* undertook a large scale survey on the food consumption habits of Japanese expatriates living in Sydney (n=390) and Los Angeles (n=1192). The expatriate families in Sydney face Australian prices and also have a wide choice of beef cuts available to them. The findings suggest that although the amount of beef consumed by the average Japanese expatriate family had increased substantially since living in Australia, it is unlikely that Japanese will consume the same amount of beef as westerners even when faced with much lower prices for beef. One of the main reasons for this lies in the different ways in which beef is consumed by Japanese. In western cultures, most meat dishes are consumed as main dishes with vegetables and bread as side dishes while in Japan, rice is usually the main dish and vegetable with a few pieces of meat (beef) added for flavour constitute a common side dish. As a result, the upper limit for Japanese per capita beef consumption is likely to be well below the amount of beef consumed in other western industrialised countries.

2.2 Sources of Imports and Product Adaptation

The main suppliers of beef to Japan are Australia, the US and New Zealand. Together, these three countries accounted for approximately 98 per cent of the Japanese beef import market in JFY 1995. Although the market shares of these three countries have not changed substantially over the JFY 1991- JFY 1995 period, it is worthwhile to note that the US has established itself as a major supplier of beef to Japan over a very short period. In 1970 the US share of the Japanese beef import market was approximately 1.5 per cent. By JFY 1990, the US market share had increased to 42.7 per cent mostly at the sacrifice of Australia. It has often been alleged that the remarkable gain in market shares by the US under the regulated import system up to JFY 1990 was largely as a result of the Japanese Government explicitly favouring the US by manipulating import quotas. Since JFY 1991 when import quotas were abolished, it is interesting to note that Australia's market share has remained stable at approximately 53.5 per cent. New Zealand has increased its volume of beef exports to Japan quite considerably but remains by far a small supplier compared to the US and Australia. In JFY 1995 New Zealand's market share was approximately 3.8 per cent.

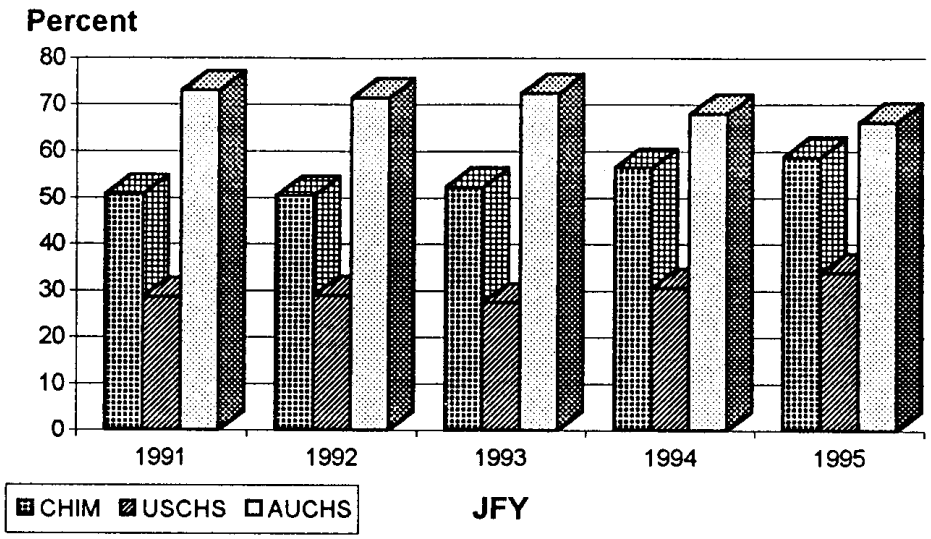
Although the market shares of the major suppliers have stabilised in the post liberalisation period, the composition of products exported from the various supply sources has changed dramatically. Generally, there has been a surge in the imports of fresh and chilled grain fed beef in the post liberalisation period. Consequently, Australian farmers have increased their production and export of grain fed beef significantly. The main features of the changing nature of beef imports include the following:

2.2.1 Surge in Chilled Beef Imports

One of the first visible change that emerged from beef import liberalisation was the increased need for suppliers to adapt their products to the preference of Japanese beef traders and consumers. Historically, Japan imported most of its beef in *frozen* form which was more suitable for the market operations of the LIPC. However, since the end of the LIPC's involvement in Japanese beef business, the imports of beef in *chilled* form has more than doubled; from 166, 324 tons in JFY 1991 to an estimated 355 thousand tons in JFY 1995. By contrast, the import of frozen beef has actually declined slightly. Figure 2 shows the changes in Japanese total import of chilled beef as well as imports from Australia and US between JFY 1991 and JFY 1995. For each year, the first column shows the proportion of chilled beef in total imports. In JFY 1991 chilled beef accounted for approximately 50 per cent of all beef imported. By JFY 1995 this had increased to 62 per cent.

The increasing preference of the Japanese market for chilled beef also exerted pressure on the US to improve its quality assurance and hygiene standards in order to compete with Australian and New Zealand chilling technology in guaranteeing a longer shelf life for its chilled beef in Japan. As a result, one noticeable development has been the emergence of the US as a major supplier of chilled beef to the Japanese market over a relatively short period. The second column in Figure 2 shows the proportion of chilled beef supplied by the US, and between JFY 1991 and JFY 1995 this has increased from 30 per cent to 40 per cent. During the same period, by contrast, the Australian share of the chilled beef market has dropped steadily from approximately 72 per cent to 63 per cent (Column 3). Thus, new market conditions favour chilled beef trade and all suppliers have increased their exports of chilled beef to Japan. However, US chilled beef exports have increased faster and as a result has captured important market shares from Australia since JFY 1991.

Figure 2: Change in Chilled Beef Import



2.2.2 Product Diversification

Under the restrictive import system, the LIPC used to import mainly *frozen full sets* (all the cuts from a beef carcass). However, in the post liberalisation period, Japanese beef import have become greatly diversified with respect to the types, cuts and other product specifications[6]. The increased emphasis on specific *chilled beef cuts* has meant that suppliers had to adopt new forms of packaging, presentation, promotion, marketing and distribution for their products. Furthermore, the import of selected cuts of beef only has created additional problems for smaller suppliers like New Zealand with respect to utilising the remaining unwanted off-cuts. The US does not quite face a similar problem because the unwanted off cuts can be easily sold in its large domestic market. Thus, the sheer size of the domestic beef market in the US gives this country a competitive edge in supplying the Japanese market with specific cuts of beef without the risk of disrupting the domestic market with the unwanted off cuts. Hence, as the Japanese market becomes more sophisticated and as the focus on specific beef cuts increases, the US may gain naturally by virtue of its size[7]

2.2.3 Product Innovation: Grain Fed Beef

Another interesting development in the Japanese beef market under the new trading environment has been the increasing preference for *grain fed* beef in that market. Between JFY 1987 and JFY 1995, the proportion of grain fed beef imports increased from a mere 5 per cent to more than 65 per cent of the total volume of beef imported. As noted earlier, Australia is the largest supplier of chilled beef followed by the US. Until recently, Australian chilled beef was mostly *grass fed* whereas chilled beef from the US is *grain fed.* The rapid growth in the import of chilled beef from the US gives some indication that Japanese consumers prefer *grain fed* to *grass fed* beef.

Australia and New Zealand to a lesser extent, have also changed their beef production systems to produce more grain fed beef for the Japanese market. As a result approximately 60 per cent of chilled beef export from Australia was grain fed in JFY 1995 (AMLC). Furthermore in the same year, it is estimated that almost 40 per cent of all Australian beef exported to Japan was grain fed, compared to only 10 per cent in

[6] In the pre-liberalisation period the standard LIPC specification for fullset was 12 cuts. By comparison, in the post liberalisation period, the full set specifications in the market place has increased to as many as 23 cuts.

[7] Industry sources indicate that in JFY 1994 approximately 60 per cent of Australian beef exports to Japan was under fullset specification thereby indicating Australia's ability to successfully market different cuts of beef to different market segments.

JFY 1988. Innovations in producing grain fed beef have also been apparent in New Zealand despite the fact that this country does not have a comparative advantage in the production of feed grains. Nevertheless, it is clear that suppliers have responded swiftly to the changing consumer preferences for beef in Japan by modifying their beef production systems.

2.3 Decline in Wholesale and Retail Beef Prices

Both wholesale and retail beef prices have declined substantially following beef import liberalisation in Japan. Figure 3 shows the changes in imported beef wholesale prices while Figure 4 shows the changes in

Figure 3: Decline in Wholesale Prices of Imported Beef

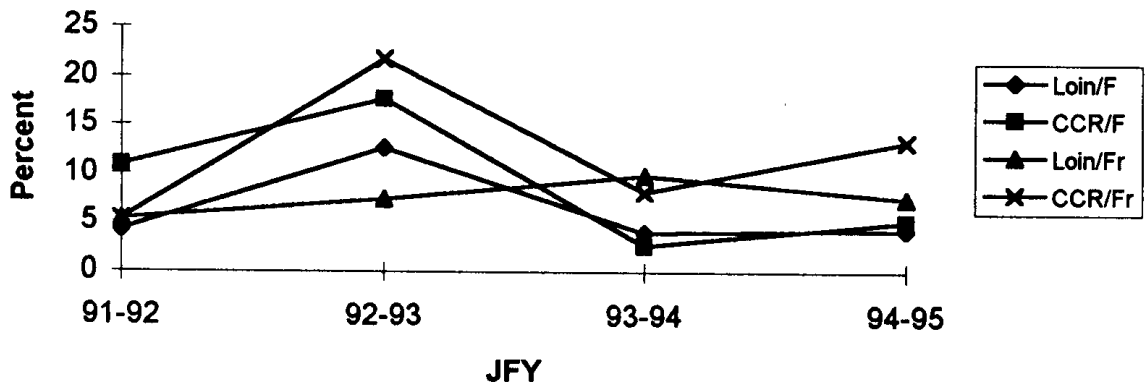
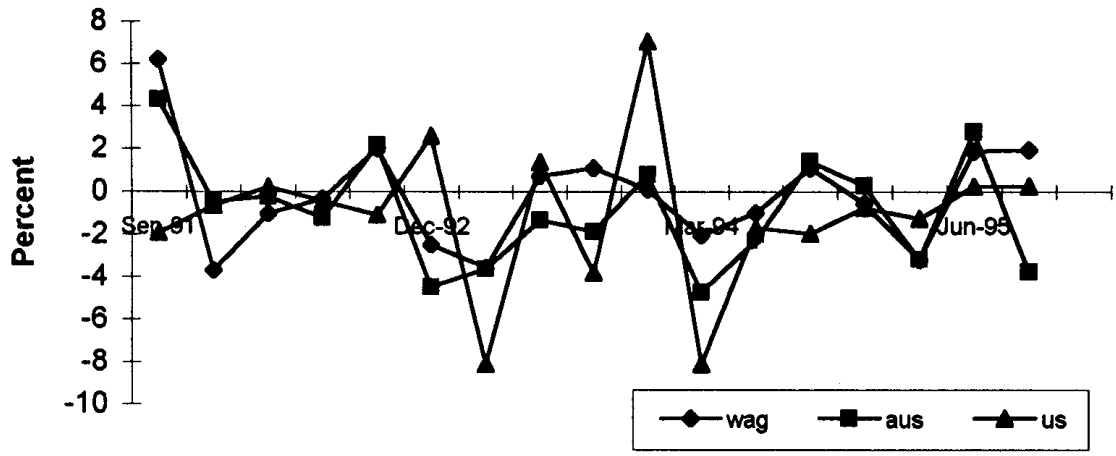


Figure 4: Changes in Retail Beef Prices July 1991-December 1995



the retail prices for selected beef cuts. Generally, the prices of all types of beef considered have declined since JFY 1991. Figure 3 shows the changes in the wholesale prices of four types of imported beef. These are fresh loin (Loin/F); frozen loin (loin/Fr); fresh chuck (CCR/F) and frozen chuck (CCR/Fr). It is interesting to note that wholesale prices dropped the most between JFY 1992 and JFY 1993; perhaps as a result of import tariffs dropping from 60 per cent to 50 per cent in that period. In the case of frozen beef, the wholesale prices of chuck and loin, for example, dropped by 22 per cent and 16 per cent respectively. The other interesting observation from Figure 3 is that the wholesale prices of the types of beef under consideration have dropped almost steadily; averaging approximately 23 per cent for fresh & chilled loin and approximately 40 per cent for chuck over the JFY 1991-1995 period.

At the retail level similar trends have been observed. For the purposes of illustration, Figure 4 shows the changes in the retail prices of three types of loin cuts. These are domestic Wagyu (wag), imported loin from Australia (aus) and loin from the US (us). Although there are periodic price increases, the overall trend for retail prices of loin has declined, in some cases by as much as 9 per cent within a single month. Overall, retail prices have dropped for all types of beef across the board. However, given the large number of retail beef cuts it is not possible to make generalisations about the extent to which retail prices have declined. It is also interesting to note that the retail and wholesale prices of high quality Wagyu beef have also declined since JFY 1991; mainly as a result of increased competition from high quality imported grain fed beef. Thus, increasingly, Japanese end users and consumers have started to accept relatively cheaper high quality imported grain fed beef as a substitute for domestic Wagyu.

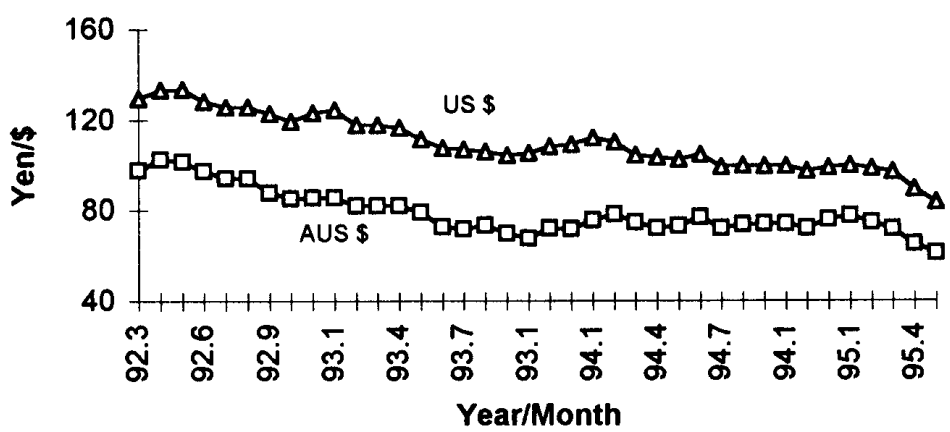
3. External Influences on Beef Prices

There is no doubt that changes in import policies have had important impacts on both wholesale and retail beef prices in Japan. However, other developments are occurring simultaneously in the wider economy and are also believed to influence, directly and indirectly, both wholesale and retail prices. Two such developments are discussed.

3.1 The Exchange Rate

It is now well documented that changes in the exchange rate can significantly affect import prices and volume of most agricultural products (Schuh, Chambers and Just, Carter and Pick). Interestingly no analysis has been undertaken to assess the impacts of the appreciation of the Japanese Yen on beef imports despite the fact that in the post liberalisation period, the Japanese currency has appreciated substantially against both the American and Australian currencies (Figure 5). For example, between March 1992 and

Figure 5: Recent Exchange Rate Trends March 1992-June 1995



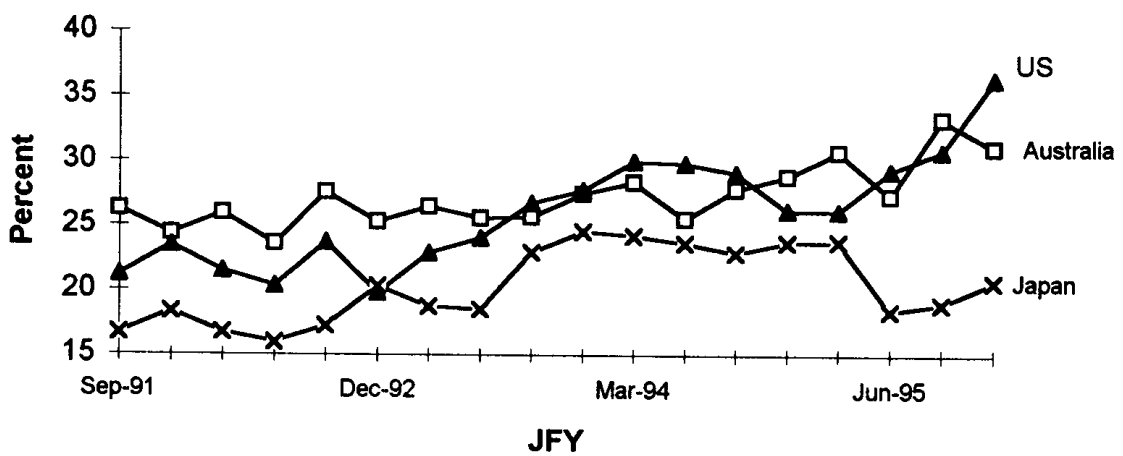
June 1995, the Yen has appreciated by approximately 30 per cent and 35 per cent against the US and Australian currencies respectively. Theoretically, appreciations of the Yen of this magnitudes should result in higher import volumes and lower prices for imports. Thus, the appreciation of the Yen must have contributed to some extent to the downward trend in wholesale and retail beef prices. An additional issue relates to exchange rate differential between various supply sources which can influence the sourcing strategies of Japanese importers. Thus, future investigations of the Japanese beef import market need to take explicit account of changes in the exchange rate. Ignoring the exchange rate may lead to an over estimation of the actual impacts of import liberalisation on the beef sector in Japan.

3.2 Reform of the Retail Distribution System

Recent changes in Japanese retail distribution system has been well documented (Riethmuller, Goldman). Japanese distribution systems have been undergoing change because of social and economic development and also because of regulatory changes by the Japanese government (Riethmuller). Only a few years ago, beef business in Japan was dominated by a few large distributors and super markets. Thus, it is believed that because of the oligopolistic nature of the market then retail beef prices were quite rigid and that consumers did not benefit from lower prices of imported beef. In recent years, however, a number of discount supermarkets and retail outlets have emerged. It is now common for major discounters such as Nu Quick, Meiji-ya Sangyo, Hanamasu and Daiei, for example, to heavily discount a range of (*mostly imported*) products, including beef, especially over the weekend. The practice of discounting has also intensified as a result of the stronger Japanese currency which make imported products relatively cheaper than domestically produced ones. Thus, a number of retail outlets use discounting as a strategy to attract customers.

Discounting beef prices has been a common practice since JFY 1991. It is reported that in JFY 1995 as much as 70 per cent of beef at the retail level was sold at discount prices. Figure 6 shows the extent to which retail loin prices, for example, have been discounted since September 1991 (as a proportion of its normal retail price). The loin beef cuts considered in Figure 6 include loin cuts from Japanese Wagyu, chilled grain fed from Australia and chilled grain fed from the US. It is interesting to note that the intensity of discounting has increased almost continuously for all three types of beef, although competition is clearly between Australian and US products. In December 1995 for example, US loin was discounted by as much as 37 per cent of its normal retail price while Australian loin was discounted by approximately 32 per cent of its normal retail price. Not surprisingly, domestic Wagyu is the least discounted type of beef; possibly because it has a longer shelf life compared to imported beef.

Figure 6: Retail Price Discounts: 1991-1995



3.3 To What Extent are Lower Import Prices Passed on to Consumers?

One of the most frequently asked question on the Japanese beef market is related to how sticky retail prices are because of the allegedly oligopolistic nature of the industry. In other words, it is often argued that retail beef prices have not declined to the same extent as import prices and that consumers in Japan have not benefited fully from beef import liberalisation. All in all, the question is "to what extent are lower import prices passed on to consumers?". Although wholesale prices of imported beef have declined steadily since JFY 1991, there is little consensus among researchers on the extent to which lower import prices have resulted in lower retail prices. The main reason for the lack of consensus among researchers is related to methodological and measurement difficulties in comparing wholesale and retail prices. On the surface, such analysis may appear quite straightforward but in reality the comparison of wholesale and retail prices is more complex. This is because wholesale beef prices usually refer to wholesale beef cuts whereas retail prices refer to retail beef cuts; the two being totally different products.

The comparison of wholesale and retail prices for beef requires wholesale prices to be adjusted to their retail price equivalents to account for product transformation from wholesale to retail cuts. Such adjustments are not always straightforward given the proliferation of beef cuts at the retail level in the post-liberalisation period. Because comparable wholesale and retail price data were not readily available from traditional sources like the Management and Coordination Agency (MCA), researchers have not been successful in analysing retail-wholesale price relationship until recently. The LIPC started to collect retail prices of specific cuts of imported (and domestic) beef on a monthly basis as well as wholesale prices of imported beef since July 1991.

3.3.1 Wholesale-retail Price Transmission: A Preliminary Assessment

As an illustrative example, consider two types of beef [US (grain-fed) and Australian (grass-fed)] and two retail primal cuts [*kata* (shoulder) and *saloin* (sirloin)].

The first step in comparing wholesale and retail prices involves establishing the appropriate wholesale cuts that correspond to the retail beef cuts under consideration. Following the recommendations of meat specialists from the LIPC, MAFF, and JMTC, the following corresponding wholesale and retail cuts of beef are used:

Corresponding Retail Cuts	Wholesale Cut: Australian Beef	Wholesale Cut: US Beef
Shoulder (kata)	clod	shoulder clod (#114)[1]
Sirloin (saloin)	striploin	striploin (#180)[1]

1 Refers to US product specification.

Sources: Personal Communications with LIPC and JMTC, July 1995.

Having identified the appropriate wholesale cuts corresponding to the two retail cuts under consideration, the next step involves converting wholesale prices to their retail cut equivalents. This conversion is necessary because the processing of wholesale beef cuts into primal retail cuts usually result in some losses in terms of unwanted fat, bone, connecting tissues and trimmings. The estimated wholesale-retail yield (by value) for the two cuts of beef are summarised in Table 1. For example, the wholesale price of Australian clod has a value yield of 74.1 per cent. Thus the wholesale price of Australian clod should be divided by its value yield ratios to derive the appropriate wholesale price for comparison purposes.

Table 1: Estimated Yield Ratios from Wholesale Primal to Retail Cuts

Australian Cuts	**Clod**	**Striploin**
Value Weight[1] (%)	74.1	67.5
US Cuts	**#114[2]**	**#180[2]**
Value weight[1] (%)	74.1	67.5

1 Weights of subcuts and trimmings discounted by their relative prices to the main cuts.

2 Refers to US product specification

Source: JMTC

Having derived the necessary wholesale and retail prices, the relationship between wholesale and retail prices is assessed. The following simple model using

monthly data for the period from July 1991 to December 1995 is estimated. For ease of interpretation, equation (1) is estimated in the double log form as:

(1) $RP_{i,t} = a + b\ WP_{i,t-1}$

where

RP_i = retail price of beef for the ith cut (i=shoulder, sirloin)

WP_i = wholesale price of beef for the ith cut

a, b = parameters to be estimated

t = t th month

Equation (1) is estimated for the two retail cuts (shoulder and sirloin) across two types of beef (Australian and US), thus giving a total of four equations. The parameter estimates are summarised in Table 2. Generally, all signs are positive as expected and are also statistically significantly different from zero in all four cases (see the respective t-values).

The estimated beta coefficients in Table 2 show the responsiveness of retail prices to changes, in per centage terms, in their corresponding wholesale prices. The results indicate that for every 10 per cent reduction in the wholesale price of Australian and US shoulder, the corresponding retail prices drop by 3.7 and 4.4 per cent respectively. Sirloin retail prices are less sensitive to changes in wholesale prices with the retail prices of Australian sirloin in Japan declining by only 1.8 per cent for every 10 per cent drop in its corresponding import prices.

In summary, something less than half the change in wholesale price is transmitted to non-discounted retail price within a one-month transmittal period. Presumably some change is delayed by lags in transmission but a considerable proportion is absorbed by distribution and presentation costs and margins.

The findings above should be interpreted with caution as this is only an exploratory exercise to highlight the methodological and measurement issues that are often overlooked in comparisons of wholesale and retail prices. Furthermore, the model used is simplistic, but nevertheless shows the extent to which wholesale and retail prices are related. It is suggested that more complete models of wholesale-retail price transmission be estimated using the methodology outlined above in deriving the appropriate wholesale-retail data, in a distributed lag framework.

Table 2: Summary of Parameter Estimates of Double log Model

Type	Shoulder	Sirloin
Australian	0.37	0.18
(t-values)	*(9.0)*	*(2.9)*
US	0.44	0.33
(t-values)	*(11)*	*(9.1)*

4. Summary and Conclusion

The deregulation of the Japanese beef import system represents one of the most interesting experiments in liberalising import for primary products ever attempted by any western nation. Currently various nations around the world are contemplating liberalising trade for agricultural products and there is increasing pressure on Japan to further liberalise its food markets. Hence, the Japanese experience can be a valuable lesson to others. In this paper it is shown that import liberalisation can indeed change a particular sector substantially over a short period. However, one should be careful not to attribute all the changes experienced in the beef sector to import liberalisation alone. We argue that the Japanese economy at large has also been experiencing change and that the effects of the external environment on the beef sector should not be overlooked.

In the post liberalisation period, the market for imported beef has became more sophisticated with greater emphasis on specialty cuts. Furthermore, consumers of imported beef now prefer *chilled grain-fed* beef. Hence the main suppliers, Australia and the US, and New Zealand to a lesser extent, had to adapt their products accordingly. The USA had to develop its expertise in chilled products within a relatively short period in order to maintain its competitive position. Similarly, Australia had to modify its beef production system in order to properly service the Japanese market with grain fed beef. As a result, more than 40 per cent of Australian chilled beef exported to Japan in JFY 1995 was grain fed.

Under the new competitive environment competition will remain strong between the two main suppliers of beef to the Japanese market. An analysis of retail price

discounting practices show that the US and Australia are competing fiercely; perhaps to maintain their respective market shares. Hence, beef marketeers to Japan will have to resort to differentiating their products in order to maintain their respective market shares and also to command higher returns. This could be achieved partly through innovative packaging, branding and promotion.

The findings in this paper also challenge the conventional wisdom that retail beef prices in Japan have not declined enough to reflect lower import prices. The results show that on average, for every 10 per cent decline in wholesale beef prices, retail prices can be expected to decline by a corresponding 3 per cent to 4 per cent. On the surface, the findings may indicate that retail beef prices are fairly rigid in Japan. However, when considering that a significant proportion of retail marketing margins account for fixed costs (e.g. wages, storage and rent), the above estimates may not be all that unrealistic.

Furthermore, our analysis of wholesale-retail price relationship uses 'normal' retail prices released by LIPC. However, as noted earlier, a larger proportion of beef is now sold at highly discounted prices. Industry sources indicate that as much as 70 per cent of beef (volume wise) was sold at heavily discounted prices in JFY 1995 (Okumura). We have also shown that the difference between normal and bargain retail prices may range between 15 to 35 per cent, depending on the type and cut of beef. Thus, when taking this fact into account, the response coefficients in this paper at best underestimate the extent to which reductions in import prices are being passed on to consumers through lower retail prices. On this basis we conclude that a much larger proportion of changes in wholesale prices of imported beef are being passed on to the retail level. This is perhaps the consequence of increased competition at the retail level as a result of reforms in the distribution systems. Finally, we suggest that future research on import-retail price relationship be undertaken and that the retail price discounting phenomenon be explicitly included in such analysis.

References

AUSTRALIAN MEAT AND LIVE-STOCK CORPORATION, (1991), "Japan: What has happened to the Japanese beef market since liberalisation?" *In Brief*, Aug. (and various other issues of *Market Notes*).

ALSTON J., CARTER, C. and JARVIS, L. (1989), "Debate on Japanese Beef Trade Liberalisation: It may not Benefit Americans", *Choices*, Fourth Quarter.

CARTER, C. and PICK, D. (1989), "The J-Curve and the US Agricultural Trade Balance", *American Journal of Agricultural Economics* 71, 713-729.

CHADEE, D. and MORI, H. (1993a), "The Japanese Beef Market in Transition", *Choices*, Fourth Quarter, pp. 32-33.

CHADEE, D. and MORI, H. (1993b), *Japanese Beef Market Liberalisation: Strategic Choices for New Zealand*, Centre for Agricultural Policy Studies, Massey University.

CHADEE, D., MORI, H. and KURIHARA, K. (1996), "An analysis of Household Beef Consumption of Japanese Expatriates in US: Implications for Future Beef Consumption in Japan", *Journal of International Food and Agribusiness Marketing* 8(1).

CHAMBERS, R. and JUST, R.E. (1981), "Effects of Exchange Rate Changes on US Agriculture: A Dynamic Analysis" *American Journal of Agricultural Economics* 63, 33-46.

COYLE, W. and DYCK, J. (1989), "Debate on Japanese Beef Trade Liberalisation: It Will Benefit American Agriculture", *Choices*, Fourth Quarter.

GOLDMAN, A. (1991), "Japan's Distribution System: Institutional Structure, Internal Political Economy and Modernisation", *Journal of Retailing* 67(2) 154-184.

HAYAMI, Y. (1979), "Trade Benefits to All: A Design of the Beef Import Liberation in Japan", *American Journal of Agricultural Economics* 61(2).

JAPAN MEAT TRADING CENTER (JMTC), *Monthly Report*, (various issues).

LIPC. *LIPC Monthly-Domestic Version*, various issues, August 1991 to present (in Japanese).

LIVESTOCK INDUSTRY PROMOTION CORPORATION (LIPC), "The LIPC Monthly Statistics", *LIPC*, Tokyo, Japan (various issues).

_____, *LIPC Monthly*, various issues.

LONGWORTH, J. (1983), *Beef in Japan: Politics, Production, Marketing and Trade*, University of Queensland Press, St Lucia.

MANAGEMENT AND COORDINATION AGENCY, STATISTICS BUREAU, *Report on Retail Price Survey* (various issues).

MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES (MAFF), Bureau of Livestock Industry, *The Meat Statistics in Japan*, various issues.

MORI, H. (1993), "Retail Margins for Beef: Wholesale-Retail Price linkage," *The Beef Cattle Magazine*, January 22-27 (in Japanese).

MORI, H. and LIN, B-W. (1994), *Japanese Beef Market: Distinctly Unique*, Senshu University Press, Tokyo.

OKUMARA, K. (1994), *The Daily Meat News*, Tokyo, Japan.

RIETHMULLER, P. (1994), "Recent developments in the Japanese Food Distribution System", *Food Policy* 19(6), 517-532.

RIETHMULLER, P., KOBAYASHI, S. and SHOGENJI, S. (1996), "Japanese Agricultural Policies Towards 2000: Swimming with the Tide", *Review of Marketing and Agricultural Economics* (this issue).

SCHUH, E.G. (1974), "The Exchange Rate and US Agriculture'. *American Journal of Agricultural Economics* 56, 1-13.

TAKAHASHI, I. (1994), "Trade Liberalisation of Beef in Japan", in *Japanese Beef Industry Facing Trade Liberalisation*, The Food and Agriculture Policy Research Centre, Tokyo.

WAHL, T.I., HAYES, D.H. and WILLIAMS, G.W. (1991), "Dynamic Adjustment in the Japanese Livestock Industry Under Beef Import Liberalisation", *American Journal of Agricultural Economics* 74, 118-132.