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Tariff Rate Quotas and New Zealand's Meat and Dairy Trade

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The tariff rate quota (TRQ) system was formalised in the Uruguay Round with the aim of maintaining and improving market access for agricultural products. Under this system, a lower tariff rate is applied to imports up to the quota limit, with a higher (and often prohibitive) tariff rate levied on products imported beyond this quota. However, the success of the TRQ system has been limited, with dairy and meat products in particular still facing relatively high barriers to international trade.

In this paper, we examine the impact of the TRQ system on New Zealand's meat and dairy trade. We draw together theoretical and empirical insights and present preliminary findings arising from interviews with key stakeholders. In particular, we examine whether the TRQ system has achieved its objectives from the perspective of the dairy and meat sectors in New Zealand and we analyse problems that appear to exist with the system. We also examine implications of reform of the TRQ system, including lower in- and over-quota rates, increased quota limits and more transparent and efficient administration methods.

1. Introduction and Background

Global trade barriers are relatively high for agricultural products, particularly dairy and meats. As well as facing relatively high tariff rates, agricultural trade is affected by numerous tariff-rate quotas (TRQs). Given New Zealand's comparative advantage in agricultural products, factors that impact on these exports are of particular importance. In this paper we examine the effects of TRQs on New Zealand's meat and dairy trade and discuss future reform of the system.

During the Uruguay Round, TRQs were agreed upon to help ensure that market access for agricultural products did not decrease during the transition from an agricultural trading system of complex and relatively high tariffs and non-tariff barriers (NTBs) to a tariff only regime. TRQs were originally designed as a temporary measure (Carbaugh, 1997). It was feared that without TRQs, a fall in agricultural trade could be the short-term result of the Uruguay Round. This could result from 'dirty' tariffication, whereby NTBs are converted into prohibitively high tariffs. Indeed, very few exports of agricultural products have been made at over-quota tariff rates. These over-quota exports face the approximate tariff rates that could have existed for all agricultural exports, had the TRQ system not been implemented (Monnich, 2003). With this in mind, and not wanting the

Uruguay Round to lead to a decrease in agricultural trade, it was decided that TRQs were necessary to maintain the levels of market access prevailing at the time.

It is estimated that 28-30% of agricultural trade occurs within the TRQ system (Herrmann et al, 2001). The TRQ system was developed with two explicit aims. The first was to ensure that market access opportunities would not decline after the commitments agreed to in the Uruguay Round were implemented. The second was to develop market access opportunities for agricultural products in markets where previously trade barriers had essentially prohibited trade. In this sense, the aim of the TRQ system was to open all domestic markets to a minimum level of trade. These minimum access requirements were set at 5% of the domestic market for developed countries and 3% of the domestic market for developing countries, with provisions for these minimum access requirements to rise over time (Abbott, 2001). However, to these ends the TRQ system has only been moderately successful. Quota fill rates average around 65% and problems of quota administration are numerous and disruptive to the workings of the TRQ system (WTO, 2002).

The aim of this paper is to examine the influence of the TRQ system on New Zealand's agricultural trade, with particular emphasis on identifying areas where the TRQ system could be improved. There has been very little research specifically analysing the impact that the TRQ system has had on the export of NZ agricultural products. With further multilateral liberalisation of agricultural trade likely in the coming years, including potential reform of the TRQ system, it is important to more fully understand how the TRQ system affects exporters and what negotiated changes are likely to bring the largest benefits to the agricultural sector. In this paper, we focus on the dairy and the meat (sheep and beef) exporting sectors; these are the most important agricultural exporting sectors for NZ and they are the most affected by TRQs.

While time series trade data for NZ dairy and meat products are available, many variables influence this data and thus it is difficult to isolate the effects of the TRQ system on agricultural trade. For this reason, interviews with key stakeholders were used in an effort to improve understanding of the influence of TRQs on agricultural trade and the most important areas for future reform. Experts in trade policy were interviewed from many of New Zealand's significant dairy and meat exporting businesses. In addition, interviews were conducted with representatives from industry wide organisations and government ministries. Insights gained from these experts are a major strength of this current study, however, by its nature this study tends to be qualitative rather than quantitative and there will necessarily be elements of subjective judgment in the analysis.

2. The Tariff Rate Quota System

Most of the literature on TRQs focuses on the economic theory and welfare implications of this system. For clarity and simplicity in theoretical analysis, we assume the importer is a small country and that all world supply curves are perfectly elastic. While this assumption may be a reasonable approximation for some countries, other importing

countries may face upward sloping world supply curves. However, this will generally not change our broad conclusions.[2] Figure 1 illustrates the theoretical workings of a TRQ.
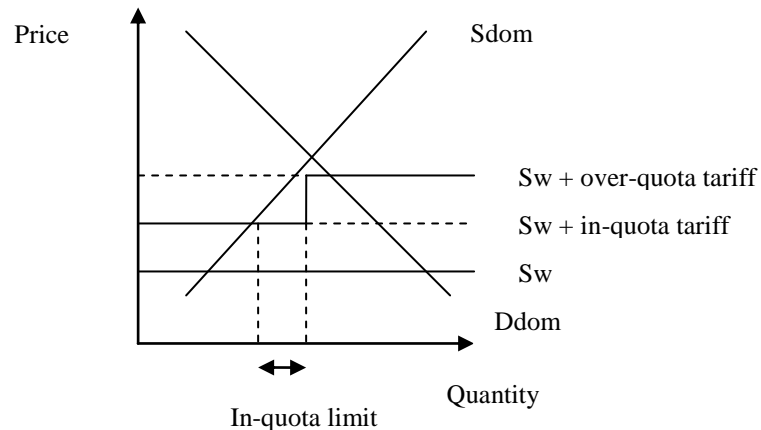
Figure 1: Tariff Rate Quotas

Figure 1 shows how a TRQ is supposed to operate. Imports are allowed at the In-quota tariff rate up to the quota limit. Further imports are charged the higher over-quota tariff rate. The domestic market price and quantity traded are determined by the intersection of the Ddom and Sw + over-quota tariff curves. One can see that any all goods traded at the in-quota tariff rate earn a premium, or quota rent. This quota rent is the difference between the market price and the lower price producers would be willing to accept, which is determined by the Sw + in-quota tariff curve. The existence of quota rents is one important aspect of the TRQ system and they are the result of the need to ration in-quota access.

The economic rents associated with TRQs are often large. Quota rents increase as quota limits increase, in-quota tariff rates decrease or over-quota tariff rates increase. In a report prepared by ACIL for the NZ Business Roundtable in 1992 quota rents were estimated for NZ's UK butter quota (now the EU butter quota). The size of the quota market was then approximately 60,000 tonnes. The estimated quota rents for the years 1989/90 and 1990/91 were $NZ131 and $NZ118 million (ACIL, 1992). Therefore quota rents can be very significant, for this reason, they can have a large impact of how a TRQ operates. While these quota rents make importing within the quota level attractive, the distribution of rents between exporters and importers depends upon the competitiveness of the market

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[2] For example welfare effects such as deadweight losses, quota rents and tax revenue will still exist although they are likely to be different in magnitude than when supply curves are perfectly elastic.

on both the supply and demand sides (Choi and Sumner, 2000). Simply put the distribution of quota rents depends upon the market power of exporters and importers to set prices. The more market power a firm has the more likely they will be able to capture quota rents.

The TRQ system decreases world welfare in comparison to a situation of free trade. This is not a surprising result given that it disrupts the workings of markets and can be shown to create deadweight loss. However free trade in agriculture is not a realistic possibility in the short to medium term. Thus TRQ must be viewed favorably relative to the likely tariff only regime that was to be implemented. There are few examples of trade occurring at these over-quota tariff rates and even with the efficiency short-comings of the TRQ system, it is economically more palatable than its likely replacement (Das, 1998).

Economic theory suggests that a TRQ will operate as a two-tiered tariff, however in reality this is often not the case. Abbott (2001) and Skully (1999), among others, describe alternate ways in which a TRQ may operate. Their focus is on the level of domestic demand. If domestic demand is low, the in-quota tariff rate may prohibit any in-quota trade. A TRQ can operate as if it were a tariff only regime, a quota or as a two-tiered tariff. A TRQ will operate as a tariff where in-quota trade occurs but not up to the quota level. Effectively the quota limit is not restricting trade in this case. A TRQ will operate as a quota if the quota limit is achieved but no over-quota trade occurs. In this case the over-quota tariff rate is prohibitive. If over-quota trade was to occur a TRQ is said to be operating as a two-tiered tariff. This is how the system was intended to operate, although high over-quota tariff rates and other factors like quota administration often conspire to stop this outcome from being achieved. The high over-quota tariff rates that have been set by many countries effectively create quotas instead of two-tiered tariffs. Quotas are a barrier to the ability of markets to respond to price signals, allocate resources efficiently and respond to changing market conditions (Appleyard and Field, 2001). Skully (1999) states that the efficient operation of TRQs has too often broken-down because of the large nature of over-quota tariff rates. In very few cases where over-quota tariff rates are applied[3] have over-quota exports actually been made.

In addition to this, tariff rates can have a tangible impact upon the level of trade. The higher the in-quota tariff rate the lower the amount of trade that occurs. The in-quota tariff rate can prevent trade from taking place if it causes the domestic price in the importing country to be lower than the world price plus the in-quota tariff. This is not a problem associated with most TRQs as in-quota tariff rates are generally less than 10%. However, some in-quota tariff rates are significantly higher than 10%, and particularly in times of low domestic demand for imports, they may be significant barriers to trade (Abbott, 2001). In general, experience with the TRQ system has shown that the over-quota tariff rate rather than the in-quota tariff rate is more often a barrier to trade.

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[3] Approximately 50% of over-quota tariffs rates are not applied, i.e. an additional amount of imports is allowed at the in-quota tariff rate (WTO, 2002).

2.1 Tariff Rate Quota Fill Rates

One of the primary reasons TRQs were implemented was to make sure trade would occur in the most heavily protected domestic markets. Theoretically one could argue that TRQs should work best in the most heavily of protected markets as they offer relatively free access to markets where domestic producers are relatively inefficient. In the situations where TRQs were implemented to ensure that trade didn't decrease, one would assume that these TRQs would easily be filled as they were established markets where access has not been diminished. It might be expected that most TRQs would be filled to their respective in-quota limits. However quota underfill has been perhaps the most disappointing aspect of the TRQ system (Abbott, 2001).

The most commonly used method of calculating quota fill is the simple fill rate. This shows the proportion of the in-quota limit that has been filled by imports for any given year. The majority of work done on TRQs uses simple average fill rates, this involves the process of averaging quota fill rates across the number of TRQs sampled (WTO, 2002).[4] In addition to the problem of using simple average fill rates is that fill rates are only calculated to 100%. For this reason they are biased downwards in the event of quota over-fill, i.e. when over-quota trade occurs. While simple averages do have their shortcomings, they provide some representation of patterns of quota fill.

In a paper by the secretariat of the WTO simple average fill rate are calculated for the years 1995 to 2000. As shown in Table 1, from 1995 to 2000, between 1/3 and 2/5 of potential in-quota trade is not being filled (WTO, 2002). Of particular importance to the current research are the fill rates of dairy and meat TRQs, also indicated in Table 1. It can be seen that TRQs for dairy products are generally filled in the range of 63-65%. In comparison with total average fill rates for all TRQs, dairy fill rates seem to be slightly higher than the average while the meat sector does significantly worse than the average. TRQs for meat products are generally filled to a lesser extent than for dairy products and there may also be evidence of a downward trend in the fill rates of meat TRQs.

Table 1: Tariff Rate Quota Fill Rates for Selected Commodity Groups (%)

	Product Category		
Year	Dairy	Meat	Total
1995	65	61	66
1996	63	57	63
1997	65	55	62
1998	64	57	63
1999	63	52	62
2000	65	54	60

Source: WTO, 2002.

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[4] The inherent weakness of this approach is that all TRQs are given an equal weighting whether they be large or small, highly valued or of low value.

Many reasons have been put forward to explain quota underfill. Deficient demand for imports in TRQ markets is commonly blamed. Although this may sometimes be the case, it is unlikely to explain most or even a good proportion of quota underfill as TRQs account for only a small proportion of the domestic market. This reason is really only applicable during economic downturns, when especially good domestic growing seasons occur, or in special cases[5] (Abbott, 2001).

Another popular excuse for quota underfill is that in some markets the amount allowed to be traded under the quota limit is too small to be economic (Abbott, 2001).[6] Additionally, exporters like to sell into high value markets where significant returns can be made. Quota limits may not be 'too small' to induce trade just 'too small' for the market they are located in. For example, access to a butter quota into the EU may be of much greater value than similar access to a quota in a developing country. Of the 181 dairy TRQs and 247 meat TRQs the majority give access to developing or lesser developed countries, or access into small markets (WTO, 2002).[7]

While the reasons outlined above no doubt play a role in the issue of quota underfill, the issue of quota administration is given the most attention in the literature as the primary cause of quota underfill. Quota administration refers to the system of operating a TRQ, including the important aspect of rationing quota access (Monnich, 2000). It is thought that quota administration is often used in political ways to essentially raise market access barriers.

2.2 Administration of TRQs

The theory of comparative advantage implies that free trade would bring benefits to all countries, causing resources to be drawn from less efficient industries into the most efficient industries, and thus leading to increased allocative efficiency. However this outcome is not politically feasible in the near term. Political considerations implicitly force the governments of many countries with strong and large, although relatively inefficient agricultural sectors, to oppose further liberalisation of world trade in agricultural products and to make current liberalisation measures as ineffective as possible (Corden, 1997).

TRQ administration is fundamentally a rationing problem. There are many ways in which to administer TRQs, all have their own costs and benefits but some are better than others. TRQ administration is the means of rationing the limited amount of in-quota market access between competing importers. How these rights are distributed helps to determine not only the volume and distribution of trade but also the distribution of quota rents. TRQ administration is open to considerable political involvement meaning efficient TRQ administration is often unlikely to occur (Monnich, 2003).

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[5] Such as mad cow disease, this may cause a significant change in preferences away from beef to other meats, thus causing deficient demand for imports and quota underfill.

[6] For example Norway agreed that beef could be imported but each producer could only import a tiny quantity thus making it uneconomic (MAF Personal communication).

[7] For example of the total of 1371 TRQs in existence, Iceland accounts for well over 200 of them.

Article XIII of GATT set two criteria for TRQ administration to ensure non-discrimination in the administration process. However these criteria are not strictly enforced. The first of the two criteria was that no additional measures should be imposed that impede quota fill. The second was that the distribution of trade under the TRQ should accurately represent the distribution of trade if the only restriction to trade was a tariff. Of the many different administration methods used since the inception of TRQs few, if any, accurately adhere to these two principles (www.wto.org).

There are many different methods that quotas can be administered and the WTO identifies 10 distinct methods. Some 50% of all TRQs are administered by applied tariff. In actual fact this is not a rationing method as the in-quota limit is not binding. Effectively an unlimited amount of imports can be imported at the applied tariff rate. The other administration methods are of more interest. Of these methods license on demand is by far the most frequently used method, accounting for almost 25% of TRQs. First-come First served and auction methods are the next most popular. The other methods are used less often but are of significant importance as they can often be the most trade distorting administration methods and thus likely to be applied in cases where countries are adverse to international competition (Monnich, 2003).

There is much theoretical work published on the economics of specific TRQ administration methods but little empirical research. Generally it is thought that market based systems should be the most efficient (applied tariff and auctions). Quasi-market systems are thought to be the next most efficient, including license on demand, first-come first-served and to a lesser extent historical. These methods are thought to be less efficient than market based methods as they add a random element to the market allocation process and do not necessarily discriminate between efficient and inefficient suppliers. This means that less efficient producers have a chance of gaining quota access at the expense of the more efficient producers (Skully, 1999). Discretionary methods including state trading and producer groups are thought to be the least economically efficient of all TRQ administration methods. This is because there are no strong incentives to fill quotas or to import from the most efficient producers (Skully, 1999).

However TRQ fill rates do not seem to mirror these rankings. State trading and producer groups have generally been the administration methods with the highest fill rates. This is especially interesting when we note that licenses on demand and auctioning tend to have relatively low fill rates. It would seem that the so called market based methods actually do poorly in comparison with the more discretionary methods. The reason for this could be that the more valuable a TRQ is, the more likely it is to be filled. If it is more likely to be filled, governments can impose discretionary methods of quota administration on it in order to restrict quota fill and/or direct some of the quota rents to domestic interest groups. Studies of TRQ fill rates in Japan and Korea seem to find this result (Choi and Sumner, 2000). Similarly regression results from Monnich (2003) suggest that while quota administration was important, it did not confirm the common presumption that market based methods are better.

In an overall sense, TRQ administration can be a barrier to quota fill as it often increases the costs of importing into a TRQ market (Skully, 1999). Moreover TRQ administration may also lead to the actual benefits of importing into a TRQ being much less than the potential benefit of doing so. This occurs when TRQ administration results in a change in the distribution of quota rents away from the exporting companies and towards the importing country (Abbott, 2001). Auctions, state trading and producer group methods of administration result in this outcome. Thus TRQ administration can be used as a NTB.
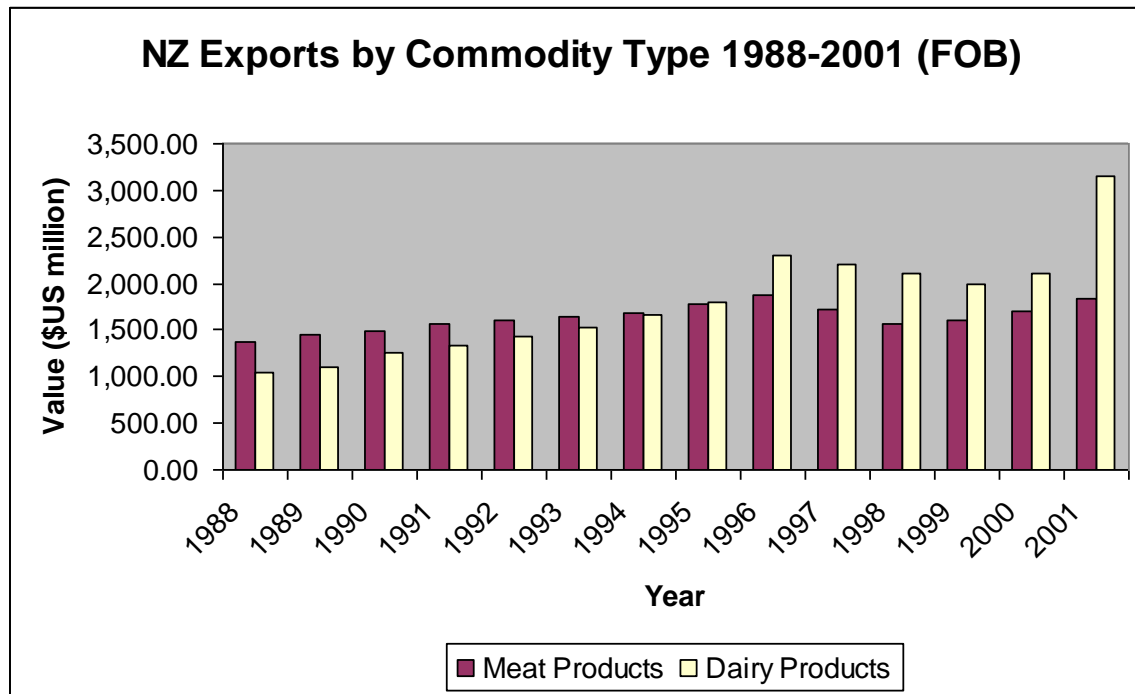
In addition to the administration methods outlined above, country specific tariff rate quotas (CSTRQs) are of significant importance in the trade of agricultural products. A CSTRQ represents specific market access for an individual country. This market access is given on an individual basis. Generally the responsibility for the administration of these CSTRQs is given to the exporting country, where they may choose an appropriate method of administration (Skully, 1999).

In New Zealand, the integration of the NZ Dairy Board into Fonterra saw the rights to NZ's CSTRQs transferred to Fonterra. This left Fonterra as exclusive holders of many CSTRQs, allowing relatively free access for specified quantities of dairy products into designated markets. In the next 5-10 years Fonterra's exclusive quota access will be removed and a new administration system will be put in place which all NZ dairy producers will have access to. The specifics of the new system are yet to be finalised. Meat NZ administers all four of NZ's meat CSTRQs which give NZ exporters access to the US and EU markets.

3. Findings for New Zealand

Evidence gathered during interviews with NZ firms and organisations involved with the TRQ system suggest it has met its objectives of maintaining and developing market access opportunities for agricultural products. Specifically the TRQ system has allowed NZ exporters to further develop valuable market access in the US beef market, the EU sheep meat market and the EU butter market. For example the EU butter quota was significantly increased upon conclusion of the Uruguay Round. Supporting this finding is retrospective research which suggested that agricultural trade in these products is significantly greater because of the Uruguay Round agreement (MAF, 2001). Most of these gains have been attributed to expanded quota limits, especially with regard to NZ's CSTRQs. The conclusion that the TRQ system has generally met its objectives from NZ's point of view is further confirmed when NZ's dairy and meat trade statistics are examined. As shown in Figure 2, there is a general upward trend in the value of NZ dairy and meat exports. The 'dip' in exports in the late 1990's can be attributed to the Asian Economic Crisis and its flow-on effects. There is no noticeable adverse impact of the Uruguay Round on either dairy or meat exports. Overall NZ exporters believe that market access opportunities were generated by the Uruguay Round. However, these gains in some cases have not been as large as expected. For example NZ is still effectively shut-out of Japan's beef market.

Figure 2: New Zealand's Dairy and Meat Exports by Value

NZ Exports by Commodity Type 1988-2001 (FOB)

Legend: ■ Meat Products □ Dairy Products

X-axis: Year (1988–2001)
Y-axis: Value ($US million)

Source: PC Infos

3.1 Main Elements of the TRQ System

There are four main elements to a TRQ. These are the quota limit, both the in-quota and over-quota tariff rate, and the quota administration method. Each of these elements impacts on NZ dairy and meat exporters.

NZ exporters tend to view quota limits as too low in high value markets. With regard to CSTRQs the only reason for underfill seems to things outside the control of exporters (for example, not being able gain an export certificate in a timely manner). Quota limits for CSTRQs appear unlikely to rise and there is a view that NZ should all it can to secure the future of these quotas because of the valuable quota rents that come with them.

In general NZ exporters do not appear particularly concerned about in-quota tariff rates. Some exporters would even be willing to incur a higher in-quota tariff in exchange for greater in-quota market access.

Over-quota tariff rates faced by both dairy and meat exporters are almost invariably prohibitive.[8] However, industry representatives stress the importance of getting over-quota rates bound at their applied level (usually the in-quota rate) to secure market

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[8] Though apparently there are some exports of cheese to the US at an over-quota rate of 40% (Fonterra, Personal communication).

access. The danger is the risk and uncertainty associated with the possibility of some countries will begin to apply their respective over-quota rates when exports rise markedly. There is also a danger of TRQs being implemented on products not currently covered.[9]

NZ dairy and meat exporters tended to view quota administration as a serious problem of the TRQ system, with exporters finding the TRQ system very complex. Quota administration appears to be used by some countries as a NTB and the complexity of the system can be a significant barrier to filling TRQs.

TRQ reform could alter each of these four elements. Reform would see larger quota limits, lower in-quota or over-quota tariffs, more transparent and efficient quota administration, or a combination of these things. The general opinion of stakeholders appears to be that additional market access for NZ products is of most importance, thus larger quota limits would be most beneficial. However larger quotas limits may just create bigger incentives for importing countries to use more inefficient quota administration methods, create additional conditions or apply over-quota tariff rates which are presently not always applied. For these reasons it appears that all elements of the TRQ system should be reformed together. The key element of these 'rules' is to provide increased certainty to exporters.

3.2 Country Specific Tariff Rate Quotas

The current research has highlighted the significance of CSTRQs for New Zealand. The majority of NZ dairy and meat exports that go into TRQ markets go through CSTRQs not MFN quotas. This is disturbing, because unlike MFN quotas, CSTRQs are able to be changed or even taken away by importing countries. CSTRQs also go against the fundamental principle of the WTO which is non-discrimination. Overall, dairy and meat producers appeared to favour expansion of CSTRQs, however, they note that this is not likely to be possible. Aside from CSTRQs, license on demand tended to be the most popular system. An auction system appears to be unacceptable to producers as it effectively nullifies most of the gains from quota access.

In the export of NZ sheep and beef more than 50% of total exports go into CSTRQs in the US and the EU (Meat NZ, Personal Communication). Thus, like the dairy industry the meat industry is vulnerable to any change in the trade policy of the US or the EU with regard to CSTRQs. While the transfer of CSTRQs into MFN quotas in a theoretical sense will not decrease market access, the impact on NZ could be adverse, as it would have to compete with other countries for market access under the quota.

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[9] For example, trade in casein to the US was relatively free since the US does not produce casein. However, with casein trade to the US increasing, US dairy farmers are claiming that it is impacting on the demand for their products and a TRQ may be implemented, causing a significant loss in market access for NZ (Fonterra Personal communication).

3.3 Risk and Uncertainty within Quota Administration

Firms need 'good' information with which to make strategic decisions, and firms are unlikely to invest when the risk and uncertainty is substantial. With regard to the TRQ system the feeling seems to be that most methods of quota administration do not give enough certainty, in terms of market access, to make long-run strategic decisions. Economic theory, as noted above, suggests that market based administration methods will be the most efficient, thus having the highest fill rates. However, market based administration methods, like license on demand or auctions have generally had relatively low fill rates. To put it simply, these methods do give certainty of market access but not to individual firms. Because of this, firms, most likely being risk adverse, seem to invest a suboptimal amount into developing TRQ market access, resulting in TRQ underfill.

Of course not all quota administration methods fail to give firms adequate 'certainty'. The way that CSTRQs are administered in both the dairy and meat industries within NZ gives firms a large degree of certainty as to how much they will be able to export. This reduces the risk associated with 'losing' market access to almost nothing, thus inducing the required amount of investment and production to fill these CSTRQs. Essentially for the TRQ system to be effective it must give sufficient incentives to exporters to fill quotas and make appropriate investment decisions.

One interesting aspect to come out of the current research is the importance of specific assets in successfully dealing with the TRQ system. Specific assets appear important because of the extremely complex nature of the TRQ system. The specific assets that are of value include knowledge of the TRQ system, experience with the TRQ system, international reputation, international infrastructure (customer relationships, marketing) and the quality and quantity resources available (including money, human resources and time). Large exporters can do disproportionately well from the present TRQ system because they have these specific assets in abundance. While there may be benefits from simplifying the TRQ system, it may not be in their best interests for this to occur. The importance of 'specific assets' means that the TRQ system may be biased towards larger exporters. This may impose significant barriers to the continued expansion of smaller dairy and meat producers especially if other market access beyond the TRQ system is unavailable.

If the TRQ system were to be significantly simplified it may be that smaller exporting firms would stand to gain the most. From a NZ perspective the complicated nature of TRQ administration may be favourable to the extent that most dairy exports are made by one organisation very experienced in the intricacies of TRQs. A further interesting finding of this research is that NZ firms may not be fully exploiting the market access opportunities of the TRQ system because there exists a lack of information. While large firms, government ministries and industry associations tend to be well informed on the TRQ system, the same cannot be said for smaller producers.

3.4 High Value-added Exports

In general it is thought that one of the important ways in which NZ could increase economic growth is by exporting products with a higher value-added content. In agriculture this would mean a shift away from the export of commodity products. However, one of the main barriers to doing this is finding markets for these value-added products and the TRQ system appears biased in favour of the export of commodity products. It can be difficult to develop markets for these higher 'value-added' products because of the restrictive nature of product definitions in TRQ agreements. The introduction of spreadable butter into the UK is a good example of this. While it occurred before the time of the TRQ system it clearly demonstrates the problems exporters face with the TRQ system today. The main problem was that the UK's definition of what constituted butter was so tight and inflexible that spreadable butter was deemed not to be butter by the UK. Consequently NZ exporters faced, and eventually won, a costly legal dispute with the UK that eventually allowed them to export this product. Although they won this right, by the time they could export to the UK, EU producers had already copied their product. Interestingly, this UK butter quota eventually became NZ's EU butter quota but the condition still remained that any butter imported into the EU had to contain salt. Although NZ now could supply any market within the EU, UK consumers were the only ones who ate salted butter (Fonterra, personal communication).

3.5 Benefits of Further Agricultural Trade Liberalisation

As it stands TRQs while offering some market access, significantly constrain the ability of New Zealand exporters to supply some markets. But they do allow significant quota rents to be earned as prices are kept artificially high. Further liberalisation of agricultural trade should lead to greater market access opportunities for NZ exports. However this will come at a price which may be the loss of quota rents as domestic market prices in importing countries fall.[10] While we may assume that free trade (or freer trade) in agriculture will be of benefit to NZ this may not necessarily always be the case.

The consensus from participants in this survey seems to be that in the export of dairy products liberalisation will almost certainly lead to net benefits for NZ. Currently many of NZ dairy exports go into low value markets like Latin America and further liberalisation will allow NZ to substitute higher value markets like the EU, US and Japan. While it is accepted that some quota rents will disappear, increased market access into high value markets will likely more than compensate for these losses. Furthermore only 7% of New Zealand dairy exports presently go into quota markets, meaning only 7% of dairy exports currently earns quota rents (Fonterra, Personal communication).

It is less certain how liberalisation will affect meat exports. Well over 50% of both beef and lamb exports currently enter into quota markets thus the meat sector stands to lose significant quota rents from trade liberalisation. These quota markets also include the

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[10] Prices will fall as the further liberalisation of the TRQ system will allow a larger supply of imported products, making them less scarce. Lower prices mean that the difference between in-quota prices and market prices is less, thus potential quota rents per unit of exports are lower.

high value markets of the EU and the US. Much will depend on the meat sectors ability to significantly increase production so that it can export more. But a question remains over how much more meat (and dairy products) NZ can produce.

Issues such as irrigation constraints and RMA were tabled as potential barriers to growth in farm production. The irrigation issue has recently come to a head in South Canterbury where all new dairy developments have been put on hold because of a lack of water (NZPA 2004a and 2004b). A further constraint to producing more agricultural products may be a lack of suitable land. While it is true that there is some land that can be converted to agricultural production, in the most part suitable land is already being used in the production of dairy and meat products. Even if there were a lot of 'spare' land with which NZ could increase meat production there is likely to be competition for this land from the dairy sector. For this reason NZ must increase production through productivity gains and more intensive farming practices.

4. Conclusions and Areas for Future Research

Generally the TRQ system is viewed as 'a step in the right direction' for multilateral agricultural trade policy. In saying this, many problems or frustrations that still exist in the TRQ system. Although the NZ dairy and meat sectors tend to support the continuation of the TRQ system, the timely reform of it is seen as essential. There are measures we can put in place to better make use of the current TRQ system and secondly there are reforms that can be argued for at the present Doha round of multilateral trade negotiations and in future multilateral trade negotiations.

To better exploiting the current TRQ system, it is possible that improved information could assist exporters. For example, a database could be prepared with relevant data on each quota including the quota size, in-quota and over-quota tariff rates, the administration method, historical fill rates and additional conditions that exporters must meet. This database could be available to all NZ dairy and meat producers, with additional help available to firms wanting to develop a TRQ market. This may assist smaller producers to deal with their lack of specific assets by lowering the costs of searching for TRQ information and potential market access opportunities. In an economic sense this database would decrease the transaction costs associated with developing new markets by making information more readily available, thus allowing exporters to make better informed decisions.

All four key aspects of TRQs could usefully be liberalised, i.e. lower in-quota and over-quota tariffs, larger quota limits and more transparent and efficient administration methods. It seems important that a system of rules on quota administration are formed so to diminish the possibility of inefficient administration methods being implemented for political reasons. Furthermore more emphasis should be placed on giving certainty of market access to producers. Also, from NZ's point of view the TRQ system should not discriminate against value-added products, and implicitly against some of the smaller dairy producers. For this to become a reality, the definition of products within TRQs may

need to become more liberal, for example, general cheese quotas rather than quotas for specific cheese types.

NZ heavily relies on CSTRQs. Already NZ faces the prospect of losing its EU butter quota (Fonterra, Personal communication). Emphasis should be placed on securing the continuance of our remaining CSTRQs, or significant market access opportunities that presently exist may be lost. While there appear to be many ways in which the TRQ system could be reformed to improve its efficiency, an interesting argument can be developed from the success of CSTRQs in New Zealand. The aim of the TRQ system is to foster agricultural trade and to do this higher quota fill rates are obliviously better than lower quota fill rates. NZ's experience suggests that well administered CSTRQs can be very effective with quota fill rates consistently at near 100%. The reason for the success of CSTRQs in NZ seems to be the certainty of market access they give individual firms. In Coase's discourse this would suggest that property rights have been explicitly allocated and because of this an efficient outcome has resulted. If the maximisation of fill rates was the primary goal of the TRQ system, a Coasian argument would suggest that fill rates will be maximised when property rights to TRQ access are clearly allocated and any TRQ access can be exchanged in the marketplace (transaction costs are low). This would suggest that market access within the TRQ system should be allocated in a way that gives individual firms certainty. CSTRQs allow this to occur, for example Meat NZ administers NZ's CSTRQs in a way which gives meat producers guaranteed market access. In addition to this CSTRQs should be tradable at either the country or firm level. This would allow the market access opportunities to move to the countries and firms which value them the greatest, i.e. those with the greatest comparative advantage in the production of a given product. However there are some practical problems with this suggestion, not least of which are the transaction costs involved.

The analysis in the current paper has tended to be qualitative. To better understand the implications of TRQ reform, quantification will be needed.[11] However, most current international trade modelling does not adequately capture TRQs and cannot quantify the implications of changes to the TRQ system. Modelling TRQs within a global trade model such as the well-known Global Trade Analysis Project (GTAP) model is now possible (Elbehri and Pearson 2000), though far from straightforward. There are considerable data problems, including the aggregation of very detailed level TRQs across both products and regions. Further work in modelling and quantification of the effects of TRQs may contribute to a much improved understanding of the impact of agricultural trade reform, particularly for countries such as New Zealand.

References

Abbott, P. (2001). Tariff rate quotas: failed market access instruments? European Review of Agricultural Economics, 29(1), 103–130.

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[11] Allan Rae of Massey University and Anna Strutt of the University of Waikato are currently exploring this area of research.

ACIL. (1992). Agricultural Marketing Regulation: Reality versus Doctrine. Report prepared by ACIL for the NZ Business Roundtable: NZ.

Appleyard., and Field. (2001). International economics (4th ed). McGraw-Hill/Irwin: USA.

Carbaugh, R. (1997). Tariff-rate quotas and the Uruguay Round. Journal of Economics, 23(2), 1-10.

Choi, J., and Sumner, D. (2000). Opening markets while maintaining protection: tariff rate quotas in Korea and Japan. Agricultural and Resource Economics Review, 29(1), 91-102.

Corden, M. (1997). Trade policy and economic welfare. Oxford University Press: USA.

Das, B. (1998). The WTO agreements deficiencies, imbalances and required changes. Zed Books Ltd: UK.

Elbehri, A., and Pearson K.R. (2000). "Implementing Bilateral Tariff Rate Quotas in GTAP using GEMPACK". GTAP Technical Paper No. 18, Purdue University.

Herrmann, R., Kramb, M., and Monnich, C. (2001). Tariff rate quotas and the economic impact of agricultural trade liberalization in the world trade organisation. International Advances in Economic Research, 7(1), 89–106.

Monnich, C. (2003). Tariff rate quotas: does administration matter? Agricultural Policy reform and the WTO: Where are we heading? International Conference, Capri, Italy, June 23-26, 2003. Retrieved from Proquest on the World Wide Web: http://proquest.umi.com/pdpweb

NZPA. (2004a). Christchurch dairy projects threatened by report. NZ Herald, 20 February 2004.

NZPA. (2004b). Report urges ban on water extraction. NZ Herald, 23 February 2004. Skully, D. (1999). The economics of TRQ administration. International Agricultural Trade Research.

WTO (2002). Tariff rate quota administration methods and tariff rate quota fill rates. WTO: Geneva.