

New Zealand's Agricultural Exports to Quota Markets

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Foreword

This publication is an output of the Centre's ongoing programme of research into agricultural trade liberalisation through the WTO, and focuses on the issue of tariff rate quotas (TRQs). This under-researched instrument of import restriction is used by many countries to construct barriers to imports of agricultural products, including those from New Zealand. Importantly, they restrict New Zealand exporter access to the EU market for products such as butter, cheese, beef and sheepmeat, and exports of beef and dairy products to the USA, amongst others.

Whilst these tariff rate quotas hinder further market access, quota is sometimes allocated to specific countries, hence providing them with preferential access. This is the case for several of the TRQs that restrict New Zealand access to various markets. In cases where these quotas are filled, as they often are in the New Zealand cases, rents may be earned by the New Zealand exporters.

This Discussion paper provides background information on some TRQs of major importance to New Zealand agricultural exporters, and reviews some recent proposals for TRQ reform that have been offered during the ongoing and currently stalled Doha Round of negotiations. Possible liberalisation of TRQs is complicated because it involves negotiation over reductions in often very high tariffs as well as over expansion of quota volumes, and may or may not result in expanded market access. Rents earned, and the distribution of those rents between exporters and importers, may also be altered through TRQ liberalisation, all of which make the potential gains to New Zealand from liberalisation of TRQs unclear.

Quantitative analysis can provide valuable input to informing such strategic decision-making, and the Centre is in the process of building on the information in this Discussion Paper to conduct such quantitative TRQ reform analyses. I wish to acknowledge financial assistance for this research from the C. Alma Baker Trust, and from FRST grant IERX0301. The contents and views expressed in the paper, however, are the responsibility of the authors.

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1. Historical Preview

1.1 *Commonwealth Preferences and the Ottawa Conference*

Many of New Zealand's agricultural exports, especially dairy products and meats, have for many years been constrained by quantitative restrictions applied by importing countries. At the same time, these restrictions also reduced competition from other potential suppliers. Prior to its accession to the European Community in 1973, the United Kingdom had become New Zealand's major market for farm produce. This market dominance reflected not only New Zealand's comparative advantage in the production of pasture-based dairy and meat products in particular, but also the preferential trading arrangements the UK established with Commonwealth member countries. These originated from the 1932 Ottawa Conference where the Dominions sought and obtained preferential access to the UK market relative to 'foreign' suppliers, and in return agreed to reduce tariffs on imports from the UK. Quantitative restrictions were introduced on meat imports – imports from South America were progressively reduced, and New Zealand and Australia agreed to hold volumes to their 1932 levels. The Ottawa Agreement thus introduced a new era of managed trade between the UK, the Dominions and other foreign suppliers. While New Zealand did gain from the Agreement through increased trade in dairy, meat and other agricultural products to the UK, the inevitable politics of 'managed trade' meant that considerable scarce resources were to be consumed through ongoing market access negotiations with the UK (Nixon and Yeabsley 2002). There was always the risk that New Zealand's access or preferential margins would be reduced, as indeed occurred following the UK's entry to the European Community.

1.2 *Britain's Accession to the European Community*

Britain announced in 1961 its intention to seek membership of the European Community (EEC), which was eventually signed off in 1972 and implemented in 1973. Thus Britain was to adopt the EEC's Common Agricultural Policy and its systems of support and protection for domestic farmers, which were at considerable variance to the UK's policies of the day. At that time, New Zealand agriculture was still largely dependent on the UK market, with 90% of total butter exports, 75% of cheese and 86% of lamb exports destined to that market in 1970. What to do about the preferential access treatment enjoyed by Commonwealth countries was of concern to both Britain and the Dominions, especially New Zealand as it faced the uncertainty of how that preferential access would be transferred to the EEC. In the end, butter and cheese quotas and tariffs were established that secured access into the EEC for New Zealand dairy products equal to 71% of the current exports (milk equivalents). Prices received by New Zealand exporters were above world price levels, and hence earned quota rents for the New Zealand dairy industry. Such quotas are also the tools of politicians however, and they proved to be continually renegotiated, often with reduced tariffs offered as the trade-off to reductions in quota volumes. Access was

substantially eroded by this political process – New Zealand’s butter exports to the UK declined from 165,800 tonnes in 1973 to 55,000 in 1992. For cheese, the decline was even more severe, from 68,600 tonnes in 1973 to only 9,500 tonnes in 1992.

New Zealand’s exports of sheepmeat to the UK (and EEC) were no longer duty free, and faced the EEC’s 20% common external tariff from 1973. Partly in anticipation of Greece’s accession to the EEC in 1981 (Greece is a major European sheepmeat producer and consumer), the EEC’s sheepmeat regime was introduced in 1980, with the aim of supplementing domestic sheepfarmers’ incomes through market support, compensatory payments and trade restrictions. Tariffs faced by New Zealand were reduced to 10% in 1980 and in return, New Zealand agreed to limit its sheepmeat exports to the EEC to 245,000 tonnes (carcase weight equivalent) under a ‘voluntary restraint agreement’. In 1989 the tariff was reduced to zero but the maximum import volume was also cut back to 205,000 tonnes.

Fresh fruit (especially apple) exports from New Zealand also benefited from preferential access to the UK market prior to 1973. Around that time the UK was the world’s third largest importer of fresh apples, and New Zealand (along with other southern hemisphere suppliers) held a substantial market share, being the principal suppliers during the northern off-season. Following the accession of the UK, the EEC’s apple import regulations applied in full to the UK from 1978. Among those regulations, a safeguard clause allowed the EEC to impose quotas, or to ban third country imports completely. The approach taken by the EEC was to agree voluntary export restraints with the southern hemisphere suppliers – for example, these were agreed in 1976, 1979 and 1983 (Rae 1987).

1.3 Quantitative Restrictions in Some Other Markets

Beef Exports to the USA

The Meat Import Acts of 1964 and 1979 were used to restrict beef imports from New Zealand (and other countries). Voluntary Restraint Agreements have been the instrument of choice to restrict imports from Australia, New Zealand and Canada, backed up by import quotas. Like its predecessor, the 1979 Law mandated quantitative import controls if imports were expected to exceed 110% of the formula quantity. The 1979 Act also included a ‘countercyclical’ approach to computing the allowable import level. The Meat Import Act was repealed in 1995.

Beef Exports to Northeast Asia

Both Japan and Korea have used quotas to restrict their imports of beef. Prior to 1991 in Japan, beef imports were highly regulated with import quotas in addition to tariffs. A quasi-government organisation (the Livestock Industry Promotion Corporation) held 80% of beef import quotas which were put out to tender, the rest allocated to the private sector. Restrictions were also placed

on the volume of beef imports over which foreign suppliers could deal directly with domestic end-users. The Beef Market Access Agreement, signed between Japan and the USA in 1988, provided for the quota system to be phased out over the three years 1988-1990. This involved expansion of the annual quotas which were then replaced with tariff-only protection from 1991 (Chadee and Mori 1993).

The Korean government has provided support to its beef producers through quantitative controls over the volume of imports since the 1980s. Annual quotas were set, and in some years (between 1985 and 1988) imports were completely banned. Korea committed itself, as part of the Uruguay Round Agreement on Agriculture, to a gradual increase in the quota volume until 2000, after which quotas were eliminated and replaced with tariff protection.

2. The Uruguay Round: The Death and Re-birth of Import Quotas

2.1 *The Uruguay Round Agreement on Agriculture (URAA)*

During the Uruguay Round of multilateral trade negotiations it was agreed to prohibit non-tariff barriers (NTBs), to convert such barriers to their equivalent tariffs, and to reduce tariffs. In cases of products that were previously protected by non-tariff barriers, countries agreed to provide a minimum level of market access by establishing tariff rate quotas (TRQs). Tariff-rate-quotas specify an import quota and a two-tier tariff regime. The lower tariff applies to imports within the quota amount, and the higher tariff to imports that enter above the quota. The quota was either the level of imports in the 1986-88 base period, or 3% of domestic consumption (increasing to 5% by the year 2000) whichever is larger. If base period imports were greater than 5% of domestic consumption, quotas were set so as to ensure imports did not fall below then current access volumes. TRQs were agreed in the belief they were the best method to 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 NTBs to a tariff-only regime. TRQs were originally designed as a temporary measure to ensure that trade in agricultural products in terms of both value and volume did not decrease as the result of the agricultural agreements made in the Uruguay Round (Carbaugh, 1997).

It was feared that without TRQs a fall in agricultural trade could be the short-term result of the Uruguay Round. But it was also possible that 'dirty' tariffification (Ingco 1996) would lead to tariff levels that were prohibitively high, even though the tariff rates established by the tariffification process were supposed to accurately represent the level of protection a commodity received pre-tariffification (Schott, 1990). Whether due to historically-high protection or dirty tariffification, over-quota exports of agricultural products can face prohibitively-high tariffs – de Gorter and Kliauga (2006) show in-quota and over-quota tariffs of 59% and 115% respectively, on average over 1,121 TRQs. These over-quota exports face the approximate tariff rates that would have

existed had the TRQ system not been implemented (Monnich, 2003). Thus following the abolition of quantitative import barriers, they returned in the guise of TRQs. It is in this sense that Abbott (2002) refers to TRQs as “failed market access instruments”.

It is estimated that 28-30% of global agricultural trade occurs within the TRQ system (Herrmann et al, 2001). TRQs were intended 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 3%, rising to 5%, of domestic consumption or current import volumes, whichever was greater (Abbott, 2002). However, to these ends the TRQ system has only been moderately successful. Quota fill rates have averaged around 65% and problems of quota administration are numerous and disruptive to the workings of the TRQ system (WTO, 2002).

TRQs may be specified on a global basis, in which cases exporters from various countries compete for a share of the quota. Some TRQs, however, provide access rights to specific countries, for example to permit the continuation of historical access preferences or market shares. Several of New Zealand’s important TRQs are of this kind, such as its country-specific quotas (CSTRQs) for butter and sheepmeat into the EU, and for beef into the USA. In some cases 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) and which country probably earns the bulk of the quota rents. Much of New Zealand’s dairy and meat exports go into TRQ markets through CSTRQs, not global quotas. We note that some current methods of TRQ administration are not without criticism, with some parties pressing for reforms in this area also.

2.2 The Basic Economics of TRQs

Only one of the TRQ tariffs, or the quota constraint, can be effective at any time. Hence at least three possible regimes exist. In Figure 1, D_0 - D_2 are possible import demand curves (measuring the excess of domestic demand over supply at any price), t_0 and t_1 are the in-quota and over-quota tariffs respectively, q_1 measures the quota volume and P_w is the world price. With weak demand (D_0) the quota (q_1) is not filled, and the in-quota tariff raises the world price to the domestic price P_0 with quantity q_0 imported (regime 1). The ratio q_0/q_1 is known as the ‘fill-rate’. Under demand conditions D_1 , imports are constrained by the quota (q_1), and the domestic price will lie within the range $P_0 - P_1$, depending on the strength of demand (regime 2). In such cases, ‘rents’, or excess profits are earned, given by the area P_0c_ba . It is important to note that in this regime, reductions in the over-quota tariff need not lead to increased market access, due to ‘water in the tariff’. This latter represents the distance between the price P_1 and the current market price, a . Only when

imports occur over the quota (as with the demand relationship D_2 , which we call regime 3) will the over-quota tariff determine the domestic price (P_1) and the rents ($P_0 - P_1$). Note that a change in any of the policy instruments (either of the tariffs or the quota) or in domestic demand or world prices can cause a regime switch – e.g. should the second regime be the effective one, a sufficient reduction in the above-quota tariff could lead to a switch to over-quota imports (the third regime).

Four other situations are worth mentioning (Abbott and Morse 2000; Abbott 2002; De Gorter et al. 2004). First, it is claimed that in some cases countries adopt quota administrative measures that make filling the quota difficult, even in the presence of adequate demand. In such cases, the effective trade barrier is the in-quota tariff plus the additional transaction costs imposed by the administration requirements. Second, where in-quota access has been made difficult, imports may also take place over-quota. Third, the quota volumes are minimum quota levels and countries can, if they wish, import more than that volume at the in-quota tariff. This is often impossible to detect from official statistics however, as the WTO reports such occurrences (and also, incidentally, cases where trade genuinely occurs over the quota) as 100% fill rates. Fourth, for some countries and TRQs, no administrative mechanism may be in place to limit imports to the quota volume, with the in-quota tariff applied to all imports. In fact, the ‘applied tariff’ method of TRQ administration is used in almost half of all cases. Here, the domestic price will equal the world price plus the in-quota tariff, and imports may exceed the quota (overfill).

The chosen method of quota access administration determines not only the volume of trade and its distribution among importers and exporters, but also the distribution of any quota rents among the market participants (De Gorter and Hranaiova 2004). Rent-seeking behaviour can result in the choice of administration method becoming a political decision, as competing interests claim entitlement to those rents. Any changes in quota administration can therefore alter not only the volumes and patterns of trade, but also the total size of the rent and its distribution. We believe the current examination of New Zealand’s butter quota in the EU (see next section) can be interpreted in this light.

3. New Zealand’s CSTRQs

3.1 Trade volumes, Fill-rates and Tariffs

In this section, we restrict attention to New Zealand’s beef, butter, cheese and sheepmeat TRQs in the EU, and the beef, butter and cheese TRQs in the USA. While only around 7% of New Zealand dairy exports presently go into quota markets, over 50% of both beef and lamb exports currently enter into such markets. Table 1 gives volume data for these TRQs and the associated in-quota and over-quota tariffs are given in Table 2. In many cases, the tariffs are scheduled as specific tariffs (i.e. a monetary amount per unit weight) or as an *ad valorem* tariff, or sometimes as a combination of both. Converting specific tariffs to their *ad valorem* equivalents can be

controversial - for example it involves choice of exchange rate, a world price and an appropriate product definition. In cases where this conversion is necessary the values in Table 2, with the exception of sheepmeat, are taken from OECD (2002). Since that publication did not include sheepmeat, tariff equivalents for the latter commodity come from CEPII (2004).

In recent years for several of these quotas, New Zealand exports have been close to, or right on the quota volumes, meaning fill rates of 100% or close to that value. For the EU quotas, the over-quota tariffs that range between 91% and 144% (Table 2) provide strong disincentives to any trade occurring over the quotas. Trade sources were unaware of any country¹ trading sheepmeat with the EU at the over-quota tariff. Note that the sheepmeat quota is measured in carcase weight equivalent, as opposed to the product weight basis of trade statistics. MAF (2005, p.24) report that the sheepmeat quota was unfilled, for the first time, in 2005. While NZ trade statistics can show beef exports to the EU in excess of the 'high quality' beef CSTRQ (of 300 tonnes) this is likely entering at the in-quota tariff in other of the EU's MFN TRQs for beef administered in the EU by way of import licenses.² Likewise for butter, exports over New Zealand's CSTRQ could enter within the MFN (global) TRQ of 10,000 tonnes, or could be re-exported to other (East European) destinations. The trade data (Table 1) show that this CSTRQ quota has been filled in nearly all years. The EU has nine TRQs for cheeses (Appendix Table 1), including two that allocate access to New Zealand for processed cheese and cheddar totaling 11,000 tonnes. New Zealand cheese exports to this market have exceeded that amount each year since 2000, and the additional supplies are likely to be entering under the MFN access that includes further quota of 35,000 tonnes of processed and cheddar cheeses. It is extremely unlikely that New Zealand could trade butter or cheese over quota, given the high tariffs that prevail (Fonterra, personal communication).

The EU's Common Agricultural Policy (CAP) has been substantially reformed in recent years. Amongst other things, the butter intervention price was reduced as part of the Agenda 2000 reform package, and was further reduced in the 2003 CAP reforms. As a result, the EU subdivided the annual butter quota to prevent more than 55% of the volume entering in the first half of 2004. This was justified on the basis that it removed an alleged incentive to import butter early in the year when prices are likely to be higher than after the programmed EU intervention price reductions. The regulation requires the splitting of the quota for the following four years while the programmed price cuts are carried out.

¹ For sheep (and goat) meat, the EU TRQ schedule has 16 country allocations totalling 283,825 tonnes. New Zealand has by far the largest allocation, around 80%.

² Personal communication, Meat and Wool New Zealand Ltd. The EU has a total of seven beef TRQs (see Appendix Table 1). This communication also indicated that at times South American beef could enter the EU at over-quota tariff rates.

A more recent issue regarding New Zealand's EU butter quota is the case brought by a German company regarding its inability to access imported New Zealand butter. The case addresses a tension between WTO law and the relevant Commission Regulations, and 'higher ranking' European Community law especially regarding market competition. Briefly,³ the export licenses that are necessary to export dairy products to the EU market are issued solely to Fonterra (at least until December 2007) under the New Zealand Dairy Industry Restructuring Act (2001). The required 'inward monitoring arrangement' (IMA 1) certificates are issued only by the New Zealand MAF and as the sole exporter to the EU, Fonterra is the only body that can be granted an IMA 1 certificate. Import license applications may be submitted only in the UK, where they are monitored to ensure that, in total, they do not exceed the quota for any import year. New Zealand butter is exported solely to a UK-based subsidiary of Fonterra, which is the only body that can be granted an import license due to its possession of the IMA 1 certificate. The Germany company had tried unsuccessfully to purchase New Zealand butter from the Fonterra subsidiary, and had also failed in its attempt to obtain an import license for New Zealand butter. The European Court of Justice, on 11 July 2006, ruled that certain aspects of the current arrangement were invalid under EU law.⁴ These related to import licenses not being procurable in all EU member countries, and discrimination against EU butter importers due to Fonterra's dominance on the importing side. EU authorities are developing new regulations that are likely to spell out new mechanisms to permit EU importers to engage in the import of butter from New Zealand. Time will tell what form these new regulations take, but it is almost certain that they will alter the distribution of the quota rents.

The trade statistics of Table 1 sometimes indicate NZ beef exports to the USA as over quota. However, these are small amounts and the gap between the in-quota and over-quota tariffs is much smaller than in the case of the EU. According to these data, this quota is either filled or almost so. The USA has a total of nine TRQs for different types of cheese (Appendix Table 2). Four of those provide CSTRQ allocations to New Zealand, totaling 22,522 tonnes. Each year since 2000, the trade data show that New Zealand exports have exceeded the total quota allocations. We believe this can be at least partially explained by the US authorities occasionally making further quota allocations on an annual basis. With an average over-quota tariff for cheeses of 84%, it would be surprising if much if any New Zealand product was entering that market over-quota. The USA has a MFN quota for butter, totaling 6,977 tonnes and in two years since 2000 New Zealand's exports have exceeded that total quota. In some years, however, internal US

³ Taken from the Advocate General's Opinion dated 1 December 2005.

<http://www.europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:DKEY=417955:EN:NOT>

⁴ See the judgement of the Court at

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62004J0313:EN:HTML>

butter prices have been sufficiently high to permit imports at the over-quota rate, and this has occasionally happened for cheese also (MAF and Fonterra, personal communications).

Further details of these TRQs are found in Appendix Tables 1 and 2. For each quota, they indicate the total quota volume, whether or not country allocations are made and if so, the volume allocated to New Zealand. The table also give the latest available fill rates – up to 2002 for the EU and 2003 for the USA. These fill rates refer to the total volume of imports within the quota, not the fill rates for any CSTRQs that may exist within that quota. For example, the EU sheepmeat quota has a fill rate of 74% in 2002, although New Zealand is said to have filled its country-specific quota in that year, and a somewhat similar situation can be observed for the USA beef quota. Also, a fill rate of 100% could mean that the TRQ is in regime 2 (quota binding and no over-quota trade) or it could mean that trade is also occurring over the quota. In summary, most EU beef quotas are generally filled as are those for butter and several of the cheese quotas. The USA butter quotas appear generally to be filled, and most cheese quotas have fill rates approaching 100%.

The EU sheepmeat and beef quotas, and that for beef to the USA, are administered by the New Zealand Meat Board. It determines the quota allocation to qualifying companies and new entrants. Following the formation of Fonterra in 2001, all rights to access certain of New Zealand's CSTRQ markets were transferred to Fonterra for a limited period. Fonterra's exclusive rights to the EU butter quota, for example, will be progressively removed over the period 2007 to 2010 and those for the US cheese quotas will be removed during 2008-2009.

The way in which the above CSTRQs are administered by New Zealand ensures that the majority of the quota rents are earned by the New Zealand exporters. New Zealand's MAF has indicated that rents from tariff quotas (mainly the EU sheep-meat market) "are currently administered in a manner that means New Zealand obtains in the order of \$200-400 million per year" (Attorney-General, 2003). There exist some specific estimates of quota rents for butter markets. ACIL (1992) referred to the UK butter quota that existed prior to the emergence of TRQs from the URAA. 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). These were based on the estimate of New Zealand returns per tonne on the UK market being 80% above prevailing world prices. An updated estimate for the premium applying to EU butter quota markets in 1995/96, when there was a larger quota but a smaller price differential, was also estimated at \$NZ118 million (Bates, 1997). A more recent estimate⁵ is that in a typical year the EU butter quota rent is worth about \$70 million per year to Fonterra.

⁵ <http://www.lincoln.ac.nz/story14629.html>

Precise estimation of the size of quota rents is difficult, and requires an intimate knowledge of the relevant market, margins, strategies and the relationships between the traders involved. It also requires estimates of representative world prices, which fluctuate from year to year, and choice of currency exchange rates. Our approach is to first calculate from trade data the *cif* per unit value for the quota market's reported imports from New Zealand, which we assume includes any rents captured by the New Zealand exporter, over and above payment of the in-quota tariff. We then compare that price with a world price for a like commodity, and for the latter we calculate the average *cif* unit value for imports from New Zealand as reported in all non-quota markets. The difference between the two prices is our estimate of the rent per tonne. We illustrate this for New Zealand's CSTRQs in the EU15 butter and sheepmeat markets. These results are reported in Table 3. For sheepmeat, the estimated return from the EU is 25% to almost 60% above our estimated world price, and this ratio trended upwards until 2003, partly due to strengthening import demand due to the foot-and-mouth disease outbreak in the UK. For butter, the rents per tonne were more stable as the EU return was in the range of 30% to 40% above the world price. We note this is considerably below the 80% estimate of ACIL (1992). The total value of rents, averaged over the six years shown in the table, amount to around US\$220 million for sheepmeat and US\$50 million for butter.

The tariff data of Table 2, along with the price information in Table 3, allows an estimate to be made of the amount of 'water' in these tariffs. For any level of world price, the in-quota and over-quota tariff equivalents of Table 2 permit the calculation of the prices P_0 and P_1 of Figure 1. From Table 3, the 2002-2004 average ratios of the New Zealand return to the world price is calculated as 1.47 (sheepmeat) and 1.37 (butter). This in turn allows the market price (a in Figure 1) to be determined after allowance for any payment of in-quota tariffs. As a result, we find that water in these tariffs is considerable – equivalent to 57% of the world price for the sheepmeat TRQ, and 41% in the case of the butter quota. This is useful information in determining whether negotiated reductions in the over-quota tariff are likely to lead to increased imports (i.e. a switch in tariff regime to importing over the quota).

3.2 A Survey of Industry Experiences with TRQs

This section presents a summary of findings from a survey conducted in 2004 (Mead and Strutt 2004). Nine trade policy experts in the dairy and meat sectors, as well as from government, were interviewed. Evidence gathered suggested the TRQ system had met its objectives of maintaining and developing market access opportunities for New Zealand's agricultural products. Specifically the TRQ system has allowed New Zealand exporters to further develop valuable market access in the US beef market, and the EU sheepmeat and butter markets. For example the EU butter quota was significantly increased upon conclusion of the Uruguay Round. Although the New Zealand

dairy and meat sectors tend to support the continuation of the TRQ system, the timely reform of it is seen as essential.

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

While some New Zealand exporters did not appear particularly concerned about the level of in-quota tariff rates, over-quota tariff rates faced by both dairy and meat exporters are almost invariably prohibitive.⁶ Industry representatives stressed the importance of getting over-quota rates bound at their applied level (usually the in-quota rate) to secure market access. The danger is the risk and uncertainty, with the possibility that some countries will start 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.

New Zealand dairy and meat exporters interviewed tended to view quota administration as a serious problem of the TRQ system, with some exporters finding the system very complex. Quota administration appears to be used by some countries as a non-tariff barrier (NTB) and the complexity of the system can be a significant barrier to filling the quotas.

As regards future reforms of TRQs, the general opinion of stakeholders interviewed appeared to be that additional market access for New Zealand products is of most importance, thus larger quota limits would be most beneficial. However larger quota 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 to over-quota shipments.

The majority of New Zealand dairy and meat exports that go into TRQ markets go through CSTRQs, not MFN quotas. The way that CSTRQs are administered in both the dairy and meat industries within New Zealand gives firms some 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. Overall, dairy and meat producers appeared to favour expansion of CSTRQs although they recognised that this is not likely to be possible.

⁶ One respondent indicated some exports of cheese to the US at an over-quota rate of 40%.

One interesting aspect to come out of the survey is the importance of specific assets in successfully dealing with the TRQ system, assets such as knowledge of and experience with the TRQ system, international reputation, international infrastructure (customer relationships, marketing) and the quality and quantity of resources available (including money, human resources and time). Large exporters such as Fonterra 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. A further interesting finding is that New Zealand firms may not be fully exploiting the market access opportunities of the TRQ system due to 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 exporters.

4. TRQs within the WTO Doha Trade Negotiations

4.1 *Market Access Negotiations*

Article 20 of the URAA mandated a new WTO Round of agricultural trade negotiations. This began in March 2000, and was subsequently incorporated into the broader negotiating agenda set at the November 2001 Ministerial Conference in Doha, Qatar. The Ministerial Declaration adopted at that time (WTO 2001) provided for comprehensive agricultural negotiations aimed at “substantial improvements in market access; reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade-distorting domestic support”.

Before proceeding to specifics of the Doha negotiations over TRQs, we briefly summarise two studies that have empirically evaluated some general approaches to TRQ reforms. De Gorter and Kliaugu (2006) report an empirical assessment of TRQ liberalization, in which they compare a 35% reduction in all over-quota tariffs with a 50% expansion in all the quotas. The former had the larger impact, expanding trade under TRQs by US\$18.3 billion, or 51.5% of the value of total TRQ trade. Most of the expanded trade, however, took place in TRQs that were in regime 3 with very little coming from regime 2 (binding quotas with no over-quota trade). Expanding all quotas by 50% increased total trade under quotas by 14.5%, or \$5.1 billion, with trade expansion mainly occurring in quotas exhibiting regimes 2 and 3. For each quota, they then noted the policy reform that provided the minimum gain, and found the total of these minimum gains was only \$2.8 billion, well below the increase with either quota expansion or tariff reduction. That result indicates the importance of reaching an agreement that does not allow importing countries to choose between reducing tariffs or expanding quotas. As discussed below however, this could possibly result from what has been proposed in the Doha Round.

Another empirical evaluation of TRQ liberalization is that of OECD (2002). Here, reform scenarios included a 50% expansion of quotas, 36% reductions of in-quota or over-quota tariffs, and combinations of the above. Given that many TRQs have been under-filled, a finding was that quota expansion would result in relatively small changes to world trade and prices. For those TRQs where the quota was the binding instrument, quota expansion led to increased imports, but with minimal effects on world prices. Largest changes in trade and world prices resulted when all tariffs were cut along with expansion of quotas.

WTO negotiations over reforms to TRQs are included in the market access pillar, which has proved to be the most difficult pillar of the agricultural negotiations. From the beginning of the Doha Round, several proposals were offered on tariff reductions (including formulae and the size of cuts). The idea was also introduced that countries could nominate as 'sensitive products' those commodities that would be subject to a tariff cut lower than that agreed for other agricultural commodities. With specific regard to TRQs, the so-called 'July framework' document in 2004 (WTO 2004) made it clear that quotas could be expanded if the product in question was selected as 'sensitive'. Therefore for products that New Zealand exports under TRQ arrangements, that are not on the importer's list of sensitive products, increased access may have to depend on the negotiated tariff cuts which may not be sufficiently large to actually increase trade. Of course this need not preclude individual countries attempting to negotiate quota expansion in exchange for other concessions from the exporter. Should quota be expanded to the point that it becomes non-binding (fill rates fall below 100%), then further access would depend upon the in-quota tariff being reduced. The July framework also says, in relation to sensitive products "'Substantial improvement' will be achieved through combinations of tariff quota commitments and tariff reductions applying to each product...balance...will be found only if the final negotiated result also reflects the sensitivity of the product concerned" (para.33) and "MFN based tariff quota expansion will be provided under specific rules to be negotiated taking into account deviations from the tariff formula" (para.34). This suggests a number of points: that sensitive products are likely to be chosen from those currently protected through the TRQ system, that any expansion of country-specific TRQs is unlikely and that quota expansion might be greater the larger is the deviation in the sensitive product's tariff cut from the agreed general tariff-reduction formula. In addition, MFN-based quota expansion may or may not result in increased market access in those cases where quota administrative mechanisms serve as additional trade barriers unless the latter are also adequately addressed in negotiations.

Progress between then and the December 2005 Ministerial Conference in Hong Kong is summarized in the Revised Draft Ministerial Text prepared for that conference (WTO 2005a). At that stage there was no general agreement as to the maximum number or designation of sensitive products, varying from 1% to 15% of a country's tariff lines. Some member countries see

sensitive products handled through TRQ expansion, but disagree on the basis of the latter – such expansion could be expressed as a percentage of domestic consumption (with proposals of up to 10%) or expanded on an ‘existing trade’ basis. Some also had proposed no new TRQs, with sensitivity in such cases to be provided through other means. Little progress in this area was achieved at the Hong Kong Ministerial Conference (WTO 2005b). On market access and sensitive products, the Ministerial Declaration essentially reiterates the position as outlined in the Draft Ministerial Text.

Ministers and heads of delegations met again between 21 June and 1 July 2006, and addressed modalities for agriculture and industrialized products. The tabled agricultural draft modalities (WTO 2006) summarized the range of the existing proposals. For TRQs, this included the same range as above for the number of permitted sensitive products, and that each such product shall be subject to a combination of reductions in bound tariffs and quota expansion. A range for reduction of these over-quota tariffs was specified as between 20% and 70% of the reduction that would otherwise have been required by the tiered formula for non-sensitive products. The basis for quota expansion was the same as that of earlier documents, i.e. based on domestic consumption, or bound quota volumes, or current trade volumes, and that quota expansion would be on a MFN basis. The document also contained a clause indicating in-quota tariffs could be either eliminated or reduced by a yet-to-be-determined percentage. An annex to WTO (2006) set out a provisional draft of modifications to TRQ administration. With the aim of improving transparency, predictability and increasing fill-rates, these included mechanisms for dealing with quota under-fill by carrying over, under specified conditions, one year’s under-fill to the following year, or reducing over-quota tariffs to the level of the in-quota tariff for a period of time.

During these meetings, it became apparent that no significant changes in negotiators’ positions would emerge, and that wide gaps in those positions remained. As is now well known, the WTO Director-General recommended that the Doha negotiations be suspended, and that was accepted by the General Council on 27-28 July 2006 despite attempts by ministers from six key players to break the deadlock. Without agreements on agricultural and industrial product modalities, it was considered not possible to conclude the negotiations by the end of 2006. Members expressed the hope that after a “period of reflection” the negotiations could resume as soon as possible.

4.2 Current Proposals for TRQ Reform

By the time of the Hong Kong Ministerial Conference, at least four detailed proposals on sensitive products and TRQs had been offered, and detailed formulae were included in WTO(2006). In considering these, it should be remembered that there is a general convergence in the negotiations towards agreeing that a number of tariff bands, or tiers, will be defined (e.g.0-

20%, 20-40% etc) and that required tariff cuts will be higher, the higher the tariff tier. For example if a bound tariff is greater than 60% or perhaps 90% (as are many of the over-quota tariffs faced by New Zealand exporters), the tariff could be cut by an amount between 42% and 90% (WTO 2006). There is as yet no convergence on the depth of tariff cuts within each tier, nor agreement on the precise definition of the tariff ranges that define the tiers. WTO (2006) also contains a proposal that for sensitive products, the cut to bound over-quota tariffs might be no less than 20% to 70% of the reduction that would otherwise have been required by the tiered formula. It also indicates that where sensitive products are declared for which no bound quota exists, there is no agreement as yet as to whether a new TRQ can be created.

Proposal (a)

This EU proposal for TRQ reform establishes a positive relationship between the gap between the general tariff cut agreed for the relevant tier and the (lower) tariff cut agreed for the sensitive product, and the degree of quota expansion – the greater this gap, the greater the quota expansion. Countries would have flexibility in choosing a smaller tariff cut for sensitive products so long as that percentage tariff cut lies within one-third and two-thirds of the general tariff cut for the relevant tier. For example, for a general tariff cut of 60%, the reduction in the sensitive product’s tariff could be anything between 20% and 40%. However, the degree of quota expansion is negatively related to the height of the sensitive product’s bound (over-quota) tariff. The rationale here could be that the ‘sensitivity’ of the product in question is reflected by the level of existing tariff protection hence, other things equal, quota expansion would decline as such sensitivity increases.

The formula proposed by the EU is:

$$\text{TRQ increase (\% of imports)} = [0.8]*(r_f - r_s)*100/(1+t_1)$$

where r_f is the reduction in the bound over-quota tariff under the tiered formula,
 r_s is the tariff reduction for the sensitive product, and
 t_1 is the current bound over-quota tariff (ad valorem equivalent).

Note that the quota expansion is measured as a proportion of base period imports, and not of domestic consumption. The EU describes the factor of 0.8 as the desired degree of market access compensation for sensitive products.

An illustration of the approach is given in Figure 2. Let the bound over-quota tariff be 100%. This might fall in a tier for which the general tariff cut is 60%. Therefore the deviation between this tariff cut and that applied to the sensitive product could lie between 20 and 40 percentage points.

Substituting these values in the equation above gives a quota expansion of between 8% and 16% of total imports. Alternatively, a product with a bound tariff of 50% may fall in a lower tier for which a 30% cut generally applies. The reduction in the sensitive product's tariff would be between 10% and 20%, so the deviation between that cut and the general cut lies between 20 and 10 percentage points. The formula and figure shows that the quota in this case could expand by between 5% and 11%.

At an informal April 2006 meeting of the so-called G6 countries in Geneva, the EU modified its proposal by suggesting, for products with low import volumes, a limited link with the level of domestic consumption. The EU believes this would lead to significantly higher TRQ commitments than its original proposal.

Proposal (b)

This proposal from the USA specifies a minimum level of quota expansion, which level would be increased in proportion to the size of the gap between the new tariff when cut at the general rate agreed for the relevant tier, and that resulting after application of the (lower) cut agreed for the sensitive product. The formula is:

$$\text{TRQ increase (\% of domestic consumption)} = [B] + (T_s - T_b) * S$$

where B is the base expansion of the quota (% consumption),
 T_s is the bound over-quota tariff to be applied to the sensitive product,
 T_b is the bound duty as calculated under the tiered formula, and
 S is a slope parameter.

The proposal gave the following example, but emphasized it was illustrative only, with the level of ambition still to be negotiated. Let the sensitive product have a bound tariff of 40%, and assume that it falls within a tier for which a 75% tariff cut is agreed. Also assume that for the sensitive product, a smaller tariff cut of 45% is agreed. Applying the general tariff cut to the base tariff gives a new bound tariff of 10% (T_b), which is 12 percentage points below the tariff when reduced at the rate for sensitive products ($T_s = 22\%$). The required quota expansion is then the base expansion (4%) plus the product of 12% and the slope parameter (S) which the US proposal illustrates as 0.2. Thus the required expansion in the quota would be 6.4% of domestic consumption. Note that the greater the gap between the new tariffs that result when cut at the general rate and at the sensitive product rate, the higher will be the required quota expansion. Figure 3 makes this clear by reapplying this formula to a bound tariff of 100% for which the above gap (using the same tariff cuts) can be shown to be 30 percentage points. Note that the percentage increase in quota under this proposal is not directly comparable with that from the EU

formula, since the latter is expressed as a percentage of *imports* which will be smaller than the volume of *domestic consumption*.

Proposal (c)

Under this proposal, the quota expansion is expressed as a percentage of the current bound quota:

$$\text{TRQ increase (\% quota)} = 100 * (0.45 - 0.5 * (1 - (r_f - r_s) / r_f))$$

where r_f and r_s are defined as in proposal (a), and the maximum deviation from the tiered formula tariff reduction, as measured by $(r_f - r_s) / r_f$ shall be 80% and the minimum deviation 20%.

Like the EU proposal, it provides importing countries the option of trading off tariff cuts with quota expansion. The given range on the value of $(r_f - r_s) / r_f$ determines that the quota expansion will be between 5% and 35% of the current bound quota. Taking the same tariff examples as in the EU proposal, for a bound tariff of 100% for which the tiered formula required a 60% cut, the smaller cut under this proposal could lie between 12% (with quota expansion of 35%) and 48% (with quota expanding by 5%). Alternatively, a bound tariff of 50% for which the general cut of 30% might apply, could be cut by the smaller amount of 6% (with a 35% quota expansion) or 24% (with quota expanding by 5%). Of course other possibilities lie within these ranges, as determined by the formula.

Proposal (d)

The G10 group of developed countries had proposed that bound tariffs on sensitive products be cut by $1/X$ of the general tariff cut. For quota expansion, a value $Y\%$ is to be agreed, and provided that the current quota is less than 5% of domestic consumption, the quota would expand by the full $Y\%$. Should the quota exceed 5% of consumption, expansions would be smaller. If the quota lies between 5% and 10% of consumption, the quota would increase by $mY\%$, and by $nY\%$ if the quota volume is more than 10% of consumption ($n < m < 1$). In addition, deviations from the above standard combination are proposed. If a commitment smaller than the standard is applied to the tariff reduction element, a larger commitment than standard would be applied for the quota element, and *vice versa*.

At the April 2006 G6 meeting Japan, a G10 member, announced a revision to the above proposal that allowed the extent of quota expansion to vary with a country's overall level of agricultural imports. A consequence would be that major importers (e.g. some of the G10 member countries themselves) would be required to make relatively small quota increases.

WTO (2006) included specific values for the parameters such as n and m above, indicating how a given quota expansion (derived from any of the above formulae) might be adjusted according to the existing quota volume share of domestic consumption, the principle being the higher the share, the larger the downward adjustment in quota expansion and vice versa. If the quota represented more than 30% of domestic consumption, the quota expansion would be adjusted by the factor 0.2. At the other end of the proposed scale, the adjustment factor was 3 where the existing quota represented 2.5% or less of domestic consumption. The adjustment would be 1 should the existing quota be more than 5% but less than or equal to 10% of consumption, but would rise to 2 should the quota be more than 2.5% but less than equal to 5% of consumption.

4.2.1 Some illustrations with the EU butter TRQ

This example is illustrative only, to indicate the possible impacts on this TRQ under some of the above proposals. We make a number of assumptions. The New Zealand CSTRQ and the MFN TRQ volumes are aggregated to give a total of 86,667 tonnes and we assume the quota is binding (Appendix Table 1). We use the tariff equivalents of Table 2 and our estimate of the ‘water in the tariff’. The over-quota tariff of 144.3% could fall in a range of values within the tiered formula for which the cut could be between 42% and 90% - we assume a mid-point value for the general cut of 66%. We use, as base period values, the averages of the 2002-2004 prices from Table 3. We also assume that there is no change to the in-quota tariff or the world price.

First, we illustrate proposal (a) above. Maintaining the cut to the over-quota tariff to within one-third and two-thirds of the general tariff cut, means that the over-quota tariff of 144.3% could be cut by anything in the range of 22% to 44%. From the formula, the quota expansion would be 14.4% for the lower tariff cut and 7.2% for the higher cut. The lower of these tariff cuts is insufficient to remove the water in the tariff, so the quota would remain binding⁷ and the quota would be expanded by 15,800 tonnes (14.4% of current imports for which we use the baseline value of 110,000 from OECD 2002). However the higher tariff cut of 44% could drive a regime switch to over-quota trading since it eliminates the water in the tariff. The quota expansion is only an additional 7,900 tonnes in this case but the possible regime shift could see additional imports take place over the expanded quota.

Under proposal (c), the specified range on the maximum deviation from the tiered formula reduction determines that the over-quota tariff could be cut by between 13.2% and 52.8%. With the smaller tariff reduction, water would still remain in the tariff so the quota would remain binding (see footnote 6) but would be increased by 35% of the current quota, or by 30,300 tonnes.

⁷ It is also possible, if import demand is sufficiently inelastic, that the expanded quota could be under-filled.

As with the previous example, the largest cut to the over-quota tariff removes the water in the tariff, and imports could occur over the quota which would expand by 5%, or by 4,300 tonnes.

In this example, subject to our assumptions, trade volume expansion could conceivably be greatest when the tariff is cut by the maximum amount, even given that this requires the minimum increase in quota, provided that sufficient over-quota trade occurs to more than compensate for the smaller quota expansion. This depends on the elasticity of excess demand, which requires very careful evaluation. The other critical parameter is the amount of water in the tariff, which determines whether or not a regime switch occurs. Given appropriate parameter estimates, it would be crucial to also estimate changes to the quota rents, and to the total value of trade which recognised any changes in rents as well as the value of additional over-quota trade at world prices. If such evaluations can be made within a global trade model, then account can also be taken of increased production in exporting countries such as New Zealand to supply expanded quota, as opposed to increased EU imports supplied through diverting products from other markets.

Another important issue in this case turns out to be estimation of the current bound quota relative to domestic consumption. Eurofood (November 18, 1999)⁸ give EU15 butter consumption at between 4.7kg and 4.8kg per capita, which for the year 2000 population would give total consumption of between 1,775.7 and 1,813.4 thousand tonnes. FAOSTAT give EU butter consumption for the year 2000 as 1,738.6 thousand tonnes. If both butter TRQs are added together to give a total bound quota of 86,667 tonnes, this equates to between 4.78% and 4.98% of domestic consumption. Since this is below 5%, under proposal (d) the quota expansions derived above could be multiplied by a factor of 2. For the EU25, butter consumption in 2006 is reported as 1,939 thousand tonnes (USDA 2006) and even allowing for the expansion of the New Zealand butter quota in recognition of EU expansion, the total of these quotas is 4.5% of the total consumption.

4.3 Discussion of the Proposals

WTO members remain far apart in their approaches to defining and providing increased market access for agricultural products, let alone for sensitive products, including those whose imports are limited through TRQs. Some countries want the amount of increased access linked to domestic consumption, others to the existing levels of imports. Some argue that the first approach takes no account of the product's 'sensitivity' whereas the latter would – presumably the higher this sensitivity, the smaller would be the current quotas. Other countries counter that where

⁸ Downloaded at http://www.findarticles.com/p/articles/mi_m0DQA/is_1999_Nov_18/ai_58157392

quotas are very small, quota expansion linked to current import volumes is unlikely to result in substantial increases in access.

Only one of the in-quota tariff, over-quota tariff and quota volume instruments can be trade-determining at any time (see discussion in relation to Figure 1). If changes are successfully negotiated to what are in fact redundant policy instruments, then there may be no impact on trade at all unless the policy reform is sufficiently large to cause a regime shift. In regime 1 for example, where the effective instrument is the in-quota tariff, no amount of quota expansion will result in increased market access. In regime 2, the quota is the effective instrument. In this case reductions to the over-quota tariff will have no effect on the imported volume until the water in that tariff has been eliminated. Therefore proposals that allow trade-offs between the extent of tariff reductions for sensitive products and quota expansion need evaluation in light of the particular TRQ regime that applied in whatever is chosen as the base period.

In regime 2 the quota is binding, rents will be earned, and a degree of ‘water’ will exist in the tariff (as measured by the distance P_1 -a in Figure 1). For each of the above proposals, it is possible that the reduced tariff for the sensitive product would still leave some water in the tariff, and hence no increase in trade would occur from that source. Trade gains in such cases therefore would have to come from quota expansion. This is unambiguous in the US proposal but in both proposals (a) and (c), a trade-off between the degree of tariff cut and quota expansion would be permitted. Depending on the trade-off finally chosen by the importing country, such an option might result in very little if any additional market access. Where sufficient ‘water’ exists in the tariff, the tariff cut could be at the maximum rate - and still leave a degree of ‘water’ - yet be compensated for with a smaller quota expansion. This is illustrated in Figure 4. Let Ts_1 and Qs_1 be one set of new tariff and quota levels, and Ts_2 and Qs_2 another. The larger tariff cut (to Ts_2) still leaves water in the tariff so the quota remains binding, but at a lower level than would result when the tariff is cut by the smaller amount (to Ts_1). And additionally, in cases where trade had been permitted over the quota but at the in-quota rate (as sometimes happens), then expansion of the quota may not lead to any new trade at all.

For those cases where trade occurs at the over-quota tariff (regime 3), under the proposals (a) and (c) a country might opt for a lower cut in the over-quota tariff and a higher expansion in the quota. In this case, very little new access might result if the new quota is still less than the volume of trade that would occur at the new tariff level (although quota rents could be higher than they would be otherwise) – that is, the new quota would remain non-binding. Figure 5 provides an illustration. The volume of trade is initially X_1 . If Ts_1 is the new over-quota tariff, trade would expand to X_3 . The new quota Qs_1 remains non-binding. Should a smaller tariff cut be chosen such that the new over-quota tariff is Ts_2 , the quota would be expanded by more, say to Qs_2 . This

larger quota also remains non-binding, and the final trade expansion is from X1 to X2. Quota rents, however, would be larger than under the first scenario.

The choice of base year will also have an influence on the achieved degree of market-opening. This is especially so where the quota expansion is based on imports rather than domestic consumption since the former is likely to vary more between years than is consumption. When regime 2 applies, countries sometimes permit imports over the quota, but continue to apply the in-quota tariff. This is equivalent to a unilateral and temporary quota expansion. Importing countries may opt to avoid such years in the base period if their objective was to minimize any quota expansion. Another issue, if quota access is based on historical imports, arises when there is more than one quota for the product in question. For example, might the EU butter quota expansion be based on total imports within both the New Zealand and MFN quotas, or just the latter? And would the increase in quota tonnage apply to both of these quotas, or just the MFN quota?

5. Concluding Discussion and Future Research

At present TRQs, while offering some market access, significantly constrain the ability of New Zealand exporters to supply some markets. But they have allowed substantial quota rents to be earned as prices are kept above world levels. Further liberalisation of agricultural trade should ideally lead to greater market access opportunities for New Zealand exports. However this may come at the cost of possible reduction in quota rents as domestic market prices in importing countries fall. Further quantitative analysis is required to determine whether such potential loss of quota rents would significantly affect New Zealand's gains from agricultural trade liberalization.

The consensus from participants in the survey (section 3.2) seems to be that in the export of dairy products, liberalisation will almost certainly lead to net benefits for New Zealand. Currently many of New Zealand's dairy exports go into low value markets like Latin America and further liberalization, including that of TRQs, will allow New Zealand to substitute higher value markets like the EU, US and Japan. While it is accepted that some quota rents may reduce or disappear, increased market access into high value markets could more than compensate for these losses.

Survey participants were less certain how liberalisation will affect meat exports. Well over 50% of both beef and lamb exports currently enter into quota markets and much depends upon how these TRQs are liberalized. There is a risk that the meat sector stands to lose significant quota rents from trade liberalisation. Much may depend on the meat sector's ability to significantly increase production so that it can export more. But a question remains over how much more meat (and dairy) NZ can produce given emerging land, water and environmental constraints.

Might the survey participants' general optimism over New Zealand's future preferential position in some quota markets be misplaced? Other countries can be expected to lobby for access to quota markets where they may currently be denied such access, if they are not already pursuing such possibilities. In some quota-restricted beef markets, for example, South American countries, once they overcome their recurring foot-and-mouth disease problems, could demand greater access than existing CSTRQs currently provide. Provided that such increased access is provided through new or expanded MFN quota (or through substantial reductions in over-quota tariffs), New Zealand exporters would compete with other countries for a share of the new opportunities.

The industry survey revealed a number of reforms to the TRQ system that were seen as potentially beneficial. These included improvements to administration methods, in-quota and over-quota tariff reductions and quota expansion. While all these have been considered one way or another in the latest WTO agricultural draft modalities, potential liberalization benefits could be seriously eroded under those proposals that provide importers the flexibility to trade-off tariff reductions and quota expansion, since they afford the option of selecting that which provides the minimum level of new market access. Since the binding TRQ policy instrument (tariffs or the quota) varies across all TRQs, and can change with world prices and market conditions, simultaneously liberalizing all three instruments and improving administrative procedures can be expected to improve market access for more products and countries, and to benefit consumers through lower domestic prices.

To better understand the implications of TRQ reform, quantification will be needed. While some have examined TRQ liberalisation (e.g. OECD 2002; de Gorter and Kliauga 2006), many international trade modelling attempts have not adequately (if at all) represented TRQs and therefore cannot quantify the implications of changes to the TRQ system. Modelling TRQs within a number of global trade models is now possible, though far from straightforward. There are considerable data problems, including the aggregation of what are in reality very detailed TRQs across both products and regions, if the quantitative models are to be kept within workable dimensions. While some extensive databases have been developed (such as CEPII, 2004), outstanding information requirements include better measuring the extent of water in the tariffs, and the distribution of rents between importers and exporters. Is it useful for policy purposes to aggregate detailed product-specific TRQs to a higher commodity level, or should new modelling approaches be developed that allow incorporation of very large numbers of TRQs specified down to the tariff line level (Grant and Hertel 2006)? Further work in modelling and quantification of the effects of TRQ reform, as we are doing in this project, can be expected to contribute to a much improved understanding of the impact of agricultural trade reform, particularly for countries such as New Zealand. For example, use of general equilibrium models permits a wider analysis of the impacts of TRQ liberalisation than was indicated using the models depicted in

Figures 4 and 5. How might rents in various quota markets change under a range of trade liberalisation scenarios? A general lowering of agricultural trade barriers would be expected to place upward pressure on world prices, especially for highly-protected commodities such as dairy products and some meats. Coupled with a degree of quota expansion, would improved returns due to higher prices in non-quota markets more than outweigh possible loss of rents in quota markets? Such world price increases might themselves reduce quota rents, a possibility not addressed in the graphical analyses of this report.

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Table 1 Details of Some CSTRQs Governing New Zealand Access to the EU and USA Markets

	European Union (15)				USA		
	Cheese ^a	Butter ^b	Sheepmeat ^c	Beef ^d	Beef ^e	Cheese ^f	Butter ^g
NZ CSTRQ ^h	11,000	76,667	226,700	300	213,402	22,522	-
Other MFN quota ⁱ	83,400	10,000	-	50,700	-	-	6,977
NZ exports (HS code) ^j	0406	040510	0204	0201+0202	0201+0202	0406	040510
2000	31,018	79,089	191,813	2,911	224,459	31,930	5,810
2001	41,643	72,340	184,737	2,360	191,167	37,790	9,709
2002	39,284	86,492	186,158	1,793	202,627	47,252	4,562
2003	53,734	89,924	194,654	1,896	226,015	37,878	4,700
2004	31,778	82,080	188,746	1,119	215,196	38,185	9,069
2005	26,448	99,049	194,504	1,275	206,132	29,153	3,274

Notes:

- a. NZ has two CSTRQs for processed cheese and cheddar. In addition to 7,750 tonnes allocated to Australia and Canada, access for a further 83,400 tonnes is available in six global quotas. The latter includes further quota for 35,000 tonnes of processed and cheddar types.
- b. The MFN TRQ of 10,000 tonnes was established in the URAA. The NZ CSTRQ was increased to 77,402 tonnes from 2006 to recognise EU expansion to 25 members.
- c. Unlike the trade data, the quota volume is measured in carcase weight equivalents. It was expanded to 227,854 tonnes from 2006. The EU allocates a further 57,125 tonnes to other countries.
- d. New Zealand's high-quality beef quota was increased from 300 to 1,300 tonnes from July 2006. This is one of seven EU beef quotas that provide total access of 161,800 tonnes. Aside from New Zealand's quota, 90,800 tonnes is allocated to Australia, USA, Canada, Argentina and Uruguay.
- e. The other major CSTRQ is that for Australian beef of 378,214 tonnes.
- f. The USA has nine TRQs for cheeses, totalling 136,520 tonnes. New Zealand has allocations in four of them and the total of these allocations is shown in the table. Further quota has been allocated on an annual basis, hence New Zealand exports have exceeded the quota allocations.
- g. The USA also has an MFN quota for butter oil/substitutes (butterfat > 45%) of 6,081 tonnes.
- h. Units are carcase weight equivalent for sheepmeat, and product weight for beef, butter and cheeses.
- i. Totals of unallocated quota in the AMAD database.
- j. All trade data are from Comtrade, as reported by New Zealand.

Sources: AMAD, Comtrade, WTO (2000), MAF (personal communication), Meat and Wool New Zealand Ltd (personal communication), Johnson, R.W.M. (personal communication).

Table 2 Tariffs^a for Selected TRQs

	In-quota tariff (%)	Over-quota tariff (%)
EU		
Beef and veal	20.0	142.8
Cheese	42.2	96.5
Butter	66.0	144.3
Sheepmeat	0.0	104.3
USA		
Beef and veal	4.7	26.4
Cheeses	12.3	83.6
Butter	9.1	117.4

a. Averaged over all TRQs where more than one exist for the given commodity and country.

Sources: OECD (2002) for all except sheepmeat, and refer to the year 2000 CEPII (004) for sheepmeat, for the year 2001. AMAD database.

Table 3 Estimated Prices in Quota versus Non-quota Markets: EU15 Butter and Sheepmeat (US\$)

Year	Sheepmeat			Butter		
	Cif return/tonne		Ratio	Cif return/tonne		Ratio
	EU15	ROW ^a		EU15	ROW ^a	
1999	3303	2630	1.26	2426	1706	1.42
2000	3181	2527	1.26	2199	1631	1.35
2001	3525	2341	1.51	1948	1484	1.31
2002	3989	2554	1.56	1769	1318	1.34
2003	4775	2997	1.59	2051	1521	1.35
2004	5576	4424	1.26	2693	1899	1.42

a. All other non-quota markets for New Zealand sheepmeat or butter exports.

Source: Comtrade.

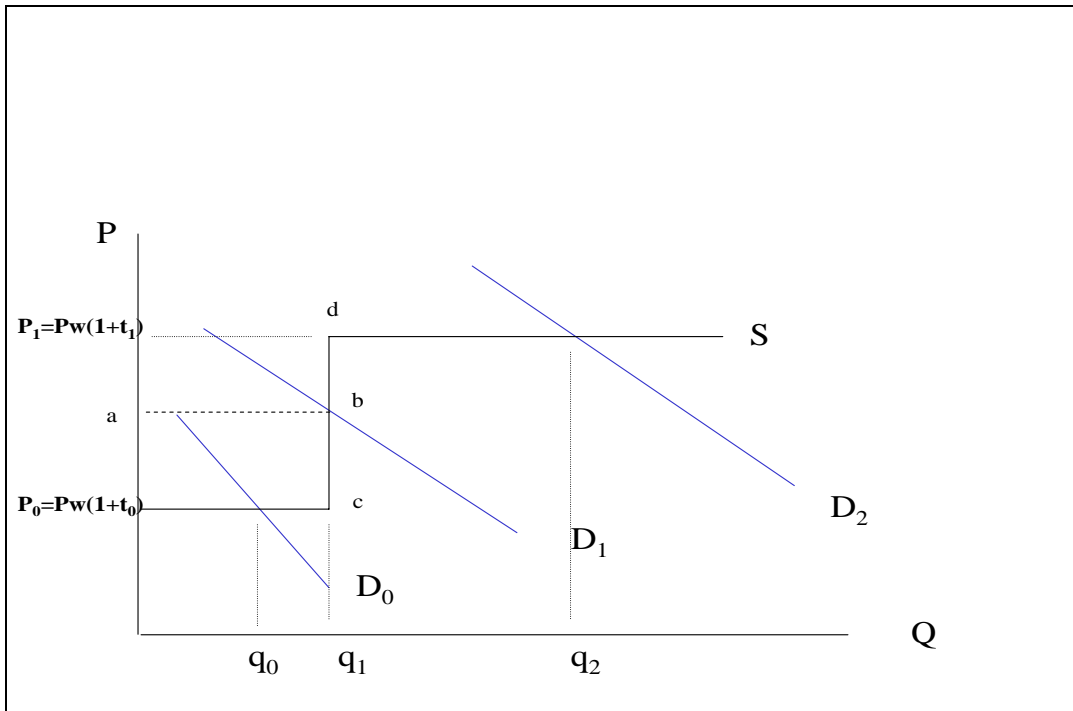


Figure 1 The Three TRQ Regimes

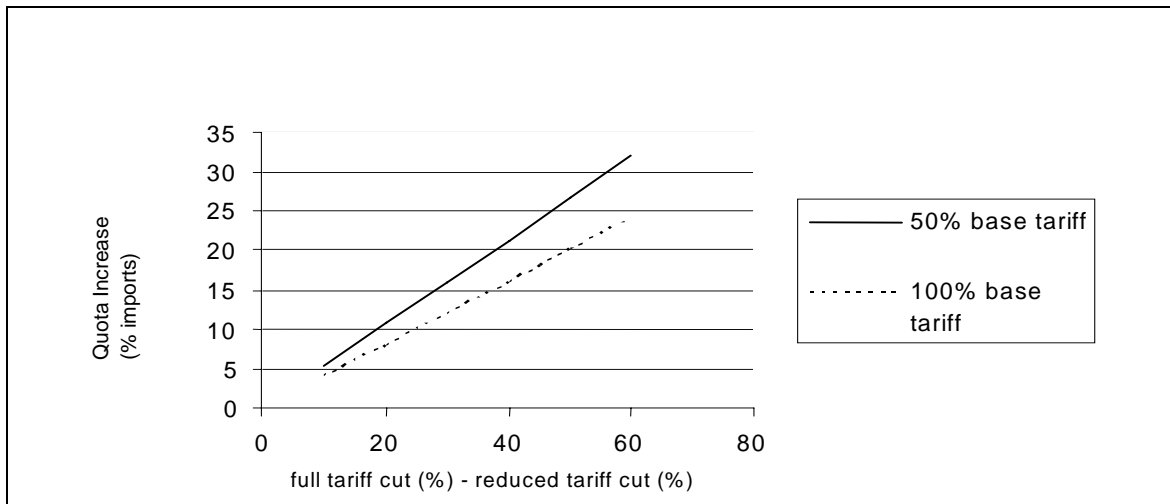


Figure 2 Illustration of the EU Proposal

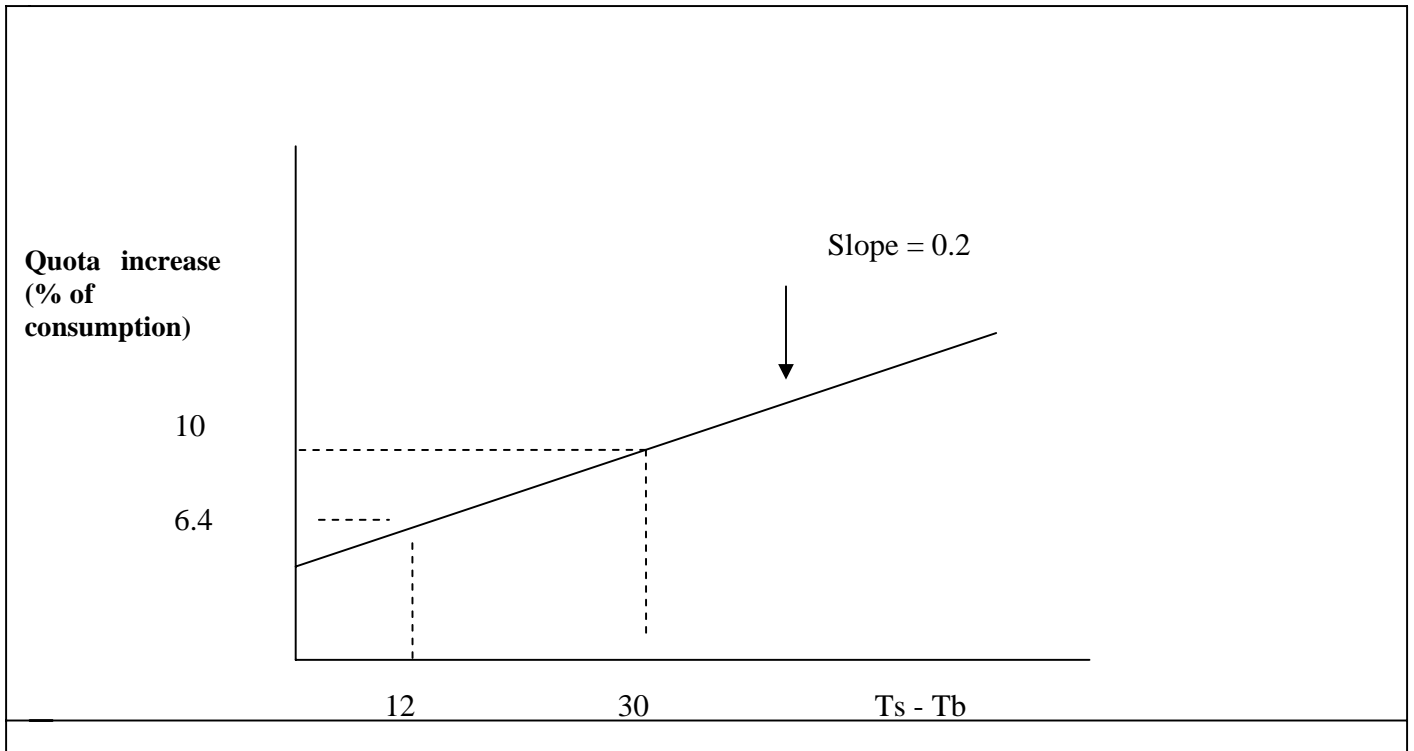


Figure 3 Illustration of the USA Proposal

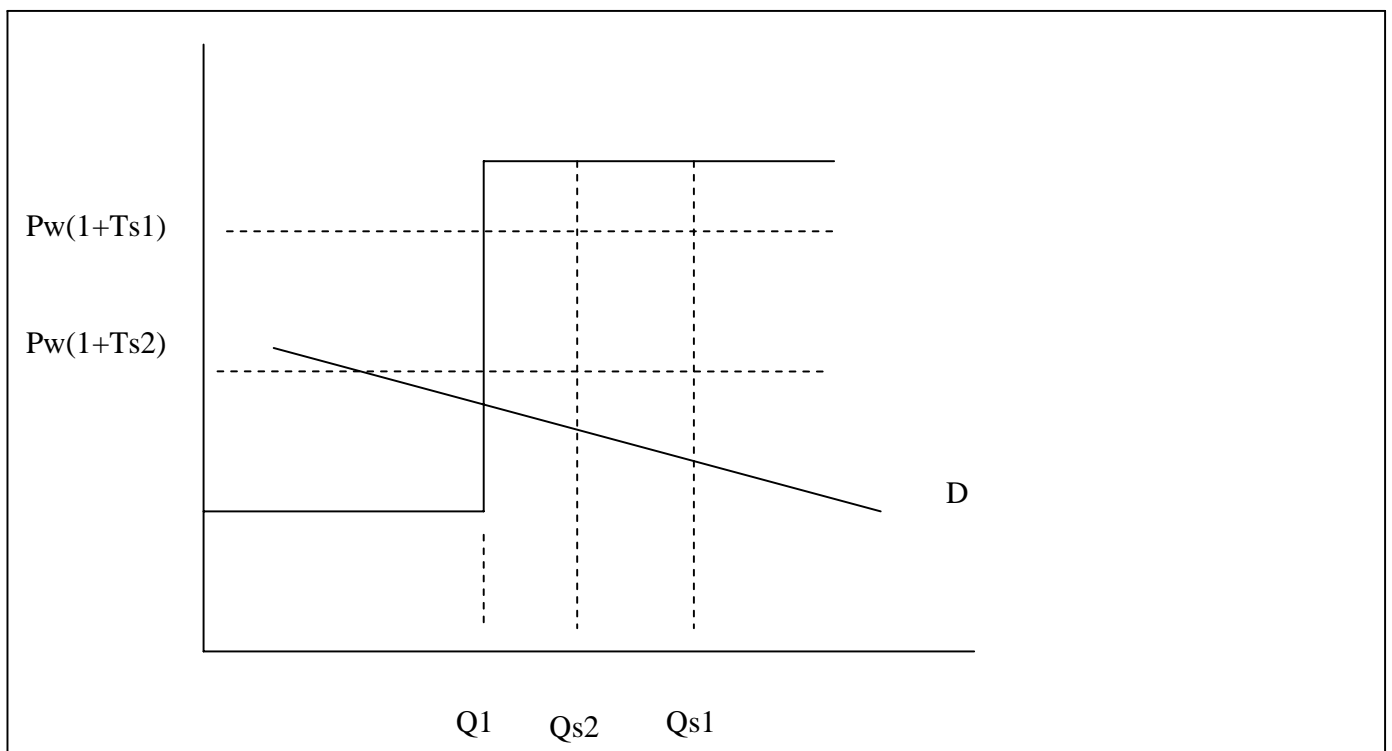


Figure 4 Tariff and Quota Trade-offs in Regime 2

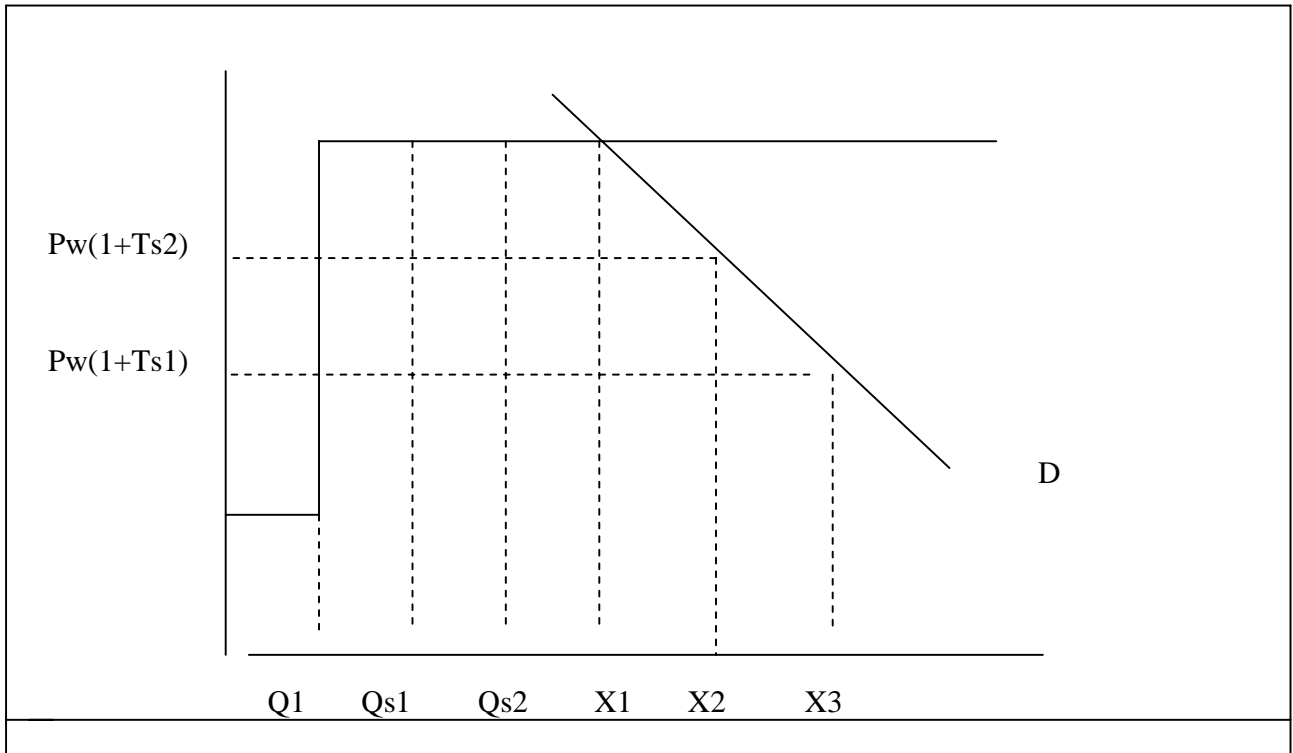


Figure 5 Tariff Reduction and Quota Trade-offs in Regime 3

Appendix Table 1. Details of Selected EU Quotas^a

TQID	Description	Final Quantity (tonnes)	CSTRQ or MFN	New Zealand allocation	Fill Rates (%) ^d		
					2000	2001	2002
EECQ004	HQ Beef ^b	37,800	CSTRQ	0	59	41	68
EECQ005	Beef (frozen)	53,000	CSTRQ	0	100	100	100
EECQ007	Beef (frozen)	50,700	MFN		56	70	100
EECQ051	HQ Beef ^c	11,000			72	92	100
EECQ052	HQ Beef	5,000			99	100	100
EECQ053	HQ Beef	4,000			100	100	100
EECQ054	HQ Beef	300		300	100	72	95
EECQ011	Sheep & goat meat	283,825	CSTRQ	226,700	87	87	74
EECQ012	Butter	76,667	CSTRQ	76,667	100	100	100
EECQ072	Butter	10,000	MFN		92	98	99
EECQ013	Processing cheese	4,500	CSTRQ	4,000	94	94	100
EECQ014	Cheddar	10,250	CSTRQ	7,000	100	100	100
EECQ015	Cheddar	4,000	CSTRQ	0	100	100	100
EECQ073	Emmental	18,400	MFN		12	4	0
EECQ074	Gruyere	5,200	MFN		25	1	14
EECQ075	Cheddar	15,000	MFN		98	99	100
EECQ076	Processing cheese	20,000	MFN		93	47	37
EECQ077	Pizza cheese	5,300	MFN		30	4	31
EECQ078	Other cheeses	19,500	MFN		83	72	100

Note: a. Final quantities do not include any increases granted following EU expansion to 25 members.

b. Detailed product descriptions for the seven beef quotas can be found in the source document. HQ = high-quality.

c. The AMAD database makes no mention of country allocations for the HQ beef quotas 051-054. Nevertheless, the New Zealand industry talks of a 300-tonne quota, which we allocate to EECQ054 above. Commission regulations governing these quotas also make no mention of country allocations, but do set regulations for the allocation of licenses to importers and total import quantities under various product definitions (Commission Regulation (EC) No. 936/97 of 27 May 1997 and subsequent amendments).

d. Fill rates refer to the total quotas in each code, not the individual country quotas where they exist.

Source: WTO (2005c).

Appendix Table 2. Details of Selected USA Quotas

TQID	Description	Final Quantity (tonnes)	CSTRQ or MFN	New Zealand allocation	Fill Rates (%) ^a			
					2000	2001	2002	2003
USAQ001	Beef	696,621	CSTRQ	213,402	83	89	83	84
USAQ004	Butter	6,977	MFN		100	98	98	99
USAQ014	Butter oil substitutes (butterfat>45%)	6,081	MFN		100	96	100	100
USAQ016	NES cheeses & substitutes	48,628	CSTRQ	11,322	90	95	99	95
USAQ017	Blue-mould cheese	2,911	CSTRQ		99	96	97	99
USAQ018	Cheddar	13,256	CSTRQ	8,200	95	95	98	99
USAQ019	American-type cheese	3,523	CSTRQ	2,000	89	93	99	93
USAQ020	Edam & Gouda cheeses	6,816	CSTRQ		98	96	98	95
USAQ021	Italian-type cheeses	13,481	CSTRQ		93	93	99	98
USAQ022	Swiss Gruyere	7,855	CSTRQ		75	85	86	82
USAQ023	Lowfat cheese	5,725	CSTRQ	1,000	48	37	65	56
USAQ024	Swiss/Emmentaler	34,325	CSTRQ		90	88	83	80

a. Fill rates refer to the total quotas in each code, not the individual country quotas where they exist.

Source: WTO (2005c)