Non-tariff measures in goods and services trade

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Contents

SUMMARY

Trends in NTMs—getting harder to see!

- Use of non-tariff measures (NTMs), narrowly defined, should not pose a problem for APEC Economies after the year 2005, once all agricultural and textile and clothing NTMs are eliminated, as per the WTO Agreements.
- However, NTMs, more broadly defined, will continue to be a growing problem for international trade and for APEC.
- The important barriers will become the ones which are the more difficult to define, such as product standards, conformance assessment procedures, SPS measures, customs procedures, differing regulatory structures, rules of origin, and so forth.
- Since it is impossible to quantify all of these, they are much harder to deal with, and progress will be the result of more specific work on various types of instruments: it will require case-by-case studies.
- These results suggest areas for priorities in the APEC work program.

Why principles and best practices can help

- Progress on NTMs will also be assisted by some generally agreed principles and/or observation of best practices.
- These principles could help resolve a major source of controversy and ambiguity in the NTM area, which is the large degree of difference in interpretation over what constitutes a legitimate measure of government policy, and what constitutes a disguised trade restriction or non-tariff barrier. The exercise by governments of the large degree of apparent latitude they have in this area, has repeatedly resulted in disagreements being brought into various dispute resolution fora.

Debate about NTMs

- There is often debate about what is an NTM. The report illustrates this issue by examining anti-dumping. It is noted that the recourse to anti-dumping measures has continued to grow over time, as the availability of tariff protection for domestic industry has fallen. Application of such measures can have protective effects, that is, they can be argued to be forms of non-tariff barriers.
- The APEC region contains three of the largest four traditional users of anti-dumping measures. Such measures have increased both in frequency, as well as in the number of governments using them. Consideration of the purpose of these measures and the application of disciplines on their use is worthwhile.

Similar issues in the food sector, but with variations

- In relation to the food sector, the report finds that the overall pattern of declining NTM use masks continued intensive use of NTMs for some products and in some economies.

- There is also some reason to suspect that the coverage of NTMs in the standard source of data on NTMs, the TRAINS database, is incomplete, at least for food products.
- Attention is drawn in the report to the heavy though selective use in the food sector of tariff quotas, which in many cases has effects similar to those of an ordinary quota. Tariff quotas, however, are not usually included in the lists of NTMs and this coverage issue should be tackled.

Some progress in assessing services NTMs

- The same point about the transition in the composition of significant NTMs applies to a lesser degree to services. However, more and more work is being done to measure the impact of the non-tariff measures which are prevalent in services transactions, so some of their effects are becoming more transparent.
- The greater difficulty in the services area will be the other matters associated with domestic regulation, where the boundary between legitimate intervention and protectionist response is difficult to define.
- As in the case of goods transactions, progress will be the result of more specific work on various types of instruments, case-by-case, or on the basis of some generally agreed principles and/or best practices.

Efficient regulation vs protectionism

- In this context, a discussion in APEC of principles to be applied to trade facilitation is valuable. It will also be valuable, in association with that activity, to work to make operational the some ideas about how to detect the difference between efficient regulation and unreasonable impediments.

FOREWORD

The Trade Policy Forum of the Pacific Economic Cooperation Council (PECC) has been working with the Action Plan Monitoring Committee of the APEC Business Advisory Council (ABAC) on a number of issues associated with the Individual Action Plans of APEC.

At the request of ABAC, with its support, PECC has undertaken a closer examination of the non-tariff measures policy area.

This report summarises work done on this project during 1999 and 2000.

After presentation to the ABAC meeting in Beijing in May 2000, this edition of the report is to be revised again and published by PECC.

The work reported here was led by Dr Sherry Stephenson and Dr Rob Scollay with input on service sector issues from Dr Tony Warren and Professor Christopher Findlay. Stephenson and Scollay had support from Soonhwa Yi. The work was also supported through comments and suggestions by other members of the PECC network, particularly David Parsons who set up the project.

Parts of the work reported here were presented to earlier meetings of ABAC. Comments received from ABAC members and their staff were important in guiding the next steps of the work. The research team thanks, in particular, the Chair of the APMC, Dr Victor Fung, and his co-Chair John MacDonald, as well their staffers Gavin Ure and Paul Irwin, for their interest in and support for this work.

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INTRODUCTION

The Osaka Action Agenda

APEC's Osaka Action Agenda provides the following objectives, guidelines and outline of collective actions to be undertaken in relation to Non-Tariff Measures (NTMs).

Objective

APEC economies will achieve free and open trade in the Asia Pacific region by

- progressively reducing non-tariff measures; and
- ensuring the transparency of APEC economies' respective non-tariff measures

Guidelines

Each APEC economy will

- take into account, in the progressive reduction of non-tariff measures, intra-APEC trade trends, economic interests and sectors or products related to industries in which this process may have positive impact on trade and on economic growth in the Asia-Pacific region;
- ensure that the progressive reduction of non-tariff measures is not undermined by the application of unjustifiable measures; and
- consider extending, on a voluntary basis, to all APEC economies the benefits of reductions and eliminations of non-tariff measures derived from sub-regional arrangements.

Collective actions

APEC economies will

- pursue incorporation of information on non-tariff measures into a future version of the APEC tariff database and compile a list of measures recognised as non-tariff impediments and a list of products affected by these impediments;
- identify industries in which the progressive reduction of non-tariff measures may have positive impact on trade and on economic growth in the Asia-Pacific region or for which there is regional industry support for early liberalization;
- progressively reduce export subsidies with a view to abolishing them; and
- abolish unjustifiable export prohibitions and restrictions and endeavour to refrain from taking any such new measures.

Review of progress

PECC's 1999 Review of APEC's Individual Action Plans (IAPs) included the following conclusion on IAPs.

> The extent and coverage of actions recorded in the IAPs is very modest. The overall impression is of a small number of scattered, isolated actions by individual economies, usually restricted to a limited range of commodities. There may be genuine 'highlights' included among these actions, but no indication of their significance is provided in the IAPs. Overall, the modest

progress recorded in the IAPs contrasts with the widespread perception that non-tariff measures constitute a serious impediment to trade, in the APEC region as elsewhere.

Problems

PECC concluded that action in the area of NTMs is hampered by a lack of an adequate definition of what is covered by the term NTM

> A key problem identified by PECC is the lack of clarity as to exactly what measures are covered in this area of the OAA. The OAA provides an illustrative list of NTMs containing just nine measures, and the IAPs largely confine their attention to these. Business and trade policy analysts however generally think of NTMs as a much larger and also very diverse group of measures. Some important measures usually included in such a group are in fact covered in other areas of the OAA, for example standards and conformance and customs procedures, where APEC is performing creditably. Other measures however are not explicitly mentioned in the OAA and are not addressed in the IAPs.

PECC noted also that a definitions by themselves are of little use without a clear understanding of what action needs to be taken in regard to each trade measure classified as an NTM

> PECC considers that little progress is likely in this area unless each type of NTM to be covered is individually identified along with the appropriate liberalisation measures or facilitation measures applicable in each case – simultaneously giving a more complete definition of the scope of the area and breaking it down into distinct and manageable components for analysis and action. This approach could lead to the creation of new OAA policy areas for each type of NTM, or alternatively to the establishment of sub-headings for each type within the existing area.

There must also be yardsticks against which progress can be measured

> …a successful plan to reduce NTMs also needs to be supported by clear identification of the specific measures in each economy which fall within the definition. Measurement of the extent and impact of NTMs is also desirable, both to allow progress to be assessed and to assist in establishing priorities for early action.

PECC also noted however that the 'difficulties of measuring the impact of NTMs are well-known and are not confined to APEC's OAA and IAPs.'

It is clear from this brief introduction therefore that effective action in the area of NTMs is hampered by a number of fundamental problems

- lack of agreement on which measures are to be targeted
- inadequate data
- lack of clarity on the action to be taken
- lack of agreed standards against which to measure progress

Outline of Study

Accordingly the first part of this report, entitled 'NTM Survey' addresses these fundamental problems under the headings of

- Definition and Classification
- Data Availability

- Measurement Problems
- Policy Conflicts

This is followed by an outline of the information which is available on the extent of the problem posed by NTMs in APEC economies, and some comments on effective courses of action which APEC might follow.

The second part of the report, 'Food Sector Issues', deals with detailed results from a food sector case study.

The third part reports work in progress on the service sector. Services are reported in the APEC IAPs in a separate policy area. However impediments to services trade and investment liberalisation have features in common with NTMs in goods trade, and it is of interest to review the methods being used to measure their effects.

NTM SURVEY

1. Definition and classification

A key problem is that the range of NTMs is potentially infinite, especially if both border measures and internal measures are to be taken into account.. In a classic 1970 study entitled *Nontariff Distortions of International Trade*, Robert Baldwin defined non-tariff measures very broadly in the following manner

> A nontariff trade-distorting policy is *any* measure (public or private) that causes internationally traded goods and services, or resources devoted to the production of these goods and services, to be allocated in such a way as to reduce potential real world income (Baldwin, page 5).

The range of NTMs may continue to expand as governments continue to ingeniously develop new measures to assist domestic producers from foreign competition.

Capturing all of the vast array of non-tariff barriers in a single operational definition is virtually impossible. Even the design of an adequate system for classifying NTMs presents difficulties. In principle all measures other than tariffs that in some form impede trade or raise the cost of trading can be included among non-tariff barriers. Many non-tariff barriers are informal, such as administrative procedures and government regulations and policies that are applied across the board in a discriminatory manner. Other non-tariff barriers can be very specific and apply to particular products or industries, such as import quotas and voluntary export restraints. Still other non-tariff barriers can be very general, and some may encompass trade expanding measures, such as export subsidies. Even exchange-rate, monetary, and fiscal policies may be considered to act as non-tariff barriers when they distort trade. Thus the range of potential non-tariff barriers is very wide – unmanageably so. When dealing with this issue it is therefore necessary to narrow the scope of what is under discussion to realistic proportions.

There have been a number of different classifications of NTMs over the past three decades. One of the earliest is that of Robert Baldwin in his 1970 study, where he sets out twelve different groupings of non-tariff trade restrictions, some of which touch on broad public policy issues. Baldwin's twelve groups are:

- quotas and restrictive state-trading policies
- export subsidies and taxes

- discriminatory government and private procurement policies
- selective indirect taxes
- selective domestic subsidies
- restrictive customs procedures
- antidumping regulations
- restrictive administrative and technical regulations
- restrictive business practices
- controls over foreign investment
- restrictive immigration policies
- selective monetary controls and discriminatory exchange-rate policies

The UN Conference on Trade and Development (UNCTAD) designed a different classification of non-tariff measures during the 1980s. UNCTAD's classification system breaks non-tariff measures down into seven major categories: price control measures; finance control measures; automatic licensing measures; quantity control measures; monopolistic measures; technical measures; and miscellaneous measures. Each of these broad groups are further sub-divided into particular measures, as shown in Table 1. UNCTAD's classification, though broad, omits nearly half of the categories set out initially by Baldwin.

From among the broad list UNCTAD also defines a set of core non-tariff barriers which are thought to be the most common and restrictive measures. These are also those measures for which it is relatively easier to find data. They comprise the majority of measures in categories 1, 2, and 4 in Table 1, as follows

- Quantity control measures (excluding tariff quotas and enterprise-specific restrictions);
- Finance control measures (excluding regulations concerning terms of payment and transfer delays/queueing
- Price control measures.

Another classification of non-tariff barriers was developed by Alan Deardorff and Robert Stern at the University of Michigan.[1] Their typology is set out in Table 2 and includes a large variety of non-tariff barriers classified into five major categories: quantitative restrictions; non-tariff charges and related policies affecting imports; government participation in trade; customs procedures and administrative practices; and technical barriers to trade.

Comparing the Deardorff and Stern and UNCTAD classifications, it is interesting to note that although two or three of the categories have similar labels in the two classifications (for example, quantity control measures and quantitative restrictions, or technical measures and technical barriers to trade), nonetheless the measures that have been included under the same category in each typology are quite different. This underlines the great difficulty, even among the most experienced economists, in deciding how to deal with these measures, and in agreeing on categorization of even fairly obvious non-tariff barriers, such as those quantitative measures that affect the volume of trade.

Deardorff and Stern's typology is quite rationally set out, and has the advantage of isolating all potentially quantifiable (quantitative) measures into one category,

Table 1
UNCTAD Classification System for Non-Tariff Measures
(used in the TRAINS DataBase)

1. Price control measures
    - administrative pricing
    - voluntary export price restraint
    - variable charges
    - antidumping measures
    - countervailing measures
2. Finance control measures
    - advance payment requirements
    - multiple exchange rates
    - restrictive official foreign exchange allocation
    - regulations concerning terms of payment for imports
    - transfer delays
3. Automatic licensing measures
    - automatic licence
    - import monitoring
    - surrender requirement
4. Quantity control measures
    - non-automatic licensing
    - quotas
    - import prohibitions
    - export restraint arrangements
    - enterprise-specific restrictions
5. Monopolistic measures
    - single channel for imports
    - compulsory national services
6. Technical measures
    - technical regulations
    - pre-shipment formalities
    - special customs formalities
    - obligation to return used products
7. Miscellaneous measures for sensitive product categories
    - marketable permits
    - public procurement
    - voluntary instruments
    - product liability
    - subsidies

separating trade remedy actions into another category, and placing most forms of government-initiated measures into still another category. However, the number and type of measures included in these two categories are extremely large, making them unwieldy for the purpose of data collection and analysis. Interestingly, the broad category labeled 'government participation in trade' includes many of the measures identified earlier by Baldwin. However, these measures are of a nature which makes them almost impossible to quantify (see next section).

Even where particular types of measure are found in all three classifications, controversies may still rage over whether they should be included as NTMs at all. For example, all three include anti-dumping duties, and UNCTAD and Deardorff and Stern also include countervailing duties. The inclusion of these trade remedy measures has however been the subject of strong disagreement. Some countries argue that these measures represent legitimate policy tools under multilateral trade rules and should not be counted among the non-tariff category. This is another aspect of the difficulties in defining NTMs for purposes of analysis.

2. Data availability for non-tariff measures

The only source of comparable and fairly comprehensive data on non-tariff barriers at the present time is the UNCTAD Database on Trade Control Measures, maintained on the basis of the classification system of non-tariff measures set out in Table 1 above. The Database in turn is used in the UNCTAD's PC-based information system distributed on CD Rom called TRAINS (Trade Analysis and Information System). The data in the Database are collected for both tariff and non-tariff measures, and cover over 80 countries, including all APEC economies except Papua New Guinea. The UNCTAD has also begun to issue regional versions of the TRAINS, for the Americas, and for Asia. The data series may be compared for a period of nearly two decades (from 1980 to 1997). At present there are no alternatives to the UNCTAD database for comparative and fairly comprehensive information on non-tariff barriers.

Apart from lack of consensus over the measures to be counted as 'core NTMs', the other key drawback with the UNCTAD TRAINS database is the reliance on countries to report their own NTMs. There is no way of ensuring a uniform level of reporting across countries, particularly since the data are not verified, that is, it is not sent back to be examined by the governments involved to confirm its accuracy. There have been suggestions that many of the measures included are out of date, but have not been removed. Moreover, little information is contained in the categories on monopolistic measures, technical regulations, and miscellaneous measures such as public procurement and marketable permits. The data provided is therefore an approximation to the real situation, which makes it difficult to use by researchers and policy makers who may rely upon it for indications of NTM coverage.

Although APEC intends to establish an electronic database on non-tariff barriers, this has not yet been accomplished. Under the Osaka Action Agenda, APEC economies have agreed to 'pursue incorporation of information on non-tariff measures into a future version of the APEC tariff database and compile a list of measures as non-tariff impediments and a list of products affected by these impediments.' This objective was subsequently endorsed in November 1996 by APEC Ministers agreeing to 'an expanded APEC database containing information and data on customs tariffs, trade flows and non-tariff measures by 1998.' This role was given to the CTI Market Access Group.

Table 2
Typology of Non-tariff Barriers by Deardorff and Stern

Quantitative Restrictions and similar Specific Limitations on Imports or Exports

- Import quotas
- Exports limitations
- Licensing
- Voluntary export restraints
- Exchange and other financial controls
- Prohibitions
- Domestic content and mixing requirements
- Discriminatory bilateral agreements
- Countertrade

Non-tariff Charges and related Policies affecting Imports

- Variable levies
- Advance deposit requirement
- Antidumping duties
- Countervailing duties
- Border tax adjustments

Government Participation in Trade; Restrictive Practices; General Policy

- Subsidies and other aids
- Government procurement policies
- State trading, government monopolies, and exclusive franchises
- Government industrial policy and regional development measures
- Government financed research and development; technology policies
- National systems of taxation and social insurance
- Macroeconomic policies
- Competition policies
- Foreign investment policies
- Foreign corruption policies
- Immigration policies

Customs procedures and administrative practices

- Customs valuation procedures
- Customs classification procedures
- Customs clearance procedures

Technical Barriers to Trade

- Health and sanitary regulations and quality standards
- Safety and industrial standards and regulations
- Packaging and labeling regulations, including trademarks
- Advertising and media regulations

Source: Deardorff and Stern (1997), *Measurement of Non-Tariff Barriers,* Paris: OECD

A computerized APEC Tariff database was established in May 1997 which is publicly accessible free-of-charge on the Internet. It contains 1997 tariff information at the national tariff line level (6-digit or more HS classification) for 16 APEC economies, excluding Malaysia and Thailand. Non-tariff data have not yet been placed in this database. APEC economies are required as part of their Collective Action Plans to compile lists of non-tariff barriers, but these lists are of little direct use at this stage to analytical studies like this one.

In the context of a study conducted by the PECC, APEC economies were requested to verify data relevant to their economies from the UNCTAD Database on tariffs and non-tariff barriers, so that the analysis contained in the resulting report would be as accurate as possible. Data on diskettes were distributed by PECC through the APEC Secretariat for the purpose in March 1998. Economies were requested to verify/update such data, including nominating any non-tariff barriers which had been omitted from the database according to UNCTAD's general system of classification. The response rate from APEC economies was slow and incomplete, and the data obtained was inadequate as a basis for confirming or modifying the information in the UNCTAD TRAINS Database for this study, and the information on non-tariff barrier coverage contained in the latest version of the TRAINS is basically that presented here, subject to a few definitional modifications. This response can also be interpreted, however, to mean that APEC members have few objections with the information in the UNCTAD Database.

The statistical division of the WTO set up an Integrated Data Base (IDB) at the end of the Uruguay Round which presently contains information on tariffs and trade flows for nearly half of its members. The WTO also intends to incorporate data on non-tariff barriers into its data base in the future, and such NTMs to be included are: licenses, quotas, prohibitions, and voluntary export restraints, plus information related to customs surcharges, minimum import prices, additional taxes and charges, and approval processes for imports and exports. However, at the present time no such information on non-tariff barriers for WTO is available in the Integrated Data Base. Moreover, WTO members have decided that in the first stage, only data on quantitative import restrictions would be included.

APEC is exploring with the WTO the possibility of APEC establishing a mirror Internet site of the Integrated Data Base. This would complement the existing APEC Tariff Data Base and have the advantage of requiring APEC economies to make only one submission of tariff data to meet both APEC needs and WTO obligations. This would most likely improve the timeliness of tariff data – with WTO members required to submit annual notifications on tariffs to the IDB by 30 March each year – and enable tariffs to be downloaded for all economies in the standard IDB format. The IDB covers in principle all APEC economies, including non-WTO members of APEC undergoing accession to the WTO. With the exception of Indonesia (1996) and New Zealand (1996), other APEC economies had submitted data for 1997, and most for 1998 as well. However, once again, these data cover only tariffs at present.

The OECD has begun to look at non-tariff indicators for its member economies in order to improve its surveillance of structural policies of member countries in the context of its Indicators of Government Assistance project. Summary indicators of tariffs and non-tariff barriers were first published in 1996, and were updated in 1997.[2] The latest indicators are for 1996 and are available for the seven APEC economies

that are also OECD members.[3] Despite the limitations of UNCTAD's database of tariffs and non-tariff barriers, the OECD found the UNCTAD Database to be the most comprehensive data base covering tariffs and non-tariff barriers that is currently available (OECD, 1997) and decided not to duplicate this effort and develop a database of its own. However, it was agreed that OECD members should authenticate and verify the information contained in the UNCTAD Database on tariffs and non-tariff barriers.

For the reporting of non-tariff barriers in member economies, the OECD has also used the same set of core non-tariff measures that the UNCTAD defines.[4] To illustrate the pervasiveness of different types of NTMs in the 'Quad' countries (of which Canada, Japan, and the United States are APEC members) in 1988 and 1993, the OECD report includes two categories from the UNCTAD list: all NTMs (minus technical and miscellaneous measures), and 'hard core' NTMs, which are taken to include price control measures (including variable charges, antidumping/countervailing duties, and voluntary export price restraints, among other), and quantity control measures (basically quantitative restrictions). Thus the UNCTAD is not the only international organization which has published non-tariff data according to this typology. However, once again, the OECD has no database of its own on non-tariff barriers, nor does it intend to develop one.

In the Western Hemisphere the countries engaged in the Free Trade Area of the Americas (FTAA) process, begun in December 1994, have also agreed to construct a comprehensive database on market access barriers for the purpose of their regional trade negotiations. This database is to include information on non-tariff measures, as well as data on tariffs and trade flows. Within the FTAA Market Access Group, it was decided that this information should be submitted by the participating countries, and would be classified by the Inter American Development Bank (IDB) according to the TRAINS typology. Countries agreed to use the TRAINS software developed by UNCTAD for the presentation and classification of the data submitted. They also agreed to submit information by customs tariff line on as disaggregated basis as possible (at least eight digits). Over the past three years of work by the Market Access Group, several countries have submitted detailed information on their non-tariff barriers and a database is in the process of being assembled. However, this database is not yet finalized nor has it been approved. It is therefore not yet publicly available. Progress has been slowed by the technical difficulties of preparing the information submitted for a database format and by the conceptual difficulties of classifying this information according to the TRAINS categories. Therefore the database effort remains largely incomplete at the present time.

3. Measurement of non-tariff barriers

Because of their wide diversity and opaqueness, it is generally very difficult to measure the amount of assistance NTMs provide to domestic producers. This partly reflects conceptual problems as well as data deficiencies. While some non-tariff measures, such as import quotas are relatively easy to handle conceptually and are clearly designed to impede trade so as to assist domestic producers, the effects of other barriers on trade, and hence domestic assistance, are far more uncertain and obscure.

Even if a unique list of non-tariff measures could be agreed, their effects could not all be measured in the same way. It is often a fine line to distinguish between those non-

tariff barriers that do assist domestic industries from those that do not. The restrictiveness of many non-tariff barriers often depends upon the way they are applied in practice. Moreover, their restrictiveness, and hence level of assistance provided to local industries, will vary between and within countries over time depending upon domestic supply and demand conditions. Thus, two identical non-tariff measures could have very different effects on trade and prices in the two markets if market conditions differed substantially.

Measuring the size of the non-tariff barrier is difficult, and no single measure fully captures their impact. This contrasts with a tariff, where a single number X – the tariff rate – tells us all we need to know about the height of the barrier. Since tariffs and non-tariff barriers occur together, it would be highly desirable to have a suitable summary measure of non-tariff measures on a basis directly comparable with the tariff rate. As will be shown below, although measuring such a statistic is conceivably possible, it is extremely difficult and time-consuming in practice. A number of general approaches have been developed for measuring non-tariff measures. Each has its own strengths and weaknesses.

Frequency ratios and import coverage ratios-type measures

These are the most rudimentary means of measuring non-tariff barriers. They measure simply the existence of non-tariff barriers across products. They therefore identify the pervasiveness of non-tariff measures and identify those products where such barriers are most heavily concentrated.

The frequency ratio indicates the proportion (or percentage) of tariff lines that are affected by non-tariff barriers, irrespective of whether the products are actually imported. To calculate the frequency ratio, the number of commodity categories (under the Harmonized System or HS nomenclature) subject to some identifiable NTM are added, and this number is then expressed as a percentage of the total number of product categories in each HS group.

There is also the import coverage ratio which is shown as an alternative indicator to the frequency ratio. It is calculated by determining the value of imports of each commodity subject to NTMs, aggregating by applicable HS commodity group, and expressing the value of imports covered as a percentage of total imports in the HS commodity group. This ratio indicates the share (or percentage) of imports that are subject to non-tariff barriers.

Import coverage ratios are likely to understate the occurrence of highly restrictive non-tariff barriers, such as prohibitions, since the barrier itself will reduce its import weight. Changes over time in import coverage ratios may also give misleading or perverse results. For example, partial relaxation of non-tariff measures will show up as an increase in the import coverage ratio. Thus, import coverage ratios need to be interpreted cautiously.

Neither frequency ratios nor import coverage ratios measures provide information on the economic impact that non-tariff barriers may have on prices, production, consumption and trade. Some non-tariff barriers picked up by these measures may in practice be non-operative and may not affect prices nor distort production and consumption patterns. The simplest example would be an import quota where imports are below the quota level. Moreover, these effects are likely to vary over time, in line

with changing market conditions and other factors, such as exchange rates. Frequency measures will not capture these differences. Moreover, some non-tariff barriers will be economically more distorting than others, and these are not reflected in frequency measures.

Price-based measures-based measures

Since the main dimension by which trade barriers affect economic activity is through their effects on domestic prices, this provides an important basis for quantifying their impact. By changing domestic prices relative to world levels and across different products, trade barriers interfere with market outcomes, and will reduce resource-use efficiency unless the market is behaving non-competitively or externalities exist,. For *ad valorem* tariffs, the extent of the rise in domestic prices above world levels is given by the tariff rate. However, for non-tariff barriers, the price rise is not directly observable and must be estimated. This will depend upon market conditions and many other factors, and will vary substantially over time and between countries.

Operative non-tariff barriers increase prices by reducing imports and creating a shortage of the product. Prices must therefore rise following the imposition of the non-tariff barriers to increase domestic production and to reduce consumption and imports to the quota level. This is how the market clears so that domestic production plus imports equals domestic demand. However, because such price rises are themselves market outcomes, there are no easy or precise ways of measuring them. Hence, non-tariff barriers are far less transparent than tariffs.

There are generally two methods available for quantifying the price-effects of non-tariff barriers. Each has its strengths and weaknesses.

Price comparisons

This involves comparing the observed domestic price of the imported product covered by the non-tariff barrier with its world price. If measured correctly, this price gap or wedge could be used as an approximate measure of the extent to which domestic prices would fall if its trade were liberalized. These have been the basis of much of the empirical work that has been done on quantifying the effects of non-tariff barriers.

Although this technique is very useful, extreme care is needed when making price comparisons. To be reliable, such comparisons must be between the same products. Moreover, prices of domestic and imported goods would need to be compared at the same point in the distribution chain to ensure that other factors such as domestic consumption taxes and transport costs are taken into account. Otherwise, if either of these conditions is not met, measured price differences could be misleading and reflect product and other differences unrelated to the non-tariff barrier itself.

A number of decisions need to be made as to which are the most appropriate prices on which to make the comparison. This will depend upon a number of conceptual factors, such as whether the product is thought to be import-competing or export-competing, and practical considerations, such as the availability of data.[5] The price gap is usually expressed as a tariff equivalent, i.e. the *ad valorem* tariff rate that would raise domestic prices above import parity levels by the same amount. This enables their protective effects to be compared and analyzed in a similar fashion to tariffs using partial and general equilibrium models.

Quota-auction price measures

Where the government auctions import quota entitlements, tender premiums bid by importers provide perhaps the most reliable means of estimating the domestic price effects of quantitative restrictions. Where the market for such entitlements is competitive, importers will bid prices for additional quota equal to the difference between the world and domestic price (the quota rent). At premiums below this gap, importers would be able to earn excess profits that would be expected to be bid away in a competitive auction market.

Thus, the size of these premiums may provide a reliable indication of the price effects of certain types of non-tariff barriers. However, in many economies quotas are allocated not by auction but by past sales performance. Nevertheless, even in these cases, domestic markets often exist in which transfer prices of entitlements may, if available, provide reliable indications of the price effects.

Auctioning import quota entitlements not only increases the transparency of the non-tariff barrier, but is also itself the most efficient means of allocating the quota. In a competitive market, those who value the quota most and are prepared to pay the highest bid will be the most efficient users. This approach allows for possible new entrants to the market, and does not advantage incumbent firms holding the quota. Indeed, under these conditions, a quota comes closest to replicating a tariff set at the tender premium rate, since it not only raises domestic prices by this amount, but also shifts the quota rents as revenue to the government. Thus, the method of administering the quota has a substantial bearing on its efficiency implications.

Quantity-impact measures

Instead of measuring price effects, the quantity-effects of non-tariff barriers could be estimated. These would directly measure the impact of the non-tariff barrier on trade. However, large measurement difficulties are also associated with these attempts. At the very least, they require a robust model for attempting to measure what the volume of trade would be without the non-tariff barrier. Most such measures to date normally use a gravity-type model to predict what trade flows would have been without the non-tariff barrier, and use statistical techniques to attribute the difference to the effects of the non-tariff barrier. However, the accuracy of such models to explain trade remains dubious, and it is highly likely that such methods of measuring non-tariff barriers will be open to criticism.

The case of services

Non-tariff barriers have traditionally been analyzed with respect to goods only, omitting consideration of services. Services trade is typically treated as separate from goods trade in trade agreements, for example the WTO Agreement and many regional agreements. For purposes of analysis and measurement of NTMs however, the omission of services trade is a major gap, since *all* barriers to trade in services present themselves in the form of NTMs. Barriers to trade in services are not found at the border, but present themselves in the form of laws and regulations that discriminate as between national and foreign service suppliers.

The main types of NTMs applied to services transactions are in the form of quantitative restrictions of some form or another. Usually these quantitative restrictions are of a

discriminatory nature, though they may be non-discriminatory as well, such as an overall limitation on the number of banks that may be licensed to operate within a given national market.

Since services are vital inputs to the production of goods, as well as being sold themselves, it is important to overcome the inadequacy in economic analysis that has up until now almost completely ignored the link between goods and services. In today's trading world, trade disputes that nominally involve goods, may in fact involve restrictions on underlying services allowing for the production or distribution of these goods to be carried out in competitive conditions. Given this increasingly strong linkage, it is inappropriate and economically unjustified to focus NTM analysis on the goods sector alone. Measurement of the impact of NTMs in sectors like financial services and telecommunications will become increasingly important. In the final part of this report we review work in progress on the assessment of impediments to services trade and investment.

4. Possible guidelines for measuring non-tariff barriers

While frequency-type measures such as those provided in this study and taken from UNCTAD's TRAINS database help identify the existence of non-tariff measures, they provide no information on which analysis of their economic effects can proceed. Thus, although an important first step, they fall well short of meeting the transparency needed to analyse non-tariff barriers. The mere existence of a non-tariff barrier says nothing about its degree of trade restrictiveness nor its impact on prices, production and consumption decisions. Thus frequency-type measures can provide a misleading impression of the distorting effects of non-tariff barriers, particularly as they appear not to be well correlated with estimated tariff equivalents of non-tariff barriers.

Because of their diversity, there is no single method available that would satisfactorily measure all non-tariff barriers. Quantifying the price effects of non-tariff barriers, preferably using information from market outcomes (such as transfer prices of import quota entitlements) but also using price comparisons where this information does not exist, offer the preferred means of improving the transparency of non-tariff barriers and measuring their magnitude. The most useful way in which NTMs can be further analyzed across industries and economies is through attempting to estimate a set of tariff-equivalent measures of protection derived from the most detailed industry-specific information that can be obtained. The measurement technique used, however, should be appropriate to the type of NTM under consideration and its method of administration. The most successful methodologies for estimating NTMs have involved some sort of price comparison to infer the tariff equivalent of the NTM.

However, there are many known non-tariff barriers for which high-quality measures are simply not available. The difficulty of obtaining reliable data and calculating most NTMs means that in most instances estimates of their economic effects can only be obtained for single products in single markets, making comparison across economies problematic. Aggregate, economy-wide estimates of the incidence of all NTMs and their effects are for all purposes impossible to obtain.

Some guiding principles and recommended procedures for measuring NTMs have been put forward by Deardorff and Stern and are useful this context. They are the following

- Measures of NTMs should be constructed to reflect equivalence to tariffs in terms of their effects on the domestic prices of the traded goods.
- Only direct effects on domestic prices should be used to define tariff equivalence.
- There is no single method that can be relied upon to measure the sizes of NTMs that may be present in all sectors of the economy.
- There is no substitute for NTM-specific expertise.
- Greatest reliance should be placed, where possible, on measures that derive their information from market outcomes in preference to measures that seek to construct estimates of market outcomes from quantitative data.
- There are many NTMs in practice for which high-quality measures are simply not available.
- Given the uncertainty that surrounds the measurement of NTMs, it would be best to construct approximate confidence intervals – upper and lower bounds that can be assumed to include the size of the NTM being measured.
- Estimates of NTMs should be done at the most disaggregated levels possible

5. Policy conflicts

A major source of controversy and ambiguity in the NTM area is the large degree of difference in interpretation over what constitutes a legitimate measure of government policy, and what constitutes a disguised trade restriction or non-tariff barriers. The exercise by governments of the large degree of apparent latitude they have in this area, has repeatedly resulted in disagreements being brought into various dispute resolution fora.

Many potential non-tariff measures are in fact legitimate trade policy instruments. This is the case of standards and technical regulations, whose purpose is to ensure the protection of consumer health and safety. Environmental standards are other examples of legitimate government policies that may have a secondary effect on international trade. Rules of origin, pre-shipment inspection, anti-dumping procedures, certain subsidy practices, and customs evaluation procedures are all examples of government policies subject whose use is legitimised by multilateral trading rules. However, when these measures are applied with the intention to restrict or impede trade unnecessarily in order to protect domestic producers, they then pass into the category of non-tariff barriers. It is for this reason that it is difficult to include them accurately in an NTM data base. In theory it is only when a dispute resolution panel has confirmed that such a contested measure acts to restrict trade that it should be included as a non-tariff barrier. To that point, it remains a legitimate – although possibly disputed – trade policy, and its inclusion in an NTM data base would please one party but annoy the other. For example, the classification as NTMs of many of the automatic licensing measures found in the UNCTAD Database is contested by governments who claim they use these measures only for statistical purposes only and not to restrict trade.

One of the most controversial potential non-tariff barriers is that of mandatory standards, or technical regulations. These are economically important, as they affect a large volume of traded products, and they are growing in importance, along with the conformity assessment procedures required to verify that products do in fact conform to given technical regulations. The WTO Agreement on Technical Barriers to

Trade allows members to adopt whatever standards or technical regulations they feel appropriate, and to require proof of conformity to such technical regulations as long as these measures do not 'create undue restrictions to trade.' As different countries have different levels of awareness over the necessity for such protection, the degree of strictness as between national standards can vary considerably, giving rise to difficulties in supplying foreign markets. In addition, the necessity of carrying out duplicate testing to meet conformity assessment requirements in various national markets may also be perceived by business as a non-tariff barrier to trade because it raises costs of production. The greater the divergence in the degree of strictness of technical regulations and conformity assessment requirements between countries, the greater will be the potential for trade to be restrained.

Such technical regulations affect most often, but not exclusively, food and agricultural products due to their importance for consumer health and safety. An examination of the sources of the trade conflicts that have been brought to the WTO since January 1995 shows that over one-fourth of these disputes cite technical regulations or sanitary and phytosanitary measures as one or the principal problem. Differing governmental interpretations over the need for strict sanitary and phytosanitary measures have also created conflicts among APEC member economies.

Trade rules versus economic rationality

A conflict between trade rules and economic logic lies behind some controversies over which measures should be classified as trade barriers. These include in particular those instruments of trade policy which are sanctioned by GATT/WTO, but which are most often designed and used to protect domestic industry, namely anti-dumping measures, and rules of origin.

Anti-dumping investigations, in particular, often have the stated objective of protecting consumers from unfair trading practices of third-country producers in the form of dumping or unfair price competition. However, economic logic is against such arguments. Consumers are great beneficiaries of dumping practices, and the only case in which it has been shown by economists that dumping harms the importing economy is when it is of a predatory nature and takes place over an extended period of time. This latter situation is extremely rare, which means that for all practical purposes, anti-dumping actions are carried out with a view to protecting domestic industry. They are particularly attractive to governments, as they are very non-transparent, can be tailored on a firm-specific level, and can be maintained almost indefinitely, thus permanently changing the terms of trade for a given product. Moreover, such procedures are very costly and the cost of participating in an investigation is often a large enough incentive to convince foreign firms to withdraw from the market or propose price undertakings.

The recourse to anti-dumping measures has continued to grow over time, as the availability of tariff protection for domestic industry has fallen. Thus such measures are often considered disguised protection, or forms of non-tariff barriers. The investigations themselves can prove to be deterrents to trade. Even when final dumping duties are not applied, the uncertainty of the final outcome several months down the road, or the application of temporary dumping duties, can convince importers to switch to other suppliers. The APEC region contains three of the largest four traditional users of anti-dumping measures. Such measures have increased both in frequency, as well as in the number of governments using them.

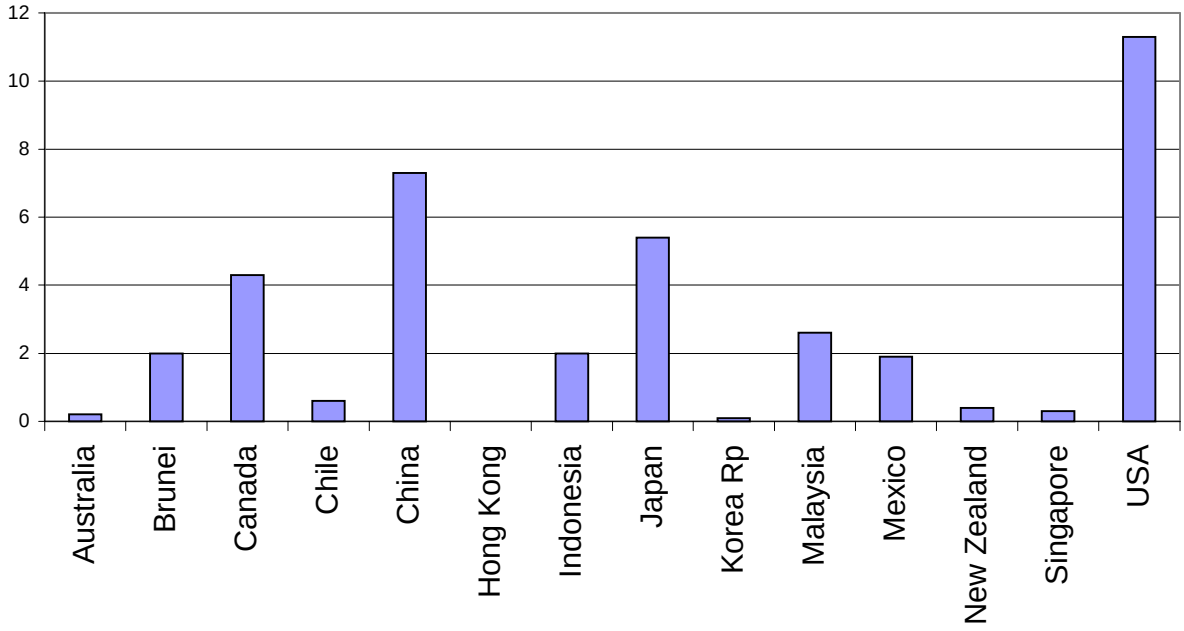
RELIANCE ON NON-TARIFF MEASURES BY APEC ECONOMIES

This section will report on the usage and reliance on NTMs by APEC member economies, and review how this changed between 1993 and 1996, using the 1997 update of the UNCTAD TRAINS Database, by APEC economy and major product category. It will also project the change in NTM coverage as of 2005, once the quotas now in place under the Multifibre Agreement will have been removed according to the obligations decided in the Uruguay Round. Remaining areas of concern after this point in time will be discussed.

Overview of NTM use in 1996: 'selected core NTMs'

The recourse to NTMs by APEC economies, as measured by the frequency ratio, is set out in Chart 1. The definition of 'Selected Core NTMs' used in this chart involves a modification of the UNCTAD definition of 'Core NTMs'. The modified definition includes all finance control and quantity control measures from the UNCTAD definition, but excludes the controversial antidumping and countervailing duties from among the price control measures. Thus for each APEC economy in the UNCTAD 1997 Database, those HS categories on which only antidumping and countervailing duties are found, have been excluded from the NTM aggregates, and percentages for the frequency ratios calculated on this basis.

Chart 1
Frequency ratio of selected core NTBs in APEC, 1996
(all sectors)



Note 1: Selected Core NTBs in this chart include quantity control measures and price control measures. They exclude finance control measures, notably antidumpimg and countervailing measures.
Note 2: Figures calculated are based on Harmonized System Code.
Source: UNCTAD TRAINS Data Base, 1997.

Chart 1 shows the extent of NTM use in 14 APEC economies as of 1996. After antidumping and countervailing measures are removed, significant reliance on NTMs as shown through frequency ratios higher than 4 percent is evident for only four APEC economies – Canada, the People's Republic of China, Japan, and the United States. Four APEC economies show frequency ratios for NTM use of around 2 percent – Brunei Darussalam, Indonesia, Malaysia, and Mexico. For six APEC economies this ratio is either zero (showing an absence of the 'selected core NTMs' for these economies) or less than one percent – the case for Australia, Chile, Hong Kong China, Republic of Korea, New Zealand, and Singapore. No data are available for the Philippines or Chinese Taipei, and no recent data for Thailand. This means, however, that for nearly half of the APEC members (nine economies), overall use of non-tariff barriers other than antidumping and countervailing measures appears to have been relatively low in 1996.

Earlier studies carried out by the PECC have shown a consistent decline in the use of non-tariff measures by APEC member economies, over the period 1985-1993, due partly to agreed Uruguay Round liberalization, but primarily to initiatives for unilateral trade liberalization, also carried forward through APEC. The updated information on NTM incidence for 1996 contained in Table 3 supports this overall continued downward trend in measured NTM use on the part of most APEC economies, though of course, nothing can be inferred from this trend about the economic cost of those NTMs still in place. As in all cases where collection of data by third sources are imperfect, these results may also reflect a situation in which data included in the UNCTAD Database is not complete, an additional reason for pushing forward with the task of verification.

NTM use by product: 'core NTMs'

The study *Milestones in APEC Liberalisation: A Map of Market Opening Measures by APEC Economies* carried out by the PECC for APEC in 1995 showed the change in NTM coverage by product, using the frequency ratio measurement, between 1984 and 1993 (information set out in tables C.4, C.5, and C.7). That information is here updated through 1996.

Table 3 sets out the change in coverage of 'Core NTMs' by APEC economies for three product categories: all products; primary products; and manufactured products, where this information is available, for the years 1988-90, 1993, and 1996. In contrast to the measure used for Chart 1, the measure used for Tables 3 and 4 (as well as for Charts 2, 3, and 4) is the UNCTAD definition of 'Core NTMs', including the antidumping and countervailing measures that were excluded from the measure used in Chart 1. The reason for this is that excluding the latter measure from the UNCTAD database is prohibitively time-consuming to use as a regular procedure. The frequency ratios in Table 3 are shown on both an unweighted and an import-weighted basis.

It is striking to note the continuous decline in the coverage of non-tariff barriers over the nearly ten-year period from 1988-1996. In many of the APEC economies included, reliance on quantitative NTM-type measures has been considerably reduced, and for some economies this change has been remarkable (for example, Australia, Chile, Republic of Korea, New Zealand). NTM use has continued to decline during the more recent period between 1993 and 1996, showing an increase for only two APEC economies (People's Republic of China and Mexico), and remaining relatively constant or decreasing for all the others. Unfortunately, again data were not available for the Chinese Taipei, the Philippines, or Thailand.

Table 3
Change in Coverage of Core NTMs in APEC Economies

		All Products		Primary Products		Manufactured Products	
		Unweighted	Import weighted	Unweighted	Import--weighted	Unweighted	Import--weighted
	88-90						
Australia	1993	0.0	0.0	0.0	0.0	0.0	0.0
	1996	0.7	1.26	2	2.2	0.3	0.6
	88-90						
Brunei	1993	-	-	-	-	-	-
Darussalam	1996	2.0	-	4.3	0	1.3	0.13
	88-90						
Canada	1993	9.0	44.1	0.7	2.0	11.5	64.4
	1996	8.5	40.80	0.7	2.03	10.8	58.32
	88-90	10.6	20.7	7.9	48.9	11.8	6.4
Chile	1993	0.1	0.0	0.4	0.1	0.0	0.0
	1996	0.6	0.24	2.4	0.96	0.1	0.05
	88-90	23.2	42.6	27.2	58.9	21.9	34.4
China, P.R.	1993	5.3	21.2	4.9	12.7	5.4	24.3
	1996	7.3	28.47	6.2	19.22	7.7	31.57
	88-90	0.5	0.9	0.8	1.9	0.3	0.3
Hong Kong	1993	0.0	0.0	0.0	0.0	0.0	0.0
	1996	-	-	0	0	0	0
	88-90	9.4	12.1	15.7	14.9	7.0	10.8
Indonesia	1993	1.7	1.9	1.9	2.1	1.6	1.8
	1996	1.9	2.28	5.8	7.54	0.9	0.99
	88-90						
Japan	1993	5.8	56.3	4.7	92.1	6.1	39.7
	1996	5.4	54.54	4.6	80.96	5.6	43.68
	88-90	2.6	3.0	9.0	8.6	0.2	0.2
Korea, Rep	1993	2.0	7.2	7.6	36.5	0.3	1.0
	1996	0.1	0.42	0.1	0.52	0.1	0.37
	88-90	2.8	6.0	1.6	1.6	3.0	8.0
Malaysia	1993	2.8	5.9	3.1	3.1	2.2	5.3
	1996	2.6	5.20	2.9	2.9	21.6	43.2
	88-90	3.9	19.0	8.5	43.6	1.8	6.5
Mexico	1993	2.7	6.8	7.9	12.6	1.1	3.1
	1996	17.9	32.22	4.7	4.7	2.1	4.62
	88-90						
N. Zealand	1993	0.4	0.2	0.4	0.1	0.5	0.3
	1996	0.4	0.16	0.3	0.09	0.4	0.2
	88-90	1.0	1.3	3.0	3.3	0.2	0.2
Singapore	1993	0.3	1.1	0.8	2.0	0.2	0.8
	1996	0.3	1.20	0.8	2.24	0.2	0.88
	88-90	8.5	6.5	7.9	12.1	8.8	3.7
Thailand	1993	0.0	0.0	0.0	0.0	0.0	0.0
	1996	-	-	0	0	0	0
	88-90						
U.S.A	1993	21.7	499.1	6.1	108.6	26.5	659.9
	1996	18.0	423.00	3.7	67.71	22.2	561.66

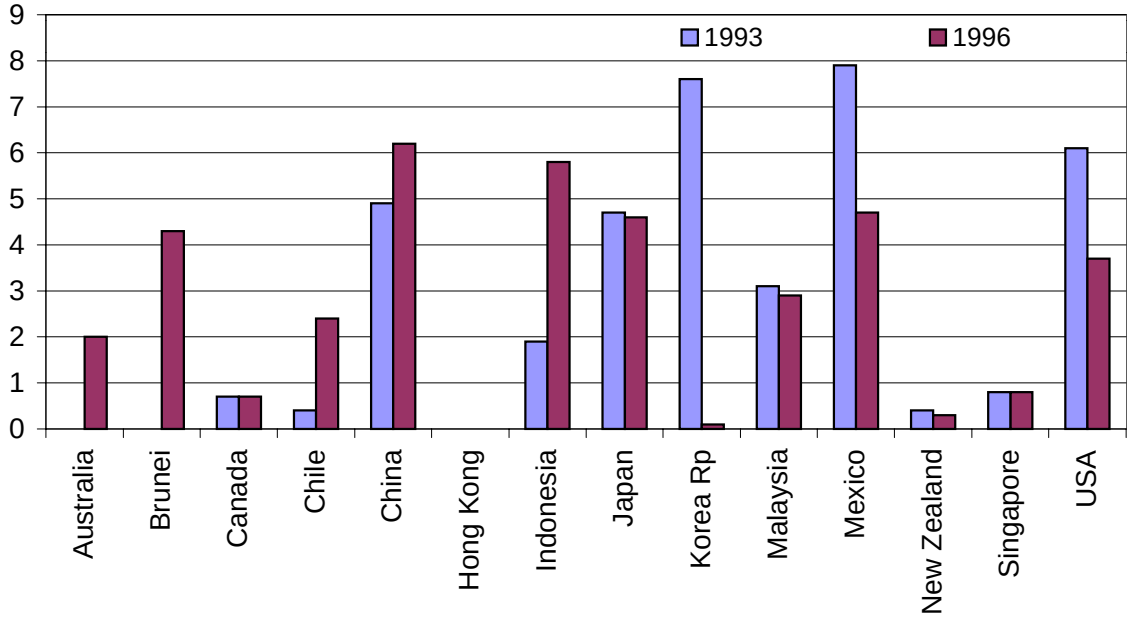
Note 1: Core Non Tariff Measures include quantity control measures, finance control measures, and price control measures.
Note 2: Figures calculated are based on Standard International Trade Classification (SITC).
Source: UNCTAD TRAINS Database, 1995 and 1997.

It is also striking to remark the differences between the NTM coverage ratios set out in Chart 1 (based on the more restricted 'Selected Core NTMs' measure eliminating antidumping and countervailing measures) and the overall figures shown in Table 3 (based on the broader measurement of 'Core NTMs' encompassing the latter measures). The difference in this coverage is particularly noticeable for Canada, Mexico, and the United States, and can be attributed primarily to the recording in the UNCTAD Database of antidumping and countervailing actions for a large number of tariff lines for these three APEC members. When the antidumping and countervailing measures are removed, the NTM frequency ratios for these three economies fall to nearly half or less than half of those derived from the broader UNCTAD measurement.[6]

Chart 2 shows this evolution in NTM use as between 1993 and 1996 for primary products, while Chart 3 does likewise for manufactured products. For a select number of economies (Australia, Brunei Darussalam, Chile, the People's Republic of China, and Indonesia), reliance on core NTMs for primary products is shown to have increased over this period. In most cases this may reflect an increase in the number of anti-dumping duties applied to agricultural and food products. Likewise, for a few APEC economies (Brunei Darussalam, People's Republic of China, Malaysia, and Mexico), reliance on core NTMs for manufactured products also shows a slight increase, most likely due to the imposition of the same types of measures. This result merits a detailed verification of the data contained in the UNCTAD TRAINS Database by the APEC member economies, on a product-by-product basis.

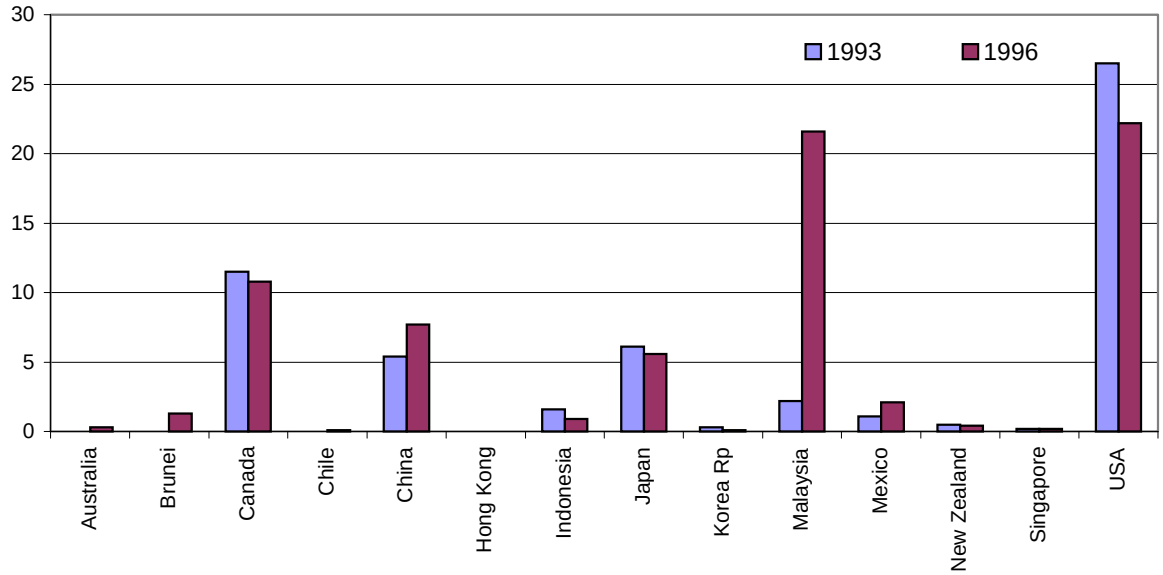
Table 4 examines the change in NTM coverage for APEC economies between 1993 and 1996 for more disaggregated product categories within the primary and

Chart 2
Change in coverage of core NTMs in APEC
(unweighted primary products)



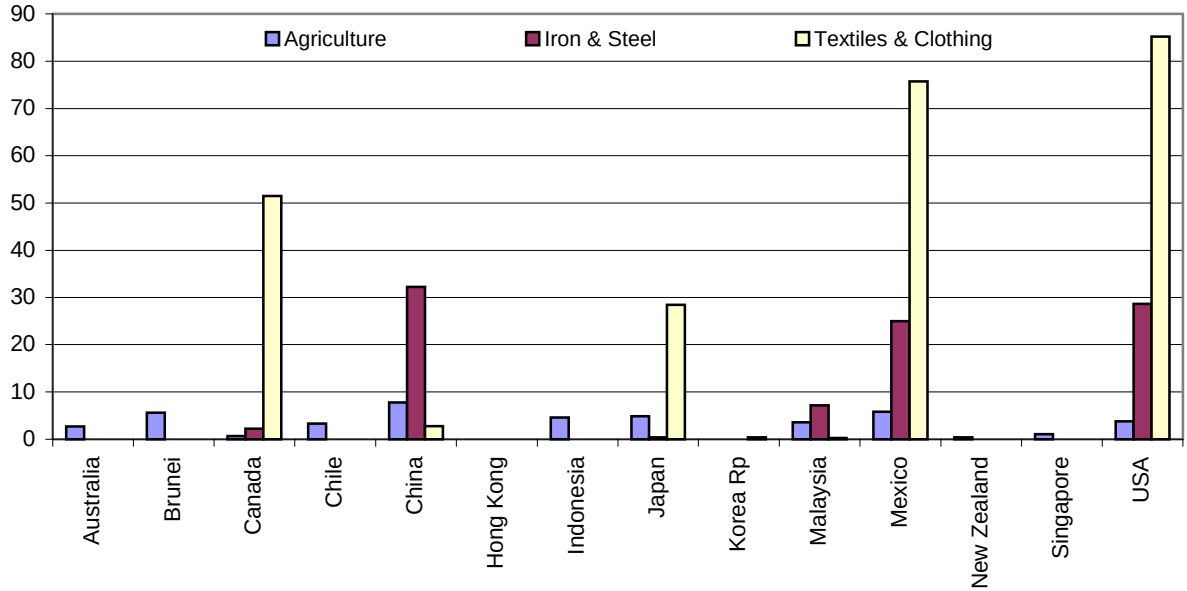
Note: Core NTMs in this chart include quantity control measures, finance control measures and price control measures.
Source: UNCTAD TRAINS Data Base, 1997.

Chart 3
Change in coverage of core NTMs in APEC
(unweighted manufactured products)



Note: Core NTMs in this chart include quantity control measures, finance control measures and price control measures.
Source: UNCTAD TRAINS Data Base, 1997.

Chart 4
Products with high NTMs coverage



Note: Core NTMs in this chart include quantity control measures, finance control measures and price control measures.
Source: UNCTAD TRAINS Database, 1997.

Table 4
Change in NTM coverage by product in APEC

	Australia		Brunei Darussalam		Canada		Chile		China		Hong Kong	
	1994	1996	1993	1996	1993	1996	1993	1996	1993	1996	1993	1996
Primary Products	0	2		4.3	0.7	0.7	0.4	2.4	4.9	6.2	0	0
Agricultural Products	0	2.7		5.6	0.8	0.7	0.5	3.3	6.7	7.8	0	0
Mining Products	0	0		0.5	0.7	0.7	0	0	0	1.6	0	0
Manufactured Products	0	0.3		1.3	11.5	10.8	0	0.1	5.4	7.7	0	0
Iron and Steel	0	0		0	3.2	2.2	0	0	29.5	32.2	0	0
Chemicals	0	1		2.1	0.1	0.1	0	0	1.3	4	0	0
Other semi-manufactures	0	0.2		3.4	0.3	0.3	0	0	1.6	1.3	0	0
Machinery and transport equipment	0	0.4		1.5	2	1.8	0	0	7.7	13.5	0	0
Textiles and clothing	0	0		0	52.6	51.5	0	0	3.5	2.8	0	0
Other consumer goods	0	0.3		0	1.9	1.7	0	0.4	4.8	5.4	0	0
Other products	0	0		0	0	0	0	0	0	0	0	0
All Products	0	0.7		2	9	8.5	0.1	0.6	5.3	7.3	0	0

	Indonesia		Japan		Korea		Malaysia		Mexico		New Zealand	
	1993	1996	1993	1996	1993	1996	1993	1996	1993	1996	1993	1996
Primary Product	1.9	5.8	4.7	4.6	7.6	0.1	3.1	2.9	7.9	4.7	0.4	0.3
Agricultural Products	2.4	4.6	5.2	4.9	10.1	0	3.9	3.6	9.7	5.8	0.5	0.4
Mining Products	0.6	9.3	3.4	3.4	0.5	0.5	1	1	2.7	1.7	0	0
Manufactured Products	1.6	0.9	6.1	5.6	0.3	0.1	2.2	2.1	1.1	21.6	0.5	0.4
Iron and Steel	13.2	0	0.4	0.4	0	0	10.9	7.2	0	25	0	0
Chemicals	0.6	0.6	1	0.7	1.1	0.1	1.8	0.8	1.2	1.5	0.1	0
Other semi-manufactures	0.9	1.1	0.7	0.2	0.2	0.2	1	0.9	1.6	7.5	0.3	0.2
Machinery and transport equipment	2.2	2.5	0.1	0.1	0	0	3.3	4.5	2.3	6	0.3	0.3
Textiles and clothing	0	0	28.3	28.4	0.4	0.4	0.1	0.3	0.4	75.7	0	0
Other consumer goods	0.2	0.2	0.7	0	0	0	1.8	1.5	0.1	15.1	2.4	2.3
Other products	0	4.2	0	0	0	0	68.8	66.7	2.1	44.8	0	0
All Products	1.7	1.9	5.8	5.4	2	0.1	2.8	2.6	2.7	17.9	0.4	0.4

	Philippines		Singapore		Chinese Taipei		Thailand		USA	
	1993	1996	1993	1996	1993	1996	1993	1996	1993	1996
Primary Products	0	0	0.8	0.8	0	0	0	0	6.1	3.7
Agricultural Products	0	0	1.1	1.1	0	0	0	0	6.6	3.8
Mining Products	0	0	0	0	0	0	0	0	4.8	3.1
Manufactured Products	0	0	0.2	0.2	0	0	0	0	26.5	22.2
Iron and Steel	0	0	0	0	0	0	0	0	88.5	28.6
Chemicals	0	0	0	0	0	0	0	0	3.5	3
Other semi-manufactures	0	0	0	0	0	0	0	0	8.4	6.2
Machinery and transport equipment	0	0	0.7	0.6	0	0	0	0	9.2	7.3
Textiles and clothing	0	0	0	0	0	0	0	0	81.5	85.2
Other consumer goods	0	0	0.1	0.1	0	0	0	0	5.5	4
Other products	0	0	0	0	0	0	0	0	0	0
All Products	0	0	0.3	0.3	0	0	0	0	21.7	18

Note 1: Core NTMs in this table include quantity control measures, finance measures and price control measures.
Note 2: Figures calculated are based on the Standard International Trade Classification (SITC).
Source: UNCTAD TRAINS Database, 1995 and 1997.

manufactured categories, again using the UNCTAD's definition of the 'Core NTM' categories of measures. While for certain APEC economies a relatively higher proportion of NTMs are found on agricultural products (the case for Australia, Brunei Darussalam, Chile and Indonesia), for others the higher NTM use is directed towards manufactured products (Canada, Mexico, and the United States, in particular).

According to the information contained in Table 4, the product categories showing the highest incidence of NTM use (exceeding 10 percent in 1996) are the following, in order of magnitude

- textiles and clothing (Canada, Japan, Mexico, United States)
- iron and steel (P.R. of China, Mexico, United States)
- machinery and transport equipment (P.R. of China)
- other consumer goods (Mexico)
- other products (Malaysia, Mexico)

Chart 4 illustrates the NTM coverage in each included APEC economy of the three product sectors subject to the largest number of NTMs in 1996. These sectors are: textiles and clothing, iron and steel, and agricultural products. Thus the NTM problem, in its more traditional forms, is largely concentrated on these three product sectors, which are – not coincidentally – those sectors most sensitive in the domestic economies to trade reform and liberalization.

Projection of NTM use into the future

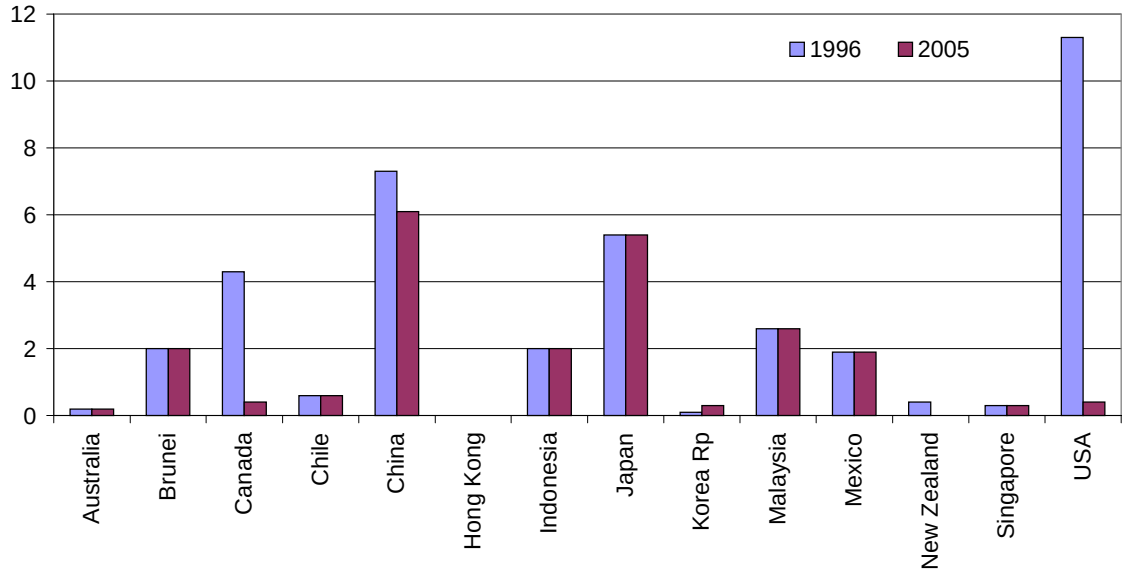
How might NTM incidence appear in APEC economies in the future if one of the major problem areas in NTM use, namely the existing quotas on textiles and clothing under the Multifibre Arrangement, were to be removed? To answer this hypothetical question, in constructing Chart 5 the quotas presently in place under the MFA, which are scheduled to be phased out by the year 2005 as per the commitment contained in the WTO Agreement on Textiles and Clothing, were removed from the selected 'Core NTM' categories used to compile Chart 1. The three types of MFA measures removed from the frequency index measurement were the following: MFA export restraints; MFA quota agreements; and MFA consultation agreements.

Removing these MFA restraints is shown to considerably lower the NTM frequency ratios for Canada and the United States (the two APEC members applying MFA quotas), bringing these down to less than 1 percent in both cases, as shown in Chart 5. Such a radical change in NTM incidence as between 1996 and that projected for 2005 for these two APEC economies underlines the importance of fully implementing the provisions contained in the WTO Agreement on Textiles and Clothing.

With the complete removal of the NTMs on textiles and clothing as projected, overall NTM coverage would continue to be of significance after 2005 for only a small number of APEC economies. In fact, under this scenario, fully 10 of the 14 APEC economies for which data are available would have NTM coverage ratios (for quantitative-type restrictions) of less than 1 percent at that point in the future.

It is likely that several more of the existing NTMs would be lifted as a result of Uruguay Round implementation, or as a result of accession to the WTO (in the case of the People's Republic of China). This is notably the case with the variable charges on

Chart 5
Change in Coverage of Core NTMs in APEC
2005: estimation after removal of MFA quotas



Note: Core NTMs in this chart include quantity control measures, finance control measures and price control measures.
Source: UNCTAD TRAINS Database, 1997.

agricultural and food imports (present in the data for Japan) which were to have been converted into tariff equivalents in the agricultural sector. Some of these types of measures may still be present in the UNCTAD Database, but may no longer be used by APEC member governments. Such a possibility again underlines the importance of the verification exercise. Detailed examination of the measures in the UNCTAD Database would yield information on the types of measures still being applied under the category of 'Core NTMs.' However, such an exercise would be most useful after verification of the data has been completed.[7]

With respect to areas of concern for future NTM use, it would seem that once Uruguay Round implementation is completed, the primary non-tariff measures affecting trade flows within APEC may lie outside of the traditional non-tariff gambit of quantitative restraints and price control measures. These would encompass non-tariff measures which are not of the border type, do not necessarily impose volume restraints on trade, and cannot be easily quantified, such as NTMs in the important areas of government procurement, customs and administrative procedures, and standards, technical regulations and conformity assessment procedures. These types of measures are quite inadequately covered in the UNCTAD Database at present, and it would be difficult to obtain agreement as to how best to incorporate them. However, if the trend towards a decline in the recourse to more traditional NTMs continues into the future, attention to the non-tariff problem will most likely be directed to these types of measures which are less transparent and more difficult to assess, but which are equally, if not more, pernicious to international trade.

FOOD SECTOR ISSUES

The research reported in this part of the study explores the problems of NTMs in the food sector from several different angles.

First the frequency count approach used in the first part of the study is applied to each of the 24 chapters in the Harmonised System of tariff clarification covering food products (Chapters 1-24). This shows that the overall pattern of declining NTM use masks continued intensive use of NTMs for some products and in some economies.

Second, the results derived from TRAINS database are compared with results from experiments with an alternative methodology. This shows that there is some reason to suspect that the coverage of NTMs in the TRAINS database is somewhat incomplete, at least for food products.

Third, attention is drawn to the heavy though selective use in the food sector of a protective instrument which is not included in any of the three NTM classifications described in the first part, but which in many cases has effects similar to those of a quota – the tariff quota.

Fourth, attention is drawn to the Producer Subsidy Equivalent and Consumer Subsidy Equivalent measures which have been developed for the agricultural sector by the OECD.

1. NTM frequency in the food sector

A frequency count of NTMs, of the kind outlined in the first part of the paper, was performed for each of HS Chapters 1-24, for each economy. The results showed that NTM remains pervasive in the food sector by some economies, notably Japan, Thailand and to a lesser extent Malaysia and, surprisingly, Singapore. In other economies there are isolated individual chapters where frequency of NTM use is very high. For example a high NTM count is found for some chapters in Australia, Canada, Chile, China, Indonesia, Korea, Peru and the United States.

The summary of average frequency per chapter reported in Chart 6 shows that the relatively less highly processed products in Chapters 1-10 tend to attract a disproportionate share of NTMs, along with Chapter 22 (Beverages, Spirits and Vinegar).

It is clear that in the food sector at least it would be premature to draw the conclusion that NTMs are losing their significance. Further work is needed to assess the nature of the barriers reflected in this sector.

2. A check on the TRAINS Database

The TRAINS Database tends to be queried not only by countries who feel that their own use of NTMs is overstated, but also by those who feel that the use of NTMs by their trading partners are understated.

For a small number of selected food products the latter proposition was tested by comparing frequency counts derived from TRAINS with information based on trade reports by the US, European Union, and Japan. The trade reports were analysed to identify instances of reports of NTMs which were either specific to the product

concerned (product-specific), applied to a range of products in the food sector which appeared likely to include the product concerned (sector-specific) , or applied across a wider range of products which again appeared likely to include the product concerned (multi-sector). The results are shown in Table 5, in two alternative forms for each product: a convention frequency ratio, indicating the percentage of tariff lines likely to be affected by NTMs, and a count of the number of different NTMs which appeared to have been identified in the trade reports as affecting that product. The latter count is compared with a count on the same basis from the TRAINS database.

The results are interesting. They appear to indicate a much more intensive use of NTMs for the products shown than would be apparent from the TRAINS database, particularly in certain member economies. Even if the count of occurrences is restricted to product-specific measures, there are still many instances where the analysis based on the trade reports produces a higher count than TRAINS.

While this would appear to suggest that TRAINS may provide an incomplete picture of the use of NTMs for these products at least, some caution is needed in interpreting these results. The trade reports essentially reflect the perceptions of officials and exporters from the country compiling the report, and they may be just as susceptible, or more susceptible to overstating the extent of trade barriers as the importing countries may be to under-reporting. Anecdotal evidence suggests that exporters often have difficulty in distinguishing between justified regulation and genuine trade barriers. At the very least however the results help to illustrate why exporters sometimes express a degree of scepticism over frequency counts of NTMs based on TRAINS. We are clearly a considerable distance away from having a measure of NTMs which is likely to be accepted as fully credible by importers and exporters alike, yet such a measure is a desirable if not essential prerequisite for constructive discussion and negotiations on the subject of NTMs.

Chart 6
Average frequency per chapter

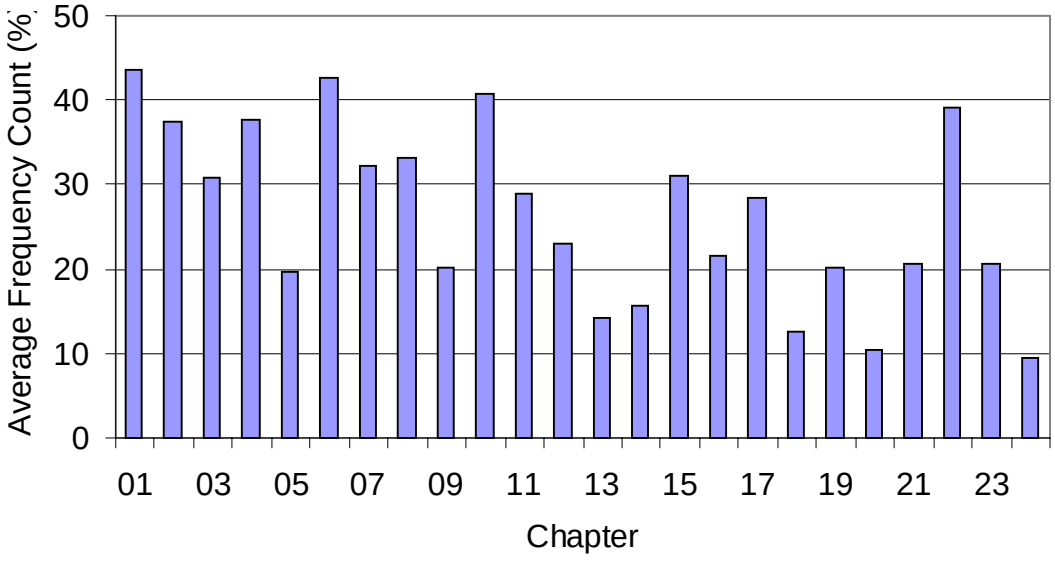


Table 5

	Australia	Brunei	Canada	Chile	China	Indonesia	Japan	Korea	Malaysia	Mexico	NZ	Philippines	Singapore	Thailand	US
RICE (1006)															
Conventional Frequency Ratios															
Affected HS Lines	4	9	0	0	5	4	4	6	7	0	0	4	16	4	0
Number of HS Lines	4	9	12	4	5	4	4	6	8	4	4	4	16	4	13
Frequency Ratio	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	87.5%	0.0%	n/a	100.0%	100.0%	100.0%	0.0%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific						2	4	4	2	1		6	1	1	
Sector Specific	4		3	1	5	5		12	1	5	2	1		6	4
Multi-Sector	2		2	1	16	9	14	14	8	15		6		8	6
All Measures	6	0	5	2	20	15	17	28	10	20	2	12	1	14	10
Ex UNCTAD TRAINS Report	1	3	0	0	4	1	4	1	3	0	0	1	1	3	0
WHEAT (1001)															
Conventional Frequency Ratios															
Affected HS Lines	0	0	4	0	3	3	8	0	3	0	0	0	0	3	0
Number of HS Lines	2	2	4	2	3	5	8	6	3	2	2	3	0	3	10
Frequency Ratio	0.0%	0.0%	100.0%	0.0%	100.0%	60.0%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific	1		4	1	2		3		1	1		1			1
Sector Specific	3		3	1	5	5		13	1	5	2	1		6	4
Multi-Sector	2		2	1	15	9	14	14	8	15		5		8	6
All Measures	6	0	9	3	21	14	17	25	9	20	2	7	0	13	10
Ex UNCTAD TRAINS Report	0	0	1	0	4	1	4	0	1	0	0	0	0	1	0
BEEF (0201/0202)															
Conventional Frequency Ratios															
Affected HS Lines	0	6	11	6	0	0	12	6	6	0	0	0	6	6	18
Number of HS Lines	6	6	12	6	6	6	13	6	6	6	6	16	6	6	32
Frequency Ratio	0.0%	100.0%	91.7%	100.0%	0.0%	0.0%	92.3%	100.0%	100.0%	0.0%	0.0%	0.0%	100.0%	100.0%	56.3%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific	1		1	2			4	4	1	1		1	1		1
Sector Specific	4		3	1	5	5		12	1	1	2	1		6	4
Multi-Sector	2		6	1	16	9	14	14	8	15		6		8	6
All Measures	7	0	6	4	20	14	17	26	9	20	2	8	1	13	11
Ex UNCTAD TRAINS Report	0	2	2	1	0	0	2	1	2	0	0	0	2	1	2

Table 5 (continued)

	Australia	Brunei	Canada	Chile	China	Indonesia	Japan	Korea	Malaysia	Mexico	NZ	Philippines	Singapore	Thailand	US
POULTRY (0207)															
Conventional Frequency Ratios															
Affected HS Lines	0	0	36	0	0	0	22	6	0	0	0	0	14	10	0
Number of HS Lines	13	13	37	13	17	13	22	33	13	20	16	34	14	10	14
Frequency Ratio	0.0%	0.0%	97.3%	0.0%	0.0%	0.0%	100.0%	18.2%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific	2		2	1					2	2	1	2			
Sector Specific	3		3	1	5	5		13	1	5	2	1		6	4
Multi-Sector	2		2	1	16	9	14	14	8	15		6		8	6
All Measures	7	0	7	3	20	14	14	25	10	21	3	9	0	13	10
Ex UNCTAD TRAINS Report	0	0	1	0	0	0	2	1	0	0	0	0	3	1	0
FRUIT (0801-0810)															
Conventional Frequency Ratios															
Affected HS Lines	41	0	8	0	0	0	55	9	49	0	2	0	43	40	30
Number of HS Lines	48	57	73	47	50	68	56	57	66	49	n/a	43	43	40	80
Frequency Ratio	85.4%	0.0%	11.0%	0.0%	0.0%	0.0%	98.2%	15.8%	74.2%	0.0%		0.0%	100.0%	100.0%	37.5%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific			3	1	3		5	3	1	1		1	1	1	2
Sector Specific	4		3	1	5	5		12	1	5	2	1		6	3
Multi-Sector	2		2	1	16	9	14	14	8	15		6		8	6
All Measures	6	0	7	3	21	14	18	27	9	20	2	8	1	14	11
Ex UNCTAD TRAINS Report	2	0	0	0	0	0	4	1	2	0	1	0	2	2	1
VEGETABLES (0701-0709)															
Conventional Frequency Ratios															
Affected HS Lines	0	0	16	29	0	1	37	5	33	0	0	0	34	28	27
Number of HS Lines	29	32	90	29	29	31	37	44	36	38	31	34	34	28	65
Frequency Ratio	0.0%	0.0%	17.8%	100.0%	0.0%	3.2%	100.0%	11.4%	91.7%	0.0%	0.0%	0.0%	100.0%	100.0%	41.5%
Occurrence (No. of identified measures)															
Ex Trade Reports															
- Product Specific			3					1	1	2		3	1		1
- Sector Specific	4		3	1	5	5	5	13	1	4	2	1		6	4
- Multi-Sector	2		2	1	16	9	14	14	8	14		6		8	6
All Measures	6	0	6	2	20	16	18	25	9	21	2	8	1	13	11
Ex UNCTAD TRAINS Report	0	0	1	1	0	1	2	1	2	0	0	0	2	3	2

Table 5 (continued)

	Australia	Brunei	Canada	Chile	China	Indonesia	Japan	Korea	Malaysia	Mexico	NZ	Philippines	Singapore	Thailand	US
DAIRY (0401-0406)															
Conventional Frequency Ratios															
Affected HS Lines	7	0	69	0	0	1	10	0	18	0	0	0	5	24	156
Number of HS Lines	41	5	72	5	5	5	10	6	40	12	28	7	22	24	244
Frequency Ratio	17.1%	0.0%	95.8%	0.0%	0.0%	20.0%	100.0%	0.0%	45.0%	0.0%	0.0%	0.0%	22.7%	100.0%	63.9%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific	3		5		1	1	3	1	2	2			1	4	2
Sector Specific	3		2	1	5	5		13	1	5	2	1		6	4
Multi-Sector	2		2	1	16	9	14	14	8	15		6		8	6
All Measures	8	0	8	2	20	15	17	25	10	20	2	7	1	16	12
Ex UNCTAD TRAINS Report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SPIRITS (2207/2208)															
Conventional Frequency Ratios															
Affected HS Lines	10	0	1	0	7	7	28	1	13	0	0	0	2	9	0
Number of HS Lines	25	17	20	11	9	9	28	21	16	20	68	9	22	9	38
Frequency Ratio	40.0%	0.0%	5.0%	0.0%	77.8%	77.8%	100.0%	4.8%	81.3%	0.0%	0.0%	0.0%	9.1%	100.0%	0.0%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific			5	1	2	3	1	1		1		2			
Sector Specific	4		3	2	5	5		13	1	5	2	1		6	4
Multi-Sector	2		2	1	16	9	14	14	9	15		6		8	6
All Measures	6	0	10	3	20	16	15	26	9	20	2	8	0	13	10
Ex UNCTAD TRAINS Report	2	0	1	0	1	1	3	1	1	0	0	0	1	2	0
BEER (2203)															
Conventional Frequency Ratios															
Affected HS Lines	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0
Number of HS Lines	2	2	1	1	1	1	1	1	2	1	3	1	2	1	1
Frequency Ratio	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific	4	2	2	1	1										
Sector Specific	3	3	1	5	5	12	1	5	2	1	5	4			
Multi-Sector	2	2	1	16	9	14	14	9	15	6	8	6			
All Measures	6	0	9	2	20	15	14	26	9	20	2	7	0	13	10
Ex UNCTAD TRAINS Report	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0

Table 5 (continued)

	Australia	Brunei	Canada	Chile	China	Indonesia	Japan	Korea	Malaysia	Mexico	NZ	Philippines	Singapore	Thailand	US
WINE (2204/2205)															
Conventional Frequency Ratios															
Affected HS Lines	7	0	0	0	2	9	13	0	0	0	0	0	0	6	0
Number of HS Lines	20	15	32	8	12	10	13	10	8	12	2	6	8	6	16
Frequency Ratio	35.0%	0.0%	0.0%	0.0%	16.7%	90.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Occurrence (No. of identified measures)															
Ex Trade Reports															
Product Specific	1	7	1	2	1	1	1	2	1	1					
Sector Specific	3	3	1	5	5	13	1	5	2	1	6	3			
Multi-Sector	2	2	1	14	9	13	14	9	15	6	7	6			
All Measures	6	0	11	3	20	15	14	26	9	20	2	9	0	13	10
Ex UNCTAD TRAINS Report		1	0	0	0	1	1	1	0	0	0	0	0	0	3 0

Sources: HS Codes': World Trade Organisation. The Results of the Uruguay Round.CD-ROM. Publications Services, World Trade Organisation. Geneva. 1996.
'Number of HS Lines': APEC Tariff Database: http://www.apectariff.org/ and UNCTAD TRAINS Database.
'Affected HS Lines': UNCTAD TRAINS Database.
'Trade Reports': Trade Reports of the United States, European Union and Japan.

3. Tariff quotas

The Uruguay Round Agreement on Agriculture required current access or minimum access provisions to be maintained or established for products subject to the tariffication process, whereby imports up to a specified small percentage share of domestic consumption are allowed at more reasonable rates of duty. This has led to the creation of a tariff rate quota regime in some APEC economies for these products, with in-quota tariff rates established for the relatively small specified import quotas which are modest in comparison with the often prohibitive out-of-quota tariff rates.

In some cases exporters are able to capture the 'quota rents' arising from the quota, which partly compensate for export sales lost as a result of the restrictions on their market access.

Eleven APEC economies operate tariff quotas. Chart 7 shows the ratio of the out-of-quota tariff to the out-of-quota tariff. The graph illustrates average tariff rates only for those products actually affected by the tariff quotas, and only for the cases where a valid comparison can be made. In many cases the in-quota tariff is on an ad valorem basis while the out-of-quota tariff is a specific duty, or vice versa. This greatly reduces the transparency of the tariff quota regime, since in such cases comparisons of in – and out- of quota tariffs cannot readily be made. In the case of Japan the comparison has been facilitated because the WTO Trade Policy Review team has calculated ad valorem equivalents of the specific out-of-quota tariffs.

Given the often enormous difference between in- and out- of quota tariffs, the prohibitive nature of many out-of-quota tariffs, and the relatively small share of consumption represented by the quota, the tariff quotas in practice resemble quantity-controlled trade regimes in many respects even though they are nominally based on tariffs.

The administration of tariff quotas is an area which has been receiving attention. It has been alleged that in some cases the administration procedures themselves can constitute a further non-tariff barrier to trade. It has also become apparent that many quotas are not being filled, including in APEC economies. This suggests either that the in-quota tariff rate has been set too high, or that trade is being impeded by other, presumably non-tariff barriers before the quotas become binding. On the other hand some quotas are over-filled, indicating a more relaxed application of the tariff quota regime than provided in the WTO bindings.

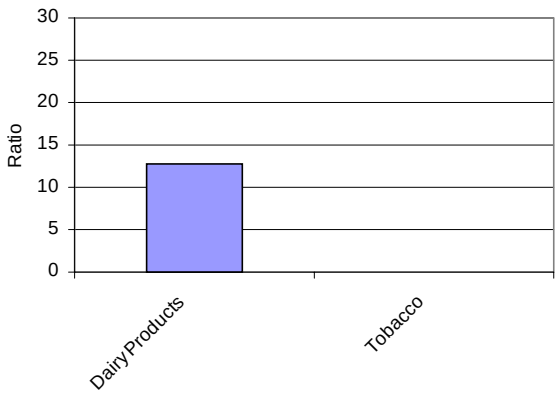
Producer and consumer subsidy equivalents

In the first part of this report attention is drawn to the potential usefulness of price-based measures of the effect of NTMs, which would allow the protective effects of NTMs to be compared and analyzed in a similar fashion to tariffs. The very real difficulties involved in producing such measures are also highlighted however.

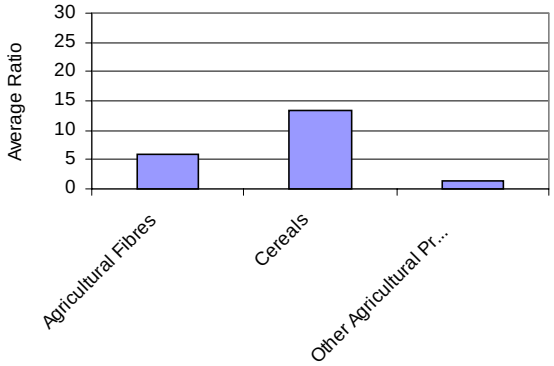
For the agricultural sector the OECD has developed two composite price-based measures, the producer subsidy equivalent (PSE) and consumer subsidy equivalent (CSE), to indicate the combined price effects of all government trade interventions. The PSE for example gives the proportion of the price received by producers which is due to all forms of government support, including tariffs, non-tariff measures and various forms of government budgetary support. It essentially consists of the difference

Chart 7

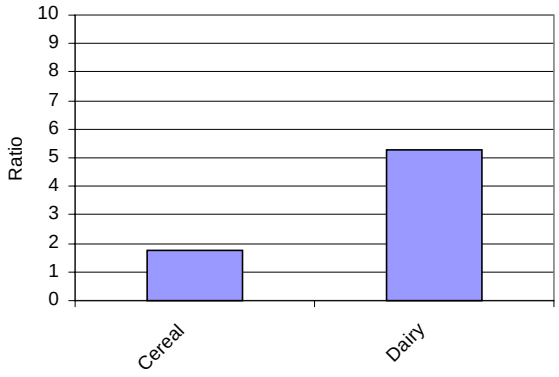
AUSTRALIA



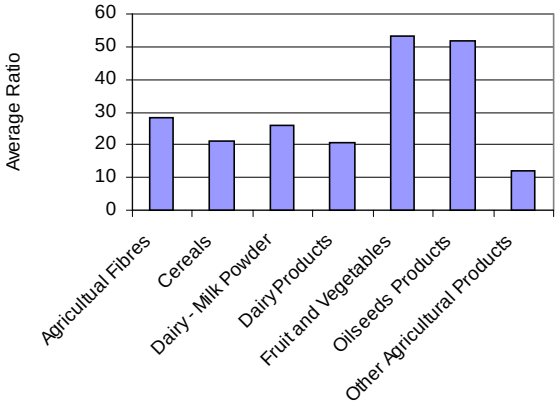
CHINA, People's Republic of



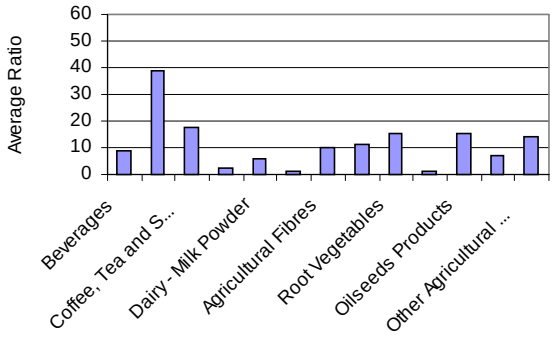
INDONESIA



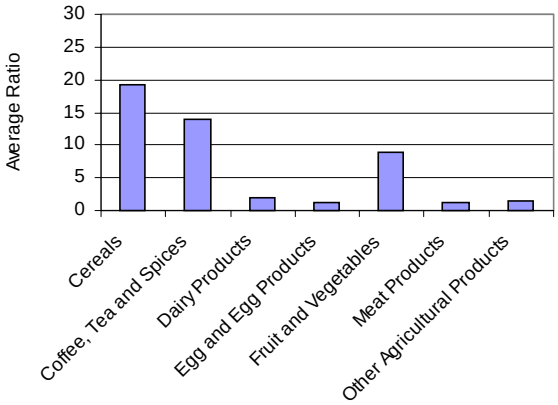
JAPAN



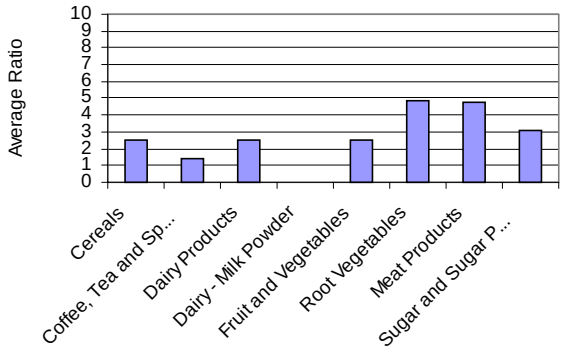
KOREA



MALAYSIA



MEXICO



UNITED STATES

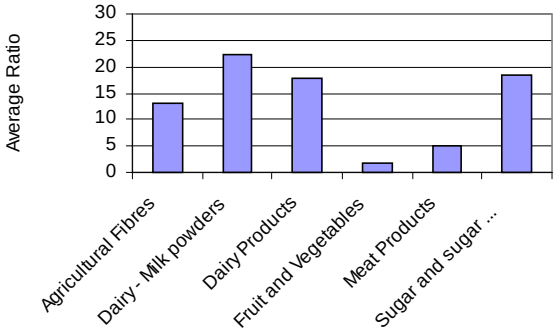
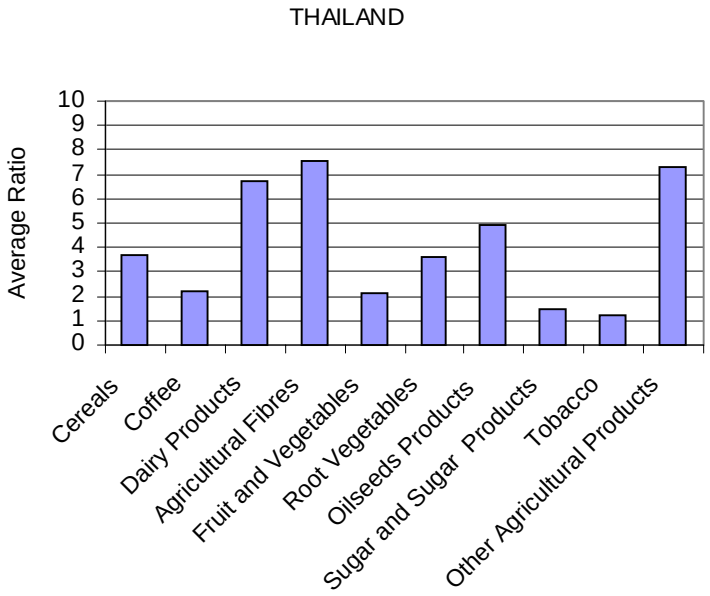


Chart 7 (continued)



between world prices and domestic prices, plus any government budgetary support, measured on a per unit of production basis. Detailed price and production information is thus needed to calculate PSEs.

The PSE provides a very useful indication of the overall effect of government support. It cannot however isolate the effect of particular interventions. Some indirect information can be deduced from the PSE however. For example, if the tariff and the amount of budgetary support is known, any remaining balance of the PSE can be assumed to be due to non-tariff measures. There is no way however to break down the PSE to isolate the separate effect of any particular NTM.

Current PSE and CSE information is available only for the OECD members among the APEC economies, excluding Korea for the time being. The USDA did formerly produce the information for some other APEC economies, but the series was discontinued in the early 1990s. Summary information from the latest OECD data is provided in Chart 8.

NTMs in services[8]

As we noted above, the barriers impeding trade in services are opaque, given the nature of the transactions involved. Some information is available – often in a qualitative form and from a diverse range of sources. Recent research has illustrated how this sort of information can be combined into robust assessments of policy that prove to be powerful explanators of market outcomes.

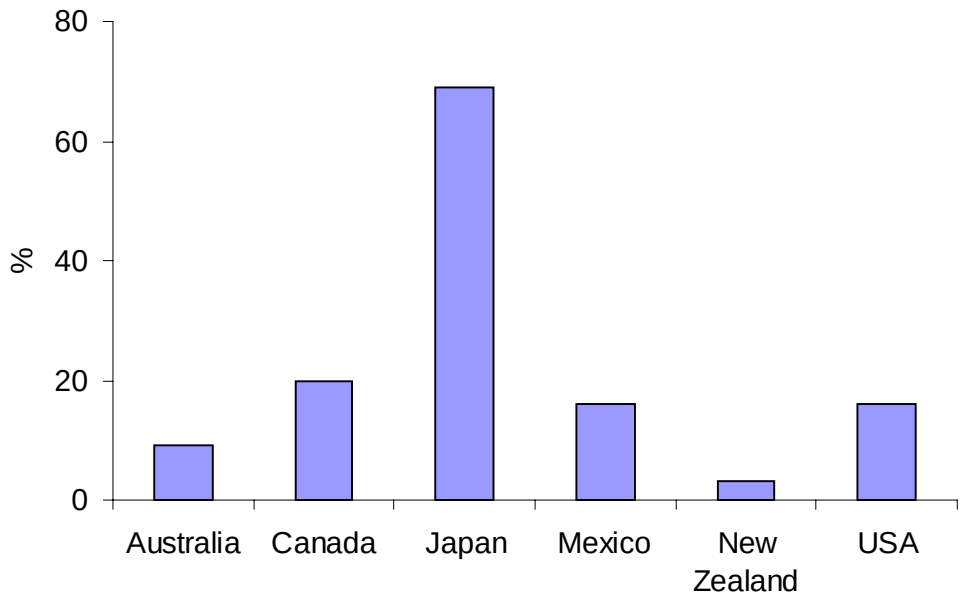
As international services transactions encompass foreign direct investment and the movement of labour, as well as traditional cross-border transactions, any policy that impedes service producers and consumers interacting through any of these channels (or modes of supply) is considered an impediment to trade.

Impediments to services trade come mostly in the form of non-tariff measures (NTMs), reflecting the difficulties inherent in imposing tariffs directly upon either the service consumer or the service supplier as they interact across borders. NTMs are notoriously difficult to identify and measure. There have been very few systematic attempts to collect information on barriers to entry beyond the periodic trade reviews conducted by national trade negotiators. No equivalent of the United Nations Conference on Trade and Development (UNCTAD) database on NTMs affecting tradable goods yet exists for the services sector. As a consequence, very few studies have identified the barriers that exist or assessed the impact of these barriers on economic outcomes.

One approach to the measurement of impediments to trade in services, developed in recent research, involves a couple of steps

- First, available qualitative evidence that compares the way nations discriminate against potential entrants in various service industries is collected. This evidence is then transformed into a frequency-type index, with every attempt made to weight discriminatory policies by their economic significance.
- Second, the impact of the policies, as measured by the frequency indexes, is assessed against cross-national differences in domestic prices or domestic quantities, with the effect of other factors explaining these differences explicitly taken into account.
- As the results of these two steps are refined, a third step can be added. The measured impact of the frequency indexes (the coefficient) on prices or quantities can be incorporated into a partial or general equilibrium model to assess the economy-wide impacts of the policies at issue.
- The remainder of this part of the report reviews recent examples of the first two steps in this process.

Chart 8
Average producer subsidy equivalents (%)



Frequency measures

The measurement of NTMs using a frequency index involves

- the collection of qualitative information on the impediments to trade; and
- the conversion of this qualitative information into a numerical index.

Collecting qualitative information has long proved an insurmountable hurdle in relation to services trade. To begin with, services trade issues were virtually ignored in policy and academic circles until the beginning of the Uruguay Round. It was not until the mid-1980s that any serious attempt was made to identify impediments to trade in services. Furthermore, the definition of what constitutes an impediment to trade in services continues to be a point of contention. For example, are prudential restrictions on offshore financial services firms or qualification requirements for foreign-trained doctors impediments to trade in services or legitimate regulatory instruments? Finally, it is a costly exercise to collect and verify the necessary information.

In relation to services, it was not until the end of the Uruguay Round that a significant international database on the incidence of NTMs became available. The requirement of the GATS that countries list in their individual schedules those sectors in which they were prepared to make commitments, and any specific barriers they wish to retain produced the first systematic, if incomplete, database on impediments to trade in services.

The conversion of the qualitative information provided by the GATS schedules into a numerical index began with the pioneering work of Hoekman.[9] He developed a three-category weighting method as a means of assessing the extent of GATS commitments. Hoekman examined all GATS schedules and, for the purposes of assessment, allocated a number to each possible schedule entry (i.e. each possible commitment on market access or national treatment in each mode in each industry sub-sector). Specifically,

- Where a member has agreed to be bound without any caveats, a weight of 1 is allocated. A weight of 1 is also allocated in circumstances where a member declares that a particular mode of supply is 'unbound due to lack of technical feasibility', if other modes of supply are unrestricted. A common example of this situation is the cross-border supply of construction and related engineering services.
- Where a member has agreed to be bound but specific restrictions remain, a 0.5 weight is allocated. If a mode of supply is bound but specific reference is made to the horizontal commitments, a weight of 0.5 is allocated. This is commonly the case for commitments on the movement of natural persons, where immigration constraints continue to apply.
- Where a member has explicitly exempted that particular entry from the operation of the GATS by recording an entry of 'unbound' or by simply failing to make any commitments at all, a weight of 0 is allocated.

Hoekman used these measures to quantify the extent of commitments (the greater the number, the more commitments made). However, other researchers quickly realised the potential to use this information to construct a frequency index of impediments to trade in services. The Pacific Economic Cooperation Council, for example, utilised the Hoekman analysis to highlight the number of commitments that have not been made (the greater the number the more illiberal the economy).[10]

Welcome as these first steps were, these studies have several key limitations, which were identified immediately by Hoekman, the Pacific Economic Cooperation Council and others.

There are two major concerns

- First, the coverage of the GATS schedules. The positive-list approach adopted for the GATS schedules means that countries only schedule information in those industries where they agree these will be completely or partially bound. Unbound industries are assumed to be closed, but this may not always be the case. Many developing economies simply did not have available the detail required to meet the complexities of the scheduling process and so left many industries unbound, some of which may be quite open. There is also some anecdotal evidence to suggest that nations with liberal policies left some services unbound so as to maintain a retaliatory capability in future market-access negotiations. Therefore some industries that are recorded in the GATS-based indexes as impeded may be open, at least to suppliers from some economies.
- Second, the methodology does not distinguish between barriers in terms of their impact on the economy, with minor impediments receiving the same weighting as an almost complete refusal of access.

More recent work has attempted to develop, at a sectoral and modal level, a more complex weighting system than that used by Hoekman, and has sought to quantify differences in the effect of various partial commitments.

More extensive databases have also been drawn upon to overcome some of the limitations with the information in the GATS schedules.

Better information sources

Since the pioneering work of Hoekman, the content of the GATS schedules has been significantly expanded with the successful conclusion of the Agreement on Basic Telecommunications in February 1997 and the Agreement on Financial Services in December 1997.

Moving beyond the GATS schedules, Tony Warren has used a 1997 survey by the International Telecommunications Union (ITU) to construct a set of policy indexes for 136 countries.[11] These data have the distinct advantage of being drawn from a survey of actual policies, rather than inferring these policies from commitments made in trade negotiations. Five separate indexes are constructed, corresponding with the more important distinctions drawn in the GATS context, namely the differences between market access and national treatment, and between trade and investment. Data availability means that a distinction is made between access to mobile and fixed telecommunications markets only in relation to the market-access restrictions on foreign investment.

In constructing these indexes, Warren incorporates not only data on economic policy but also economic variables, including a count of the number of firms actually competing in a market. A high degree of variation is found, reflecting the continuing resistance among many countries to the liberalisation of their telecommunications markets.

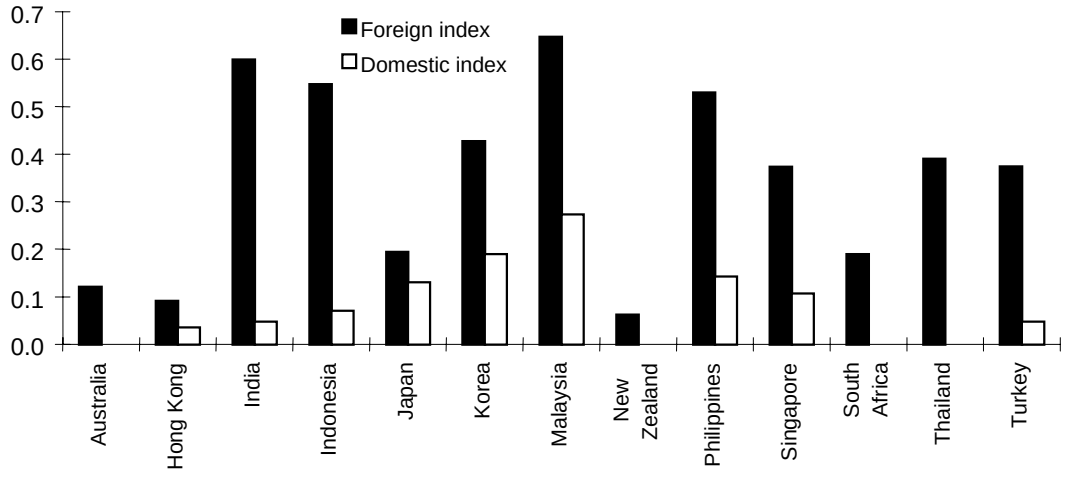
There are substantial impediments to trade in transport services. Greg McGuire, Michael Schuele and Tina Smith have designed a technique for assessing impediments to trade in maritime services.[12] The data on policy came from a variety of sources including a questionnaire developed by the WTO Negotiating Group on Maritime Services, GATS schedules, WTO Trade Policy Reviews, Office of the US Trade Representative information, OECD material and APEC IAPs. Separate indexes are developed to quantify restrictions on foreign suppliers of maritime services and all suppliers. The gap between the scores for these two types of entrants indicates the extent to which there is discrimination against foreign suppliers. Results are reported for 35 economies in the Asia Pacific region, the United States and Europe and show a large range in the degree of restrictiveness.[13] Chile, the Philippines, Thailand, Turkey and the United States treat foreign suppliers of services significantly less favourably than domestic firms.

Several frequency indexes of impediments to trade and investment in financial services have been produced, reflecting the pre-eminent position of this industry in the world economy. Greg McGuire and Michael Schuele have constructed a set of indexes of impediments to trade in banking services from a variety of sources.[14] They differentiate between impediments relating to commercial presence and impediments on operations (raising funds and so on), and between impediments affecting foreign banks and impediments that affect all banks. Each of the inputs into the indexes are weighted to reflect the degree to which they are perceived to restrict access to the market. Their results are summarised in Chart 9.

Further work of this type is in progress with respect to the education sector.

In reviewing this research, it is increasingly apparent that the information necessary to construct frequency indexes of impediments to trade in services is available, although significant effort is often involved in collecting and collating the data. It is probable

Chart 9
Restrictiveness indexes for banking services in selected Asia Pacific economies, South Africa and Turkey



Note: The higher the score, the more restrictive an economy; scores range from 0 to 1.
Source: McGuire and Schuele

that over the next few years a database of impediments affecting most of the significant service industries will be constructed. Whether or not these data will be updated or simply remain as snapshots of policies at a particular time period is difficult to anticipate.

Improved weighting techniques

The second major problem with the early frequency indexes of impediments to trade in services concerns the weighting of the qualitative information. Unweighted indexes treat all qualitative information equally. Consequently, a minor impediment to trade and investment such as a notification requirement receives the same score as a complete prohibition on entry. More recent indexes have sought to ameliorate this problem by weighting the qualitative

In the construction of indexes of impediments to trade in telecommunications, Tony Warren also used weights for various inputs according to their perceived economic importance. For example, the actual number of competitors within an industry is given greater weighting, in a variable designed to capture market access, than the specific policies that governments have in place. Actual outcomes are seen as far more significant than policies which may or may not have been implemented.

McGuire and Schuele in their work on banking differentiate in their indexes between impediments relating to commercial presence and impediments on operations (raising funds and so on), and between impediments affecting foreign banks and impediments that affect all banks. Each of the inputs into their indexes are weighted to reflect the degree to which they are perceived to restrict access to the market.

The potential of frequency weighting systems, however, has been most clearly demonstrated by an OECD pilot study on assessing barriers to trade in professional services.[15] In this approach, a series of questions within a flowchart, mimicking the questions that a service provider would ask when seeking to enter a foreign market. For example:

- 'can I physically access the market?' (market access);
- 'if I can access the market, am I then allowed to practice and to what extent?' (rights of practice);
- 'can I provide services as an independent firm?' (rights of establishment); and
- 'if I am required to practice in partnership with a local entity, what limitations does this place on me?'.

Scores are attributed to each answer and a detailed weighting system is proposed, whereby different constraints are deemed to have very different effects. Accountancy services in four countries (Australia, the United Kingdom, France and the United States) are examined. The United Kingdom is found to be the most liberal of the four countries, while the United States has the highest barriers.

The extent to which these more sensitive weighting systems can be generalised to other industries is not yet clear. However, the scope for further refinement of weighting techniques appears to be significant. It is hoped that the information generated by the price and quantity-impact analyses illustrated in other chapters will allow for more formalised assessments of the economic impact of various policies, which in turn can be used to construct weights for future frequency indexes.

Price-impact measures

A few studies have attempted to develop price impact measures of the impediments to services transactions. One of the best examples is work by Kalirajan and others who examine the price–cost margins (or the net interest margins) of 694 national and state commercial banks in 27 economies. Using a two-stage econometric technique they were able to isolate the specific impact the trade restrictiveness indexes developed by McGuire and Schuele had on this margin, while correcting for the factors that influence the size of the buffer that banks need to manage their cash flow.

The estimated impacts for Indonesia, Malaysia and the Philippines are the highest of the 27 economies, with the net interest margins at least 45 per cent higher than they would be in the absence of restrictions on trade in banking services.

For the more developed countries, restrictions are less, resulting in smaller net interest margin increases.

Quantity-impact measures

Recently, several telecommunications studies have sought to examine the impact of barriers to entry, focusing upon the quantity of mobile telecommunications services consumed within an economy – rather than the quantity traded – and comparing this with international benchmarks. The aim is to quantify the comparative impact of restrictions on telecommunications consumption, controlling for other explanatory variables. Restrictions on competition are modelled directly by counting the number of mobile operators in each country at each period.

Tony Warren has also developed these earlier studies by extending the analysis from mobile telephony to include the fixed network services, measured in terms of the number of mainlines per hundred people. Warren expanded the policy variable beyond a simple count of the number of operators (fixed and mobile) to include the ITU-derived indexes of telecommunications policies discussed above. He found that the liberalisation of the sector would have significant impacts of the extent of the fixed line and mobile networks in his sample of economies.

Review

It is possible to construct weighting schemes to measure the effect of policy measures on international services transactions. These schemes reflect some expectation of the economic significance of the restrictions involved.

The research also indicates that policy measures constructed in this way are powerful explanators of market outcomes, especially when policy data from the GATS can be supplemented by data from industry sources. If market data are available, the significance of the policy measures can be tested in terms of their impact on market outcomes. Where market data are not available, outcomes can be inferred from the policy measures, given the confidence in this methodology based on its applications in other markets.

The increased sophistication of the measurement techniques being development has a number of significant implications. For the first time, measures of impediments to

trade in services are becoming available which can be used as the focus for negotiations in the WTO or for the documentation of commitments, including within APEC. This has a number of major consequences. It implies that

- information will be available to help set priorities at the national level;
- commitments in global (and regional) talks can be codified more easily and therefore cross-sectoral negotiations can be facilitated;
- the constraint on the lack of incremental change – an inhibitor to reform because of the apparent all-or-nothing choices faced by negotiators – will be removed, since partial reform or sequencing will be more easily documented;
- a move to a negative-list approach to documenting commitments in any one sector will be facilitated by the greater information disclosures these techniques engender;
- the difficulty that some economies have in being able to characterise their policy regimes and therefore participate meaningfully in negotiations or in making policy commitments can be overcome, again through the increased information disclosure that is a core result of these techniques.

APEC implications

In terms of further, research effort to support the calculation of these measures is worthwhile. The APEC IAPs are an important source of information. But at the same time this methodology can be used to guide the work in progress in APEC on the documentation of impediments. It can be used to prompt decision making about the selection of the sort of information collected and how to present it in a manner which is consistent over time and between economies.

PECC in its review in 1999 of the APEC IAPs argued that in relation to services

> The OAA states that member should progressively reduce restrictions on market access, provide for MFN and for national treatment. The OAA Guidelines ask members to contribute to the WTO agenda, expand GATS commitments, and undertake further action to 'facilitate supply'.
>
> The IAP format guidelines indicate that all of this should be reported in considerable detail with supporting lists of exemptions and restrictions, plus details of the steps leading to their removal.
>
> Not surprisingly these guidelines are not being met. There are many examples of economies not making any commitments. Where commitments are made, the detail provide is often not sufficient therefore making them impossible to monitor. There are also inconsistencies over time in the IAPs. It is difficult to link statements of implementation with earlier statements of intent. There is little reporting of efforts to 'facilitate supply', which we interpret to mean economic and technical cooperation. There are also examples of commitments to services liberalisation which contribute to the OAA goals but which are not being recorded in the IAPs.
>
> Overall the services sections of IAP contain a lot of detail but is usefulness is far less significant than its volume.

The research reported here provides further guides to the choice of information to report in the IAPs. While the research methodology will be contentious, discussion of its applications will still serve the purpose of moving towards consensus on significant services trade and investment impediments.

It was concluded in relation to NTMs applying to goods that the important measures were likely to become those even more difficult to quantify. A similar point applies in services. While measuring the impediments associated with barriers to establishment or restrictions on operation is becoming more efficient, the research results also suggest that there are significant impediments will are not being assessed. These include aspects of domestic regulation. It is also in those areas that the line between legitimate regulation and protectionist use of NTMs is more difficult to draw.

Another possibility is that the APEC work program could look at NTMs across the board for both goods and services. Examining quantitative restrictions in place for services trade would highlight the functioning of quantitative limits on trade for service providers, parallel to those for goods. It would be the first effort to try and bridge the artificial gap that exists at present in the consideration of NTMs for goods and services as separate issues, when in fact they comprise an integrated economic fabric in all economies. Such an approach would permit as well the integration of economic analysis as regards such barriers, permitting to analyze whether existing quantitative restrictions on goods and services go hand in hand to affect similar products (as is often the case with the simultaneous application of tariffs and NTMs to the same products), or whether they are applied in a manner independent of each other.

Notes

1 They first developed this typology in 1985, and refined it further in their most recent book on *The Measurement of Non-tariff Barriers* (1998). This book was first published by the OECD in 1997.

2 These indicators are also available on CD-ROM.

3 These countries are Australia, Canada, Japan, Mexico, New Zealand, Korea and USA.

4 OECD, Patterns and Pervasiveness of Tariff and Non-Tariff Barriers to Trade in OECD Member Countries, prepared for the Expert Group on Indicators of Government Assistance, 1995. The OECD tables show that quantitative restrictions are more commonly used than price control measures in the 'Quad' countries, and that these are concentrated especially in: agricultural and food products; textiles and apparel; chemicals; nonmetallic mineral products; basic metals; and fabricated metals.

5 Generally speaking, the world or unassisted price is usually taken to be import-parity (cif or ldf) in the case of import-competing goods, and export parity (fob) for export-competing goods. The appropriate domestic price would usually be the domestic price of the imported product received by the importer which implicitly assumes that all the quota rents accrue to the importer or the ex-factory price of the domestically-produced good.

6 While clearly other APEC economies also have antidumping measures in place, these do not seem to have been captured to the same extent in the current UNCTAD TRAINS Database, still another incentive to proceed with verification of this information.

7 Once textile and clothing restraints under the MFA Arrangement are eliminated, the most prominent types of NTMs remaining as of 2005 in APEC economies for which the frequency ratios of NTM use is higher than four percent are very broadly the following : for the People's Republic of China: global quotas on industrial items, administrative pricing and import inspection, and import licensing on food, beverages, and mineral products; for Japan: import authorization measures for fish and textile products, global quotas on cereals, and variable charges on animal and food products; for Malaysia : primarily licenses on prohibited goods applied to culturally sensitive items, along with import licensing for food products and certain intermediate products; for Mexico: import authorization measures for textiles and clothing, light consumer goods, and intermediate products.

[8] This section is based on the overview chapter in Christopher Findlay and Tony Warren (2000), *Identifying the Road Blocks to International Service Business*, Routledge, forthcoming.

[9] Hoekman, B. (1995), 'Tentative First Steps: An Assessment of the Uruguay Round Agreement on Services', paper presented for the World Bank Conference, The Uruguay Round and the Developing Economies, 26–27 January.

[10] Pacific Economic Cooperation Council (1995), Survey of Impediments to Trade and Investment in the APEC Region, APEC Secretariat, Singapore.

[11] Tony Warren, The Identification of Impediments to Trade and Investment in Telecommunications Services in Findlay and Warren.

[12] Greg McGuire, Michael Schuele and Tina Smith, Restrictiveness of International Trade in Maritime Services, in Findlay and Warren

[13] Brazil, Chile, India, Indonesia, Korea, Malaysia, the Philippines, Thailand and the US are among the most restricted markets.

[14] Greg McGuire and Michael Schuele, Restrictiveness of International Trade in Banking Services, in Findlay and Warren.

[15] Alessandra Colecchia, Measuring Barriers To Market Access For Services: A Pilot Study On Accountancy Services, in Findlay and Warren