

# **Trade Facilitation: What, Why, How and Where?<sup>1</sup>**

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October 2006

## **Abstract:**

This paper surveys recent developments in the literature on trade facilitation, defined broadly as reform of non-tariff barriers. The paper looks at what trade facilitation is, why it matters, how to measure it, how it is actually implemented at the global, regional and unilateral levels, and where it might best be implemented.

JEL Classification: F13, F15.

Keywords : Trade facilitation, non-tariff barriers, regulatory barriers.

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<sup>1</sup> The authors thank Shengjun Guo for assistance in compiling and reviewing empirical studies of trade facilitation. Earlier drafts of sections of this paper were presented at the LAEBA Annual Meeting on "Regional Integration and Regional Cooperation in Asia and Latin America" in November 2006 and prepared for a project on 'A Comparative Analysis of Trade Facilitation in Regional Integration Agreements' undertaken by the Institute of International Trade at the University of Adelaide for UNESCAP ARTNet. Support of those organisations for this work is gratefully acknowledged by the authors. All errors are theirs.

# 1 What

Trade facilitation is, according to the definition used in the WTO

... the simplification and harmonization of international trade procedures, including the activities, practices and formalities involved in collecting, presenting, communicating and processing data and other information required for the movement of goods in international trade.<sup>2</sup>

This definition of the scope of trade facilitation focuses on administrative processes at the border and these are the focus of trade negotiations in the WTO and in various regional trading arrangements. Business commentators or survey respondents often stress the significance of those matters for their business relative to other barriers to international commerce such as tariffs. Attention on trade facilitation is therefore welcome, but this definition is relatively narrow.

Supply chains link production processes with final consumers. The transition of products across international borders is certainly part of this supply chain. However, the processes associated with that transition are not the only ones that affect the full cost (that is, money cost plus time cost) of delivery in the supply chain. The full cost of delivery along the whole chain is the more important concern of business. Various aspects of domestic infrastructure and regulatory practices in both exporting and importing countries also affect the performance of the supply chain. Indeed, when questioned about impediments to 'international business', exporters will often respond with a litany of concerns about domestic policy, transport policy or local infrastructure quality rather than matters of tariffs or licences in their export markets!

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<sup>2</sup> See [http://www.oecd.org/document/13/0,2340,en\\_2649\\_34665\\_35305549\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/13/0,2340,en_2649_34665_35305549_1_1_1_1,00.html)

From this perspective, many of the determinants of the performance of the supply chain, and therefore the extent to which trade is ‘facilitated’, are related to measures that traditionally were thought of as non-tariff barriers. For example, The UNCTAD Coding System of Trade Control Measures defines over 100 measures under the classifications of:

- para-tariff measures — customs surcharges, additional taxes and charges, decreed customs valuation;
- price control measures — administrative pricing, voluntary export restraints, variable charges;
- finance measures — advance payment requirements, regulation concerning terms of payment for imports, transfer delays and queuing;
- quantity control measures — non-automatic licensing, quotas, prohibitions, export restraint arrangements, enterprise-specific restrictions;
- monopolistic measures — a single channel for imports, compulsory national services; and
- technical measures — technical regulations, pre-shipment inspection, special customs formalities.

Some of these measures have effects similar to those of a tariff, creating rents for local interests or fee and tax transfers to government. Others are outright quantity controls, akin to quotas, which are also rent-creating measures. However, many of these measures are ‘cost-escalating’, in that they have the effect of slowing down the

movement of goods or adding to the costs of that movement (for example, as a consequence of cargo inspections).<sup>3</sup> Compliance costs also increase the cost of delivery (for example, compliance with technical measures). Further, various administrative procedures may be associated with the application of quantity controls or other charges, and those administrative procedures can add to the full cost of delivery of goods (for example, the time and money costs of applying for an import licence).

Trade facilitation is also usually treated as a topic which is distinct from liberalisation. As we explain below, change to remove costs from the trading system creates the expectation of being able to create ‘winners all round’. We argue this distinction between facilitation and liberalisation is not always clear; even measures which might be included in the narrow definition of trade facilitation have effects on rents. We note that perhaps that explains why the trade facilitation agenda has not been implemented as quickly as might have been expected.

In summary, trade facilitation as discussed in this paper therefore extends beyond the matters of administrative processes at the border. We extend the label of trade facilitation to include a range of measures that affect supply chain performance in terms of cost and time of delivery of goods and services. This includes measures which are more often regarded as part of the services liberalisation agenda. We propose this extension, firstly, because it matches the scope of business interests on management of supply chains. We also propose a wider definition because even the measures which might be included in the narrow definition of trade facilitation are not necessarily just cost-increasing. At the same time, many measures traditionally classified as non-tariff

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<sup>3</sup> Costs include those of the lack of reliability, or variations in delivery times, associated with these measures.

barriers which create rents, such as outright controls of quantities of imports, might appear to be not associated even with our broad notion of matters for consideration under ‘trade facilitation’, but the manner of their administration is directly relevant.

In the next section, we give more attention to the origins of the welfare effects of trade facilitation and the value of separating the rent-creating and cost-escalating effects of these measures. The latter are the traditional target of trade facilitation, but as noted many measures implemented in the name of trade facilitation also affect rents. The assumption that trade facilitation measures only affect costs leads to misguided policy strategies and frustrated expectations of reform.

## **2 Why**

Why the interest in trade facilitation? The answer is that the reform of measures to support trade facilitation most likely will be significant for business costs and for economic welfare. Later, we review some studies that suggest this result but in this section we discuss some of the analytical issues.

As noted in the previous section, some regulatory trade restrictions, particularly quantitative restrictions, create artificial scarcity, and will inflate prices because incumbent firms are able to earn economic rents — akin to a tax, but with the revenue flowing to the incumbent rather than to government. Other trade restrictions increase the real resource cost (including costs associated with delay) of doing business, and will inflate prices because costs are increased.

The two types of restrictions can have vastly different welfare and distributional effects, even if they create the same vertical shift in supply curves. Liberalisation of rent-creating barriers will yield ‘triangle gains’ in producer and consumer surplus associated

with improvements in allocative efficiency (the shaded area in figure 1a), but would also have redistributive effects associated with the elimination of rents to incumbents. Alternatively, liberalisation of cost-escalating barriers would be equivalent to a productivity improvement (saving in real resources), and yield ‘roughly rectangle’ gains associated with a downward shift in supply curves (the shaded area in figure 1b). This could increase returns for the incumbent service providers, as well as lowering costs for users elsewhere in the economy.

The distinction is critical, for two reasons. First, in a unilateral or multilateral setting, rectangle gains are likely to exceed triangle gains by a significant margin. Secondly, in the context of preferential trade agreements, the danger of net welfare losses from net trade diversion arises only if the relevant barriers are rent-creating (see also Baldwin 1994).

Theory can provide some guidance. Rents are likely to be created by quantitative and other barriers that limit entry (or exit, though this is far less common). Some red-tape measures may add to resource costs. There are also many ways in which rents can be dissipated or capitalised. So non-tariff barriers that may once have been rent-creating for the initial incumbent become cost-escalating for subsequent incumbents.<sup>4</sup>

In the following section we review the methods that have been used to measure the economic effects of measures that are relevant to the trade facilitation policy agenda.

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<sup>4</sup> For example, Kalirajan (2000) provides indirect evidence that some of the zoning and other restrictions in the wholesale and retail sector have created rents that are subsequently capitalised into the price of commercial land. See Tullock (1975) for a general discussion of this issue.

### 3 How to measure economic effects

Measuring the economic effects of non-tariff barriers requires a counterfactual — a representation of how economic performance would differ if the non-tariff barriers were not in place. Measurement techniques have followed one of two strategies for obtaining a measure of the counterfactual, depending on whether the traded good or service can be seen as homogeneous across different markets (figure 2).

If the good or service is homogeneous, the counterfactual can be obtained by observing the characteristics (typically the price) of that good or service in some other market where non-tariff barriers do not apply. Often this involves price comparisons between domestic and foreign markets. Sometimes it involves price comparisons of similar goods within a domestic market. Deardorff and Stern (1997) give the most detailed description of this approach. Recent applications are by Ando (2005), Bradford (2005), Dean, Feinberg and Ferrantino (2005) and Yoo (2005). Homogeneity ensures that the relevant counterfactual is directly observable.

If no similar good or service can be found, then the counterfactual cannot be observed — it needs to be constructed. Econometric methods are used to estimate the effects of some measure of non-tariff barriers (*NTB*) on some measure of economic performance (*Y*) in a market, controlling for all the other factors (*Z*) that affect economic performance in that market. The estimated model is then used to construct the value *Y'* that would obtain in that market if there were no non-tariff barriers (normally, if *NTB* took a zero value). This is often called the *antimonde*.

One particular application of this second approach is the well-known gravity model. In that model, the measure of economic performance *Y* is bilateral trade volumes,

and the control variables  $Z$  include the sizes of the trading partner economies and the distance between them. Recent applications of the gravity model framework to quantifying the effects of trade facilitation include Estevadeordal and Suominen (2005), Wilson, Mann and Otsuki (2005), Otsuki, Wilson and Sewadeh (2001), Guasch and Spiller (1999), Moenius (1999), and Swann et al. (1996). We review some of these studies in more detail in a later section.

Another application of the antimonde approach is measurement of regulatory barriers to services trade. Since services are highly differentiated to the needs to individual consumers, non-homogeneity is acute. Further, the regulatory barriers operate behind the border. So the measures of economic performance are typically behind-the-border measures of price ( $P$ ), cost ( $C$ ), profit ( $\Pi$ ), or productivity, while the controls are other industry characteristics. Dee (2005a) gives a brief survey of the recent literature.<sup>5</sup>

### ***The antimonde approach***

While the antimonde approach does not require an observable measure of the counterfactual, it does require a quantifiable measure of the non-tariff barrier ( $NTB$ ). Unlike tariffs, these do not come with a ready number attached. There have been a number of approaches to this problem.

An early approach was to avoid quantifying  $NTB$  directly, but to attribute the residuals from a regression of outcomes  $Y$  on controls  $Z$  to the presence or absence of non-tariff barriers. This was the approach taken in the gravity model estimation by Francois and Hoekman (1999), for example, in their early work on quantifying services trade barriers. A number of writers (eg Whalley 2004) have criticised this indirect

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<sup>5</sup> See also Bagai and Wilson (2006).

approach as risking misattribution of the effects of other omitted variables to non-trade barriers, and of leading to paradoxical results, such as negative impacts of non-tariff barriers.

A second approach has been to use frequency counts of non-tariff measures as quantifiable regressors. For example, Swann, Temple and Shurmer (1996) use simple counts of the stocks of idiosyncratic or international standards in Britain and Germany in their study of the effects of standards on trade volumes. Frequency measures have featured in previous surveys of non-tariff quantification (Deardorff and Stern 1997, Bora, Kuwahara and Laird 2002) as measures of economic effects in their own right, and have been rightly criticised as measuring prevalence, rather than economic significance. But they can play a vital role as explicit measures of policy in an antimonopoly estimation, where the estimation process is the extra step that establishes economic significance.

Recently a more sophisticated frequency count approach has been used to quantifying the presence of NTBs. This involves compiling an index measure, taking account of the severity of non-tariff barriers as well as their prevalence. Index measures can be compiled to capture a single dimension of policy. For example, in measuring the policy determinants of port efficiency, Clark Dollar and Micco (2004) included an index measure, ranging from 1 to 7, that measures the absence of organised crime. Data on this were taken from the Global Competitiveness Report, based on surveys of representative firms about whether organised crime did not impose significant costs on business and was not a burden.

Alternatively, to conserve degrees of freedom, an index can be compiled that weights together more than one dimension of policy. This requires judgements, not just

about the relative severity of each policy, but also about the relative severity of the different policies against each other. For example, Kalirajan et al. (2000) use an index measure of policy barriers to trade in banking services that weights together licensing restrictions, foreign equity limits, restrictions on lending, restrictions on raising funds, prohibitions on other lines of business (eg insurance, securities), limits on the number of banking outlets, and restrictions on the temporary movement of people.

In some cases, the different dimensions of policy are weighted together using judgemental weights assigned by the researcher. In other cases, factor analysis is used to determine linear combinations of individual policies that best ‘span’ (in the technical, mathematical sense) the total policy space. Neither approach is entirely satisfactory. The quality of judgmental weights depends on the extent to which the researcher has specialist knowledge of the industry under study. Factor analysis confuses in-sample variation with economic significance. Better than either approach is to enter indexes of each policy dimension separately into the antimonde estimation. Using principal components here, rather than factor analysis in a prior step, could help to conserve degrees of freedom, while showing which combinations of policy measures best ‘spanned’ the economic outcome space — a truer measure of economic significance.

The quality of the measures derived using antimonde estimation also depends on the quality and comprehensiveness of the control variables  $Z$ . There has been a recent revival of interest in the theoretical foundations of the gravity model, which determine the control variables in that context (eg Deardorff 1998, Baier and Bergstrand 2001, Feenstra, Markusen and Rose 2001, Evenett and Keller 2002). Anderson and van Wincoop (2003) have showed that many empirical implementations have strayed from

the theoretically derived reduced form, by omitting measures of relative trade resistance. Harrigan (2004) shows how the effects of relative trade resistance (or relative distance, in his interpretation) can be controlled for using country fixed effects.

In the services trade literature, the empirical models of sectoral performance have typically been drawn from the industrial organisation literature on structure, conduct and performance, and the relevant control variables  $Z$  have varied widely from one sector to the next. For example, in banking they have included interest rate volatility and measures of the extent of prudential regulation (Kalirajan et al. 2000, Barth, Caprio and Levine 2004), in telecommunications they have included household density and the length of waiting lists for a fixed line connection (Warren 2000), while in electricity generation they have included the proportion of electricity generated from hydro or nuclear sources (Steiner 2000). Recent empirical support for the structure-conduct-performance approach has been provided by Slade (2004). Some authors have used a plethora of fixed effects in lieu of structural controls (eg Moenius 1999).

As will be seen, when estimates of non-tariff barriers are used in modelling exercises of trade liberalisation, the question discussed earlier of whether they are rent-creating or cost-escalating is often argued by assertion. But the antidomestic estimation can provide some guidance. Estimation that uses price-cost margins as a performance measure can identify whether barriers are rent-creating. Estimation that uses cost or productivity as a performance measure can identify whether barriers are cost-escalating. Ideally, more than one performance measure should be used.<sup>6</sup>

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<sup>6</sup> See Dee (2005a) for a summary of the performance measures used in the context of estimating barriers to services trade.

The aim of antimonde estimation is to measure the extent to which non-tariff barriers cause a vertical shift in the supply or demand curve.<sup>7</sup> So ideally, the econometric models of sectoral performance should be both developed and estimated at the structural level — that is, supply and demand side influences should be separately identified and estimated. In practice, some models are developed structurally but then estimated in reduced form, as in the model of financial intermediation used by Kalirajan et al. (2000). Other models are both developed and estimated in reduced form, as with the model of electricity prices used by Steiner (2000). Hence it is not always clear that the estimated price or cost wedge corresponds to a vertical shift in the supply or demand curve. On this score, the direct effects of non-tariff barriers may be underestimated.

### ***Price comparisons***

Price comparisons rely on the assumption of homogeneity for a directly observable measure of the counterfactual, and do not require a quantifiable measure of the non-tariff barrier (*NTB*). But for that reason, they do not provide information about which particular non-tariff barriers are responsible for the price gap. As noted, Deardorff and Stern (1997) give a thorough overview of this approach, so the focus here is on recent developments.

When the prices being compared are at different stages in the distribution chain, corrections have to be made to account for transport and other distribution costs (perhaps including tariffs) between the two stages. Bradford (2005) makes this correction using direct data on distribution margins, transport costs and indirect taxes from input-output

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<sup>7</sup> Quantity effects can be turned into price effects using an estimate of the elasticity of demand (eg Warren 2000).

sources, as well as direct tariff data. But Dean, Feinberg and Ferrantino (2005) use econometric techniques to control for the influence of transport costs and wholesale and retail margins, using proxy measures of these variables.

Ando (2005) also mixes price comparisons with antimonde estimation techniques. She uses price comparisons (net of tariff levels) to estimate overall tariff equivalents of non-tariff barriers, and then econometrically estimates a relationship between these tariff equivalents and by-type frequency ratios (with other control variables), to decompose the tariff equivalents into price effects by type of measure. Thus several recent applications of price comparisons have used the same econometric techniques as in the antimonde literature, both to control for other factors, and to attribute economic effects to particular policies.

#### **4 With what result — the gains from reform<sup>8</sup>**

The recent empirical literature has confirmed the significance of a variety of measures that facilitate trade. We begin with studies that focus on policies related to infrastructure services.

##### ***Infrastructure and trade***

A number of papers that examine links between infrastructure and transport or logistics services and trade are summarised in Table 1. Generally, these papers find that infrastructure quality can have a significant effect on trade, and relatively significant effects compared to reductions in other impediments.

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<sup>8</sup> Parts of this section draw on Dee and Ferrantino (2005).

The studies in Table 1 generally try to explain variations in trade volumes. For example, Wilson, Mann and Otsuki (2005) examine the effects of four different dimensions of trade facilitation — port efficiency (both water and air), the customs environment (prevalence of hidden import barriers and bribes), the regulatory environment (transparency and control of corruption), and what they call services sector infrastructure (internet access and use). Using simulations based on their gravity model, they find the total gain in trade flow in manufacturing goods from trade facilitation improvements in all four areas is estimated to be \$US 377 billion: all regions gain in imports and exports. Further, the most important ingredient in achieving these gains, particular in the OECD market, is a country's own trade facilitation efforts.

Clark, Dollar and Micco (2004) is the exception in the table, since they try to explain variations in trade costs. They find that improving port efficiency from the 25<sup>th</sup> to the 75<sup>th</sup> percentile can reduce shipping costs by 12 per cent. They find port inefficiency is linked to excessive regulation, the prevalence of organised crime and the general condition of the country's infrastructure, so improvements in these areas would help to generate the reductions in shipping costs.

### ***Rules of origin, standards and barriers to trade in services***

Estevadeordal and Suominen (2005) draw the following conclusions from their gravity model analysis of the impact of rules of origin: restrictive product-specific rules of origin undermine aggregate trade; regimes that allow flexibility in the application of product-specific rules boost trade; high levels of sectoral selectivity in rules of origin undermine trade; and the restrictiveness of rules of origin in final goods encourages trade in intermediate products.

Chu and Prusa (2005) document the rapid rise in anti-dumping cases filed against Chinese exporters, the high probability that anti-dumping duties are imposed, and the high rates that are imposed. They note that as FDI has flowed into China from the four East Asian Tigers, Chinese-sourced exports have replaced exports from the parent company home markets. They speculate that anti-dumping filing against China may be replacing filings against those countries. They use econometric analysis to confirm a positive association between anti-dumping cases filed on Chinese exports and inward FDI flows to China, although they are unable to fully explore the ‘anti-dumping triangle’ hypothesis. They also cite evidence of low concentration ratios on Chinese industries that have contributed to the competitive price and low profit margins. Their review of anti-dumping filings against China confirms that anti-dumping practice can be a very convenient and effective tool to deter trade.

Moenius (1999) finds that bilaterally shared standards are favourable to trade — a one per cent increase in bilaterally shared standards between the United States and its trading partners could increase US trade volumes by about \$US 6 billion. But Moenius does not find country-specific standards to be a barrier. While country-specific standards of importers reduce imports for non-manufactured goods, they promote trade in the manufacturing sector. Information costs explain this latter finding. If goods have to be adapted to a foreign market, then country-specific standards of the importing country offer valuable information for adapting the product to that market.

Kalirajan et al. (2000) find that the barriers to trade in banking services that prevailed in 1997 may have raised the price of banking services by around 5 per cent in countries such as Argentina, Canada, the European Union and Switzerland, by 15 per

cent in Japan, by over 30 per cent in Chile, Korea, Singapore and Thailand, and by up to 60 per cent in Malaysia. Extending the methodology of Kalirajan (2000) and others, Copenhagen Economics (2005) find that the EU's proposed Directive on Services in the Internal Market could more than halve the burden of non-tariff regulatory measures in accountancy, IT services and wholesale and retail trade. For example, the total price burden on foreign accountancy services would be reduced from 22.8 per cent to 8.1 per cent, partly because costs would be reduced, and partly because markups would be squeezed.

### ***Policy priorities***

While these results confirm that non-tariff barriers can have significant direct effects, they do not always give clear guidance on policy priorities. With tariffs, the height of the tariff barrier already conveys a great deal about the likely welfare effects of tariff removal, subject to a number of qualifications about tariff dispersion, intersectoral linkages, trade shares of GDP, and so on. But with non-tariff barriers, measures that imply similar vertical movements in supply curves can have vastly different welfare effects, as figures 1a and 1b demonstrate. So a proper evaluation of the economic effects of non-tariff reform requires that measures of their direct effects be used in a modelling framework that can take into account whether they are rent-creating or cost-escalating.

As noted, some of the literature on trade facilitation seems to *define* trade facilitation measures as those that eliminate cost-escalating barriers (Elek 2006). In this view, the trade facilitation agenda can deliver 'gains all round', with few of the problems of trade diversion or other awkward redistributive effects that can sometime beset tariff liberalisation. But Walkenhorst and Yasui (2005) argue that even with the measures

generally agreed to be at the core of this more narrow trade facilitation agenda, the assessment is not straightforward. They argue that indirect trade transactions costs, such as longer border waiting times, are best thought of as being cost-escalating. But the direct trade transaction costs, such as form filling, while being a cost to the exporter or importer, are a source of income for the form processors. These costs are best modelled as being tax-like, recognition that they have a large transfer component rather than a wastage component. They argue that previous modelling assessments of the effects of trade facilitation may be overstated, by treating all measures as cost-escalating. And according to their analysis, the biggest policy impact would come from reducing *indirect* trade transaction costs.

Bradford (2005) instead assumes that all non-tariff barriers are tax-like, rather than creating waste or adding to the real resource cost of doing business. Not surprisingly, he finds that reform of non-tariff barriers has similar effects to tariff reform. Across the eight countries in his modelling analysis,<sup>9</sup> the correlation between the height of non-tariff barriers and the welfare gains from their unilateral removal (expressed as a percentage of GDP) is 0.83. The correlation between the height of total (tariff plus non-tariff) barriers and the welfare gains from their removal is very similar, at 0.81. Further, he finds that non-tariff barriers are about as high as tariff barriers in Canada, but up to eight times higher in Japan. The gains from reform of non-tariff barriers tend to exceed the gains from tariff reform accordingly.

By contrast, Hertel, Walmsley and Itakura (2001) consider three elements of the ‘new age’ agreement between Japan and Singapore — customs automation, security and

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<sup>9</sup> The countries are Australia, Canada, Germany, Italy, Japan, the Netherlands, The United Kingdom and the United States.

harmonisation measures in e-commerce, and liberalisation of trade in business and construction services — and assume that all would remove barriers that create waste and add to real resource costs, rather than being tax-like. They find the new age measures to be virtually the sole source of gains from agreement, because they do not produce trade diversion in the way that the preferential tariff cuts do. This follows directly from their treatment of the non-tariff barriers as being cost-escalating.

This modelling evidence suggests that possibly the single biggest determinant of the projected gains from removing non-tariff barriers is whether they are modelled as being rent-creating or cost-escalating. This ‘treatment’ effect can dominate the estimated ‘height’ of the trade barrier, and play a crucial role in determining the apparent policy priorities.

There is very little modelling literature to date that has evaluated the effects of removing non-tariff barriers, while taking seriously the available empirical or theoretical evidence about whether they are rent-creating or cost-escalating. One of the few examples is Walkenhorst and Yasui (2005), above. Another is Andriamananjara, Ferrantino and Tsigas (2005). They model non-tariff barriers in three different ways — as import tax wedges in footwear, as export tax wedges in apparel, and as what they call ‘sand in the wheels’ (or waste) in food processing. This treatment is based on careful consideration of the types of non-tariff measures applying in each sector. Although the height of the barriers in processed food is lower than in footwear, the global welfare gains from liberalisation are greater, in part because of the difference in treatment. The gains from liberalising non-tariff barriers in apparel swamp both, however, because of the much greater prevalence of barriers in this sector around the world.

Another modelling example that takes into account whether non-tariff barriers are rent-creating or cost-escalating is the study of the EU's proposed services directive by Copenhagen Economics (2005). Their modelling results suggest that total consumption in the European Union could increase by approximately 0.6 per cent, or 37 billion euros, both because markups would be squeezed and real costs reduced.

Finally, Dee (2005b) uses the available evidence on the nature of barriers to services trade to look at the effects of various East Asian economic integration initiatives. She finds that the biggest gains would be achieved from reforming on a unilateral basis those behind-the-border restrictions on competition that affect both foreigners and domestic new entrants equally. Such initiatives would provide economic gains of more than five times those that might be available through an East Asian preferential trade agreement.

## **5 How are trade facilitation measures implemented?<sup>10</sup>**

Trade facilitation is explicitly included in the Doha Development Round negotiations and it is a common topic in preferential trade negotiations. In this part, we summarise the treatment of trade facilitation in these negotiations, in the latter case with reference to The Association of Southeast Asian Nations (ASEAN), The Pacific Agreement for Closer Economic Relations (PACER) and The Economic Cooperation Organization (ECO). All these negotiations focus on the subset of border related measures. We also compare the treatment of trade facilitation in the Asia-Pacific Economic Cooperation (APEC) process.

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<sup>10</sup> Material in this section was originally drafted for a project on 'A Comparative Analysis of Trade Facilitation in Regional Integration Agreements' undertaken by the Institute of International Trade at the University of Adelaide for UNESCAP ARTNet.

The scope of the WTO treatment of trade facilitation is limited to the relevant aspects of the General Agreement on Tariffs and Trade, in particular Articles X (transparency), VIII (fees and formalities) and V (goods in transit). The main transparency issues concern publication and availability of information, the time period between publication and implementation of rules, allowance for consultation and comment on new or amended rules, advance rulings, appeal procedures, and measures to enhance impartiality and non-discrimination. Discussion of the fees and formalities associated with importing and exporting also concern border agency coordination, simplified release and clearance of goods, and tariff classification. Disciplines on goods in transit include simplification and standardization of fees, formalities and documentation required for goods in transit, as well as limitation of inspections and controls. Other topics in the WTO include technical assistance and capacity building (TA/CB) and special and differential treatment for low-income countries.<sup>11</sup>

ASEAN, the oldest regional trading arrangement in the Asia-Pacific region, has made progress, especially since 2002, in trade facilitation areas such as customs cooperation and standards harmonization and mutual recognition. In 2002 the ASEAN leaders, acknowledging the importance of trade facilitation made an ASEAN Customs Partnership a high priority. A guiding principle is to take the Revised Kyoto Convention on customs processes, procedures and practices as the basis for ASEAN countries' customs legislation. ASEAN introduced a harmonized tariff nomenclature in 2004, which increases consistency and transparency in tariff application. A customs valuation

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<sup>11</sup> There are also proposals for special and differential treatment for countries whose mother tongue is not a WTO official language and for land-locked economies, although the usual assumption is that such treatment is of most significance for poor countries with these characteristics. For an update on WTO negotiations, see [http://www.wto.org/English/tratop\\_e/tradfa\\_e/tradfa\\_negoti\\_docs\\_e.htm](http://www.wto.org/English/tratop_e/tradfa_e/tradfa_negoti_docs_e.htm)

guide introduced in 2003 is intended to ensure progressive adoption of the WTO Agreement on Customs Valuation into ASEAN customs procedures. Work is under way to simplify, improve and standardize customs forms. In 2005 a majority of ASEAN members adopted the ASEAN Customs Declaration Document, which contains 48 information parameters and which was developed on the basis of the Single Administrative Document recommended by the World Customs Organization.

The ASEAN Single Window (ASW) Agreement was signed at the December 2005 summit.<sup>12</sup> By having a single point for the submission and processing of information and for making all decisions relevant to customs clearance, the ASW aims to cut customs clearance time for any single transaction to 30 minutes by 2010, from the current 3-4 hours average. Initial implementation is, however, on a bilateral basis.

The Pacific Agreement for Closer Economic Relations (PACER), signed in Nauru in 2001, is a framework agreement envisaging creation of a reciprocal free trade area between the sixteen The Pacific Island Forum countries. The initial focus is the development of cooperation on trade facilitation, with a current work program in the areas of customs, quarantine, and standards and conformance. Australia and New Zealand agreed to partially fund a trade facilitation programme, and all signatories agreed that their national programmes should be consistent with other regional and international agreements. It allows for periodic revision of national trade facilitation programmes but it also contains a very general opt-out clause giving any signatory the option of not participating in a trade facilitation programme which they consider to be “disadvantageous”.

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<sup>12</sup> This followed seven years of *ad hoc* initiatives sponsored by the ASEAN Secretariat but implemented unilaterally (eg. the Gold Card Program in Indonesia, the Super Green Lane in the Philippines, and the Single Window in Singapore), which reduced customs clearance times from several days to several hours.

The Central Asian countries are all landlocked states.<sup>13</sup> Unpredictable changes in official policies (such as imposition of temporary tariffs or other levies, temporary border closure, and changing requirements about bonds or the need for transiting trucks to travel in convoy), innumerable documents and approvals required at border crossing (which are often an excuse for unofficial charges), and frequent delays and fees while transiting a country have been features of the relations between them. Regional agreements among these economies, such as The Economic Cooperation Organization (ECO), have failed to address transit issues. One explanation is that too many individuals see the personal gains from the current system and national governments are unable or unwilling to curtail the activities of these rent-seekers or the national governments themselves view transit as an opportunity to tax foreigners to the hilt.

At some stage in the history of most developed economies, the central government imposed law and order to protect traders from unnecessary and unpredictable delays or taxes by local officials or highway robbers. An example of such a goal being achieved bilaterally, with external assistance, is the Almaty-Bishkek road agreement signed by the governments of Kazakhstan and the Kyrgyz Republic in order to obtain funding from the Asian Development Bank for upgrading the road between the largest cities in the two countries. Transiting Kazakhstan in the late 1990s was notoriously expensive; a common estimate was that it cost a truck from the Kyrgyz Republic an average of US\$1700 to cross Kazakhstan, and this made previously flourishing sales of Kyrgyz vegetables to Russia unprofitable. The ADB (2000, pp. 11-12)

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<sup>13</sup> At the United Nations, constraints on transit in developing countries were the subject of General Assembly Resolution 56/180. This resulted in the United Nations World International Ministerial Conference of Landlocked and Transit Developing Countries being held in Almaty (Kazakhstan) in August 2003, which resulted in the 'Almaty Declaration' highlighting transit issues.

estimated that in the Almaty-Bishkek corridor roadside checks alone increased transport costs in 2000 by \$2 million due to delays and by \$16 million in bribes. The loan for the road was made conditional on the two governments' collaboration in facilitating passage through the border post on the road and also reducing the behind-the-border costs due to specious fines or unofficial levies.

With respect to negotiations in progress, many announcements of trade facilitating measures remain paper measures as the actual practice at the border continues to inhibit trade. Some trade costs require bilateral attention, such as coordination of opening times of border crossings, but many current initiatives at bilateral or plurilateral trade facilitation are addressing essentially multilateral issues. The implementation of many border measures related to trade facilitation may be non-preferential. Reductions in behind-the-border costs or increases in customs clearance efficiency should facilitate all trade. In practice, however, there may be discrimination for technical reasons, for example, if Thai customs expand the electronic clearance facility this may benefit Malaysian exporters to Thailand but be infeasible for Lao exporters to Thailand who do not have computers. The only explicitly preferential aspect of recent RTAs' impact on trade facilitation is the US position on fast-tracking container clearance, which is limited to trading partners with whom the US has a trade agreement; a container from Singapore does not require the individual inspection legislated post-9/11 as long as it has been certified and sealed in Singapore, but a container from Indonesia will not be exempted from inspection.

Trade facilitation along with liberalisation and economic and technical cooperation is one of the three pillars of APEC. The principles espoused in APEC

documents on trade facilitation are transparency, efficiency, simplification, non-discrimination, procedural fairness, cooperation and capacity building.<sup>14</sup>

In 2001, at the Shanghai summit, the APEC Committee on Trade and Investment was mandated to reduce transactions costs on trade by 5% by 2006. Starting in 2002 each APEC member was expected to submit annual Trade Facilitation Action Plans (TFAPs), which would achieve the 5% target, and report on their progress. Since 2002, 1400 items had been selected in individual countries' TFAPs, mainly in the sub-category of customs procedures, and 62% of these had been completed and a further quarter were in progress (Elek, Nguyen and Woo, 2006). Customs measures have the highest completion rate (69%), followed by business mobility (60%), standards (52%) and e-commerce (47%). APEC Ministers declared the 2006 target met by members and asked for another 5% reduction in transactions costs by 2010.<sup>15</sup>

In June 2005 APEC trade ministers agreed to develop model measures on trade facilitation for free trade agreements. There had always been some overlap of membership between APEC and regional trading arrangements. Seven ASEAN members are in APEC (not Laos, Cambodia and Myanmar), and other APEC signatories are in NAFTA or the CER. The issue has become more acute since the turn of the century, with over half of APEC's members having negotiated bilateral and plurilateral preferential trading arrangements, and an increased potential for spaghetti bowl effects, including conflicting trade facilitation arrangements.<sup>16</sup>

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<sup>14</sup> Several of these principles are already part of WTO obligations (eg. Article X requires transparency in trade regulations, Article VII covers customs valuation procedures, Article VIII requires minimization of complexity of fees and formalities associated with trade).

<sup>15</sup> See the Eighteenth APEC Ministerial Meeting Joint Statement at <http://www.apec2006.vn/article/77>

<sup>16</sup> Scollay and Gilbert (2001) have highlighted the cost-increasing potential of the Spaghetti Bowl effects which were popularized by Jagdish Bhagwati in the 1990s. Spaghetti Bowl diagrams of the regional and bilateral trade agreements in the Asia-Pacific region can be found in Feridhanustyawan (2005, pp. 10-11).

## 5 Where should trade facilitation be managed?

So far, we have established that:

- Trade facilitation as traditionally defined refers to a set of measures that determine trade procedures and costs. But even measures which meet that definition, such as border processes, may not simply affect costs, they may also affect rents.
- From a business point of view, trade facilitation should be wider and should include all measures that affect supply chain performance: this includes some measures which were traditionally regarded as part of the liberalisation agenda, for example services trade and investment reform or various non-tariff measures.
- Measures which traditionally were regarded as rent-creating, such as import controls, are also relevant to the trade facilitation agenda, because their administration affects supply chain performance.
- The distinction between rent-creating and cost-increasing effects of policy is important for assessment of the welfare effects of reform, though this distinction is not always made in empirical work, and for an understanding of the determinants of the pace of reform.
- Important progress is being made in the Doha Round negotiations to refine the ambit of WTO commitments on trade facilitation. However, the scope of these negotiations under the banner of trade facilitation in the WTO is

limited and does not meet our criterion for a desirable scope. On the other hand many measures being examined elsewhere in the WTO, in the services negotiations for example, are also relevant, although this linkage of services reform and trade facilitation is not often made.

- In regional or bilateral agreements, trade facilitating measures generally remain propositions on paper as the actual practice at the border continues to inhibit trade. One explanation of slow progress may be the presence of significant elements of rents in current arrangements.
- APEC has, since 2001, had a more structured trade facilitation program, with well specified timetables, and the ASEAN countries have gone further in pushing for coordinated trade facilitation measures, but there is a significant variation in implementation.

How to accelerate reform designed to capture the gains from trade facilitation? As noted, trade facilitation is popular in international negotiations – do they help? Dee and Sidorenko (2006) argue that when the impacts of reform are on costs and resource savings there is less case for reciprocity, for the purpose of mobilising countervailing political interests to offset the resistance to reform. Trade facilitation in this case is more likely to be manageable within a domestic reform agenda. The contribution of international commitments and cooperation continue to be significant, for example, as a device for demonstrating the commitment to reform, to benchmarking domestic policy and to receiving guidance on paths of reform.

The conditions identified by Dee and Sidorenko (2006) do not always apply, since some measures have both rent and cost effects, as noted above and as illustrated in some

of the experiences reported in Central Asia. The presence of the rent effects complicates the implementation of trade facilitation agenda. Does this increase the value of embedding the reform agenda within a formal set of negotiations with foreign trading partners? Not necessarily.

The political economy issues to be resolved in dealing with the origins of trade facilitation problems (by improving infrastructure quality for example) may not be so much to with domestic versus foreign interests, but rather incumbent versus new entrant interests. With respect to the use of preferential trade agreements to deal with trade facilitation matters, which is a popular argument for signing such agreements, Dee (2005b) argues that for reasons of political economy ‘new age’ trade agreements tend to be limited to measures that can be liberalised on a preferential basis, and tend to target only those provisions that explicitly discriminate against foreigners. But the available empirical evidence is that these types of provisions tend to be rent-creating rather than cost-escalating. So the gains from even the ‘new age’ trade agreements are trivial, compared with the gains from comprehensive reform of non-discriminatory impediments to competition, as part of a thorough-going program of unilateral domestic regulatory reform. It is the latter which is more likely to deal with the issues of trade facilitation.

Further, a focus on the terms of foreign entry into these protected sectors may lead to a redistribution of existing rents, including transfers offshore to the detriment of domestic welfare, rather than their reduction and increases in efficiency. For example, suppose in infrastructure services a licensing scheme is used to manage access to the market. An allocation of an additional license to a foreign entrant, rather than opening the sector more widely to competition, would have this effect.

Finally, much of the debate about trade facilitation concerns actions of governments and the ways in which they add to costs in the trading system, but sometimes what matters more is what governments are not doing, rather than what governments are doing. This concern is especially relevant to matters related to infrastructure services. Competition might be introduced in that example by separation of the bottleneck facility from the rights to operate in that facility, via an access regime. The absence of effective competition policy regimes to constrain monopoly power and remove barriers to entry lead to higher-price services, lower volumes of transactions (of domestic and foreign origins), and reductions in welfare.

Therefore, to add to our earlier list of summary points

- Dealing with trade facilitation, trade negotiations about foreign entry are either not required (for cost increasing measures) or risk inefficient results (for rent creating measures).
- What matters is a comprehensive reform of non-discriminatory impediments to competition, as part of a thorough-going program of unilateral domestic regulatory reform. This program may require correction of lack of action, rather than a reform of current action.
- International cooperation on trade facilitation makes a contribution to domestic reform by documenting and making transparent the results, demonstrating commitment and preventing backsliding, and benchmarking domestic policy and providing a guide for reform.

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Figure 1a **Rent-creating non-tariff barriers**

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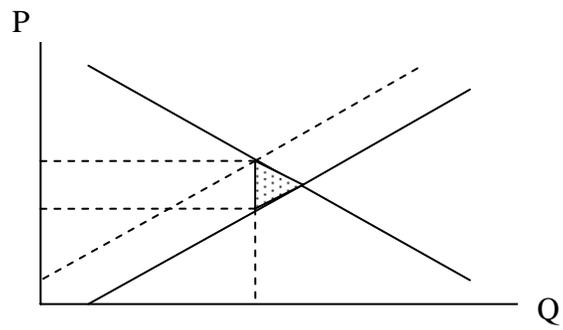


Figure 1b **Cost-escalating non-tariff barriers**

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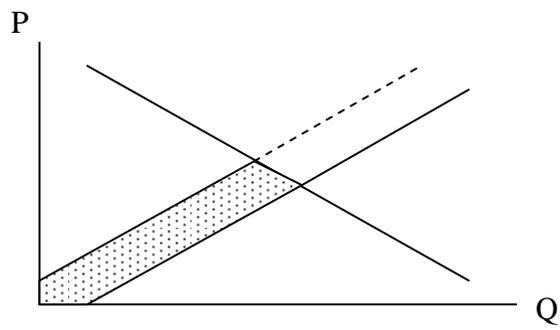
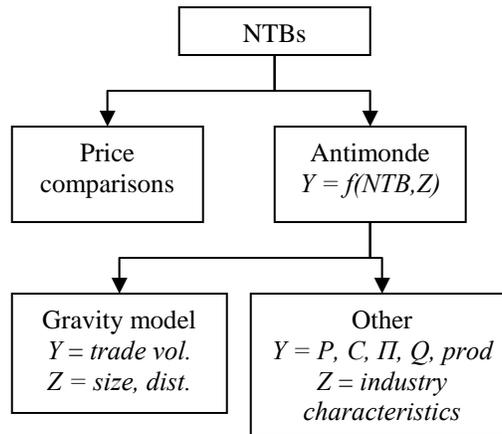


Figure 2 **Measurement methods**

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<b>Table 1 Summary of studies of infrastructure, transport and logistics services</b>					
<b>Paper</b>	<b>Empirical Model</b>	<b>Dependent Variable</b>	<b>Data</b>	<b>Key Variables</b>	<b>Main Findings</b>
Berthelon, Freund (2004)	Regression of Trade growth on distance	Trade growth	4-digit data from the COMTRADE database for periods 1985-1989, 1990-1994, 1995-2000	Distance	The effect of distance is decomposed into the composition effect (trade shift toward more distance sensitive industries) and distance sensitivity effect(industries have moved toward distance sensitive practices). The empirical evidence favors the increase of distance sensitivity across industries instead of a compositional shift of trade toward more distance sensitive industries
Clark, Dollar and Micco (2004)	IV Regression equation on maritime charges	Charges per unit of weight	US Import Waterborne Databank (US Department of Transportation) for years 1996, 1998 and 2000	Distance, level of containerization, trade imbalance, port efficiency	Doubling in distance generates an 18% increase in transport costs. level of containerization presents a significant negative effect on transport costs and improvement of port efficiency from the 25th percentile to 75th percentile reduces transport costs by 12%
Djankov, Freund and Pham (2006)	Difference Gravity Models	$\ln(\text{Exports}_{jk}/\text{Exports}_{hk})$	World Bank data on the days it takes to move standard cargo from the factory gate to the ship in 126 countries	Added export time in the gravity equation	10% saving in exporting time increases exports by 4% or each additional day delayed reduce trade by 1%
Freund and Weinhold (2003)	Panel gravity model and cross section gravity model	Export growth/exports	Constructed from various sources	Internet domain host counts	Evidence supporting the theory that internet growth reduce trade cost and hence increase trade
Hanson, Xiang (2002)	Difference in difference gravity model	Ratio of high mark-up good export over Ratio of low mark-up good export	World Trade Database for 1990 for bilateral trade flows for 3 or 4 digit SITC revision 2 product classes.	Ratio of two country's GDP to detect home market effect	The home market effect is strongest in the high transportation cost industries
Hausman, Lee and Subramanian (2005)	Augmented Gravity Models	Total bilateral exports	Compiled by World Bank in 2005 containing detailed country-level data on the time and cost of moving a typical 20-foot FCL container from the port of entry to a firm in the most populous city.	Added various measures of logistic friction, later constructed a logistics index to replace individual measures	Logistics performance significantly affects the level of trade

Nordas, Piermartini (2004)	Gravity Models	Imports	Tariff data are derived from TRAINS(Trade Analysis and Information System), Bilateral trade flows are extracted from COMTRADE (Commodity and Trade Database). Trade cost indicators are derived from various World Bank data source all in year 2000	Applied tariff rate and infrastructure quality measures	10% reduction in tariff increases trade by 12.5%, quality of infrastructure has significant and large impact on trade, especially for port efficiency, 10% improvement in port efficiency increases bilateral trade by 6%
Nordas, Pinali and Grosso (2006)	Gravity/Probit	Probability that a firm in country i will export to country j	A panel of 192 countries exporting intermediate inputs, clothing and electronics to Australia Japan and UK in 1996-2004	GDP, relative distance(GDP weighted), relative time	Support for scale effect (indicated by GDP), time is important factor on market entry, even taking away some influence from distance, which remains important
Shepherd and Wilson (2006)	Gravity model with importer and exporter fixed effects	ln(Export)	Constructed from various sources	A set of trade costs determinant variables	Trade flows may be more sensitive to upgrades of infrastructure than to reductions of tariff barriers.
Wilson, Mann and Otsuki (2004)	Gravity Model	Exports	Trade flow data from COMTRADE of UN Statistics Division for 2000-2001 in the manufactured goods	Tariff and trade facilitation measures(port efficiency, regulatory environment, service sector infrastructure)	1% reduction in ad valorem tariff will increase the trade flow by 1.1%, similar to the effect of distance. Improvement of port efficiency, customs improvement, improving regulatory environment and improving service sector infrastructure all improve trad