Transparency & Trade Facilitation in the Asia Pacific: Estimating the Gains from Reform

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September, 2007.

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Transparency and Trade Facilitation in the Asia-Pacific:

Estimating the Gains from Reform[1,2]

Asia-Pacific Economic Cooperation

And

The World Bank
Development Research Group

September 2007

Executive Summary

Improving transparency of trade policy is a critical aspect of any structural reform agenda. This is particularly true with regard to trade expansion and integration, as the principle of transparency can be applied to a wide range of policies affecting border and "behind-the-border" procedures. Yet despite the central role of transparency in support of economic development and trade, the relative impact of transparency and related trade facilitation measures have not been evaluated in a comprehensive way. Based on the Asia-Pacific Economic Cooperation's Bogor

Goals and principles on trade facilitation, we identify two main touchstones of policy transparency: *predictability* and *simplification*. After conducting a quantitative benchmarking of performance in the region against these measures, we develop new composite indices of both importer and exporter transparency.

Our analysis shows that the gains from improving transparency in APEC are substantial relative to other reform options: at least $148 billion or 7.5% of baseline 2004 trade in APEC. Export gains are generally widely spread across the region. These estimates are only for intra-APEC trade; when considering trade with members outside of the region, the gains from increased transparency would be significantly larger. This is particularly true if reforms are undertaken on a non-discriminatory basis, anchored in open regionalism. Quantitative benchmarking suggests that future transparency priorities for APEC could include a specific focus on action to address unofficial payments and "hidden" trade barriers.

Defining Transparency: Predictability and Simplification

Many economies across the world, and particularly in APEC, have enjoyed considerable success in liberalizing "traditional" trade policy measures such as tariffs and quotas. Even though there is still much to do in this area through unilateral, regional, and multilateral reforms, future trade liberalization efforts will focus on other policy measures that reduce transaction costs. The achievement of both the Bogor Goals and the ultimate objective of a Free Trade Area of the Asia-Pacific depend on resolute action by APEC member economies, including common initiatives to reduce trade transaction costs through structural reform. APEC's ambitious program of trade facilitation is an important example of this: on top of the original Shanghai goal of a 5% reduction in trade transaction costs by 2006, APEC member economies have now agreed to aim for an additional 5% reduction by 2010. The evidence presented in this report suggests that member economies have already made considerable progress on this front, but that further gains can be made in terms of reducing "hidden" trade barriers and controlling unofficial payments.

Transparency is an important aspect of trade facilitation, as it is not only the restrictiveness of at-the-border and behind-the-border policies that matters for bilateral trade but also the way in which those policies are designed and administered. However, transparency is a broad concept that is difficult to measure in its entirety. In order to benchmark recent progress and identify priorities for future reforms, we draw on APEC's 2001 Principles on Trade Facilitation in order to identify two crucial aspects of trade policy transparency: predictability and simplification.

Making trade policy more *predictable* reduces uncertainty, and therefore costs, for business. Possible policy reforms along this line cover both the design and administration of trade policy in all its various aspects, including:

- Binding tariff rates through the WTO;
- Moving towards "flatter" tariff structures;
- Making import and export delays less variable;
- Lowering uncertainty surrounding unofficial payments; and
- Reducing favoritism in administrative decision-making.

Simplifying trade policy makes it easier, and therefore less costly, for importers and exporters to identify, assess, and comply with regulation. It also helps civil society groups and government

agencies conduct detailed assessments of the benefits and costs of particular policy measures, thereby reinforcing a virtuous cycle of evidence-based policymaking and efficient regulation. Possible reforms to simplify trade policy could include:

- Streamlining documentary requirements for import/export transactions;

- Reducing the number of border agencies with which firms must interact;

- Removing "hidden" trade barriers; and

- Limiting unofficial payments.

Benchmarking Progress in Reform

In general, APEC member economies perform relatively well in terms of trade policy transparency compared with world income-group averages; this is particularly true of indicators such as e-government readiness. While our review thus suggests that APEC's particular attention to trade facilitation and transparency is bearing fruit, there are nonetheless certain critical areas in which additional progress could be made in the future. Moreover, performance in terms of trade policy transparency is quite heterogeneous across APEC member economies. Reforms in transparency will not only bring direct economic benefits to APEC member economies, but will also reinforce APEC's leadership role on trade facilitation within the broader multilateral context.

Conclusions: What Next for the APEC Transparency and Trade Facilitation Agenda?

APEC member economies perform relatively well with regard to transparency. Empirical analysis suggests however that reform in areas such as "hidden" trade barriers and unofficial payments has considerable potential to raise intra-regional trade. New initiatives by APEC to link transparency to trade facilitation goals can reinforce the principles of good economic governance to which APEC Leaders and Trade Ministers have repeatedly demonstrated their commitment. This agenda is directly related to the overall goals of the Bogor Declaration, as well as to the strengthening of ties within APEC over the long term.

Given the wide range of policy levers available to governments in matters of transparency, future reform efforts must identify both substantive priorities and a set of efficient policy instruments designed to promote them. New pathfinder initiatives, investing in and championing systematic collection of data to measure gains, and a new commitment to policy-relevant analysis are fundamental to the achievement of APEC goals. At the same time, it is clear that certain pro-transparency reforms involve direct resource costs. APEC could therefore play an important role as a champion—and where appropriate, as a sponsor—of capacity-building transparency programs linked to collective action and to lower transactions costs in the region.

This new agenda in capacity-building is especially important for a regional grouping as diverse as the current membership of APEC. A new "Transparency and Competitiveness" action plan in APEC would bring together elements of the current agenda into a coordinated initiative to raise capacity and stimulate reform, with a two-part goal. First, the action plan would serve as a platform for supporting data on and analysis of transparency and structural reform tied to APEC's goals. Secondly, it would provide an ongoing basis for coordinating capacity-building

projects and dialogue with development institutions, the private sector, and other key stakeholders in the APEC agenda.

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1   Introduction

In the development context, it is increasingly recognized that tariff liberalization is not enough to ensure the integration of an economy into international markets (World Bank Independent Evaluation Group, 2006). Barriers other than tariffs hinder firms in emerging economies from successfully entering export markets. It is therefore natural that as tariff levels have fallen over recent decades, attention has increasingly been focused on non-tariff barriers (NTBs) and other "non-traditional" sources of trade costs. Measures to facilitate trade—and reduce such costs— have therefore become a key priority for policymakers and international development institutions.

The concept of trade facilitation is open to different interpretations (cf. Wilson et al., 2005). At its broadest, the defining theme of trade facilitation involves lowering transaction costs associated with international trade. There is a general theme however that provides a framework for discussions on trade facilitation, namely *transparency*. As an example of the links between transparency and trade facilitation, we note that two of the three GATT articles on trade facilitation (Article VIII and Article X) explicitly promote transparency in the application and publication of trade policy instruments. Moreover, the current WTO negotiations on trade facilitation focus on streamlining customs procedures in order to reduce costs for traders, and thereby create a more *transparent* and efficient trading environment.

APEC has long been at the forefront of reform efforts in the area of trade facilitation.[3] In the 2001 Shanghai Declaration, for instance, APEC member economies set themselves the ambitious

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[3] For reviews, see Wilson et al. (2002) and APEC Economic Committee (2004).

goal of a 5% reduction in trade transaction costs by 2006. Following a successful review of that goal, APEC member economies have renewed their commitment and are now striving towards an additional 5% reduction by 2010. APEC's public commitment to such ambitious objectives has allowed it to assume an important leadership role in the areas of trade transaction costs and trade facilitation. This research report will help build on that momentum by addressing another important aspect of comprehensive trade facilitation reform, transparency, which is relatively under-analyzed in the existing literature.

Box: APEC's Approach to Transparency and Trade Facilitation—Key Milestones

Many difficulties have plagued trade facilitation talks at the multilateral level, as one of the "Singapore Issues". The formal decision to launch multilateral negotiations on trade facilitation was only taken as part of the 2004 "July Package", so although talks in this area are now ongoing as part of the Doha Development Agenda their incorporation into the multilateral sphere was by no means easy. The contrast with APEC's successful mainstreaming of trade facilitation is striking, and stands out clearly from the consideration of a few key dates in APEC's work in this area. The same is true of transparency, which is recognized as an important component of successful trade facilitation reform.

1994 Bogor Goals

Leaders announce their commitment to the goal of "free and open trade and investment in the Asia-Pacific no later than the year 2020". They "emphasize the importance of trade facilitation because trade liberalization efforts alone are insufficient to generate trade expansion".

1995 Osaka Action Agenda

Transparency and comprehensiveness, i.e. "addressing all impediments to achieving the long-term goal of free and open trade and investment", are included as General Principles supporting APEC's liberalization and facilitation program.

2001 Shanghai Accord

Leaders commit to a 5% reduction in trade transaction costs over five years. They also "recognize the importance of transparency in economic governance".

2003 Bangkok Statement

Leaders recognize that transparency is both "conducive to fairer and more effective governance" and "is a basic principle underlying trade liberalization and facilitation". Within this general framework, they adopt transparency standards covering, amongst other areas, customs procedures and market access (tariff and non-tariff measures).

2005 Busan Roadmap

Leaders call for a further 5% reduction in trade transaction costs by 2010, on the basis of a favorable review of the original Shanghai goal.

Source: Wilson et al. (2002); APEC Economic Committee (2004); and original texts available at http://apecsec.org.sg

The main objective of this research report is to provide a first, quantitative assessment of the trade policy transparency environment in APEC member economies. To do so, we establish a conceptual framework in which to analyze the complex linkages between transparency, trade policy, and trade flows (Section 2). Drawing on APEC's 2001 Principles on Trade Facilitation, we define transparency in terms of two core concepts: *predictability* and *simplification*. In Section 3, we apply this framework to data for APEC member economies in the context of a region-wide benchmarking exercise. We mobilize a wide variety of indicators, drawn from different sources, which we summarize statistically into two comprehensive measures: importer transparency and exporter transparency. We then use a standard gravity model of international trade to assess the sensitivity of trade to improvements in transparency (Section 4). Counterfactual simulations suggest that the potential intra-regional trade gains from improved transparency are large relative to other alternatives, such as modest tariff and NTB reductions. In Section 5, we present our conclusions and address some possible ways for APEC to move forward on transparency while building on progress already made.

Our main findings are as follows:

- Trade policy reform efforts need to focus not just on the restrictiveness of traditional measures such as tariffs, but also on transparency, i.e. the way in which these measures are designed and administered.

- Making trade policy more transparent involves policy reforms in two main areas: predictability and simplification. Both types of measures can help reduce the transaction costs associated with international trade.

- Overall, APEC member economies perform relatively well on trade policy transparency compared with world income group averages. This is particularly true in the area of e-government readiness.

- Counterfactual simulations from a standard gravity model of international trade suggest that the potential intra-regional trade gains from improved transparency are substantial compared with alternative policies: approximately \$148bn, or 7.5% of baseline (2004) trade. Assuming non-discriminatory implementation of policy reforms, the overall gains will be larger once extra-regional trade is taken into account.

- Based on quantitative benchmarking, future transparency priorities for APEC member economies could include a more dedicated focus on the reduction of unofficial payments and "hidden" trade barriers.

While this study focuses on the relationship between transparency and trade, it is also important to situate our results in a broader context. It is likely that the economic mechanisms we outline in Section 2 apply more widely than just in trade. Transparency likely plays a similar role in relation to investment, and even more broadly in regard to business facilitation. The analysis here should therefore be viewed as one indication of the type of empirical research which could be produced in this area, with a view to informing policymakers and stakeholders.

2   Transparency, Regulatory Reform, and Trade: What are the Links?

In this section, we present the economic rationale for improving trade policy transparency. In summary, we argue that as traditional border measures are liberalized, the design and application of other trade policy measures become increasingly important. This is reflected to a large extent in the evolution of the rules-based multilateral trading system, and the central role it assigns to the notion of transparency, and in APEC's work on trade facilitation and transparency. In the remainder of this section we discuss in more detail the individual components of transparency in this context, focusing on the economic mechanisms that link them to international trade flows. We focus in particular on two crucial dimensions of trade policy transparency namely *predictability* and *simplification*. In each case, we provide a brief overview of the metrics applied in Section 3 to benchmark APEC economies' performance in these areas.

2.1   Trade Policy Transparency: An Overview

When policymakers and analysts consider the possible gains from trade policy reform, it is natural to focus in the first instance on the economic benefits of making border measures such as tariffs and quotas less restrictive. However trade policy reform can also include a variety of additional dimensions, which are becoming more important as "traditional" border measures are lowered through multilateral, regional, bilateral, and unilateral reforms. On the one hand, there are other, quite separate, measures to deal with "behind-the-border" measures.[4] These include technical and sector regulations, as well as burdensome product standards. At the same time however it is also important to address the emerging issue of transparency, namely the way in

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[4] In this report behind-the-border measures are defined as including all trade facilitation measures that are applied in order to enhance the movement of goods and services once cleared by customs. Our definition is narrower than the definition used in APEC documents, where behind-the-border reforms are often used interchangeably with structural reform.

which trade policies—broadly construed—are designed and implemented. Whether the focus is on at- or behind-the-border measures, it remains important to recognize that non-transparent trade policy can impose economic costs over and above those suggested by a simple consideration of the nominal restrictiveness of such policies.[5]

To illustrate this point, it is worthwhile to examine where the concept of trade policy transparency is placed and reflected in the multilateral trade system (see Wolfe, 2003 for a review). For several decades, the GATT/WTO system has not been concerned only with the restrictiveness of trade policy (e.g. the level of tariffs); WTO members have also used the multilateral trading system and architecture as a forum in which to negotiate rules governing the composition and implementation of trade policy. A number of features of these regimes can be interpreted in terms of trade policy transparency. One example is the Agreement on Anti-Dumping, which establishes a set of minimum requirements that anti-dumping investigations must follow in order to ensure that findings are based on a proper review of the evidence, conducted according to a transparent process. Similarly, the Agreements on Sanitary and Phytosanitary Measures and Technical Barriers to Trade require WTO Members to provide advance, public notice of certain new regulatory rules that might impact trade. In both cases, these obligations exist in order to promote transparency of national policies that regulate trade—an implicit recognition by WTO Members that a lack of transparency can impose unwanted and

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[5] The concept of transparency has received relatively little attention in the academic trade policy literature. Anderson and Marcouiller (2002) use corruption prevalence as an indicator of transparency. In the context of a political economy analysis, Kono (2006) distinguishes relatively transparent trade policies (ad valorem tariffs) from relatively non-transparent ones (non-tariff measures). More broadly, transparency can be seen as one dimension of the larger issue of the role of institutions in international trade: see for instance De Groot et al. (2004), Jansen and Nordas (2004), Francois and Manchin (2006), and Levchenko (forthcoming).

unnecessary costs on economic actors, and throw sand in the wheels of international economic integration.

Another perspective on the importance of trade policy transparency comes from conceptualizing trade liberalization in terms of regulatory reform. In this perspective trade policy is designed to achieve certain legitimate national objectives, but is only one among many possible instruments that could be used for that purpose. The goal of regulatory reform is to ensure the best possible correspondence between goals and means, while also limiting any resulting economic inefficiencies.

Within the broader context of regulatory reform, transparency is widely regarded as crucial to successful reform efforts (see APEC-OECD, 2005). There are two main reasons for this. First, the economic costs of policy interventions, from the point of view of individual economic actors, can be exacerbated when those policies are implemented in an uncertain or non-transparent manner. For a given level of restrictiveness, in other words, the economic cost will usually be lower when it is enforced consistently and impartially than when it is applied in an arbitrary or unpredictable manner. Second, regulatory transparency is not just important from the individual point of view but also from the collective point of view. Central governments looking to regulate their economies efficiently must be able to assess the costs and benefits of current policies rigorously, and with as little uncertainty as possible, in order to ensure that their objectives are being met. Similarly, particular groups in society such as consumers rarely come together to assess the benefits and costs of regulation, and may therefore benefit from independent assessments by researchers and think tanks. Greater policy transparency can be an important part of this process, in that analysts can be confident that their understanding of the relevant regulations is not subject to arbitrary deviations by those in charge of implementing them. Their

cost-benefit assessments are therefore likely to be more accurate than under a low-transparency regime. In this sense, we would argue that regulatory transparency—including as it relates to trade policy—is in reality an important element of good economic governance, since it can help promote a virtuous cycle of rigorous assessment and evidence-based policy reform.[6]

APEC's work on transparency recognizes these complex dynamics by making a close link between transparency, regulatory reform, and trade facilitation. In 2001, APEC Trade Ministers endorsed Principles on Trade Facilitation that included the following:

> "**Transparency**: Information on … rules and procedures relating to trade … should be made available to all interested parties, consistently and in a timely manner, through readily accessible, widely available medium at no cost . .
>
> **Communication and Consultations**: The authorities should strive to facilitate and promote effective mechanisms for exchanges with stakeholders, especially business and the trading community…
>
> **Simplification, Practicability and Efficiency**: Rules and procedures relating to trade should be simplified to ensure that they are no more burdensome or restrictive than necessary…
>
> **Consistency and Predictability**: Rules and procedures relating to trade should be applied in a consistent, predictable and uniform manner with integrity so as to minimize uncertainty to the trade and trade-related parties. …
>
> **Modernization and the Use of New Technology**: Rules and procedures relating to trade should be kept under review, and updated if necessary, taking into account changed circumstances, including new information and new business practices…"

While each principle is presented as a separate component of a comprehensive trade facilitation program, it is also helpful to read them as elaborating on different dimensions of the core concept of transparency. Doing so enables us to give more precise analytical value to that idea, which we have thus far used in a broad sense. For the remainder of this Report, we will focus on what appear to us to be the two most important dimensions of transparency as presented in the

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[6] For an in-depth discussion of these issues, see APEC Economic Committee (2006) and Dee (2007).

2001 APEC Principles: *predictability* and *simplification*. We now elaborate further on these concepts, and highlight the economic mechanisms through which they can impact international trade.

2.2   The Predictability of Trade Policy

In our conceptual framework, as well as in APEC's declarations on transparency, the concept of predictability of trade policy is an important touchstone of transparency. How is this approach made operational in a practical trade policy context? One example is the long-established multilateral principle of tariff bindings; by establishing ceiling rates above which applied tariff rates are not normally allowed to pass, binding increases the level of policy predictability compared with a situation in which economies are completely free to set whatever tariff rate they prefer at a particular point in time. Francois and Martin (2004) develop a simple economic model of this practice of binding, and use it to show that the economic welfare gains from binding tariffs can be significant: in the case of wheat tariffs pre- and post-Uruguay Round, reductions in tariff unpredictability were responsible for at least half the overall welfare gains in four of the seven economies studied.

It is important to highlight that the gains from greater predictability in trade policy can accrue in two separate ways. On the one hand, improvements abroad can effectively boost market access for exporters by reducing the trade costs they face. But as Francois and Martin (2004) show, domestic reforms that lead to greater predictability can also contribute to welfare gains at home by reducing economic distortions. This analysis suggests that, as usual in trade policy, economies have a mercantilist interest in encouraging their partners to be more transparent but also have an economic welfare interest, both in such measures and in their own transparency.

The above discussion focuses primarily on the unpredictability surrounding tariffs—as does the analysis by Francois and Martin (2004). This should not be taken to suggest that it is the only part of trade policy in which these factors matter.[7] The argument can easily be extended to other types of trade costs: indeed, we would suggest that most factors that can drive a wedge between international and domestic prices could be analyzed in this way. For instance transport and logistics costs—to which time delays contribute—can often make up a significant proportion of that wedge, particularly in developing economies. Recent work at the World Bank (Arvis et al., 2007) for example shows that unpredictable transport times can indeed impose significant economic costs on firms in addition to the direct impacts of delays. The same is generally true of corruption and unofficial payments, which constitute a significant trade cost in some economies. Fisman and Gatti (2006) show that the economic costs of corruption are lower in economies where institutional factors provide firms with relatively more predictability as to the level of payment required and the service obtained in return. Finally, the evolution of the GATT/WTO system over recent decades has, as already noted, given considerable attention to promoting policy predictability in areas such as product standards.

If policy predictability is to be a useful concept to policymakers, we need to be able to measure it and benchmark the performance of an economy in order to quantify possible gains and identify reform priorities. Section 3 will provide the main detail of our approach, but it is useful at this point to set out explicitly the main indicators that we will use:

- Percentage of tariff lines that are bound: As discussed above, binding imposes a legally enforceable ceiling on applied tariff rates. A greater percentage of bound lines therefore

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[7] Indeed, Francois (2001) shows that more predictable trade policy can be associated with greater investor confidence and a higher capital stock.

equates with greater policy predictability, since it implies that policymakers are constrained across a wider variety of products.

- "Flatness" of the applied tariff schedule: In the extreme case of a "flat" tariff—i.e., the same ad valorem rate applied to almost all goods, as in Chile or Hong Kong China—there is no scope for dispute between a foreign exporter and the customs administration as to the rate of duty that should be applied to a particular shipment of goods. The more complex a national tariff schedule is, the more scope there is for classification disputes to arise. Such complexity can arise from two sources: dispersion of tariff rates across products, and dispersion across origins (due to geographical preferences). In such cases, a less dispersed, or "flatter", tariff schedule is associated with greater policy predictability.

- Absence of "hidden" trade barriers: "Hidden" trade barriers are obstacles which are not easily perceivable by traders due to a lack of transparency by the authorities, or due to their complexity. Since they are not immediately evident from official texts, such barriers may have the effect of "surprising" exporters and importers as to the true level of trade costs that they face. One example might be complex technical standards which are difficult to fulfill by foreign exporters. Harmonizing national technical standards with international standards would contribute to a reduction of "hidden" trade barriers and therefore enhance the predictability of the trade regime.

- Active Use of Information Technology: Making information on national trade regimes available through the intelligent use of information technology can considerably enhance policy predictability. Examples are the publication of tariff schemes on the internet or using the internet to announce upcoming changes in trade policy.

- Predictability of import/export delays: As already noted, greater certainty regarding the time required to move goods tends to mean lower costs for exporters and importers. This can be seen as an aspect of policy predictability, to the extent that variation in delays can depend on government policy priorities (e.g. infrastructure, customs reform) as well as administrative decision-making.

- Predictability of the level of unofficial payments in imports/exports: Payment of bribes can be seen as subject to an explicit or implicit negotiation between an exporter or importer and a customs agent. The outcome of that negotiation is an agreement for the latter to provide a particular "service" in exchange for the bribe. Regular traders may need to engage in such negotiations repeatedly, with a variety of different personnel. The outcome of the negotiations, whether or not a bribe is required and its amount, may differ in each case, thereby leading to unpredictability for private actors as to the level of effective costs they will face.

- Lack of favoritism in administrative decisions: When the implementation of established rules and practices is not subject to favoritism, exporters and importers can be reasonably certain as to the level of policy-related trade costs to which their goods will be subjected. Excessive freedom for administrators to favor particular firms loosens that link, and thus tends to reduce trade policy predictability.

2.3   Trade Policy Simplification

Another aspect of transparency that is important in a trade policy context is *simplification*. By this we mean the reduction of the number of different dimensions, or "layers", of trade policy that exporters and importers must contend with. Multi-dimensional trade policy can impose significant information costs on potential exporters and importers, in addition to the direct costs

of the policies themselves: exporters need to identify the existence of each separate policy instrument, ascertain its current level of restrictiveness, assess the costs it imposes, and ensure compliance with necessary formalities.

Again, the recent development of the multilateral trading system has tended to reinforce the importance of simplification as it relates to trade policy. Through successive negotiating rounds, there has been a move towards the replacement of multidimensional trade policy—and in particular non-tariff measures—with simple ad valorem tariffs. This was the case for instance for agricultural products during the Uruguay Round "tariffication" process. At the same time, the current negotiations on trade facilitation are aimed at reducing the number of procedural "layers" involved in importing and exporting goods, by making customs and border procedures more efficient.

Recent research results show that simplification is indeed important for trade performance. For example, Djankov et al. (2006) use data from the World Bank's *Doing Business* report to show that the time taken to move goods through port facilities and customs administrations is an important determinant of the costs of trade, and can impact significantly on aggregate trade flows.

Having established the potential importance of simplification as a component of trade costs, we now provide some additional details as to the principal measurable indicators that can be used to assess economic performance against that criterion. These include:

- Percentage of tariff lines that are bound: A greater percentage of bound lines not only enhances the predictability of a tariff scheme, but it also helps make it simpler. Binding all tariff lines eliminates the costs for traders of finding out which tariffs are still entirely at the discretion of the government.

- <u>"Flatness" of the applied tariff schedule</u>: A flat tariff schedule considerably simplifies the cost calculations of traders. If the tariff dispersion across products and trading partners is low, traders are able to gauge their trade costs more easily without having to cope with search costs.

- <u>Absence of "hidden" trade barriers:</u> In addition to paying official charges, exporters sometimes need to deal with additional barriers whose existence is not always made plain in official texts. For example a given economy may feature anti-competitive practices amongst distributors. Reducing or eliminating such hindrances can bring about a simplification of trade policy.

- <u>Active Use of Information Technology:</u> Traders have to overcome additional costs if information on the trade regime is difficult to access. The active use of information technology has the potential to lower these costs substantially. Authorities should not only provide simple, easy, and non-discriminatory access to relevant information, but also communicate actively with the business community in order to better understand their needs.

- <u>More streamlined documentary requirements for import/export:</u> While some level of documentation will always be required to support international trade transactions, it must be recognized that each formality imposes costs on private economic actors. Fewer documentary requirements, and quicker clearance times, translate into lower administrative costs for exporters and importers. They can also mean lower information costs, in terms of understanding the set of steps that must be taken in order to ensure smooth passage through customs and border administrations.

- Fewer border agencies: As for documentary requirements, the number of border agencies with which exporters and importers must deal can also impact their costs. We expect that fewer agencies will cost companies less time—and therefore less money—than dealing with the administrators and compliance requirements of each agency.

- Limited unofficial payments: The need to make unofficial payments can in some cases impose an extra dimension of costs on exporters and importers. One example is the instance when a bribe is required in order to "facilitate" access to the national market, even after payment of official duties and taxes.[8]

As is the case for predictability, we will return to these indicators in Section 3 via a detailed benchmarking of APEC member economies.

Box: Peru's Path towards Effective and Transparent Customs Procedures

Customs reforms and comprehensive efforts to lower trade transaction costs have been conducted in Peru since the 1990s. Trade facilitation measures were implemented as an attempt to improve border procedures and import clearance. The impetus to address this subject was reinforced by the fact that Peru's geographic conditions can involve relatively expensive transportation, especially in the high and rugged areas of the economy. The 1991 customs reform program was implemented to improve personnel and to modernize operations. One of the most important results of this reform was a considerable reduction in transaction costs. For example, release times in customs decreased from 15-30 days to approximately two days. Lowering transaction costs helped increase foreign trade. Imports more than doubled between 1990 and 1996, from $4.5 billion to $9.6 billion (constant 2000 US$), and exports increased from $3.9 billion to $6.1 billion. Meanwhile customs collections went from $626 million to $2.7 billion and the customs contributions to total national revenue collections increased from 23 to 35 percent, this despite a reduction in staff of around 30 percent.

Following this momentum of positive change, the World Bank approved a loan to the Peruvian government in 2003 targeted to increase trade, productivity, and export competitiveness of Peru's private sector. The project leveraged earlier trade facilitation projects carried out by the

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[8] We are aware however that the mechanism will not always work in this way. If a bribe is paid in order to avoid official duties, then by assumption it should result in lower nominal trade costs. Nonetheless, the importer or exporter will still need to deal with an added "layer" of costs in having to deal with customs agents in order to "negotiate" an acceptable deal.

Peruvian government and set out to further enhance Peru's competitiveness. Previous trade expansion efforts had been focused on the traditional sector (mining, fishing, etc.), which had low growth potential. Consequently, the established objectives of the 2003 project were to "(a) establish a more streamlined, integrated and effective institutional and policy framework to increase nontraditional exports and (b) develop and implement initiatives designed to foster the entrance of new export market participants, especially small and medium producers."[9] Specifically, the project intended to reduce logistics and transaction costs by continuing to improve the efficiency of Customs, operational, and security procedures at seaports and airports. In 2006, the World Bank reported in its *Status of Projects in Execution* for Peru that the implementation of the project initially had experienced some delays, but that the pace of implementing reforms was increasing. At the time when the status review was published, one third of the activities had been completed, including important activities such as the development of specific export plans for key products and regions. The original closing date of the World Bank project has recently been extended by one year and is currently expected to be finalized by December, 2007.

More positive outcomes, in the form of enhanced trade flows and FDI, can be expected as Peru adopts more far-reaching measures in the field of trade facilitation. In April 2006 Peru signed a Trade Promotion Agreement with the United States, which includes in the final text a separate chapter on Customs administration and trade facilitation. Complying with the rules of this agreement will increase the predictability of the trade environment and lower trade transaction costs further.

Sources: Moïsé (2005); World Bank (2007, 2003); USTR (2006).

2.4   *Causality and Policy Reform: The Example of Corruption*

Thus far, we have focused on providing a typology of transparency as it applies to trade policy. It is not the case, however, that each aspect of the transparency measures outlined here corresponds to an exogenous policy lever that can be manipulated directly by policymakers to produce the desired results. We will use the example of corruption—a central issue in both dimensions of trade policy transparency that we have identified—to demonstrate the complexities involved in such an assumption.

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[9] See the Trade Facilitation and Productivity Improvement Technical Assistance Project webpage, http://go.worldbank.org/TPTGXHS8O1.

From a policy reform perspective, the relationships between unofficial payments, trade costs, and transparency are neither simple nor do they move in one direction. Policymakers cannot simply "reduce" corruption in order to improve transparency and thereby promote trade. Rather, it is probable that policy predictability, simplification, restrictiveness, and even openness to trade all interact to produce a set of incentives that structure corruption. The incentives for exporters and importers to make corrupt payments, and for customs officers to accept them, are in part determined by these dimensions of trade policy. In order to reduce corruption and mitigate its effects, policymakers need to concentrate on measures that affect economic incentives. Increased policing combined with harsher penalties is one—but only one—such step. Recent research (see Box below) shows that a variety of other tools are also available, including enhanced policy predictability. In sum, reforms that promote other aspects of trade policy transparency will tend to support efforts to reduce the negative impacts of corruption.

Box: Corruption and Trade—What are the Links?

While social norms and historical practices undoubtedly play a role in explaining different prevalence rates of corruption across economies, there is increasing evidence that economic incentives also matter. Economic analyses of corruption usually model the phenomenon as the outcome of rational choices by individual actors, given external constraints such as the likelihood of being "caught", severity of punishment, and likely gains. This approach suggests that for a given level of policing and punishment, it might be possible to reduce corruption by designing policies that reduce the incentives for individuals to engage in corrupt practices. In the trade context, restrictive and non-transparent trade policy can constitute one important source of corruption incentives: by imposing unnecessarily high costs on "legitimate" traders, such policies can make it worthwhile for exporters and importers to look for ways around legal requirements—and to be prepared to exchange bribes for "services" in order to do so.

What does the empirical evidence say about this conjecture? A number of recent papers shed some light on the topic, although research in this area is still in a relatively early phase. On the one hand, Anderson and Marcouiller (2002) find evidence that corruption has a negative effect on bilateral trade flows. Meanwhile, Fisman and Wei (2004) find evidence that higher tariffs are robustly associated with greater tariff evasion in the context of trade between Hong Kong, China, and the mainland. Their results are confirmed for Eastern Europe by Javorcik and Narciso (2006), who also show that evasion is more serious for differentiated products. Gatti (2004) applies a different methodology to obtain similar results across a broad cross-section of

developing economies. Finally, Gatti (1999) shows that transparency, measured by tariff rate dispersion, also impacts the prevalence of corruption in trade transactions.

In sum, there is now an emerging body of evidence to support the view that corruption matters for trade. And moreover, its prevalence in trade transactions can potentially be influenced by appropriate design and implementation of trade policy, focusing on restrictiveness and transparency.

Sources: Anderson and Marcouiller (2002); Fisman and Wei (2004); Gatti (2004, 1999); Javorcik and Narciso (2006).

2.5   *Consolidation: Trade Facilitation through Policy Predictability and Simplification*

In this section, we have set out the concept of transparency as it applies to international trade and trade policy. We have defined it in terms of two central components that relate directly to APEC's trade facilitation agenda: policy predictability and simplification. For a constant level of restrictiveness, improvements along either of these two dimensions can contribute to lower trade costs and closer economic integration.

Trade policy reform which promotes transparency can therefore be seen as a dimension of trade facilitation in the broad sense (Wilson et al., 2005), and there is a case for linking transparency with broader policy discussions on the full range of policy instruments available to reduce trade costs. These include improved customs administration and processing—i.e. trade facilitation in the WTO sense (Finger and Wilson, 2006)—as well as improved trade infrastructure, product and service market regulation, and now trade policy transparency. These issues are at the heart of efforts to move forward on trade and economic integration, in particular for economies that have already been relatively successful in lowering traditional border barriers—as is the case for many APEC member economies. APEC's approach to trade facilitation, which is now coming to overlap with its ongoing work on transparency, fits well within this schema: member economies

agree on a common goal to reduce trade costs by a given percentage, but are relatively free to choose the blend of policies which best suits their individual circumstances.

Against this background the next section examines in detail the experiences of individual economies in terms of policy predictability and simplification, through a quantitative benchmarking exercise. We consider both objective outcome indicators and "process" indicators, based on goals set and progress made within the framework of APEC Individual Action Plans (IAPs).

3   Trade Policy Transparency in APEC

As noted, APEC member economies have long recognized the importance of trade facilitation and transparency in relation to progress toward the Bogor Goals of open regional trade and investment flows, as well as in more generally fostering economic exchange and integration. This section presents a brief stocktaking of the activities and achievements of APEC member economies in the field of trade policy transparency.[10] It also identifies areas in which significant challenges still remain. In its structure, it follows directly from the analysis of the previous Section in treating the two core elements of transparency individually, namely predictability and simplification.

3.1   APEC Reform Ambitions and Successes

As outlined above, the governments of the APEC economies have recognized the need to facilitate trade in the region and committed themselves to an ambitious work program outlined in the Bogor Goals. In 2002 APEC member economies agreed on a Trade Facilitation Action Plan,

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[10] For a more general assessment of APEC's progress on regional integration, see Centre for International Economics (2005).

which consists of a menu of concrete actions and measures for trade facilitation. This menu includes 97 items of actions and measures with the following breakdown: 60 on customs procedures, 20 on business mobility, 6 on standards, and 11 on electronic commerce. Since APEC is based on the principle of self-commitment, each economy was free to choose the number of goals and the actions and measures it would like to achieve. Despite this voluntary approach, APEC economies have proven to be very ambitious in translating the Bogor Goals into concrete action. Since 2002, APEC economies have taken over 1,400 actions and measures and completed 62% of those; the rest are in progress or pending (APEC, 2007).

Every year, each APEC member submits an Individual Action Plan (IAP) which records all actions undertaken towards the achievement of the Bogor Goals. In order to increase the objectivity and transparency of IAPs, the APEC member economies introduced a peer review process in 2002. Teams of peer reviewers from other APEC member economies now help conduct independent research and analysis. Concerning the topic of trade facilitation, the IAP contains a summary table at the end of each report that documents the success achieved so far in implementing the Trade Facilitation Action Plan (TFAP). In more detail, the table reports three important numbers:

- The total number of actions and measures selected from the TFAP.

- The number of actions and measures that are being implemented.

- The number of actions and measures completed.

Figure 1 provides a visual summary of these numbers for the year 2006 or the latest year available. It is surprising that the level of ambition in realizing the TFAP goals varies substantially among APEC economies. Whereas Chile, Japan, and Mexico were willing to adopt

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the complete list of goals, other economies such as China and the USA showed considerable reluctance. New Zealand reported a higher number of actions and measures than it was supposed to take. It remains unclear whether this constitutes a reporting error or whether New Zealand split certain measures into subcategories.

The second column presents the number of goals that were or are currently pursued. In most cases the gap between the first and second column is small, indicating that the economies have started implementing the TFAP goals. However in China and Vietnam the gap between targeted goals and concrete actions or measures remains considerable.

Figure 1 Ambition, Progress, and Achievements of the Trade Facilitation Goals
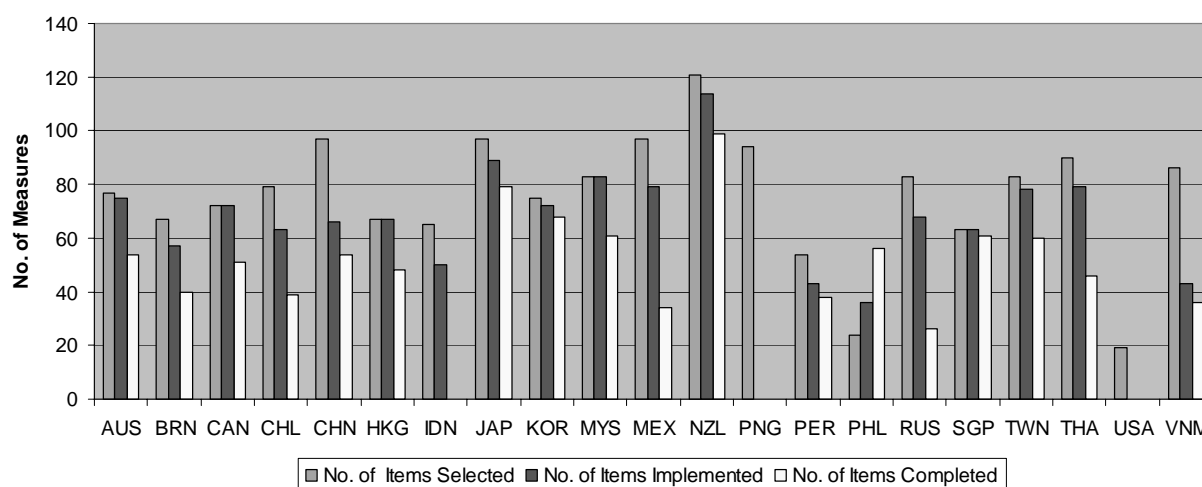
Source: APEC Individual Action Plans (2006 or latest available year)

Finally, the third column counts the number of TFAP goals that have been successfully achieved in the period from 2002 to 2004/2005. The difference between the second and third column therefore indicates the number of projects that are currently under way to complete the remaining goals. Several economies, such as Japan, Peru, and Chinese Taipei have been highly successful in implementing a large number of TFAP goals within a short period of time. In other cases, such as Chile and Mexico, much work remains to be done.

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One can also evaluate the success of APEC economies in implementing trade facilitation measures at a lower level. Each APEC economy is supposed to establish the same statistics as above for all four categories: customs procedures, business mobility, standards, and electronic commerce. The results of this finer analysis are reported in the following figures.

Figure 2 Reform of Custom Procedures in APEC
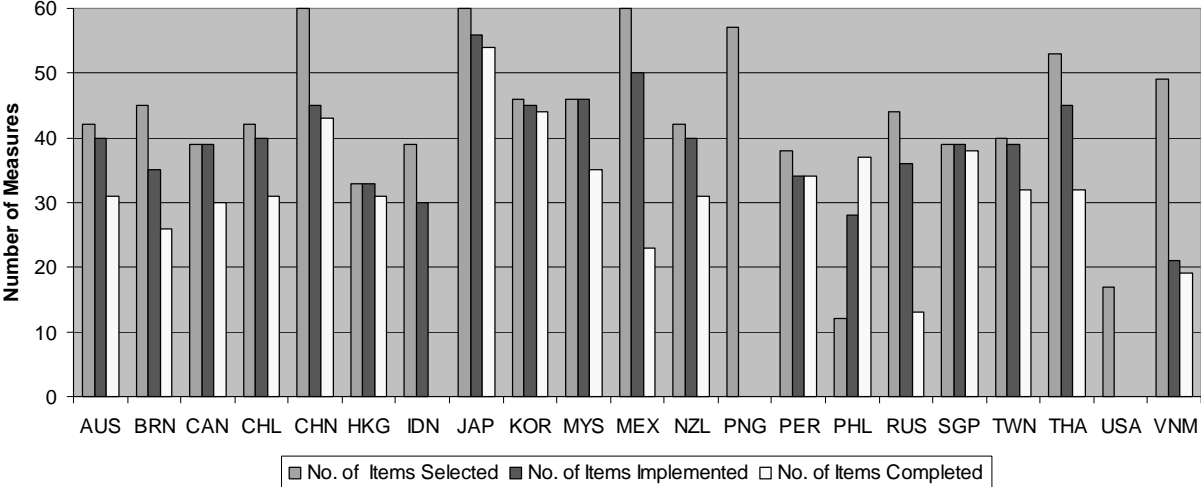
Source: APEC Individual Action Plans (2006 or latest available year)

Reforming customs procedures has become an objective of the majority of APEC economies (Figure 2). China, Japan, Mexico, Papua New Guinea, and Thailand show the greatest ambition in selecting reform items (first column); Canada, Hong Kong China, Malaysia, and Singapore have been particularly successful in implementing reforms of customs procedures (second column).

APEC economies have also agreed to undertake efforts to enhance the mobility of businesspeople in the APEC region (Figure 3). This objective is supposed to be achieved through a streamlining of travel documentation procedures, as well as a more active use of information and communication technologies. For example, the latter should be used to speed up clearance

upon arrival and make visa information and application available on the internet. Australia, Canada, Hong Kong China, Japan, Malaysia, New Zealand, and Chinese Taipei have already completed more than 10 out of 20 possible actions and measures to increase business mobility as depicted in Figure 3 (the number for New Zealand might again be subject to reporting errors.)

Figure 3 Improvement of Business Mobility in APEC
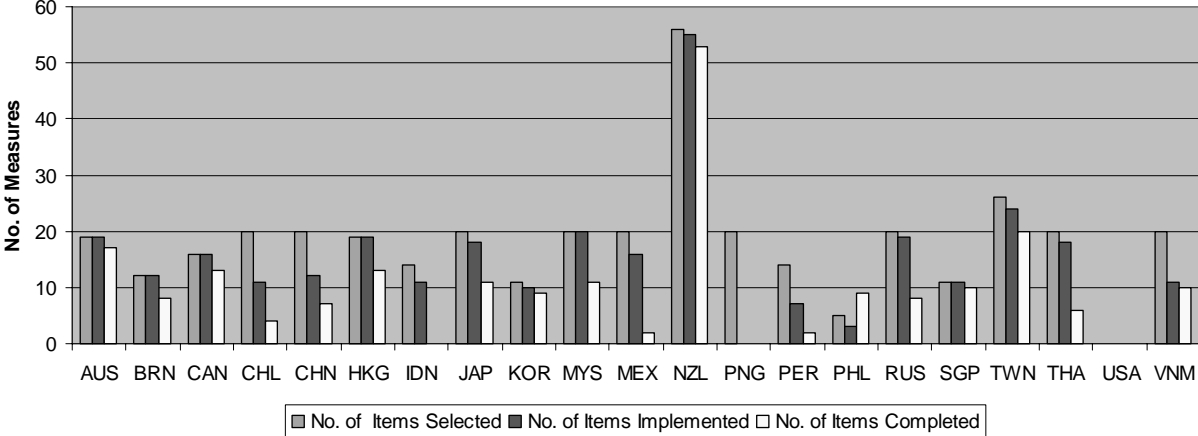
Source: APEC Individual Action Plans (2006 or latest available year)

The majority of APEC economies have selected all six items related to standards (Figure 4). The exceptions are Brunei, Peru, the Philippines, and Russia. Adherence to regional or international standards can be a key aspect for domestic firms interested in exporting, but also for foreign investors. In most of the APEC economies substantial reform efforts are underway, and several economies are close to completing all items.

Figure 4 Standards in APEC
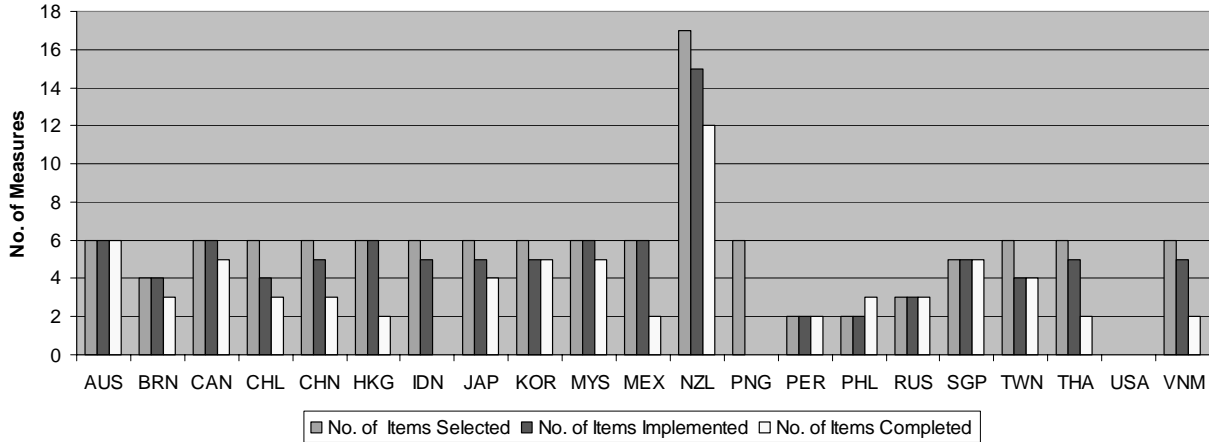
Source: APEC Individual Action Plans (2006 or latest available year)

The reform ambitions for electronic commerce are diverging among APEC members as demonstrated in Figure 5. Twelve economies have adopted all possible actions and measures; others such as New Zealand or the USA are less ambitious. The gap between implementation and completion is still considerable in many economies.

Figure 5 Introduction of Electronic Commerce in APEC
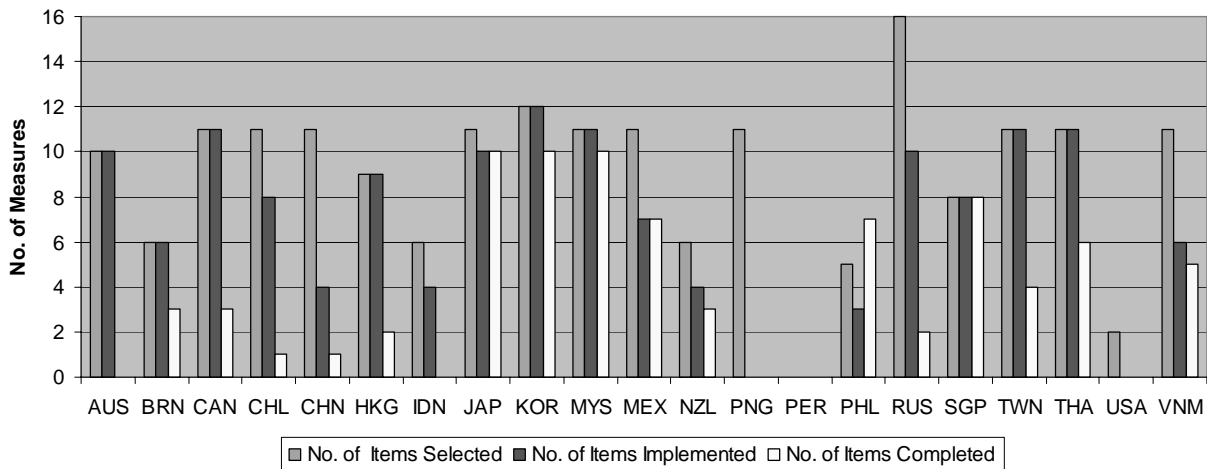

Source: APEC Individual Action Plans (2006 or latest available year)

The above analysis reveals interesting information about the ambitions and success of APEC economies in facilitating trade. Unfortunately, doubts exist about the comparability of the data submitted by APEC members. For example, New Zealand selected more items than any other APEC economy and thus seems to show reform ambitions far beyond those. In other cases, national authorities apparently submit incomplete information. For example in the case of the USA information seems to be missing in all categories, which makes an evaluation of its performance impossible. Considering these shortcomings of the data on trade facilitation measures provided my APEC members, the following sections present additional indicators on various dimensions of trade policy transparency from other sources.

Box: Trade Policy Restrictiveness in APEC

As previously discussed, transparency and restrictiveness are closely intertwined when it comes to trade policy. Figure 1a provides an overview of the several key characteristics of the tariff schedule among APEC members. In the first column the average effective MFN tariff rate is depicted, which includes ad valorem as well as specific tariffs. The overall tariff level in APEC is low and for the majority below 10%, the only exceptions being Mexico, Thailand, and Viet Nam where the effective rate reaches an average level higher than 15%. In the second column we weight the tariffs by the total trade volume of each economy. The overall tariff level in APEC now becomes even smaller, and does not cross the 15% mark for any economy. Finally, we have also gathered information on the effectively applied tariff rate (trade weighted) which takes into account preferential trade arrangements amongst APEC members. Except for Chinese Taipei, the preferential effective tariff rate is considerably lower than the MFN tariff rate; this is a clear sign of the regional integration underway in the Pacific Rim region.

Figure 1a: APEC Trade Policy Restrictiveness
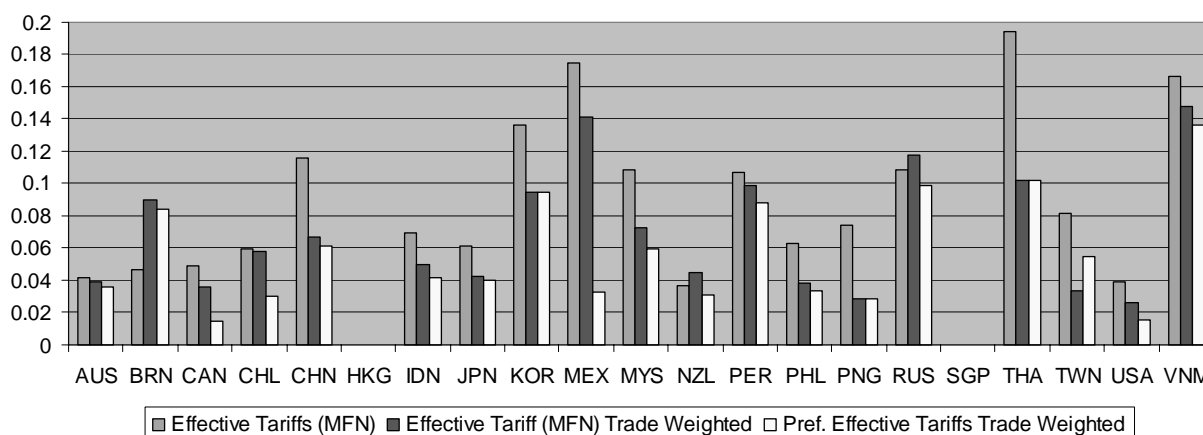
Sources: MAcMap (Laborde et al., forthcoming); Kee et al. (2006); authors' calculations.

3.2   Elements of Trade Policy Predictability

3.2.1   Tariff Schedule Complexity

One empirical measure of the complexity of a tariff schedule is the dispersion of tariff rates across products. A high dispersion would indicate that the tariffs fluctuate substantially, and therefore render the tariff schedule less transparent. The first column of Figure 6 depicts the standard deviation of effective applied MFN tariffs[11] in HS 4-digit product groups for all 21 APEC economies. It is interesting to observe that Chile, which applies a flat tariff for almost every product line, Hong Kong China, which allows duty-free trade across all lines, and Singapore, all show relatively low levels of tariff dispersion—as expected given their respective policy choices.

Another indicator of transparency in tariff policy is the percentage of bound tariff rates. APEC economies which are also WTO members are able to bind their tariffs at a certain rate, which cannot easily be exceeded.[12] Tying the authorities' hands with respect to the level of tariffs translates into a higher predictability for traders, which ultimately reduces the costs of doing business. Gauging the percentage of bound tariff rates reveals the degree of certainty that traders face. The second column of Figure 6 shows the results for the APEC economies. Since Russia is not a WTO Member, and Vietnam was not either for the base year of our tariff data (2004), these countries were not able to bind their tariffs and therefore are recorded as having 100 percent of unbound tariffs. Hong Kong China, the Philippines, Singapore, and Thailand have the highest

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[11] The effective applied MFN rate takes into account specific tariffs by dividing them by the unit value. For more information see data appendix.

[12] WTO Members are allowed to apply a lower tariff level and freely change it as long as it stays below the bound rate. WTO members therefore often prefer to bind their tariffs at a relatively high level in order to maintain considerable freedom in their tariff policy decisions.

percentage of unbound tariff rates. However, the majority of APEC economies (13) has bound more than 95% of all tariff lines and thereby makes an important contribution to a stable trade environment.

Figure 6 Indicators of Tariff Schedule Complexity for 21 APEC economies
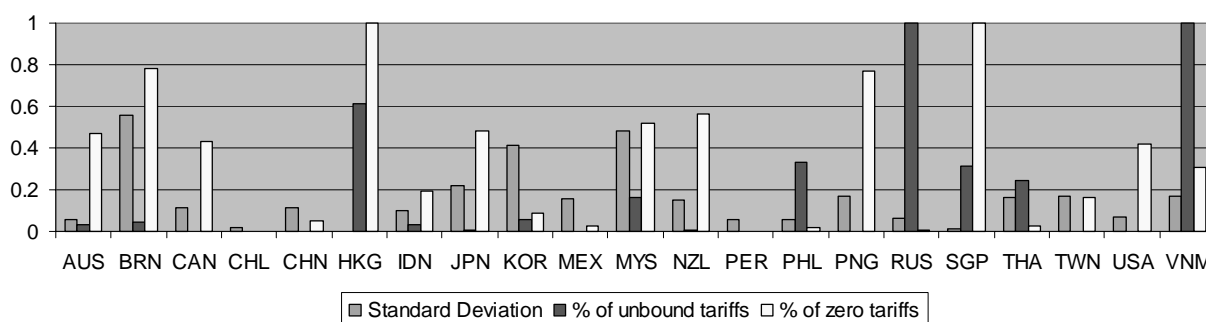
Source: MacMap; authors' calculations

Finally, another dimension to capture transparency in trade policy is to count the number of duty-free tariff lines. Allowing duty-free market access is the clearest and strongest commitment to the international integration of an economy. In the APEC group only Hong Kong China applies a policy of duty-free market access across all product groups, as illustrated in Figure 6. It is interesting to observe that Brunei and Papua New Guinea grant duty-free market access in almost 80 percent of the tariff lines. On the other hand, we count eight economies (Chile, China, Korea, Mexico, Peru, the Philippines, Russia, and Thailand) in which traders enjoy duty-free market access in less than 10 percent of all products.

The comparison of different dimensions of complexity regarding the tariff schedule yields the overall result that further improvement is possible in all APEC economies. The dispersion of tariffs and the percentage of unbound tariff rates are low in the majority of developed APEC economies; however, duty-free market access remains the exception. The main objective for

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developing economies, in order to increase the predictability of their tariff schedules, is to

increase the binding of their tariff rates and to allow more duty-free market access.

Box: Tariff Policy in Korea

Korea's simple average bound tariff rate fell from 27.6 % in 1996 to 17.67 % in 2002, and reached the level of 17.2 % in 2006. The Korean government aims at a level of 17 % for the year 2009. In the Korean tariff schedule 91.5 % of all tariff lines are bound, metals and agriculture (excluding fish) being the sectors with the highest percentage of bindings. The average level of bound tariffs differs considerably between sectors, reaching 61.1 % for agricultural products and 10 % for industrial products.

Korea's simple average-applied tariff has also decreased, from 13.8 % in 2000 to 12.8 % in 2006. Again, one observes a marked difference between the simple average-applied tariff for agricultural products (47.9 % in 2004) and the rates applied to industrial products (6.6 % in 2004). Compared to other developed economies, the average tariff rate in Korea remains high, as illustrated in Figure 6. The Korean government collects a considerable about of revenue from customs duties, amounting to 4.8 % of national government revenue in 2006.

Furthermore the Korean government applies a large number of other tariff measures, such as autonomous tariff quotas which grant lower duties for certain imports. Korea was ready to lower substantially its tariff level for economies with which it signed free trade agreements. According to the Korean government the average-applied tariff for the free trade agreements negotiated with Chile, Singapore, and the EFTA countries is 2.03 % and therefore significantly lower than the MFN rate. Overall the Korean government seems committed to the creation of a more open, stable, and transparent tariff regime.

Sources: APEC IAP Korea (2006); APEC Report of the IAP Peer Review of Korea (2007); WTO (2004).

3.2.2   Presence and Transparency of Non-Tariff Barriers (NTB)

The national tariff schedule is not the only trade policy instrument available to governments.

Other measures, often summarized as non-tariff barriers (NTBs), form a second group of

instruments in the policymaker's toolkit. NTBs encompass all measures that have potential trade

effects, such as technical standards, trade remedies, or quotas. As multilateral, regional and

bilateral trade liberalization efforts have pushed the overall tariff level down, NTBs are gaining

more and more significance in the international trading system. One way to limit the distorting effects of these measures is to apply them in a predictable and transparent manner. In our analysis of trade policy transparency in APEC economies we are therefore interested in the presence of NTBs, but also in the transparency of these measures.

Comparative analyses of NTBs are relatively rare, mainly because many NTBs are not easily quantifiable. Ching et al. (2004) provide an insightful analysis of the presence of NTBs is the Pacific Rim region using a small firm-level survey. According to their study, NTBs are frequently encountered in this region and they have a significant impact on firms' production costs, revenue, and expansion plans. Recently, the World Bank Development Research Group (see Kee et al., 2006) developed an index of trade restrictiveness that covers a large number of developing and developed economies. Trade restrictiveness is measured taking into account the tariff level but also NTBs. Among the NTBs considered are price and quantity measures, monopolistic measures, and technical regulations. The exact data sources and methodologies are described in detail in Kee et al. (2006). For our purposes, we only use the measurement of NTBs and focus on the 19 APEC economies for which data is available (Kee et al., 2006 did not cover Chinese Taipei nor Vietnam since no adequate data on NTBs was available). In order to allow a comparison of APEC economies with other economies we also report the average performance of economies classified by the World Bank as low-income, lower- and upper-middle income, and high-income. Rescaling Kee's et al. (2006) index for NTBs from 0 (not restrictive) to 1 (highly restrictive) yields the results presented in column 1 of Figure 7. Compared to the world average for low-, middle-, and high-income economies, most APEC members do considerably better.

Whereas the trade restrictiveness index mainly focuses on the existence of NTBs, additional information is needed to gauge the degree of transparency in the application of NTBs. The *Global Competitiveness Report* (GCR) published by the World Economic Forum (WEF) provides useful information in this respect, based on trade barriers as identified by the business community.[13] In the 2004 GCR, survey participants were asked to assign a score from 7 (strongly agree) to 1 (strongly disagree) to each of the following questions:

- "In your country, hidden import barriers (that is, barriers other than published tariffs and quotas) are an important problem or not an important problem?"

- "In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with the import and export permits?"

The first question aligns well with the subject of interest here and the answer serves as an appropriate proxy to gauge the degree of transparency in the application of non-tariff measures. The second question goes in a similar direction, but focuses more on NTBs related to red-tape and corruption. We have collected the answers to these two questions for 19 available[14] APEC economies and rescaled the results from 0 (hidden import barriers/extra payments or bribes are not a problem) to 1 (hidden import barriers/extra payments or bribes are a problem). The results are presented in the second and third columns of Figure 7.

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[13] Each year the WEF conducts an international survey assessing the competitiveness of a large number of developed and emerging economies.

[14] Brunei Darussalam and Papua New Guinea were not covered in the 2004 GCR.

Figure 7 Indicators of the Presence of Non-Tariff Barriers for 21 APEC economies
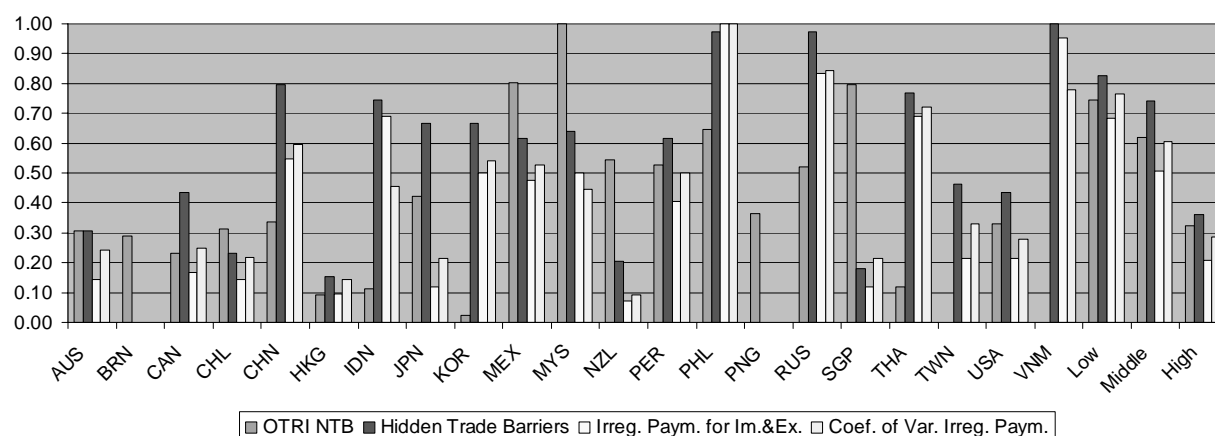
Source: Authors' calculations based on Kee et al. (2006); GCR; and WTO.

According to the GCR data, Hong Kong China, New Zealand, and Singapore take the lead in this comparison. Most of the middle-income economies in APEC do better than the world income group average. However, in China, the Philippines, Russia, and Thailand the business community perceives hidden trade barriers that are above world-average for middle income economies. Finally, in the one APEC economy which belongs to the low-income group, namely Vietnam, traders still appear to struggle with hidden trade barriers, also as compared to other low-income economies.

Box: Improving Transparency and Predictability in Indonesia

Trade activities were the engine of growth during Indonesia's economic liberalization period in the 1980s and 1990s. Indonesia's economic progress has been relatively strong in light of the many exogenous shocks and natural disasters that have affected the economy: Gross Domestic Product expanded on average by approximately four percent annually between 1989 and 2005. Nevertheless addressing high trade transaction costs is a priority; transportation and port services, together with cumbersome customs procedures, have been recognized as impediments to trade. Especially during times of crisis, relatively high trade transactions costs can undermine the competitiveness of businesses.

During the past several years trade facilitation measures have significantly improved the trade and business climate in Indonesia. Current reforms should further enhance this trend. Strengthening the predictability of the trade environment has been an important element in these reform efforts. For instance a risk-based management system has been applied to revise the existing control system, in order to better differentiate between high-risk and low-risk importers.

The new system allows customs to be proactive in their risk assessments and to more effectively allocate resources, i.e. to shift more of their focus to high-risk importers. Moreover since low-risk importers could be given preferential treatment, gains were twofold: not only did security measures become more focused, but incentives for importers to comply with customs procedures were enhanced since a good track record now increases the chances of success in the future. Overall it has facilitated a more efficient customs environment, implying a faster clearance of goods.

Sources: Damuri (2006); World Bank (2007); WTO (2007).

In studying the answers to the second question about undocumented extra payments or bribes, a similar result emerges (third column). In Indonesia, the Philippines, Russia, and Thailand extra payments or bribes connected with import and export permits are apparently widespread. All high-income APEC economies do better than the world average, the only exception being Korea which has a score closer to the average of middle-income economies.

The GCR provides not only the average score for each of these questions, but also the standard deviation of the replies. The standard deviation reveals important information about traders' relative certainty of confronting hidden trade barriers or irregular payments. Even though the standard deviation is not a direct measurement of uncertainty, the dispersion of answers indicates how differently the issue is perceived and therefore helps us gauge the uncertainty among traders. The last column of Figure 7 depicts the coefficient of variation for the replies given to the question on irregular payments for imports and exports. The two extremes are New Zealand on the one hand and the Philippines on the other. In New Zealand, irregular payments appear to be rare and traders know what to expect. In the Philippines, irregular payments for imports and exports remain and their size varies substantially.

3.3   *Elements of Trade Policy Simplification*

Trade policy affects more than tariffs and non-tariff measures. In many economies, the flow of goods and services remains hindered by complicated customs regulations, insufficient use of modern technology in customs, the lack of handling and transportation infrastructure, or by other shortcomings. In economies which still face problems facilitating trade, traders must consider additional costs when selling or buying goods and services on international markets.

The annual *Doing Business* report of the World Bank collects, among other data, detailed information on the success of trade facilitation measures. For example, the efficiency of customs is documented in data which record the number of documents as well as the number of days needed for importing or exporting. In Figure 8 we present the respective *Doing Business* data for 20 APEC economies (Brunei was not covered by the survey) as well as the average results for the low-, middle-, and high-income groups.

The first interesting observation is that the number of documents and days needed for exports are lower in most economies than for imports. Only in the case of Australia and the USA are more documents required for exports than for imports. Furthermore, only in Russia, Thailand, and Vietnam does the delay for exports exceed the delay for imports. The two low-income economies among the APEC economies, Papua New Guinea and Vietnam, require less documentation for exports and imports than the low-income average. Most middle-income APEC economies require a number of export or import documents that is similar to the world average for this income group; the Philippines and Mexico perform particularly well in this comparison. Among the high-income APEC members Canada achieves the best score, asking for only three export and four import documents.

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The difference in APEC economies is particularly pronounced concerning the days needed for imports and exports. Several empirical studies have pointed out the importance of timeliness for the trading performance of economies (Hummels, 2001; Evans and Harrigan, 2005). In a recent World Bank study, Djankov et al. (2006) find that a one-day delay before shipping is estimated to reduce trade by 1%. In nearly all APEC high-income economies, the number of days required for imports and exports is lower than the world average for this income group. Singapore in particular has been very successful in streamlining customs procedures. The majority of middle-income APEC economies show a similar above-average performance in the category. Furthermore it is promising to note that Papua New Guinea and Vietnam have clearance times that are similar to the middle-income average, and substantially superior to the average of low-income economies.

Figure 8 Customs Efficiency
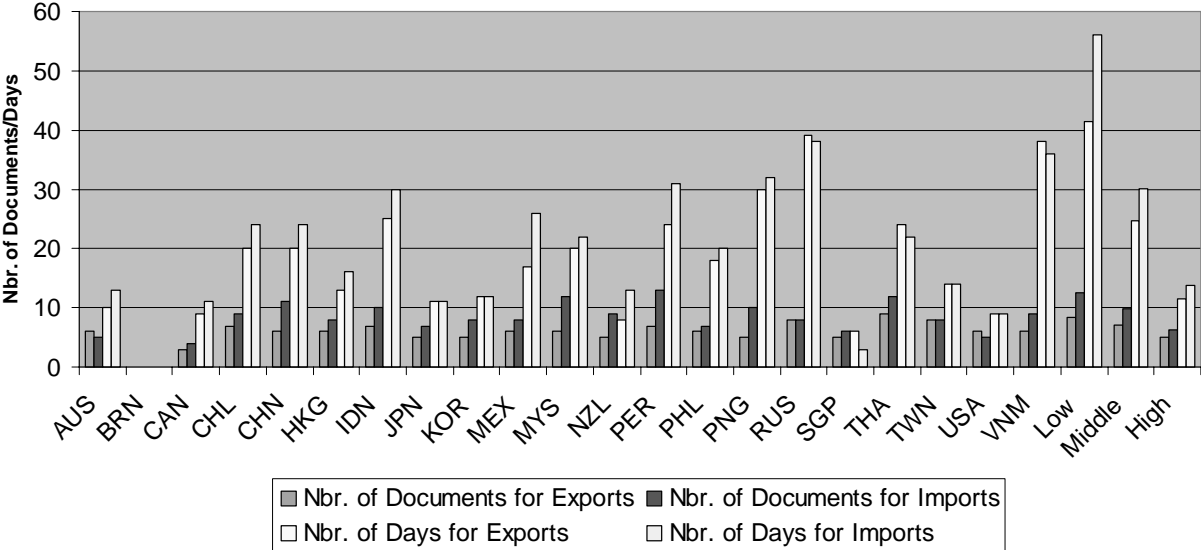
Source: World Bank, *Doing Business 2006*

In the 2007 *Doing Business* report the total number of days and documents needed for imports and exports are reported, as well as the exact cost and time shares in terms of document

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preparation, customs, terminal handling, and inland transportation. This detailed information allows us to identify which particular problems cause high transaction costs for traders. The results for 20 APEC member economies (except Brunei) are presented in the following four tables.

Figure 9 reports the time requirements in days, for the four groups, when it comes to imports. Overall, it can be observed that document preparation takes the lion's share in terms of time in all APEC economies. Interestingly, document preparation is faster in the Philippines and Thailand than it is in Mexico or Russia, even though both latter economies perform very well concerning time spent in customs. With some minor exceptions, customs clearance seems to be performed relatively quickly in APEC. When it comes to the time spent in terminal handling, the majority of APEC economies are faster than the world average in their respective income groups. Overall, inland transportation is the least time-consuming cost factor. However in some economies such as New Zealand, Mexico, Peru, or Russia, inland transportation amounts to over five days, which may be linked to particularly difficult geographical circumstances.

Figure 9 Time Shares for Imports (Doing Business, 2007)

Source: World Bank, *Doing Business 2007*

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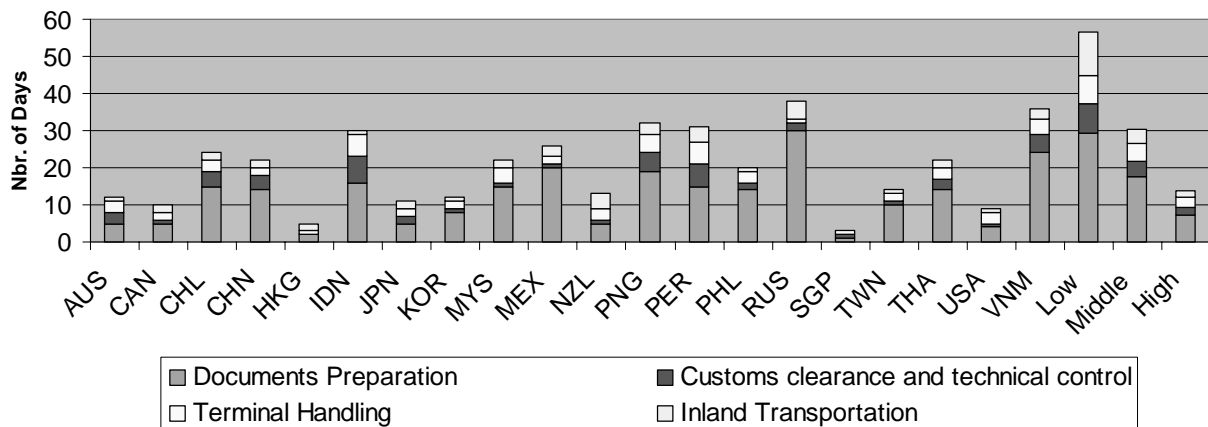
A different picture emerges when one focuses on the costs shares for imports, illustrated in Figure 10. The costs of document preparation and customs clearance become minor for most of the APEC economies. The costs for terminal handling vary considerably among APEC economies. Among the middle-income group, terminal handling costs are particularly low in Chile, China, and Malaysia. Compared to the world average in this income group, most APEC economies show a superior performance. The cost for inland transportation is very low in Indonesia and Thailand, but still relatively high in Japan and Korea.

Overall, the costs for importing vary substantially across APEC economies. It is promising to observe that several middle-income economies offer lower import costs to traders than high-income economies. For example, imports into China and Malaysia cost half of those going into Australia and Canada.

Figure 10 Cost Shares for Imports (*Doing Business 2007*)
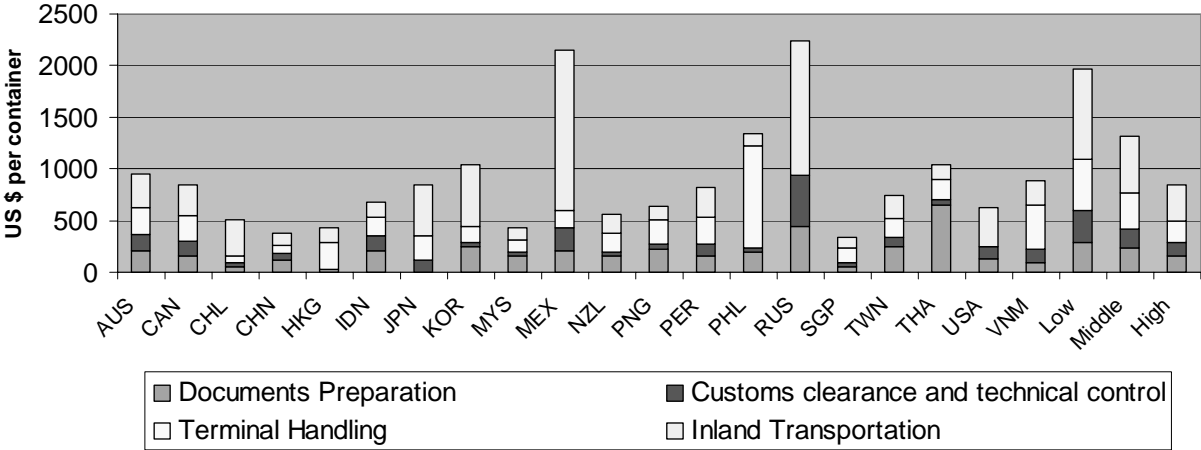
Source: World Bank, *Doing Business 2007*

Box: Thailand and Trade Facilitation through New Technology

As in many developing economies, trade plays a significant role in Thailand. The GDP shares of exports and imports have risen considerably over the past decade. Taken together they amount to around 150 percent of GDP. The Thai Government has focused on trade liberalization and

facilitation as a wider strategy to achieve economic development. In terms of trade facilitation, it has been successful in using new technology to improve its customs procedures. The Customs Department has reportedly managed to implement the Electronic Data Interchange (EDI) for a wide area of documents. This has significantly helped import and export processing systems, by better connecting trading partners to customs. Solutions such as these have made it possible for traders to settle tariff calculations and payments online.

Moreover, the Electronic Fund Transfer (EFT) has been established to make settlements of customs duties between importers and exporters easier. Another example is the "Single-Window e-Logistics" project. As a result of a nation-wide strategy to improve the economy's competitiveness through efficient logistics information, the project is supposed to build up a network intended to accommodate government agencies, private firms, and logistics communities in exchanging trade related services.

Sources: WTO (2005, 2003); World Bank (2007).

The 2006 Logistics Perception Index (LPI) of the World Bank is another source to measure particular dimensions of simplification in this area. The LPI attempts to capture the logistics "friendliness" of economies and is based on a survey of global freight forwarders and express carriers. The data covers 100 economies, including all APEC economies except Brunei Darussalam, Papua New Guinea, and Chinese Taipei.

The LPI contains several variables which are worth studying in the context of transparency. The first two variables of interest are the number of border agencies involved in imports and in exports. The results for the APEC economies are depicted in Figure 11 (rescaled from 0 to 1), together with the average of the above-mentioned income groups. Compared to the three different world averages the majority of APEC economies demonstrate a strong performance, with fewer border agencies involved in imports than the respective average. This is especially true of Singapore, which appears to possess a highly efficient structure of customs.

Figure 11 Logistics Perception Index 2006 Indicators for APEC Economies
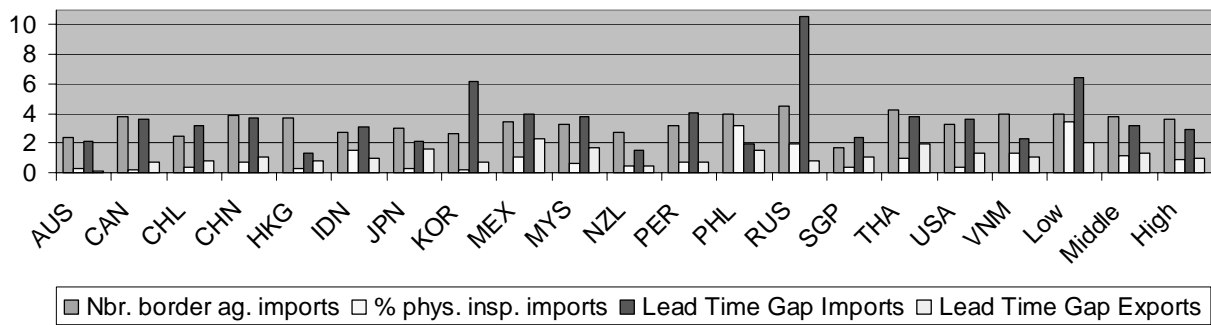
Source: World Bank, Logistics Perception Index 2007

The LPI also collects data on the percentage of physical inspection of imports. Physical inspection of traded goods might constitute an important procedure in the verification system of customs, however it is a time-consuming process and also increases the possibility of bribes and other irregular payments (World Bank, 2006). Physical inspections are almost absent in the most high-income economies, such as Australia, Canada, Japan, or Korea. The middle- and low-income economies use this instrument to a lesser extent than the world average, with the exception of the Philippines, Russia, and Indonesia.

The LPI also records the maximum and minimum lead time for exports and imports. The gap between both reveals interesting information about the predictability of clearance times for traders. If the difference between both variables is small, traders are able to manage the supply-chains with greater accuracy. In the last two columns of Figure 11, we bring together the gaps in clearance times for imports and exports for APEC economies as well as the average for low-, middle-, and high-income economies. Vietnam, the only low-income economy in APEC covered by LPI, has very low gaps in both dimensions which places it among the best performers such as Singapore. The middle-income economies in APEC have similar gaps to the world average for

this group. Among the high-income economies, Hong Kong China and New Zealand take the lead.

Traders are affected by transparency not only in the trading environment, but also more generally in the business environment. Inefficient and corrupt public services create additional costs for firms, and thus undermine their international competitiveness. In order to measure the transparency level of the regulatory environment in APEC economies, we collected data from three different sources. First, the *Doing Business* report contains data on the number of procedures, number of days, and costs for lawsuits. Second, the *UN Global E-government Readiness Report* assesses governments' use of the internet for the provision of information, products, and services. It also measures the level of telecommunications and human capital infrastructure development in an economy. Third, in the *Global Competitiveness Report* survey participants are asked to evaluate the business cost of corruption in their economy.

All three data sources offer a different view on the regulatory environment in an economy. The *Doing Business* report focuses on the legal-judicial environment. For our purposes, we have selected the variable which measures the number of administrative procedures from the moment the plaintiff files a lawsuit in court until the moment of payment. The available data for APEC economies is presented in

Figure 12 on a scale from 0 to 1, and presented together with the average for low-, middle-, and high-income groups. Comparison of the APEC economies reveals that in Hong Kong China and the USA the judicial system is organized in the most efficient way, making only 17 procedures necessary. The majority of middle-income APEC economies require more procedural steps for enforcement than the world average of the same income group.

In the second column of Figure 12 we summarize the performance of APEC economies with respect to their e-government readiness (lower values indicate a higher degree of e-government readiness).[15] In this comparison, nearly all middle- and high-income APEC economies do far better than the world average of the corresponding income group. Australia, Canada, Korea, New Zealand Singapore, and the USA have achieved a particularly high level of e-government readiness. In Papua New Guinea as well as Vietnam much work remains to be done in order to increase the government's use of the internet, and to build up a comprehensive information technology infrastructure.

Figure 12 Transparency of the Regulatory Environment
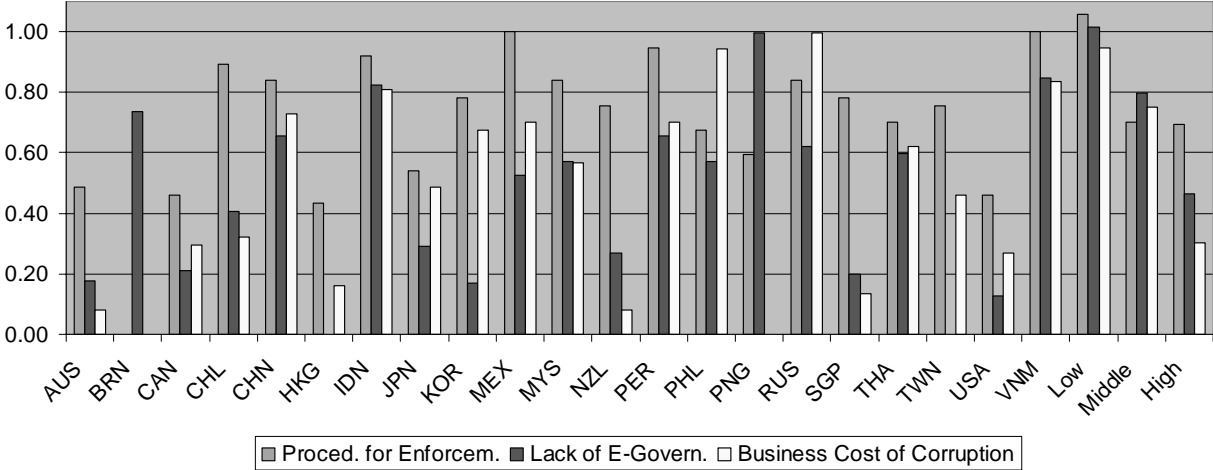
Finally, the results of the GCR on business costs of corruption are summarized in the last column of Figure 12. New Zealand and Australia stand out as economies in which corruption is perceived as almost absent. Chile and Chinese Taipei also show a very strong performance in

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[15] The *UN Global E-government Readiness Report* does not contain data for Hong Kong China and Chinese Taipei.

their income group. Corruption seems to severely impact business in other economies, especially several developing member economies.

Taking all variables together, we note that Australia, Canada, and the USA offer a regulatory environment with the highest degree of regulatory certainty. Several APEC economies from the middle-income group have chosen an ambitious agenda in order to build up a more efficient regulatory environment, and the first fruits are already visible.

Box: Customs Reform in Vietnam

During the last two decades Vietnam has changed from a closed economy into a strong exporter and an active participant in world markets. Between 1990 and 2005, GDP grew by 7.4 percent per year on average. The rapid expansion of exports, which grew by approximately 21 percent per year, is considered to be an important contributor to this positive development. Many of the trade reforms the Vietnamese government has committed to under the ASEAN Free Trade Area, the bilateral trade agreement with the United States, and WTO accession are examples of how openness and export strategies can foster development.

As Vietnam's trade with the rest of the world has increased, the incentive to focus on trade reforms continues. The World Bank has supported projects to assist reform and capacity-building in these areas. For example, the Bank approved a US$65.9 million credit to Vietnam in 2005. The rationale behind this project, entitled the *Customs Modernization Project*, rests on the fact that a modern and efficient customs administration is an integral part of Vietnam's transformation into a market economy. The project has four basic components and builds on the work of other development partners such as the United Nations Development Program, the World Customs Organization, and the Asian Development Bank.

The first component refers to customs systems and procedures, with the main objective of reducing clearance times, enhancing transparency and predictability, reducing red tape, and lowering trade transaction costs in general. This will partly be done through capacity-building related to legal frameworks, the use of procedures such as risk management, and harmonizing standards with international norms. The second component addresses the need to restructure the customs organization and its management; this objective involves introducing new human resource management policies, complemented with measures such as streamlining the organizational structures at headquarters and in branch offices. The third component sets out to introduce modern information and communication technology in customs. The fourth component aims to provide technical support to the Management Unit of the project during all stages of implementation.

Sources: World Bank (2007, 2005); Swedish Trade Procedures Council (2003).

3.4   Summary of Overall Data Indicators

In the previous sections we have presented a large number of indicators on the two dimensions of trade policy transparency that we are primarily interested in, namely predictability and simplification. In order to provide a straightforward summary indicator of overall performance against these benchmarks, we will now present results of statistical analysis designed to summarize the above information into just two variables: *importer transparency* and *exporter transparency*. This approach also facilitates the econometric analysis in Section 4, since it makes it possible to avoid technical problems caused by strong correlation amongst these indicators.

Both importer transparency and exporter transparency are constructed as regional indices on a scale of 0 (lowest) to 1 (highest). Each index is a weighted average of a number of the measures examined above in terms of predictability and simplification. To decide on the weight assigned to each component when taking the average, we use results from a statistical method known as factor analysis. The advantage of this approach is that it is the correlations in the data that determine the weights, and not the analysts' prior beliefs.[16]

Figure 13 and Figure 14 present the factor analysis procedure graphically, listing the components of importer transparency and exporter transparency and their relationship to the two dimensions of predictability and simplification.

Figure 13 Composition of the importer transparency index

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[16] For examples of the use of similar methodologies in the assessment of trade policies, see Anderson and Marcouiller (2002) and Francois and Manchin (2007).
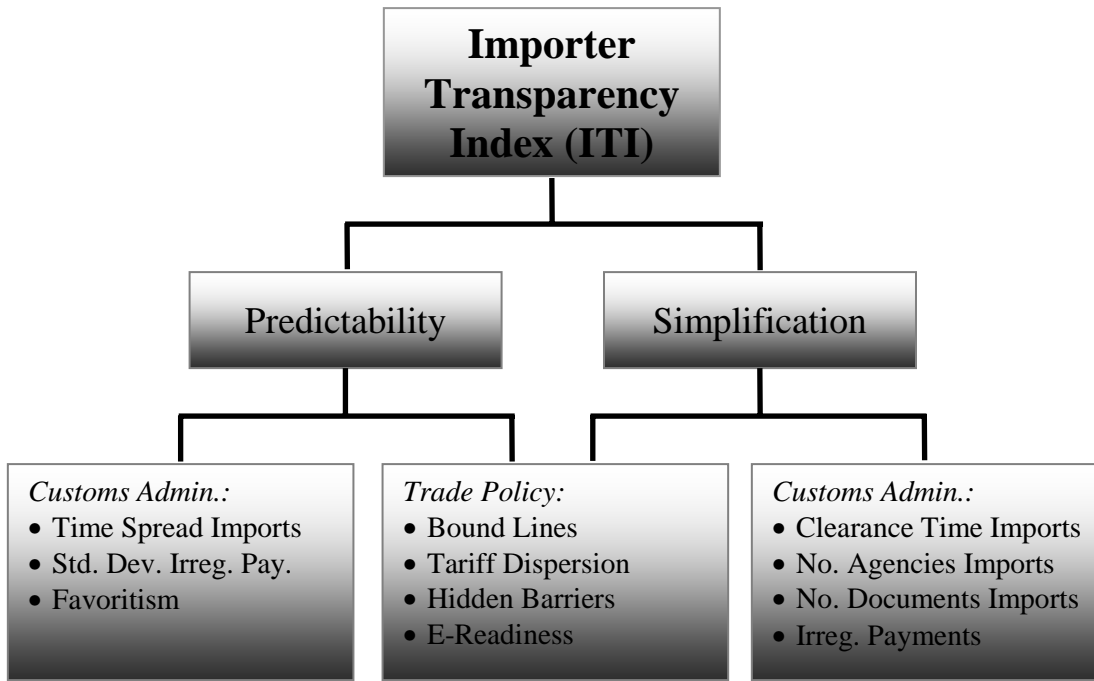
Figure 14 Composition of the exporter transparency index
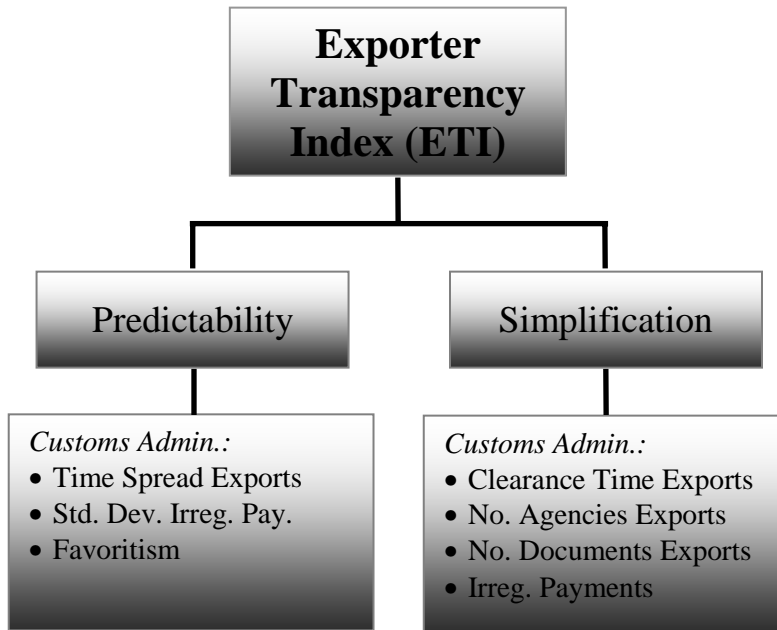
The above variables are available for all APEC member economies except Brunei Darussalam, Papua New Guinea, and Chinese Taipei. The importer transparency index has more variables than the exporter transparency index, since there are a number of aspects of transparency (e.g. tariff rate dispersion) that are only relevant from an importing point of view. Final results for the two indices are reported in Figure 15 and Figure 16, and suggest considerable heterogeneity across the APEC member economies for which we have data.

Figure 15 Importer Transparency Index
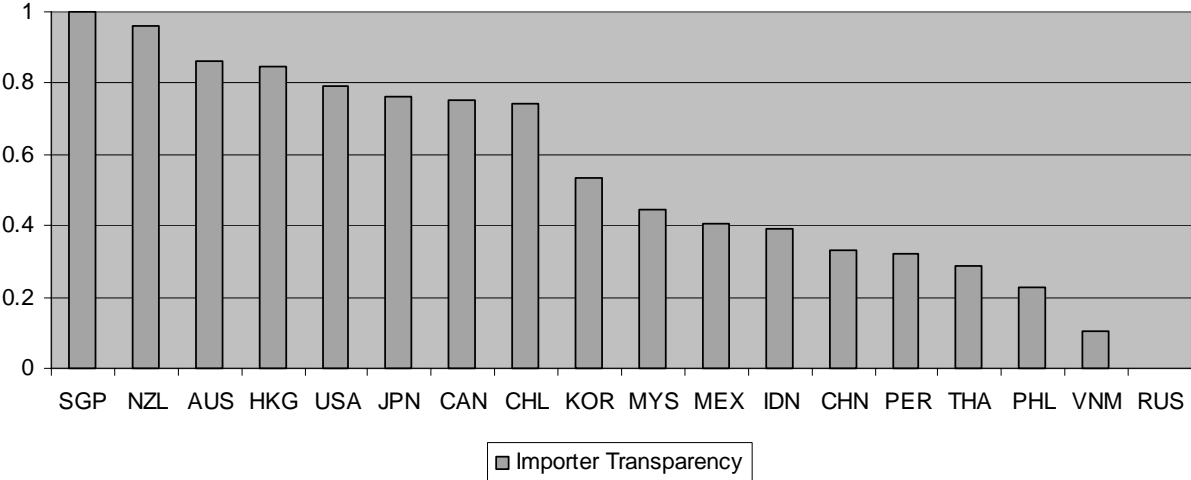
Figure 16 Exporter Transparency Index
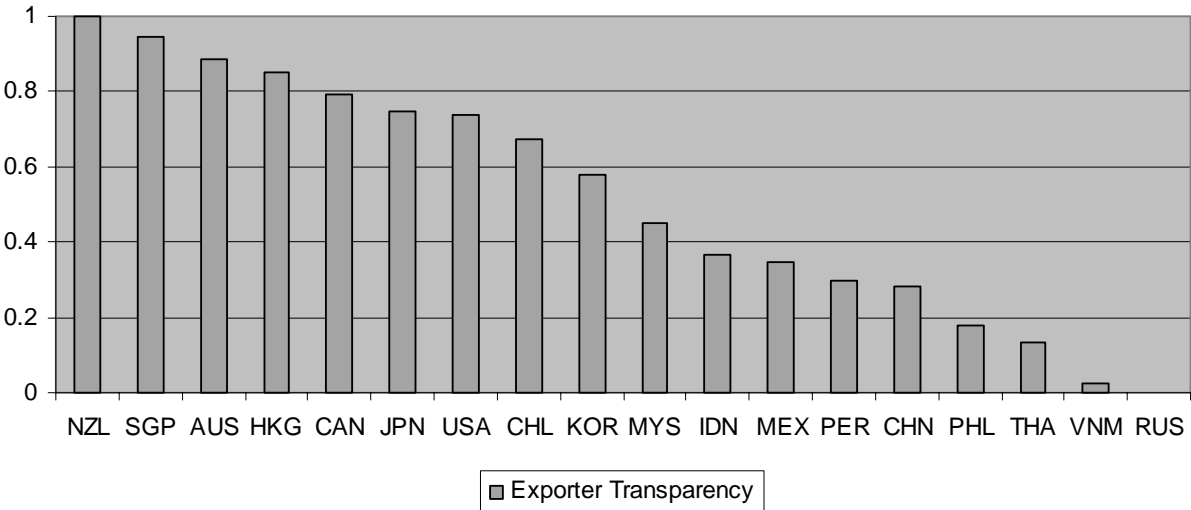
It is important to stress that, as already noted, both the ITI and the ETI are weighted averages. Thus, the various components do not all count equally in terms of the final indices. The factor analysis we have conducted here suggests that hidden trade barriers, irregular payments, and time required to import should be weighted relatively heavily in calculating the ITI. By contrast, tariff dispersion receives a relatively low weight in the ITI. A corollary of this is that reforms in highly weighted areas will tend to have a significant impact on an economy's ITI score.

Box: Using Factor Analysis to Calculate Korea's Importer Transparency Index Score

Factor analysis refers to a set of statistical techniques that can be used to produce an index summarizing performance across a number of correlated indicators. In broad terms, the index is derived by assuming that an unobserved factor (e.g. "transparency") is responsible for the common variation in the original set of indicators. Statistical techniques can be used to identify that unobserved factor in terms of a weighted average of the original indicators. Thus, our ITI is a weighted average of the original importer transparency indicators in which the weights are chosen via a statistical algorithm. The advantage of such an approach is that it has some claim to objectivity in terms of the weight accorded to each individual indicator.

Factor analysis is commonly used in the social sciences to produce summary indices. Whereas we have used here a type of factor analysis known as principal factors, the economics literature more commonly relies on the closely related technique of principal components. For instance, Anderson and Marcouiller (2002) construct a composite security index using World Economic Forum data on governance, corruption, rule of law, crime, and policing. Similarly, Francois and Manchin (2006) use principal components analysis to construct indices of infrastructure and institutional development, drawing on indicators covering transport and communications infrastructure, governance, regulation, and rule of law. An example of principal factors in the economics literature is Dihel and Shepherd (2007), in which the authors construct trade restrictiveness indices using a wide variety of indicators on regulatory barriers to trade in services.

To see how our approach works in practice, we use Korea's ITI score as a simple example. First, we use factor analysis to calculate the weight that each indicator should have in the transparency index (see first column of the table). Next (second column), we scale Korea's score on each transparency indicator by subtracting the APEC mean and dividing by the standard deviation. We then multiply these modified scores by the weights (column 3), and then take the sum to calculate the unscaled ITI score. Finally, we scale the ITI to lie between 0 and 1 by subtracting the minimum (-1.49), dividing the result by the scaled maximum (1.51) and then subtracting from 1 to give 0.54.

Source: Anderson and Marcouiller (2002); Francois and Manchin (2006); and Dihel and Shepherd (2007).

Table 1: Calculation of Korea's ITI score.

Indicator	Weight	KOR Rescaled Score	Index Contribution
Percentage Unbound	0.05	-0.41	-0.02
Tariff Dispersion	0.02	1.69	0.03
Std. Irregular Payments	0.18	0.88	0.16
Import Time Spread	0.05	1.26	0.06
Lack of E-Readiness	0.10	-1.18	-0.12
Import Time	0.23	-0.86	-0.19
Import Documents	0.05	-0.18	-0.01
Number of Agencies	0.06	-0.81	-0.05
Favoritism	0.12	0.50	0.06
Irregular Payments	0.16	0.28	0.04
Hidden Trade Barriers	0.20	0.34	0.07
ITI (unscaled)			0.03

4 What are the Gains from More Transparent Trade Policy? A Quantitative Impact Assessment

Section 3 presented a descriptive analysis of different dimensions of transparency in trade policy, and summarized that information into two composite indices of transparency. In order to provide a first assessment of the quantitative impact of these variables on trade flows between APEC economies, we need to make use of an econometric analysis (subsection 4.1). The results obtained by this econometric analysis then allow us to simulate the possible intra-regional trade gains from increased transparency and to compare them with those available from alternative policy reforms such as tariff reductions (subsection 4.2).

4.1 The Impact of Trade Policy Transparency on Trade – A Gravity Equation Approach

In order to gauge the impact of a variable on bilateral trade flows, trade economists commonly use a gravity equation approach. The gravity equation stipulates that the volume of trade between two economies is positively related to their combined economic "mass" (i.e. market size) and is inversely related to the level of bilateral trade costs, including transport (usually approximated as distance) and trade policies. In other words, the larger any two economies are and the lower the

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trade costs between them, the higher the trade volume. Using this simple approach, the gravity equation has been highly successful in modeling actual trade flows between economies and has therefore become the workhorse of trade economists. The gravity equation literature has been recently enhanced by the contributions of Anderson and van Wincoop (2004, 2003) and stands on very solid theoretical ground.

We apply the gravity equation approach to disaggregate trade data between APEC economies in order to measure empirically the impact of trade policy transparency on trade. In other words, the gravity equation establishes a benchmark of trade flows against which we evaluate the possible influence of improved trade policy transparency. To do this, we use the composite indices of Importer Transparency and Exporter Transparency developed via factor analysis in the previous Section. As noted, these indices capture the essential elements of both components of transparency discussed in Sections 2 and 3, namely predictability and simplification. As is customary in the gravity model literature, we also control for the impact of factors other than the size of the economy (GDP) and transparency on bilateral trade flows.

We control for the restrictiveness of trade policy by including data on bilateral applied tariffs from the MAcMap dataset (see Data Appendix), along with ad valorem equivalents of non-tariff barriers calculated by Kee et al. (2006). Other unobserved factors, such as international transport costs, are accounted for statistically using importer-exporter pair fixed effects, while we correct for the presence of zero trade flows amongst some APEC member economies by applying a Poisson quasi-maximum likelihood estimator to the gravity model (Santos Silva and Tenreyro, 2006). Finally, we take account of the possibility for reverse causation between trade flows and transparency by applying an instrumental variables strategy. For full details of the model,

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econometric methodologies, and data sources, see Appendix 2. The base year for our dataset is 2004.

Estimation results using trade data disaggregated to the HS 2-digit (Chapter) level are presented in Table 2. The first column covers all HS Chapters, while the second excludes raw materials (Chapters 1-27), and the third further excludes basic manufactures (Chapters 1-83). In all three columns we find that coefficients generally carry the expected signs and are statistically significant at the 10% level or better. We prefer the results in columns 2-3 to those in column 1, since the greater presence of non-ad valorem tariff measures affecting agricultural products leads to a considerable loss of precision with regard to our estimates of the impact of trade policy on bilateral trade. Since the sample size in Column 2 is much greater than in Column 1, we take the former as our preferred set of results.

Table 2 Gravity Model Estimation Results

	All goods	HS > 27	HS > 83	Diff. Goods	Homog. Goods
GDP Importer	0.605***	0.596***	0.599***	0.577***	0.641***
	[0.023]	[0.016]	[0.018]	[0.021]	[0.028]
GDP Exporter	0.660***	0.745***	0.789***	0.770***	0.557***
	[0.020]	[0.017]	[0.016]	[0.770]	[0.026]
Tariff (RG Weighted)	-0.701	-1.421	-2.121	0.138	-0.875
	[0.588]	[0.988]	[1.603]	[1.194]	[0.702]
NTB (RG Weighted)	0.414	-0.951**	-1.881**	0.076	1.057***
	[0.469]	[0.439]	[0.805]	[0.023]	[0.367]
Imp. Transparency	**1.828***	**1.864***	**2.583***	**3.889*	**1.987**
	[0.302]	[0.373]	[0.401]	[2.533]	[2.049]
Exp. Transparency	**-0.406**	**-0.856***	**-0.681***	**3.071*	**1.939**
	[0.260]	[0.239]	[0.199]	[2.113]	[1.749]
Observations	29376	21114	4284	76500	50694

Robust standard errors in brackets, * significant at 15%; ** significant at 10%; *** significant at 5%. Estimation method is Poisson QML. Importer and exporter transparency are instrumented by British colonization of the importer and exporter. First stage F-statistics are 374.68*** and 306.88*** respectively.

Moving down column 2, we see that both importer and exporter GDP have the expected positive signs and are statistically significant at the 1% level, while tariffs and NTBs both impact

negatively on bilateral trade. While NTBs are statistically significant at the 5% level, bilateral tariffs are only marginally significant at the 15% level. In both cases, however, the impacts of these variables on trade are economically significant: a 1% tariff cut or reduction on the ad valorem equivalents of NTBs increases bilateral trade flows by around 1%.

In terms of our transparency indices, it is primarily importer transparency that has a discernable negative impact on trade: a 1% improvement in the economy's index score is associated with a nearly 2% boost to trade. In the case of exporter transparency, our results are less clear-cut. Although the coefficient on that variable in column 2 has a negative sign, we do not interpret that result literally. Rather, we conclude that the impact of exporter transparency is lesser than that of importer transparency, and in the context of the column 2 regression it is so weak as to be indistinguishable from zero. This interpretation sits well with the general thrust of our regression results in Table 2 and Table 6 (Appendix), and would be consistent with the view that it is primarily import market, rather than export market, transparency which matters for bilateral trade. However, this must be regarded as a tentative finding that will need to be investigated further in future research on this subject.

Box: Controlling for Reverse Causality

Reverse causality between trade flows and transparency has the capacity to bias our econometric results, and thereby produce potentially misleading policy prescriptions. We use a common technique to control for reverse causality or "endogeneity", namely instrumental variables estimation. This approach allows us to purge endogenous variation from our transparency indices by exploiting their correlation with other variables ("instruments") which we know not to suffer from the same problem. Good instruments should therefore be strongly correlated with the potentially endogenous explanatory variable (transparency), but should not be correlated with the variable we are trying to explain, namely bilateral trade flows. While good instruments are usually difficult to find, one common approach is to use geographical or historical data: since these are either long-established (history) or unchangeable (geography), they can be regarded as genuinely exogenous to current variables such as bilateral trade flows. A famous example of this is Acemoglu et al. (2001), in which the authors use settler mortality during the colonial era as an instrument for the current quality of institutions, in the context of a model seeking to explain observed differences in economic growth across economies.

To estimate our gravity model, we adopt a similar approach: our instruments for exporter and importer transparency are 1-0 dummy variables for British colonization of the exporting or importing economy respectively.[17] Colonization is clearly exogenous to current bilateral trade flows, but it turns out to be strongly correlated with current measures of transparency: the simple correlation coefficient is 0.72 for importer transparency and 0.74 for exporter transparency. We therefore conclude that British colonization is an appropriate instrument in this case. Moreover, the difference between the estimates reported in the main text—which control for endogeneity— and those reported in the Appendix—which do not—suggests that it is indeed important to take this factor into account in order to avoid overestimating the impact of transparency on trade flows.

Source: Acemoglu et al. (2001); Wooldridge (2002) pp.663-665.

Simulation of Possible Gains from Improved Trade Policy Transparency

From a policy point of view it is important to know that greater trade policy transparency can increase trade, but also to be able to gauge the strength of that effect relative to other policy options. To provide some first indications in this direction, we now use the gravity model results in column 2 of Table 2 to conduct some simple counterfactual simulations (cf. Wilson et al., 2005 and APEC Economic Committee, 2004). For each simulation, we specify the counterfactual in terms of a given exogenous "shock" to a single policy variable. We then map that shock to trade impacts using the elasticities we have estimated. Comparing impacts from one simulation to another gives an idea of the relative trade gains involved.

Concretely, we consider three simulation scenarios, each of which represents an ambitious but, we believe, feasible medium-term objective within APEC:

- Scenario I: Improve importer transparency within the APEC region such that no economy is below the current regional average (0.54).

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[17] We stress that our use of these instruments does not involve a value judgment, but simply exploits an observed regularity in the data.

- Scenario II: Reduce applied tariffs within the APEC region such that no economy applies a higher level of protection than the regional average for each HS Chapter.

- Scenario III: Reduce the ad valorem equivalents of non-tariff barriers within the APEC region such that no economy applies a higher level of protection than the regional average for each HS Chapter.

In line with our estimations, trade impacts for these scenarios refer to intra-APEC trade only, and exclude raw materials (HS Chapters 1-27). Results show that intra-regional trade gains are possible under any of the three scenarios, in other words APEC member economies can boost trade by cutting tariffs, reforming NTBs, or promoting transparency. Relative to other ready alternatives, however, policies aimed at increasing trade policy transparency in the APEC region would appear to have the potential for high impact: improving importer transparency to the regional average is associated with an increase in intra-regional trade on the order of 7.5%, as compared with only 0.9% for scenario II and 1.8% for scenario III. In monetary terms, these effects equate to approximately US$148bn, US$18bn, and US$35bn respectively.

Region-wide aggregates obscure the fact that these results are subject to considerable heterogeneity across economies. This is inherent in the way in which the simulations are designed, since only those economies with performance below the regional average are assumed to have a policy reform under the counterfactual. Those economies without a policy shock can therefore only benefit from policy reforms undertaken by their trading partners. In light of this dynamic, it is useful to look at trade impacts on an economy-by-economy basis (see the following three Figures).

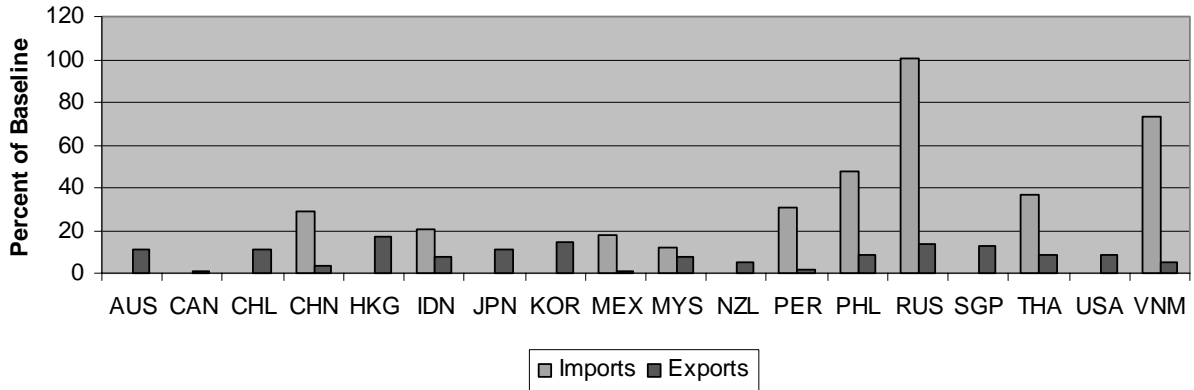**Figure 17 Breakdown of simulation results by economy (Scenario I).**

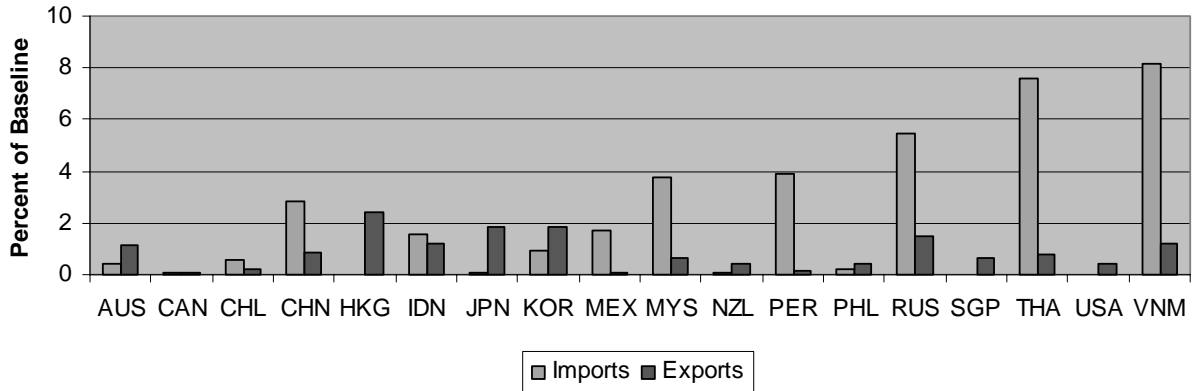**Figure 18 Breakdown of simulation results by economy (Scenario II).**

Figure 19 Breakdown of simulation results by economy (Scenario III).
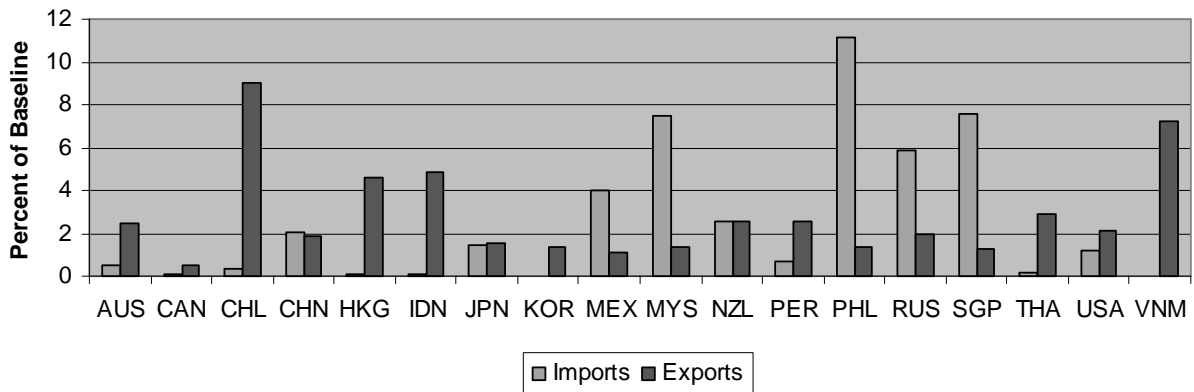
Each of the three Figures shows that the import gains from reform tend to be concentrated in a few economies, while the export (market access) gains are spread more widely across the region. Such a distribution is inherent in the design of our counterfactuals: only those economies with transparency, tariff, or NTB scores below the regional average receive a policy "shock", and therefore only those economies can reap an import gain from reform. However, to the extent that other APEC member economies export to reforming economies, they can take advantage of a corresponding market access gain.

Overall, we conclude that the potential intra-regional trade gains from reform are substantial for all three counterfactual scenarios. This is reinforced by a consideration of the cross-region distribution of export and import gains, which shows that certain economies stand to benefit to a level far in excess of the regional average. In interpreting these results, it is important to recall that under standard theories of international trade, both exports and imports contribute to the overall welfare gains from trade. In empirical applications, it is usually the case that more far-reaching reductions in import market distortions lead to greater welfare gains for those economies that reform (see the review by Piermartini and Teh, 2005). While it is true that a higher level of imports can impose transitional costs on those involved in domestic import-competing industries, these are best dealt with through appropriate adjustment policies (see OECD, 2005).

Table 3 Import and export gains by economy for Scenario I (% of baseline)

	Scenario I		Scenario II		Scenario III	
	Imports	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**
AUS	0.00	11.42	0.40	1.11	0.55	2.50
CAN	0.00	1.22	0.08	0.09	0.10	0.50
CHL	0.00	10.69	0.59	0.23	0.36	9.01
CHN	28.99	3.81	2.83	0.83	2.00	1.89
HKG	0.00	16.90	0.00	2.41	0.10	4.60
IDN	20.25	7.71	1.59	1.21	0.06	4.88
JPN	0.00	10.94	0.07	1.83	1.46	1.56

KOR	0.40	14.13	0.92	1.86	0.00	1.38
MEX	17.73	0.48	1.72	0.08	4.04	1.10
MYS	12.13	7.78	3.75	0.63	7.52	1.40
NZL	0.00	5.01	0.10	0.44	2.55	2.55
PER	31.00	2.04	3.88	0.17	0.71	2.53
PHL	47.59	8.21	0.20	0.44	11.15	1.38
RUS	100.66	13.93	5.44	1.50	5.90	1.95
SGP	0.00	12.90	0.00	0.63	7.59	1.32
THA	36.65	8.49	7.62	0.75	0.19	2.87
USA	0.00	8.46	0.03	0.45	1.22	2.12
VNM	73.55	5.41	8.16	1.19	0.00	7.24

Before concluding this Section, it is important to stress that our results, like all simulation results, are subject to a number of caveats. First, we are dealing with trade effects and not economic welfare as such. Second, our results apply only to intra-regional trade in manufactures, and do not take account of possible extra-regional effects. Given that the policy reforms contemplated here—in particular in Scenario I—can be implemented in a non-discriminatory manner, there is considerable scope to produce gains for economies outside APEC as well. Assuming that non-discrimination is adhered to, our results could therefore be interpreted as a lower bound for the likely range of overall (worldwide) effects. Third, our simulations implicitly assume that the elasticities on which they are based remain constant before and after the policy shock. While this may be the case for small policy changes, it is unlikely to hold for major regime shifts. Fourth, although we have attempted to control for reverse causality between trade flows and transparency, we have not done the same for tariff rates and ad valorem equivalents of non-tariff barriers. For technical reasons related to the weighting scheme we have adopted in aggregating those measures to the HS Chapter level, we believe that the endogeneity problem is likely to be less severe in relation to those variables. However, there is still the possibility that our results suffer from some amount of bias in this area. Fifth, our simulations are based on data for the year 2004; as new data become available, we expect that the results for economies having undergone

major policy shifts since then—such as WTO accession in the case of Vietnam—may change significantly. Finally, Scenarios II and III do not take account of quantitative restrictions that may represent binding constraints on bilateral trade even once tariffs and other NTBs are lowered.

It is also important to note the issue of cost. Reductions in tariffs and ad valorem equivalents of NTBs impose relatively few direct resource costs on central governments. However, for trade facilitation measures including those aimed at transparency, the cost implications are potentially larger. While we do not have sufficient information available to assess the costs in this case, we would simply highlight that when compared with other trade facilitation measures—such as upgrades of "hard" infrastructure—the cost of improving performance across the set of transparency measures we are dealing with here is likely to involve manageable levels of costs. The government actions required are often legal and administrative in character, along with equipment upgrades in some cases (e.g. e-government readiness), and are therefore unlikely to involve costs on the level of, for instance, a port or road network upgrade. However, the nature of these actions also suggests an ongoing need for technical cooperation and capacity-building, since the measures involved are often complex.[18]

5   Conclusions: Moving Forward on Transparency and Trade Facilitation

The results we have presented in this Report suggest that APEC member economies have been right to make a close link between transparency and trade facilitation. Not only are the two ideas

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[18] On the basis of six case studies, including one APEC member economy, McLinden (2006) reports that the costs of implementing improved trade facilitation may be smaller than previously thought. The improvements considered, based on the possible contours of a future WTO agreement, would involve costs ranging from US$165,000 to US$1.3m per economy.

closely related on a conceptual level, in a practical sense they inevitably tend to overlap. As tariff barriers continue to fall around the world, it becomes all the more important for economies to focus on additional ways of reducing trade transaction costs. Improving trade policy transparency by making it simpler and more predictable is likely to hold significant trade payoffs for reformers.

This research report constitutes one of the first efforts to comprehensively examine the possible economic gains from increased trade policy transparency within a quantitative framework. We expect that future research will add considerable detail and nuance to these results, and will provide additional insights for policymakers. However, even at this relatively early stage, we can draw some significant, policy-relevant conclusions:

- Trade policy reform efforts need to focus not just on the restrictiveness of traditional measures such as tariffs, but also on transparency , i.e. the way in which these measures are designed and administered.

- Making trade policy more transparent involves policy reforms in two main areas: predictability and simplification. Both types of measures can help reduce the transaction costs associated with international trade.

- In general, APEC member economies perform relatively well on trade policy transparency compared with world income group averages. This is particularly true in the area of e-government readiness.

- Simulations from a standard gravity model of international trade suggest that the potential intra-regional trade gains from improved transparency are substantial compared with alternative policies: approximately $148bn, or 7.5% of baseline (2004) trade. Assuming non-

discriminatory implementation of policy reforms, the overall gains will be larger once extra-regional trade is taken into account.

- Based on quantitative benchmarking, future transparency priorities for APEC member economies could include unofficial payments, and "hidden" trade barriers.

These findings suggest that in moving forward, there is considerable scope for APEC to consolidate and build on progress already made in the area of transparency and trade facilitation. In terms of substantive priorities, the two areas listed above—unofficial payments, and "hidden" trade barriers—would seem to have particular potential for high payoff reforms. Within APEC's framework of regional cooperation and concerted unilateralism, it will be important for policymakers and stakeholders to develop both a set of substantive goals and concrete policy options that can be implemented with these priority areas in consideration. Mobilizing the financial and technical resources necessary to ensure that any such reform program is feasible and sustainable across such a diverse regional grouping will require member economies to once again demonstrate the creativity and flexibility for which APEC is known.

At the same time, there are a number of areas in which additional policy-relevant research could assist policymakers in identifying national and regional priorities in relation to transparency. This relates to discussions in APEC about the utility of supporting a more sustained effort to invest in data and analysis that serve APEC's goals.

The results we have presented suggest that the impact of improved transparency may differ from sector to sector. In particular, we would argue that the effect appears to be relatively stronger for trade in differentiated products. In future dialogue and analysis in APEC, it will therefore be important to identify in greater detail the mechanisms that lead to this outcome. In the APEC context, one aspect of this issue that is likely to be significant is the role of transnational

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production networks, which often rely on the movement of highly differentiated inputs across borders quickly, cheaply, and reliably. Future empirical work may well show that transparency is particularly important for these business models.

While this study has focused on the general area of trade in goods, this is not the only domain in which increased transparency could potentially have benefits in terms of regional integration and economic growth and development. Issues of regulatory transparency are also crucial in relation to trade in services, and more broadly in terms of regulatory reform affecting services sectors. However, measuring the extent of barriers to services trade, and quantifying their economic impacts, is an extremely challenging task.[19] This is because such barriers are almost always linked to important issues of "behind-the-border" regulation. Similar comments apply to the issue of international investment flows.[20] Behind-the-border barriers, including transparency-related factors, are important in understanding the determinants of foreign direct investment; however, as with services trade, they tend to be extremely difficult in terms of identification and impact assessment.

In line with APEC's broader regional agenda, which includes trade in services and foreign direct investment as well as trade in goods, it will be important for future work on transparency to cover all of these dimensions. By putting in place structures to facilitate the identification of barriers at a detailed level, APEC member economies could strengthen individual and collective regulatory reform efforts by establishing a culture of impact assessment and efficient sectoral regulation. Sharing best practice would be an important element of this process.

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[19] See Dihel and Shepherd (2007) for one recent attempt at progress on this front.

[20] For a recent review of the issues involved in assessing and quantifying the impact of barriers to FDI, see Centre for International Economics (2006).

Underlying all of the above points is analysis on the mechanics of reform. Although increased transparency and regulatory reform might be in the national interest, such moves might be opposed by vested interests and lobby groups. The political economy of reform is thus an important area for future research in APEC – including most importantly in relation to corruption and unofficial payments. As indicated above, corruption does not exist in a vacuum, but is the outcome of a complex set of interactions amongst traders and officials, taking place against the background of national trade policy choices. Moving forward on corruption therefore requires detailed dialogue and work on its determinants, as well as on the design of incentive-compatible policy reforms.

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7   Appendices

Appendix A: Data for Empirical Assessment of Trade Policy Transparency

Table 4 Data and Sources

Variable	Description	Year	Source
Bound Lines$_i$	Measures the percentage of bound lines in the tariff schedule of economy i.	2002-2004	MAcMAP (2007)
Clearance Time$_i$	Measures the number of days needed for import or export clearance in economy i.	2006	*Doing Business* (2007)
E-Readiness$_i$	Measures the state of e-government readiness of UN Member States in economy i. It is a composite index comprising the Web measure index, the Telecommunication Infrastructure index and the Human Capital index.	2005	*United Nations Government E-Readiness* (2007)
Favoritism$_i$	Measures the extent of favoritism in economy i. Based on responses to the question: "When deciding upon policies and contracts, government officials (1=usually favor well-connected firms and individuals, 7=are neutral among firms and individuals)?"	2004	*Global Competitiveness Report* (2005)
GDP Exporter	GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates.	2004	World Bank, World Development Indicators (2007)
GDP Importer	GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates.	2004	World Bank, World Development Indicators (2007)
Hidden Barriers$_i$	Measures the presence of hidden trade barriers in economy i. Based on responses to the question: "In your country, hidden import barriers (that is, barriers other than published tariffs and quotas) are (1 = an important problem, 7 = not an important problem)?"	2004	*Global Competitiveness Report* (2005)
Imports$_{ijk}$	Imports of economy i from economy j in sector k. Aggregated at the HS 2-digit level and SITC 4-digit level.	2002-2004	MAcMAP (2007)
Irreg. Paym.$_i$	Measures the extent of irregular payments in economy i. Based on responses to the question: "In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with import and export permits (1=common, 7=never occur)?"	2004	*Global Competitiveness Report* (2005)
No. of Agencies$_i$	Counts the average number of border agencies involved in imports or exports in economy i.	2006	Logistics Perception Index (2007)
No. Documents$_i$	Counts the average number of documents needed for imports or exports in economy i.	2006	*Doing Business* (2007)
NTB$_i$ (RG Weighted)	Non-tariff barriers in economy i are calculated as the difference between the overall trade restrictiveness index (OTRI) and the trade restrictiveness index (TRI) for each tariff line. It is weighted by reference group weights and converted to	2001/ 2004	Kee et al. (2006)

	logarithm of (1 + NTB).		
Std. Dev. Irreg. Paym.ᵢ	Standard deviation for the answer to the question on irregular payments in economy i.	2004	*Global Competitiveness Report* (2005)
Tariffᵢ (RG Weighted)	The tariff rate of economy i is measured as the effective applied MFN rate, which is defined as (specific applied MFN tariff/Unit Value) + ad valorem applied MNF tariff. It is weighted by reference group weights and converted to logarithm of (1 + tariff).	2002-2004	MAcMAP (2007)
Tariff Dispersionᵢ	Standard deviation of effective applied MFN tariffs in HS 4 digit product groups in economy i.	2002-2004	MAcMAP (2007)
Time Spreadᵢ	Difference between the maximum and minimum number of days for clearance needed for imports or exports in economy i.	2006	Logistics Perception Index (2007)

Table 5 Economies included in the dataset.

Group	Members
Importers	Australia*, Brunei, Canada*, Chile*, China*, Hong Kong China*, Indonesia*, Japan*, Korea*, Malaysia*, Mexico*, New Zealand*, Papua New Guinea, Peru*, Philippines*, Russia*, Singapore*, Chinese Taipei, Thailand*, USA*, Vietnam*.
Exporters	Australia*, Brunei, Canada*, Chile*, China*, Hong Kong China*, Indonesia*, Japan*, Korea*, Malaysia*, Mexico*, New Zealand*, Papua New Guinea, Peru*, Philippines*, Russia*, Singapore*, Chinese Taipei, Thailand*, USA*, Vietnam*.

*Note: * indicates economies included in the effective sample for the regression.*

Appendix B: Methodology and Additional Econometric Results

In this paper, we use the micro-founded gravity model of Anderson and Van Wincoop (2004, 2003), which is today's standard approach as accepted in the academic literature. From basic microeconomic principles, Anderson and Van Wincoop (2004, 2003) show that it is possible to derive a gravity-like model of exports from economy *i* to economy *j* in sector *k* (X_{ij}^k):

$$\log\!\left(X_{ij}^k\right)=\log\!\left(E_j^k\right)+\log\!\left(Y_i^k\right)-\log\!\left(Y^k\right)+(1-\sigma_k)\log\!\left(t_{ij}^k\right)-(1-\sigma_k)\log\!\left(P_j^k\right)-(1-\sigma_k)\log\!\left(\Pi_i^k\right)+\varepsilon_{ij}^k \qquad (1)$$

Where: Y_i^k = Output of economy *i* in sector *k*; E_j^k = Expenditure of economy *j* in sector *k*; Y_t^k = Aggregate (world) output in sector *k*; σ_k = Elasticity of substitution in sector *k*; t_{ij}^k = Trade costs facing exports from economy *i* to economy *j* in sector *k*; ω_i^k = Economy *i*'s output share in sector

k; ω_j^k = Economy j's expenditure share in sector k; and ε_{ij}^k = Random error term, satisfying the

usual assumptions. Inward resistance $\left(P_j^k\right)^{1-\sigma_k} = \sum_{i=1}^{N} \Pi_i^{\sigma_k-1} \omega_i^k \left(t_{ij}^k\right)^{1-\sigma_k}$ captures the fact that j's

imports from i depend on trade costs across all suppliers. Outward resistance

$\left(\Pi_i^k\right)^{1-\sigma_k} = \sum_{j=1}^{N} P_j^{\sigma_k-1} \omega_j^k \left(t_{ij}^k\right)^{1-\sigma_k}$, by contrast, captures the dependence of exports from i to j on trade

costs across all importers.

An elegant way to implement this theoretical approach in an econometric model is to apply a fixed effects estimation. A fixed effects estimation accounts for expenditure, output, and resistance terms, instead of seeking to estimate them directly. As fixed effects can be used either economy-specific fixed effects (for each importer and exporter) or bilateral fixed effects (for each bilateral pair in the sample). Since the fixed effects capture all economy-specific or bilateral differences, one needs to choose the approach which is most appropriate for the respective object of investigation. In our case, we are interested in how economy-specific variables, in particular transparency related variables, influence bilateral trade, and therefore we use bilateral fixed effects.

Before implementing this approach in an empirical setting, we need to specify bilateral trade t_{ij}^k in terms of observable variables. The bilateral fixed effects capture all bilateral trade costs in the trade pair, such as transport costs, historical factors, and geographical particularities. Controlling for all bilateral effects, we postulate that bilateral trade is a function of the economy-specific variables listed in equation (2).

$$\log\left(t_{ij}^k\right) = \beta_1 \log\left(1 + \tau_i^k\right) + \beta_2 \log(ntb_i^k) + \beta_3 \log(Itrans_i) + \beta_4 \log(Etrans_j)$$

The importer's applied tariff is denoted $\left(1 + \tau_{ij}^k\right)$. ntb_i^k gauges the presence of non-tariff barriers in the importing economy at the product line according to Kee et al. (2006). *Itrans$_i$* adds the principal factor measurement of importer transparency, whereas *Etrans$_j$* measures the exporting economy's transparency.

A strict derivation from (1) suggests that fixed effects would be required also in the sector dimensions (cf. Baldwin and Taglioni, 2006). To take account of the possibility of cross-product variation in the elasticity of substitution (Chaney, 2005), the parameters in the trade cost function should also be allowed to vary by product. We therefore propose using fixed effects in the product dimensions (γ_k). Experience suggests that using bilateral as well as product-specific fixed effects represents an acceptable compromise between theoretical consistency and empirical tractability.

Our baseline empirical specification therefore takes the following form:

$$
\begin{aligned}
\log\left(X_{ij}^k\right) &= \alpha_{ij} + \beta_1 \log\left(Y_i\right) + \beta_2 \log(Y_j) + \beta_3 \log\left(1 + \tau_i^k\right) + \beta_4 \log(ntb_i^k) + ... \\
&... + \beta_5 \log(Itrans_i) + \beta_6 \log(Etrans_j) + \gamma_k + \varepsilon_{ij}^k
\end{aligned}
\tag{3}
$$

We estimate (3) using Poisson pseudo-maximum likelihood (Santos Silva and Tenreyro, 2006) in order to take into account the presence of bilateral trade flows that are zero or missing from the dataset (another option would be to estimate a Heckman sample selection model, as done by Helpman et al., 2007).

The following table presents basic estimation results for the model in (3), using bilateral trade data disaggregated at the HS 2-digit level (columns 1-3) or HS 6-digit data classified into differentiated products (column 4) and homogeneous goods (column 5) following the classification in Rauch (1999). The first column covers all HS Chapters, while the second

excludes raw materials (Chapters 1-27) and the third further excludes basic manufactures (Chapters 1-83).

Table 6 Gravity Equation Estimation Results

	(1)	(2)	(3)	(4)	(5)
GDP Importer	0.771***	0.844***	0.860***	0.792***	0.691***
	[0.050]	[0.060]	[0.074]	[0.078]	[0.053]
GDP Exporter	0.788***	0.933***	0.977***	0.934***	0.596***
	[0.061]	[0.068]	[0.078]	[0.093]	[0.063]
Tariff (RG Weighted)	-0.784	-2.807***	-3.132**	-0.936	-0.923
	[0.488]	[0.921]	[1.597]	[1.015]	[0.691]
NTB (RG Weighted)	0.305	-1.045**	-2.034***	-0.069	1.046***
	[0.462]	[0.434]	[0.663]	[0.220]	[0.365]
Imp. Transparency	**6.886***	**8.901***	**9.622***	**8.371***	**2.379**
	[2.028]	[2.401]	[2.817]	[3.324]	[2.052]
Exp. Transparency	**4.842***	**6.826***	**7.258***	**5.170**	**2.046**
	[1.655]	[2.069]	[2.463]	[2.677]	[1.745]
Observations	29,376	2,1114	4,284	76,500	50,694

Robust standard errors in brackets; * significant at 15%; ** significant at 10%; *** significant at 5%

In the first three columns, we find that coefficients generally carry the expected signs and are statistically significant at the 5% level. However, results are noticeably clearer in the case of the trade policy variables in the last two columns when raw materials are excluded. The reason is probably that the markets for agricultural goods and raw materials are often still heavily distorted through different economic policy interventions. For our analysis we therefore focus on the estimation results when this sector is excluded.

Moving down column 2, we find that both importer and exporter market size (GDP) are positively associated with bilateral trade, with an income elasticity approaching unity. Similarly, higher bilateral tariffs are associated with reduced trade: it is approximately the case that a 1% cut in applied tariffs is associated with a 2.8% increase in trade. The same applies to non-tariff barriers, although the elasticity is less than half as strong. Finally, the two variables of main interest for the purposes of this Report, namely *exporter transparency* and *importer transparency*

are both strongly positive and statistically significant. Column 2 suggests elasticities of 6.8 and 8.9 respectively. Indeed, the effects for all dimensions of trade policy, including transparency, would appear to be even stronger on the basis of column 3. We take this to indicate that the impact of transparency might be stronger for manufactured goods than for raw materials, since the former are subject to greater problems of (for example) misclassification than the latter. In other words, it could be the case that a product that is classified at origin in a specific HS 2 chapter becomes classified differently in destination for whatever reason.

To test this hypothesis more extensively, we re-estimate the gravity model separately for differentiated and homogeneous goods. We identify these products using the classification scheme due to Rauch (1999), who divided all products at the 4 SITC digit level into three groups: goods traded on an organized exchange, reference priced goods, and differentiated products. We consider the first two as homogenous products and the later group as bringing together heterogeneous products. Running the same gravity equation on both groups yields the results which are presented in the last two columns of Table 6. In column (4), where only differentiated products entered the equation, the estimation results appear to support our earlier claim that transparency is of special importance for heterogeneous goods. Column (5) shows that the coefficients decrease considerably when homogeneous goods are considered.

In interpreting these results, we have been careful to avoid references to causality. It would not be appropriate to conclude from Table 6, for instance, that improved transparency necessarily "causes" an increase in bilateral trade. This is because simple gravity results such as those in Table 6 do not account for possible estimation bias due to the endogeneity of transparency with respect to trade. In other words, while Table 6 is consistent with a causal link running from

transparency to bilateral trade, it is also consistent with a link running in the opposite direction: economies may tend to be more transparent because they have higher trade volumes, which leads to greater pressure for reform. Indeed, it is likely that causation runs in both directions at once, and that improved transparency leads to more intense bilateral trade flows, while more trade also leads to greater transparency.

It is possible to control for this type of endogeneity using a set of statistical techniques known as instrumental variables estimation. Essentially, we look for a genuinely exogenous variable (an "instrument") that can be used to separate out exogenous variations in transparency, which can then be appropriately related to trade flows in a unidirectional causal framework. It is often extremely difficult to identify solid instruments, since they must meet the twin requirements of being correlated with the potentially endogenous explanatory variable (transparency in this case), while being uncorrelated with the outcome variable (bilateral trade). One possible candidate in this case is colonial history (cf. Acemoglu et al., 2001). Pre-20th Century colonization generally leaves institutional marks on the colonized area, including potentially those institutions that govern trade policy formation and implementation. Indeed, our dataset reveals that in the APEC sample, a dummy variable coded so as to capture colonization by Great Britain is strongly positively correlated with our two transparency indices. Since British colonization took place in this region largely in the 18th and 19th centuries, we can be confident that it is exogenous to current (i.e. 2004) bilateral trade flows. We therefore use two dummy variables, one for exporter colonization by Great Britain and another for importer colonization by Great Britain, as instruments for exporter and importer transparency respectively. Results using this instrumental variables strategy are presented in the main text.

**Appendix C: Additional Trade Policy Indicators**

The *Doing Business 2007* report also specifies the time and cost elements for exports. Figure 20 and Figure 21 graphically present the result for the respective APEC economies. The data mirrors the case of imports and again reveals two very different pictures when comparing time elements versus costs elements. Document preparation for exports is again highly time-consuming in most cases, whereas terminal handling and inland transportation dominate the costs of exports.

Figure 20 Time Shares for Exports (*Doing Business 2007*)
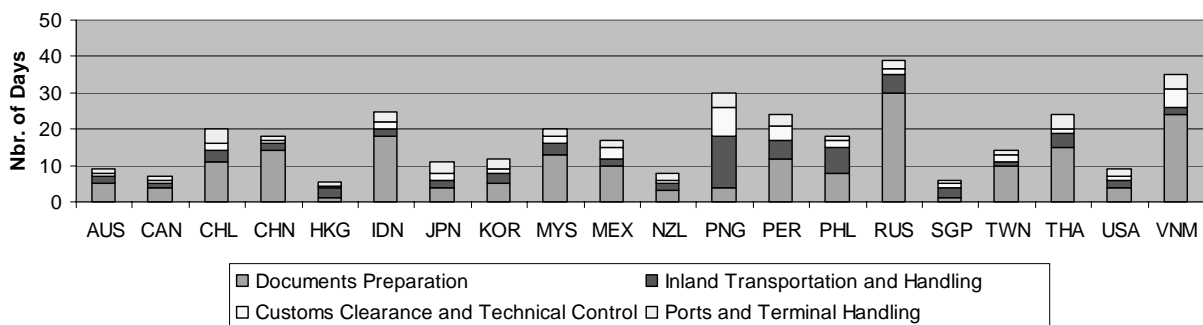
Source: World Bank, *Doing Business 2007*

Figure 21 Cost Shares for Exports (*Doing Business 2007*)
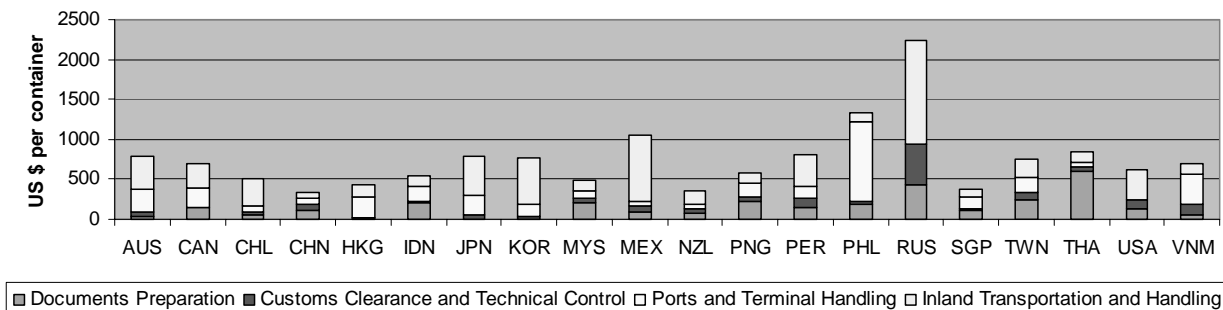
Source: World Bank, *Doing Business 2007*

Appendix D: Breakdown of the Importer Transparency Index

As noted in the main text, our importer transparency index is in fact a composite of a number of underlying measures of the various dimensions of transparency. These indicators cover both principal dimensions of transparency, namely predictability and simplification. In this Appendix, we provide a simple graphical analysis of the contribution made by each underlying measure to the final index score for each economy. Our methodology is straightforward: we transform the underlying indicators to have zero mean and unit standard deviation, and then we multiply the resulting scores by the weight accorded to each indicator in the principal factors method used to construct the index. The graphs in this Appendix can therefore be interpreted as follows: a very small bar suggests that an economy's score on a given indicator has only a minor impact on its final index score, while a large positive or negative bar is suggestive of a much stronger impact. Positive bars are associated with higher (above average) index scores, while negative ones are associated with lower (below average) scores.

Figure 22

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