APPENDIX 9

STRENGTHENING SUPPLY CHAINS IN APEC

An Overview of Transparency, Cooperation, and Capacity Building[1]

[1] The Full Report was tabled as Document Number 2014/CSOM/032.

ABBREVIATIONS

ABAC	APEC Business Advisory Council
APEC	Asia-Pacific Economic Cooperation
CTI	Committee on Trade and Investment
LPI	Logistics Performance Index
OECD	Organization for Economic Cooperation and Development
PSU	Policy Support Unit
SCC	Supply Chain Connectivity
SCFAP	Supply Chain Connectivity Framework Action Plan
SCI	Supply Chain Connectivity Initiative
SOM3	Third Senior Officials' Meeting
TFA	Trade Facilitation Agreement
TFI	Trade Facilitation Indicators (OECD)
US-ATAARI	U.S.-APEC Technical Assistance to Advance Regional Integration
USAID	U.S. Agency for International Development
WCO	World Customs Organization
WTO	World Trade Organization

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INTRODUCTION

Global supply chains are the foundation of economic growth. Obtaining and processing raw materials, assembling them into final goods, and delivering those goods to consumers take place in integrated streams of business that transcend national borders. The economic importance of trade in raw materials, intermediate inputs, and final products has long been acknowledged by economists, governments, international bodies, and trade professionals. So has the need to improve the efficiency of trade- related processes and trade-supporting infrastructure to reduce the time, cost, and uncertainty of trading in global supply chains.

Economies that offer the most efficient platforms to do business are most likely to take advantage of the productivity enhancements, workforce upgrading, employment opportunities, and hence economic growth, afforded by participation in global supply chains. In this context, APEC's Committee on Trade and Investment (CTI) supports efforts to identify bottlenecks, or chokepoints, in trade, assess the relative importance of these chokepoints to improving trade efficiency, and build the capacity of member economies to improve the performance of their supply chains. Surveys of member economies and a review of benchmark data have informed the assessments (see Appendix A for secondary sources for benchmark data).

In 2009, APEC's CTI and Economic Committee began to identify elements to be included in a work program on trade logistics and supply chain connectivity. This led to the 2010 launch of the Supply Chain Connectivity Initiative (SCI). This work program supports the 2010 APEC leaders' goal to improve the flow of goods and services in the APEC region 10 percent by 2015, with improvement measured in reduced time, cost, and uncertainty (APEC 2010b). As part of the SCI work program, eight chokepoints in the flow of goods, services, and business travelers were identified, and workstreams to address them were defined (see Table 1-1) (APEC 2009).

Table 1-1. Chokepoints in APEC Supply Chains

Chokepoint	Lead Economy	Report Citations
1. Regulatory transparency and government coordination	United States	Ferro et al. (2013)
2. Transport infrastructure	Australia	Ferro et al. (2014)
3. Local and regional logistics capacity	China	*Not yet available*
4. Border clearance procedures	Japan	USAID (2014a)
5. Customs documentation	Korea	Yoon and Yang (2014)
6. Multimodal transport connectivity	Singapore	USAID (2014b)
7. Cross-border standards and regulations for movements of goods, services, and business travelers	Australia	USAID (2014c)
8. Cross-border customs transit arrangements	Chile	Government of Chile (2014)

APEC leaders committed in 2010 to take a holistic approach to identifying and addressing impediments to moving goods and services throughout the Asia-Pacific region, articulating a supply chain connectivity framework action plan (SCFAP) for each of the eight chokepoints (APEC 2010c).[1] In 2012, ministers approved a systematic approach for completing the action plan for chokepoint 1. This approach, displayed in Figure 1-1, is being applied to all eight chokepoints.

Figure 1-1. Supply Chain Initiative Systematic Approach

Source: APEC CTI 2012 Annual Report to Ministers*, Section V: Supply-Chain Connectivity and Establishing Reliable Supply Chains (September 2012, Vladivostok).*

At the October 2013 APEC Ministerial Meeting held in Bali, the 2013 CTI annual report to trade ministers gave policy recommendations for the eight chokepoints (APEC 2013b). The recommended policy outcomes are reference points for each chokepoint analysis.

At the Third 2014 Senior Officials' Meeting (SOM3) held in Beijing in August 2014, trade officials reviewed progress toward meeting the 2015 target. Chokepoint reports were presented and future capacity-building work prioritized. This paper summarizes the information from all the chokepoint reports and puts the information into context. Section 2 of this paper highlights improvements that have been made in connectivity. Section 3 identifies SCI follow-on and linkage priorities. Section 4 synthesizes findings of the SCI chokepoint reports. Section 5 presents capacity-building recommendations.

[1] This document lists proposed actions for each chokepoint.

2. MEASURING CONNECTIVITY PROGRESS

APEC economies have been improving supply chain performance—reducing time, costs, and uncertainty (APEC 2013a). The SCI supports APEC leaders' goal of achieving 10 percent improvement in supply chain performance, as measured by time to export, time to import, costs to export, costs to import, and percentage of shipments meeting quality criteria.[2] Table 2-1 lists ways in which SCI diagnostics may contribute to reaching these goals.

Table 2-1. Expected Contributions to SCI Goals by Chokepoint

Chokepoint	Time	Cost	Uncertainty
Chokepoint 1: Regulatory transparency and government coordination	Greater collaboration among government agencies reduces redundancy, streamlines processes, and shortens time.	Increasing automation reduces opportunities for corrupt practices and thus lowers costs.	Improving the transparency, validity, and coherence of posted information enables traders to plan. Issuance of advance rulings improves access to information.
Chokepoint 2: Transport infrastructure Chokepoint 6: Multimodal transport connectivity	Informed infrastructure and multimodal connectivity planning should result in more and better physical infrastructure, reducing delays.	Impact on cost is unclear.	Informed infrastructure and multimodal connectivity planning should facilitate movement of cargo through value chains and thus improve certainty.
Chokepoint 3: Logistics	Improved logistics capacity enables more seamless transitions among supply chain nodes, thus reducing time.	Impact on cost is unclear.	Improved logistics capacity also strengthens traders' confidence in cargo reliability.
Chokepoint 4: Border clearance procedures Chokepoint 5: Customs documentation Chokepoint 8: Transit	Streamlining, harmonizing, integrating data among agencies, along with automating transit and border clearance procedures and documentation, should reduce time and costs of trade as well as improve certainty of trade.		
Chokepoint 7: Standards and Regulations	Improving opportunities for electronic data interchange between ports should reduce clearance time.	Increasing competition in international telecommunications markets would reduce costs.	Improves security and strengthens certainty in the business environment, and thus in trade.
	Harmonizing heavy-vehicle regulations would reduce time and costs.		

[2] Percentage of shipments meeting quality criteria" is an indicator from the World Bank's *Logistics Performance Index,* and was proposed by the Policy Support Unit in APEC (2013) as a proxy for certainty. The chokepoint 1 report proposed the alternative, composite measure "of "business certainty," comprising variables gauging the ability of firms to submit and process customs declarations and supporting documentation electronically, the availability of nonjudicial appeal and review to settle border policy disputes, the strength of investor protection, the efficiency of the legal framework in settling disputes, and judicial independence; these variables are derived from World Bank, World Economic Forum, national customs authorities, Global Express Association, and other secondary sources.

APEC, on average, is making progress in reducing time to trade, at rates that exceed average OECD progress, and has nearly achieved its 10 percent goal.[3] Both APEC and OECD members, however, have on average experienced increases in cost to trade and declines in shipment quality. These increases are especially true for APEC's developing economies.

Aggregate performance masks performance gaps in some economies (see Table 2-2).

Table 2-2. Economies' Progress Toward Connectivity Goals, 2009/10–2014 (% change)

Economy	Time to Export	Cost to Export	Time to Import	Cost to Import	Shipment Quality
Australia	0	-4	0	-6	7
Brunei Darussalam	-30	12	-21	9	n/a
Canada	0	-2	0	-6	11
Chile	-12	32	-25	31	-18
China	0	35	0	13	6
Hong Kong, China	-14	-6	0	-11	14
Indonesia	-6	-5	-15	0	2
Japan	0	4	0	1	-3
Korea	-11	-13	-13	-7	5
Malaysia	-15	0	-20	8	26
Mexico	-15	-1	-35	-15	-6
New Zealand	0	0	0	-3	n/a
Papua New Guinea	0	8	10	11	n/a
Peru	-45	3	-32	13	-34
Philippines	-6	-24	-13	-19	-4
Russian Federation	-8	26	-9	30	22
Singapore	0	1	0	0	10
Chinese Taipei	-17	-13	-17	-6	-30
Thailand	0	-5	0	-4	-8
United States	0	10	0	6	6
Viet Nam	-13	14	-9	-1	-13
APEC average	**-9.2**	**3.4**	**-9.4**	**2.0**	**-0.4**
OECD average	**-4.5**	**3.6**	**-8.6**	**1.6**	**-0.2**

Note: For time and cost, a negative value indicates progress toward achieving goals, whereas for shipment quality, a positive value indicates progress (improved quality and therefore reduced uncertainty). Time is measured in days and cost in US$ per container.

Sources: World Bank Doing Business *2009 and 2014,* Logistics Performance Index *2010 and 2014*

[3] The APEC Policy Support Unit conducted an interim assessment of progress in meeting SCFAP goals (Bayhaqi and Zhang Yuhua 2013). It found faster trading times, higher costs, and greater share of shipments meeting quality criteria.

When export and import indicators are averaged, nine APEC economies have exceeded the goal of a 10 percent reduction in time (Brunei Darussalam, Chile, Indonesia, Korea, Malaysia, Mexico, Peru, Chinese Taipei, and Viet Nam), while three have reduced costs at least 10 percent (Korea, Philippines, Chinese Taipei). With regard to shipments meeting quality criteria, five economies have achieved improvement of 10 percent or greater (Canada, Hong Kong, Malaysia, Russian Federation, Singapore).

The progress reported here suggests that APEC SCI should focus on technical assistance to help economies reduce costs to trade and improve the certainty of trade consignments. Time is not as problematic as other issues on average, although some economies still lag in performance.

3. PRIORITIZING FOLLOW-ON WORK

The SCI's diagnostic reports on chokepoints cover a wide range of information on supply chain connectivity. Section 4 summarizes these findings. This section suggests priorities to follow in determining focus areas of the SCI capacity-building program.

An SCI initiative for assistance in capacity building should be undertaken for one or more of the following reasons, for example, because the initiative

- Contributes measurably to APEC's goals of reduced trade time/costs/uncertainty;
- Reduces performance gaps observed among APEC economies;
- Conforms to recommended sequencing guidelines (see Holler et al. 2014);
- Reflects other priorities of APEC members or their business communities, as represented by the APEC Business Advisory Council (ABAC)[4]; or
- Brings members into conformity with the World Trade Organization (WTO)'s proposed Trade Facilitation Agreement (TFA).

Three of these elements are discussed in this section. The others are discussed in Section 5 on capacity building priorities.

TRADE FACILITATION INDICATORS AND ESTIMATED COST IMPACT OF TFA

When APEC members' trade facilitation performances are compared, which variables demonstrate the largest performance gaps among economies? Narrowing of which performance gaps would most reduce trade costs?

The OECD's Trade and Agriculture Department has developed a set of trade facilitation indicators (TFIs) that correspond closely to the articles of the TFA.[5] For 133 countries (of which 20 are APEC economies6), the OECD (2014c) has collected information on the status of policies regarding:

[4] See ABAC (2010) for chokepoint-specific recommendations from businesses. In a February 2014 statement on connectivity, ABAC called for attention to domestic regulatory reform, business and skills mobility, harmonization with global data standards, and infrastructure development that enhances private sector participation (ABAC 2014).

[5] TFIs were developed in line with the WTO Negotiating Group on Trade Facilitation's Draft Consolidated Negotiating Text (Moïsé, Orliac, and Minor 2011). For access to TFI data, country reports, and analyses, see http://www.oecd.org/trade/facilitation/.

- **Information availability—**Knowledgeable references are available to answer inquiries (referred to by OECD as "enquiry points"), physical and virtual publication of trade information;
- **Advance rulings—**Prior statements by the administration to requests from traders concerning classification, origin, valuation method, etc., applied to specific goods upon import; and the rules and processes applied to such statements;
- **Appeal procedures—**How, if possible, to appeal administrative decisions by border agencies;
- **Fees and charges—**Disciplines on fees and charges assessed on imports and exports;
- **Formalities–Documents—**Acceptance of copies, simplification of trade documents, harmonization with international standards;
- **Formalities-Automation—**Electronic exchange of trade data; use of risk management; availability of automated border clearance procedures;
- **Formalities-Procedures—**Streamlining of border controls, single windows, post-clearance audits; recognition of authorized economic operators;
- **Border cooperation (internal)—**Control of delegation to customs authorities; cooperation among a country's border agencies;
- **Border cooperation (external)—**Cooperation with neighboring and third countries; and
- **Governance and impartiality—**Customs structures and functions, accountability, ethics policies.

Economies are evaluated on a scale of 0 to 2 for each TFI.

Comparing individual APEC economies with the region's best-performing economy, Singapore, gives a sense of aggregate performance gaps. **The variables with the largest observed aggregate performance gaps are advance rulings, formalities- procedures, fees and charges, and border agency cooperation (internal).** Variables with the smallest aggregate performance gaps are governance and impartiality, involvement of the trade community, and appeal procedures. TFI-specific performance gaps obviously differ among APEC economies. Radar graphs in the OECD TFI country reports allow for comparisons identifying specific TFI performance gaps.

The OECD trade facilitation team has also estimated the impact that addressing each of these bottlenecks would have on trade costs in low-income, lower-middle-income, and upper-middle- income economies.[7] Since APEC comprises 12 high-, 5 upper-middle-, and 4 lower-middle- income economies, this information does not fully reflect APEC as a whole. However, it

[6] Chile's figures have not yet been incorporated into the TFI database.

[7] For details of the model used, see Moïsé, Orliac, and Minor (2011) and Moïse and Sorescu (2013), Appendixes 9 and 10.

does suggest important gains for the 9 upper- and lower-middle-income economies to which this analysis does apply. Overall, fully implementing the TFA would **reduce total trade costs 14 percent for low-income countries, 15 percent for lower-middle-income, and nearly 13 percent for upper-middle-income countries** (OECD 2014b).

Table 3-1 gives OECD's analysis of the potential impact on trade costs for improvements in five TFIs, according to an economy's income. These figures suggest that the greatest priority, especially for upper- and lower-middle-income countries, would be streamlining and automating border procedures, simplifying required documentation, and providing advance rulings.

Table 3-1. Potential Cost Impact of the Trade Facilitation Agreement (% change)

TFI	Low Income	Lower Middle Income	Upper Middle Income
Streamlining border procedures		-2.3	-2.8
Automating trade and customs processes	-2.4	-2.1	-2.3
Advance rulings			-1.3
Harmonizing and simplifying trade documents	-3.0	-2.7	
Ensuring availability of trade information	-1.7		

Source: OECD (2014b)

WTO TRADE FACILITATION AGREEMENT AND APEC CHOKEPOINTS

To what extent does the structure of APEC's Supply Chain Initiative (SCI), launched in 2009, overlap with the focus of the WTO Trade Facilitation Agreement (TFA), adopted by trade ministers in 2013? Which of the SCI chokepoints are most relevant from the perspective of the WTO TFA?

Trade facilitation was one of several issues trade ministers addressed during the Ninth WTO Ministerial Conference, held in Bali, Indonesia, in December 2013. Adoption of the Trade Facilitation Agreement was a notable part of the Bali Package.[8]

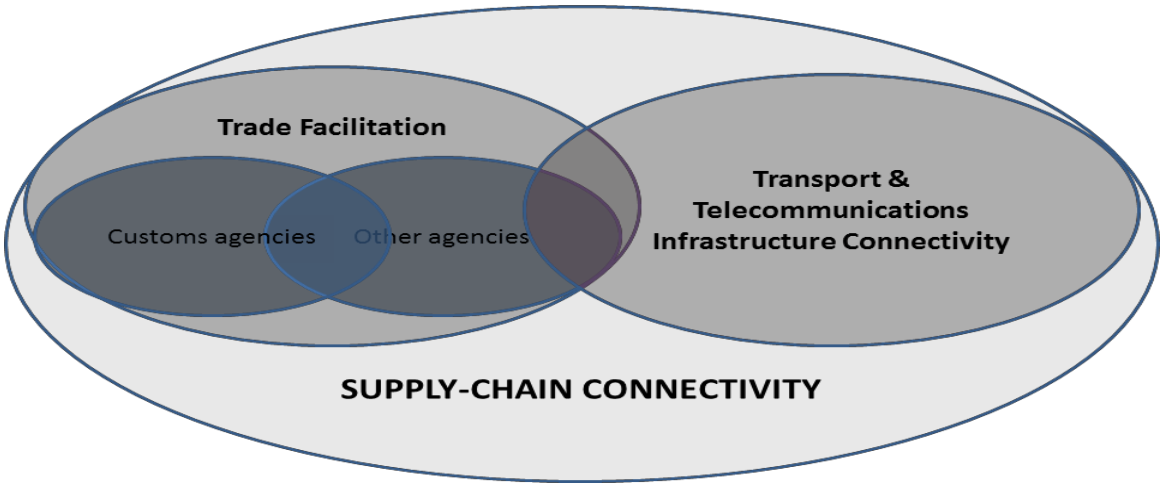
The TFA gives developing countries the flexibility to categorize the timetable they will use to implement specific TFA provisions and affirms the link between developing countries' implementation and provision of the capacity building to support implementation. Developing and least-developed countries may classify TFA provisions one of three ways: (1) those implemented upon entry into force of the TFA (Category A); (2) those implemented after a transitional period that follows entry into force (Category B); and (3) those implemented after a transitional period *and* after receipt of capacity-building assistance.

Trade facilitation is a large dimension of the SCI concept, although the SCI concept is broader. According to APEC's SCI, supply chain connectivity (SCC) encompasses infrastructure connectivity in addition to trade facilitation (Figure 3-1). Moreover, SCC embraces

[8] As of this report, the TFA was pending approval by the WTO General Council. The General Council, the WTO's highest-level decision-making body, meets regularly throughout the year, whereas the Ministerial Conference meets only every two years.

interagency collaboration in addition to the traditional mandate of Customs authorities. This concept also accords with the TFA approach, discussed further below. In addition, the SCI recognizes that physical infrastructure, investment planning for infrastructure development, and harmonization of approaches to infrastructure regulation should also be integrated for supply chain connectivity to succeed.

Figure 3-1. Supply chain Connectivity Diagram



The TFA covers 13 articles and 45 sections that address trade information, interactions between Customs and other border agencies and customers, disciplines on associated fees and charges, trade facilitation processes, institutional collaboration, and trade facilitation policy governance, as outlined in Table 3-2.

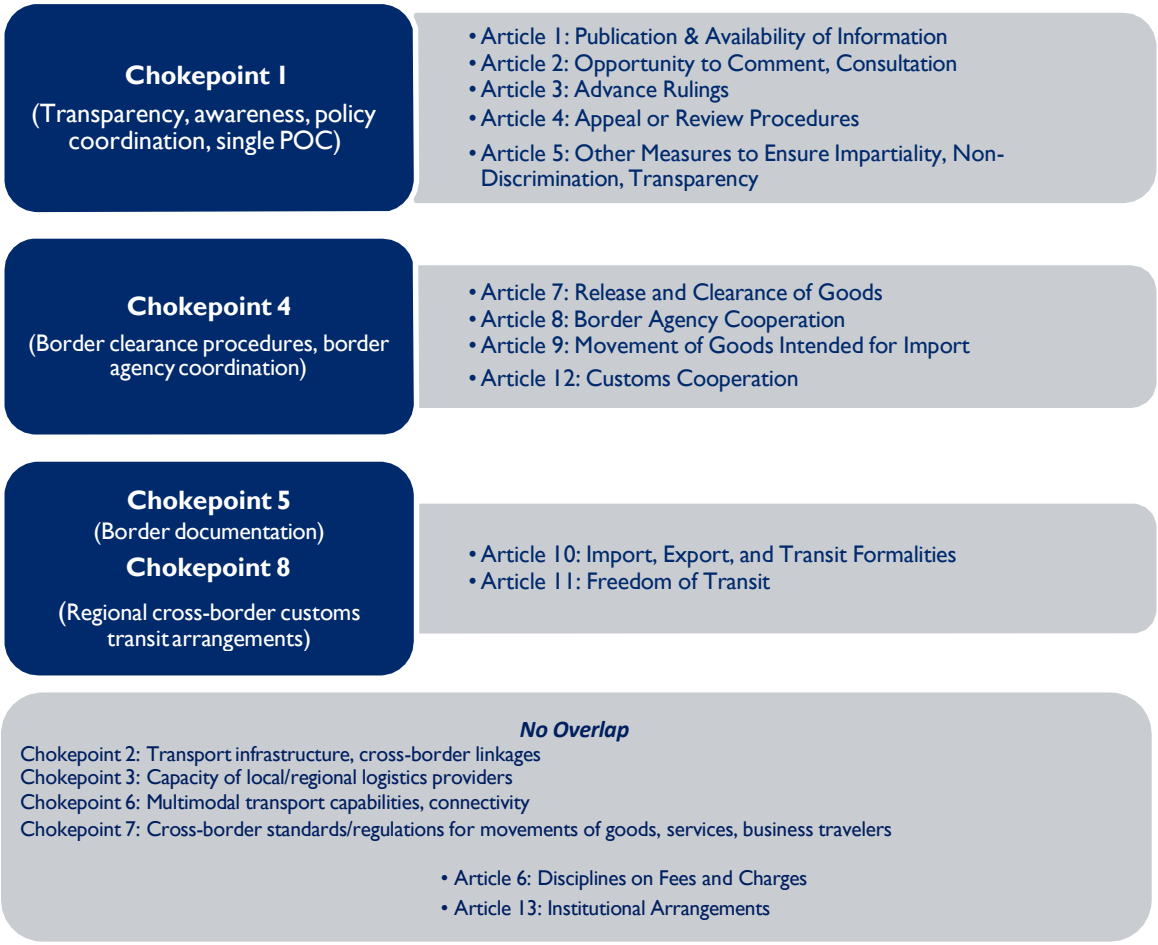
Table 3-2. Coverage of the WTO Trade Facilitation Agreement

Article	Sections
Article 1: Publication and availability of information	• Publication • Information available through Internet • Enquiry points • Notification
Article 2: Opportunity to comment, information before entry into force, and consultation	• Opportunity to comment and information before entry into force • Consultations
Article 3: Advance rulings	
Article 4: Appeal or review procedures	Right to appeal or review
Article 5: Other measures to ensure impartiality, non-discrimination, and transparency	• Notifications for enhanced controls or inspections • Detention • Test procedures
Article 6: Disciplines on fees and charges imposed re import/export	• General disciplines • Specific disciplines • Penalty disciplines

Article	Sections
Article 7: Release and clearance of goods	• Prearrival processing • Electronic payment • Separation of release from final determination of customs duties, taxes, fees, and charges • Risk management • Post-clearance audit • Establishment and publication of average release times • Trade facilitation measures for authorized operators • Expedited shipments • Perishable goods
Article 8: Border agency cooperation	
Article 9: Movement of goods under customs control intended for import	
Article 10: Formalities connected with import, export, and transit	• Formalities and documentation requirements • Acceptance of copies • Use of international standards • Single window • Preshipment inspection • Use of customs brokers • Common border procedures and uniform documentation requirements • Rejected goods • Temporary admission of goods/inward and outward processing
Article 11: Freedom of transit	
Article 12: Customs cooperation	• Measures promoting compliance and cooperation • Exchange of information • Verification • Request • Protection and confidentiality • Provision of information • Postponement or refusal of a request • Reciprocity • Administrative burden • Limitations • Unauthorized use or disclosure • Bilateral and regional agreements
Article 13: Institutional arrangements	• Committee on Trade Facilitation • National Committee on Trade Facilitation

Not surprisingly, a good deal of overlap exists between the TFA and topics covered by APEC's SCI chokepoint reports, mapped in Figure 3-2. TFA Articles 6 and 13 find no parallel in the chokepoint reports. Chokepoints 2, 3, 6, and 7 are not addressed by the TFA.

Figure 3-2. Convergence of Chokepoints and Trade Facilitation Agreement



Thus, from the perspective of the WTO TFA, the most significant chokepoints are 1, 4, 5, and 8.

4. CHOKEPOINT REPORT FINDINGS

This section summarizes the key findings of SCI chokepoint reports in areas of overlap with the Trade Facilitation Agreement or priorities highlighted in Section 3 (chokepoints 1, 4, 5, and 8).

STRENGTHENING GOVERNANCE AND INFORMATION TRANSPARENCY

Goods in 15 APEC economies are subject to multiple inspections (i.e., by governmental agencies in addition to Customs) at the border.[9] Most APEC economies engage in **interagency cooperation**, involving customs authorities and all other agencies with a role in clearing goods. Such cooperation is needed both "behind the border" (i.e., domestic policy and regulatory harmonization) and "at the border" to streamline clearance. Review of border policies and regulations should also involve trade and competition authorities, as well as private sector comment, in order to take into account the potential impact of policies and regulations on trade and the business environment.

Few economies have formal mechanisms in place for interagency collaboration and policy coordination, and few economies fully exploit opportunities for agency cooperation through **integrated online presences** that could offer a variety of services to traders (such as 24/7 access to up-to-date repositories of trade information, windows for online documentation submission, registration to receive advance notification from public authorities on trade-related rule changes, windows for submission of public comment on advance notifications, and links to electronically register appeals).

Nearly all APEC economies have in place a policy on **advance rulings**, but greater harmonization of advance rulings policies across economies to include binding rulings on valuation and product origin would enhance certainty of trade.

Most APEC member economies have formal organizations for **dispute settlement,** but practices vary widely in rights, coverage, use of arbitration, ability to file directly with customs authorities of trade partners, length of time to settlement, and procedures in cases involving preferential treatment. Consensus is needed on best practice goals and on capacity building to meet those goals.

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[9] Global Express Association database, accessed July 18, 2014.

HARMONIZING POLICIES, AND STREAMING, INTEGRATING, AND AUTOMATING BORDER PROCEDURES

Eighteen APEC economies either already use or are building national **single windows**, using a variety of functional (integrated, interfaced, hybrid) and governance structures, and funding mechanisms. Most commonly, these are managed by Customs and entirely funded by the government budget, although three economies charge user fees to cover some or all of the single window's operation. Eleven economies have harmonized their data models[10] with that developed by the World Customs Organization, and eight use UN/EDIFACT for customs clearance. However, only about half of customs agencies link other government agencies electronically into their single windows, which indicates additional work is needed to constitute a fully operational single window incorporating all agencies involved in clearance.

Fifteen economies have introduced into their legal frameworks **protections of traders' data privacy** to accommodate the expansion of electronic trade data submission. Policies on **minimum dutiable values** vary widely among economies. Fourteen economies allow **advance release of goods** before payment of duties, taxes, and other fees, and 14 allow **electronic payment** of those obligations.

In addition to the benefits from automation mentioned above (submission of data, securing advance release, allowing for electronic payments), increased use of automation would also enable more APEC economies to apply technology to the goal of **risk assessment,** including the identification of trusted traders and the targeting of border inspections to shipments that present the greatest risks. Thirteen APEC economies use some form of automated risk assessment, while three rely on inspector discretion and three conduct random examinations.[11]

Prearrival processing is also a common practice. Fifteen economies indicated that customs declarations and other documents (such as preferential certificates of origin, manifests, health and phytosanitary certificates, and insurance certificates) can be submitted in advance. Many APEC economies are signatories to the World Customs Organization's guidelines on **immediate consignment release**, yet practice varies on how the signatories apply those guidelines to cargoes across volumes and values. **Time-release studies** have been conducted in less than half the APEC economies, with some indication that data collection is a challenge to implementation.

Twelve economies offer a **single point of contact to service customers** with border clearance delays or other concerns. This point of contact is managed either by the customs authority (five economies) or a separate office (seven economies).

Transit policies also vary among APEC economies with regard to: restrictions on freedom of transit, transit documentation requirements, the role of third economies in issuing such documentation, the length of time during which goods may remain in transit status, splitting of

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[10] A data model, according to the WCO, is defined as "a universal language for cross-border data exchange," or "a set of carefully combined data requirements that are mutually supportive…to meet the needs of cross-border regulatory agencies…".

[11] For a detailed database of customs capabilities, see the Global Express Association database, accessed July 18, 2014 (www.global-express.org).

consignments, and whether preferential status (under a bilateral or regional trade agreement) would still apply if the consignment transited through a nonparty economy. Consensus appears to have been reached for certain transit-related policies: 14 economies require goods in transit to be declared to their customs authorities, and most economies require inclusion of specific information on routes taken by cargo in transit. Also, only one economy applies taxes or duties to goods in transit; four economies do not allow consignees to receive goods in transit; and five economies require a bond or other form of financial guarantee on goods in transit. Sixteen economies are parties to treaties that include regulation of goods in transit.

Virtually all APEC economies are partners in at least one preferential trade agreement. Accessing such treatment requires the submission of **certificates of origin** to confirm a trader's right to preferential status. Outside of preferential trade agreements, 13 economies do not require certificates of origin. Policies governing the issue of these certificates range widely. Four economies require a government agency to issue the certificate of origin, while 12 allow for a diversity of issuing authorities, and 10 accept self- issued certificates of origin. The length of validity varies widely among economies. Although most certificates of origin are valid at least 12 months, some are valid for 6 months or less. A few economies still require that multiple documents be submitted in order to receive a certificate of origin, further delaying delivery. Six economies do not allow for the electronic exchange of certificates of origin. Also, some economies still do not use the highest standard for security for e-signatures of e-certificates of origin.

5. CAPACITY-BUILDING NEEDS

This section suggests topics for further work on capacity building. These suggestions take into account the priorities highlighted in Section 3 and the findings of SCI chokepoint reports summarized in Section 4. These topics should help APEC economies connect national supply chain platforms to global supply chains.

Table 5-1. Recommended Topics for SCC Capacity-Building

Topic	Justification
Information Transparency and Governance	
Advance rulings	Providing specific information about tariff classifications, expected duty treatment, and other applicable border processes would greatly enhance certainty while also cutting time and cost of transactions.
Modern, integrated border management systems	Economies are already well advanced in single window design and implementation. However, modern, integrated border management systems can be more than just opportunities for e-customs processes. These systems can combine: (a) improved dissemination of trade information through online repositories of trade information, (b) sources for downloading or online submission of relevant documentation, and (c) integrated border clearance procedures of customs authorities and other relevant government agencies. The systems can also be used to supply information on how to appeal border clearance decisions and resolve disputes through national single windows (and integrated regional single windows, as being undertaken by ASEAN). Single windows can also be used as communications portals, enabling government agencies to push information (such as advance rulings) to enrolled traders. These portals would also enabling traders to comment on pending rules changes. Audits of existing portals to identify opportunities for next-generation service delivery would ultimately reduce the time, cost and uncertainty of trade.
Legal framework analysis	Assuring that an economy's legal framework embraces electronic commerce and payments is important, not just to assuring private traders' privacy, but also to clarify roles and responsibilities of trade-related actors in new, automated environments. Trade certainty would thereby be enhanced.
Harmonizing Policies, Streamlining Border Procedures	
Costs to trade analysis	Although not specifically addressed by SCI chokepoint reports, disciplines on fees and costs surfaced as a trade facilitation issue in comparing OECD TFI performance across economies. Conducting procedural audits to determine specific cost sources would be a first step to reducing overall charges.
Preferential certificates of origin	Simplifying documentation requirements and introducing the capability for self-issuance would help reduce time, cost, and uncertainty.
Prearrival processing	Developing policies, rules, and work programs to let customs authorities process cargo dossiers before goods arrive in port would help reduce the time, uncertainty, and possibly cost of trade.
Advance release of goods	Providing documentation and logistics systems that allow goods to leave port after inspection but before duties are paid would also reduce time and uncertainty (and possibly cost) of trade.
Expedited shipments	Assuring expedited clearance of express shipments, usually arriving by air, in time-sensitive value chains is critical to reducing times to trade and increasing certainty. Simplified, harmonized clearance procedures among APEC members would assure more transparent treatment for this key component of supply chain trade.

Topic	Justification
Electronic payments	Integrating electronic customs records with electronic financial systems to let traders pay duties through direct transfer of funds also would reduce time, cost, and uncertainty of trade.
Appeal and dispute settlement	Transparent rules and procedures for appealing border clearance decisions and quickly settling disputes are crucial for enhancing certainty as well as reducing time and costs.
Risk management	Customs authorities and other agencies in economies with well-functioning supply chains have moved away from systems that inspect all shipments, randomly inspect, or rely on inspector discretion. These economies have adopted technology enabling use of decision-trees or algorithms. These tools make it possible to determine which traders can be trusted and which shipments are more likely to have a fraudulent declaration or threaten cargo security or public safety. Implementing such technology improves certainty for reliable traders while also reducing their time and costs.
Time-release studies	A number of APEC economies say time-release studies have proved cumbersome to implement. Yet they are an important gauge of whether supply chain bottlenecks are being resolved.

Selecting from among these follow-on initiatives builds from the diagnostics prepared by Lead Economies for the SCFAP. Providing technical assistance to self-selected economies from among these topic areas would support APEC members as they increase efforts to accomplish SCI supply chain connectivity goals by the end of 2015.

PROPOSED SEQUENCING FOR CAPACITY BUILDING

USAID highlights four groups of trade facilitation initiatives that developing countries can undertake to implement the WTO TFA, suggesting an optimal sequence in which they should be implemented (Holler et al. 2014):

1. **Political will and adoption of fundamental principles.** This group of initiatives promotes information transparency and accessibility, such as advance rulings and opportunities to comment on proposed rule changes, and the establishment of National Trade Facilitation Committees (TFA articles 1, 2, and 13). Prioritization of this group is important as a precursor to other TFA-related technical assistance because their successful completion affirms an economy's political commitment to carry out the rest of the trade facilitation agenda (Holler et al. 2014, 13).
2. **Procedural simplification.** This group addresses specific border clearance procedures and formalities that involve customs authorities and other government agencies with border control responsibilities (e.g., alerts, detentions, and testing; fees, charges, and penalties; release and clearance of goods; goods in transit; and other formalities such as preshipment inspection and use of customs brokers) (TFA articles 5, 6, 7, 9, 10, and 11).
3. **Compliance management.** This group contains more specific operational dimensions of border management. This groups promotes a shift from blanket controls to more selective, risk-based interventions (e.g., advance rulings, appeals and reviews, penalty disciplines, application of risk management strategies such as naming of authorized economic operators, and post-clearance audits) (TFA articles 3, 4, 6, and 7).
4. **Interagency cooperation and coordination.** This group encompasses actions that enforce, from the top down, rigorous institutional change. The group includes such

initiatives as interagency cooperation and single windows. Impacts of these actions can be monitored through time-release studies (TFA articles 7, 8, 10, and 12).

To summarize, capacity-building should focus on:

- **Initiatives to reduce costs and uncertainty of trade—** Especially initiatives to streamline and automate border procedures (chokepoint 4), simplify required documentation (chokepoint 5), and provide advance rulings (chokepoint 4), as found in the OECD Trade Facilitation Indicators analysis.
- **Issues covered under the WTO's Trade Facilitation Agreement—**In addition to issues addressed in chokepoints 4 and 5, topics covered in chokepoint 1 regarding transparency, awareness, policy coordination, single point-of-contact, and dispute resolution, and chokepoint 8 regarding regional cross-border transit arrangements, would help to bring economies in compliance with the TFA.

APEC SCI follow-on capacity-building work may also strive to be consonant with sequencing principles, such as those proposed by USAID. These emphasize early attention to governance and transparency, followed by work on simpler procedural simplification. A third set of priorities includes the introduction of modern methods to target border management interventions, while a fourth group would include more complex interagency cooperation and integration of electronic trade management systems.

REFERENCES

APEC Business Advisory Council (ABAC). 2010. *Recommendations from ABAC Secretariat on Supply Chain Chokepoints in the APEC Region.* 2010/SOM2/CTI/039, Agenda Item: 6.3 (a). Second CTI Meeting, Sapporo, Japan, 1–2 June.

_____. 2014. Asia Pacific Business Leaders to Press APEC Leaders to Accelerate Regional Economic Integration. https://www.abaconline.org/v4/download.php?ContentID=22611554.

APEC. 2009. Appendix 8—Supply Chain Connectivity Framework. 2009/AMM/011app08. Presented at 21st APEC Ministerial Meeting, Plenary Session. Singapore, 12 November.

_____. 2010a. *Sendai Symposium on Supply Chain Connectivity.* Sendai, Japan, 20–21 September 2010.

_____. 2010b. *Committee on Trade and Investment, Annual Report to Ministers.* Singapore.

_____. 2010c. APEC Supply Chain Connectivity Framework Action Plans. Appendix 5, in *2010 Committee on Trade and Investment Report to Ministers*.

_____. 2012a. *Outcome Report: Symposium on Supply Chain Connectivity Measurement Framework.* Prepared by the Policy Support Unit. August.

_____. 2012b. APEC Supply Chain Connectivity Action Plans. Appendix 6, in *2012 Committee on Trade and Investment Report to Ministers*.

_____. 2012c. Establishing Reliable Supply Chains, in *2012 APEC Ministerial Meeting, Joint Statement*. Vladivostok, Russia, 5–6 September.

_____. 2012d. *Integrate to Grow, Innovate to Prosper.* 20th APEC Economic Leaders' Meeting. Vladivostok, Russia, 8–9 September.

_____. 2013a. The 2013 Interim Assessment for Supply Chain Connectivity Framework Action Plan, Executive Summary. Appendix 5, in *2013 Annual Report to Ministers*. 2013/AMM/010. Prepared by the Policy Support Unit. March.

_____. 2013b. Supply Chain Connectivity Framework Action Plan: List of Policy Inventories for Reference (as of 27 September 2013). Appendix 6, in *2013 Annual Report to Ministers*, 2013/AMM/010. 2013/AMM/010app6. Bali, October.

Bayhaqi, Akhmad, and Bernadine Zhang Yuhua. 2013. *The 2013 Interim Assessment for Supply Chain Connectivity Framework Action Plan.* Prepared by the APEC Policy Support Unit. Singapore, March.

Ferro, Esteban, Catherine Mann, Bruce Thomson, and John S. Wilson. 2014. *Strengthening Supply Chains in APEC: Regulatory transparency and coordination in the trade and logistics environment— A Diagnostic Analysis of Chokepoint 1 of the APEC Supply Chain Connectivity Framework.* Prepared by the World Bank, Development Economics Research Group, Trade and

International Integration for APEC Committee on Trade and Investment. Washington, D.C., January.

_____, Catherine Mann, Bruce Thomson, and John S. Wilson. 2014. *Transport Infrastructure Along APEC's Critical Supply Chains: Analysis for Informed Capacity Building*. Prepared by the World Bank, Development Economics Research Group, Trade and International Integration for the Australian Department of Foreign Affairs and Trade. Washington, D.C., January.

Government of Chile. 2014. *Strengthening Supply Chains in APEC: Transparency, Cooperation, and Capacity Building—Analysis of Chokepoint 8, Customs Transit Arrangements.* Prepared for the APEC Committee on Trade and Investment. Santiago, March.

Holler, Robert, Erin Endean, Paul J. Fekete, and Virginia Brown. 2014. *A Comprehensive Approach to Trade Facilitation and Capacity Building*. Prepared by Business Environments for Agile Markets program for U.S. Agency for International Development. Arlington, Virginia: Carana Corporation.

International Finance Corporation. 2013. *Doing Business 2014: Understanding Regulations for Small and Medium-Size Enterprises.* Washington, D.C.

Jacobs, Scott. 2013. *Progress Report on 2011 Baseline Study on Good Regulatory Practices*. Prepared for APEC under the USAID APEC Technical Assistance and Training Facility program. Arlington, Virginia, implemented by Nathan Associates Inc.

Moïsé, Evdokia. 2013. *The Costs and Challenges of Implementing Trade Facilitation Measures.* OECD Trade Policy Papers, No. 157. Paris: OECD Publishing.

_____, Thomas Orliac, and Peter Minor. 2011. *Trade Facilitation Indicators: The Impact on Trade Costs.* OECD Trade Policy Working Papers, No. 118. Paris: OECD.

_____and Silvia Sorescu. 2013. *Trade Facilitation Indicators: The Potential Impact of Trade Facilitation on Developing Countries' Trade.* OECD Trade Policy Papers, No. 144. Paris: OECD.

OECD. 2014a. *The WTO Trade Facilitation Agreement—Potential Impact on Trade Costs.* Paris: OECD, February.

_____. 2014b. *OECD Trade Facilitation Indicators: Calculating the potential impact of the WTO Trade Facilitation Agreement on Trade Costs.* Paris: OECD, May.

_____. 2014c. *OECD Trade Facilitation Indicators—State of Implementation.* Paris: OECD, June.

U.S. Agency for International Development. 2014a. Strengthening Supply Chains in APEC: Transparency, Cooperation, and Capacity Building—Analysis of Chokepoint 4, Cross- Border Clearance Procedures. Prepared by Nathan Associates. Arlington, Virginia, July.

_____. 2014b. Strengthening Supply Chains in APEC: Transparency, Cooperation, and Capacity Building—Analysis of Chokepoint 6, Multimodal Transport Capabilities and Connectivity. Prepared by Nathan Associates. Arlington, Virginia, July.

_____. 2014c. Strengthening Supply Chains in APEC: Transparency, Cooperation, and Capacity Building—Analysis of Chokepoint 7, Standards and Regulations for Cross-Border Movement. Prepared by Nathan Associates. Arlington, Virginia, October.

World Bank. 2012. *Connecting to Compete: Trade Logistics in the Global Economy, The Logistics Performance Index and Its Indicators.* Washington.

World Customs Organization. 2013. *Dublin Resolution: Resolution of the Policy Commission of the World Customs Organization on the Conclusion of an Agreement on Trade Facilitation by the World Trade Organization.* Dublin, 11 December.

_____. 2014. *WTO Agreement on Trade Facilitation: The WCO's Role and the Customs Community in Implementing the TFA.* One of a series of presentations to the WTO. Geneva, 16 June. http://www.wto.org/english/tratop_e/tradfa_e/wks_wcotf14_e.htm.

World Economic Forum. 2012. *Global Enabling Trade Report: Reducing Supply Chain Barriers. Geneva.*

_____. 2013. *The Global Competitiveness Report 2013-2014.* Geneva.

World Trade Organization. 2013. *Agreement on Trade Facilitation: Ministerial Decision of 7 December 2013.* WT/MIN(13)/36, WT/L/911. Ministerial Conference, Ninth Session, Bali, 3– 6 December.

Yoon and Yang. 2014. *APEC Supply Chain Connectivity Assessment Report, Chokepoint 5: Burdensome Procedures for Customs Documentation and Other Procedures.* Republic of Korea, Customs and Trade Practice Group. Seoul, March.

APPENDIX A.

BENCHMARK DATABASES

The following list provides links to secondary data that chokepoint reports used to help benchmark APEC economy performances on a range of trade and transport indicators:

APEC WebTR
Links to member economies' national websites for tariff and rules of origin information:
http://www.apec.org/Groups/Committee-on-Trade-and-Investment/Rules-of-Origin/WebTR.aspx

Booz Allen Hamilton
Cyber Power Index
http://www.boozallen.com/content/dam/boozallen/media/file/Cyber_Power_Index_Findings_and_Methodology.pdf

Centre d'Etudes Prospectives et d'Informations Internationales (*CEPII*)
Institutional Profiles Database
http://www.cepii.fr/institutions/EN/ipd.asp

Global Express Association
Customs Capabilities Report
http://www.global-express.org/index.php?id=271

International Finance Corporation
Enterprise Surveys
http://www.enterprisesurveys.org/

International Telecommunications Union
Global Cybersecurity Index *(under development)*
http://www.itu.int/en/ITU-D/Cybersecurity/Pages/GCI.aspx

International Transport Forum
Annual Transport Outlook reports (with OECD), and accompanying transport statistics
http://www.internationaltransportforum.org

Organization for Economic Cooperation and Development (OECD)
Trade Facilitation Indicators (TFI)
http://www.oecd.org/tad/facilitation/indicators.htm

OECD-WTO
Trade in Value-Added Database
http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm

PricewaterhouseCoopers
Global State of Information Security
http://www.pwc.com/gx/en/consulting-services/information-security-survey/

UN Commission on Trade and Development
Liner Shipping Connectivity Index
http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92

UN Economic and Social Committee for Asia and the Pacific
Trade Facilitation and Paperless Trade Expert Survey
http://www.unescap.org/resources/trade-facilitation-and-paperless-trade-asia-results-expert-survey

World Bank
Doing Business
http://www.doingbusiness.org
Logistics Performance Index
http://lpi.worldbank.org/
Private Participation in Infrastructure Database
http://ppi.worldbank.org/

World Customs Organizations
Links to national Customs websites
http://www.wcoomd.org/en/about-us/wco-members/customs-websites.aspx

World Economic Forum
Global Competitiveness reports
http://www.weforum.org/issues/global- competitiveness
Global Enabling Trade reports
http://www.weforum.org/issues/international- trade

World Trade Organization
Trade Policy Reviews
http://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm

APPENDIX B.

SUPPLY CHAIN CONNECTIVITY PERFORMANCE

Table B-1. Supply-Chain Time, Costs, and Uncertainty, 2009/10 and 2014

Economy	APEC?	OECD?	2009 Time to Export (days)	2009 Cost to Export (US$ per container)	2009 Time to Import (days)	2009 Cost to Import (US$ per container)	2010 % Shipments Meeting Quality Criteria	2014 Time to Export (days)	2014 Cost to Export (US$ per container)	2014 Time to Import (days)	2014 Cost to Import (US$ per container)	2014 % Shipments Meeting Quality Criteria
Australia	Y	Y	9	1,200	8	1,239	85	9	1,150	8	1,170	92
Austria		Y	9	1,180	8	1,195	92	9	1,090	8	1,155	77
Belgium		Y	9	1,240	9	1,400	95	9	1,240	8	1,400	96
Brunei Darussalam	Y		27	630	19	708		19	705	15	770	
Canada	Y	Y	8	1,710	10	1,785	79	8	1,680	10	1,680	90
Chile	Y	Y	17	745	16	710	95	15	980	12	930	77
China	Y		21	460	24	545	70	21	620	24	615	76
Czech Republic		Y	18	1,045	20	1,087		17	1,215	17	1,190	98
Denmark		Y	6	794	5	744	92	6	795	5	745	93
Estonia		Y	6	750	5	740	94	6	765	5	795	95
Finland		Y	9	545	8	575	91	9	615	7	625	91
France		Y	10	1,285	11	1,395		10	1,335	11	1,445	90
Germany		Y	8	852	7	887	92	9	905	7	940	76
Greece		Y	20	1,078	19	1,265	97	16	1,040	15	1,135	97
Hong Kong, China	Y		7	625	5	633	81	6	590	5	565	95
Iceland		Y	10	1,109	9	1,183		10	1,530	9	1,620	97
Indonesia	Y		18	644	27	660	68	17	615	23	660	70
Ireland		Y	8	1,109	10	1,121	100	8	1,160	10	1,121	
Israel		Y	12	665	12	605	88	10	620	10	565	

Economy	APEC?	OECD?	2009 Time to Export (days)	2009 Cost to Export (US$ per container)	2009 Time to Import (days)	2009 Cost to Import (US$ per container)	2010 % Shipments Meeting Quality Criteria	2014 Time to Export (days)	2014 Cost to Export (US$ per container)	2014 Time to Import (days)	2014 Cost to Import (US$ per container)	2014 % Shipments Meeting Quality Criteria
Italy		Y	20	1,281	18	1,231	79	19	1,195	18	1,145	83
Japan	Y	Y	11	859	11	957	92	11	890	11	970	89
Republic of Korea	Y	Y	9	767	8	747	92	8	670	7	695	97
Luxembourg		Y	8	1,420	7	1,420	89	8	1,425	7	1,420	97
Malaysia	Y		13	450	10	450	71	11	450	8	485	97
Mexico	Y	Y	13	1,472	17	2,050	86	11	1,450	11	1,740	80
Netherlands		Y	7	925	6	1,020	77	7	925	6	975	94
New Zealand	Y	Y	10	868	9	850	63	10	870	9	825	
Norway		Y	8	1,055	7	929	93	8	1,225	7	1,100	92
Papua New Guinea	Y		23	1,064	29	1,128		23	1,149	32	1,250	
Peru	Y		22	860	25	895	91	12	890	17	1,010	57
Philippines	Y		16	771	16	819	75	15	585	14	660	71
Poland		Y	17	884	17	884	80	17	1,050	14	1,025	95
Portugal		Y	16	730	15	899		15	780	13	925	92
Russian Federation	Y		24	2,080	23	2,165	55	22	2,615	21	2,810	77
Singapore	Y		6	456	4	439	82	6	460	4	440	92
Slovak Republic		Y	22	1,445	22	1,445	97	17	1,500	16	1,480	87
Slovenia		Y	20	1,075	21	1,130	83	16	745	14	830	
Spain		Y	10	1,171	10	1,250	90	10	1,310	9	1,350	87

Economy	APEC?	OECD?	2009 Time to Export (days)	2009 Cost to Export (US$ per container)	2009 Time to Import (days)	2009 Cost to Import (US$ per container)	2010 % Shipments Meeting Quality Criteria	2014 Time to Export (days)	2014 Cost to Export (US$ per container)	2014 Time to Import (days)	2014 Cost to Import (US$ per container)	2014 % Shipments Meeting Quality Criteria
Sweden		Y	9	717	6	735		9	725	6	735	
Switzerland		Y	8	1,537	8	1,505	92	8	1,635	8	1,440	97
Chinese Taipei	Y		12	757	12	769	91	10	655	10	720	61
Thailand	Y		14	625	13	795	91	14	595	13	760	83
Turkey		Y	14	940	15	1063	83	13	990	14	1235	82
United Kingdom		Y	10	1,080	8	1,350	90	8	1,005	6	1,050	77
United States	Y	Y	6	990	5	1,245	81	6	1,090	5	1,315	87
Viet Nam	Y		24	533	23	606	89	21	610	21	600	76
APEC AVERAGE			**14.8**	**884**	**15.0**	**962**	**80.9**	**13.1**	**920**	**13.3**	**984**	**81.5**
OECD AVERAGE			**11.4**	**1046**	**11.1**	**1110**	**88.1**	**10.7**	**1079**	**9.8**	**1114**	**89.5**

Sources: Doing Business 2009 for all 2009 data; Doing Business 2014 for all 2014 data except % Shipments Meeting Quality Criteria; LPI 2010 and LIPI 2014 for % Shipments Meeting Quality Criteria. I

Table B-2. Changes in Time, Cost, and Uncertainty of Supply Chains, 2009/10–2014

Economy	APEC?	OPEC?	Time to Export (days)	Cost to Export (US$ per container)	Time to Import (days)	Cost to Import (US$ per container)	Shipments Meeting Quality Criteria
			% Change				Points +/-
Australia	Y	Y	0	-4	0	-6	7
Austria		Y	0	-8	0	-3	-15
Belgium		Y	0	0	-11	0	1
Brunei Darussalam	Y		-30	12	-21	9	
Canada	Y	Y	0	-2	0	-6	11
Chile	Y	Y	-12	32	-25	31	-18
People's Rep. China	Y		0	35	0	13	6
Czech Republic		Y	-6	16	-15	9	
Denmark		Y	0	0	0	0	1
Estonia		Y	0	2	0	7	1
Finland		Y	0	13	-13	9	0
France		Y	0	4	0	4	
Germany		Y	13	6	0	6	-16
Greece		Y	-20	-4	-21	-10	0
Hong Kong, China	Y		-14	-6	0	-11	14
Iceland		Y	0	38	0	37	
Indonesia	Y		-6	-5	-15	0	2
Ireland		Y	0	5	0	0	
Israel		Y	-17	-7	-17	-7	
Italy		Y	-5	-7	0	-7	4
Japan	Y	Y	0	4	0	1	-3
Republic of Korea	Y	Y	-11	-13	-13	-7	5
Luxembourg		Y	0	0	0	0	8
Malaysia	Y		-15	0	-20	8	26
Mexico	Y	Y	-15	-1	-35	-15	-6
Netherlands		Y	0	0	0	-4	17
New Zealand	Y	Y	0	0	0	-3	
Norway		Y	0	16	0	18	-1
Papua New Guinea	Y		0	8	10	11	
Peru	Y		-45	3	-32	13	-34
Philippines	Y		-6	-24	-13	-19	-4
Poland		Y	0	19	-18	16	15
Portugal		Y	-6	7	-13	3	
Russian Federation	Y		-8	26	-9	30	22
Singapore	Y		0	1	0	0	10

Economy	APEC?	OPEC?	Time to Export (days)	Cost to Export (US$ per container)	Time to Import (days)	Cost to Import (US$ per container)	Shipments Meeting Quality Criteria
			% Change				Points +/-
Slovak Republic		Y	-23	4	-27	2	-10
Slovenia		Y	-20	-31	-33	-27	
Spain		Y	0	12	-10	8	-3
Sweden		Y	0	1	0	0	
Switzerland		Y	0	6	0	-4	5
Chinese Taipei	Y		-17	-13	-17	-6	-30
Thailand	Y		0	-5	0	-4	-8
Turkey		Y	-7	5	-7	16	-1
United Kingdom		Y	-20	-7	-25	-22	-13
United States	Y	Y	0	10	0	6	6
Viet Nam	Y		-13	14	-9	-1	-13
APEC AVERAGE			**-9.2**	**3.4**	**-9.4**	**2.0**	**-0.4**
OECD AVERAGE			**-4.5**	**3.6**	**-8.6**	**1.6**	**-0.2**

Note: The average change in shipments meeting quality criteria is calculated only for economies with observations in both 2010 and 2014.