Grow with the Flow

An Evaluation of World Bank Group Support to Facilitating Trade 2006–17

IEG
Independent Evaluation Group
WORLD BANK GROUP
World Bank • IFC • MIGA

WHAT WORKS

Attribution—Please cite the report as: World Bank. 2019. *Grow With the Flow: An Independent Evaluation of the World Bank Group's Support to Facilitating Trade 2006–17.* Independent Evaluation Group. Washington, DC: World Bank.

Grow with the Flow

An Evaluation of World Bank Group Support to Facilitating Trade 2006–17

IEG
Independent Evaluation Group

WORLD BANK GROUP
World Bank • IFC • MIGA

Careful observation and analysis of program data and the many issues impacting program efficacy reveal what works as well as what could work better. The knowledge gleaned is valuable to all who strive to ensure that World Bank goals are met and surpassed.

contents

Boxes

Figures

Tables

Appendixes

abbreviations

ASA	Advisory Services and Analytics
ASEAN	Association of Southeast Asian Nations
ASYCUDA	Automated System for Customs Data
CAS	Country Assistance Strategy
CPF	Country Partnership Framework
DB	Doing Business
DPL	development policy loan
DTIS	Diagnostic Trade Integration Study
ICT	information and communications technology
IEG	Independent Evaluation Group
IFC	International Finance Corporation
LPI	Logistics Performance Index
MFD	Maximizing Finance for Development
MIGA	Multilateral Investment Guarantee Agency
NSW	National Single Window
OECD	Organisation for Economic Co-operation and Development
PPD	public-private dialogue
PRA	portfolio review and analysis
SDG	Sustainable Development Goals
T&C GP	Trade and Competitiveness Global Practice
TTFA	Trade and Transport Facilitation Assessment
TFA	Trade Facilitation Agreement
TFF	Trade Facilitation Facility
TFI	Trade Facilitation Indicator
TFSP	Trade Facilitation Support Program
UNCTAD	United Nations Conference on Trade and Development
WB	World Bank
WBG	World Bank Group
WCO	World Customs Organization
WTO	World Trade Organization

All dollar amounts are U.S. dollars unless otherwise indicated.

acknowledgments

This evaluation of the World Bank Group's support for trade facilitation was led by an IEG team comprised of Giuseppe Iarossi and Andrew Stone (co-task team leads) and Jacqueline Andrieu. It was carried out under the direction of José Candido Carbajo Martínez (Director, IEGSP) and Stoyan Tenev (Senior Manager, IEGFP) and the overall guidance of Caroline Heider (Director General, Evaluation). The team received methodological guidance from Jozef Leonardus Vaessen (IEG methods advisor), as well as econometric guidance from Lodewijk Smets and Qihui Chen.

Team members included Ana Belen Barbeito, Ozlem Onerci, Santiago Ramirez Rodriguez, Marcio De La Cruz, Giovani Tanzillo, Asita De Silva, and Emelda Cudilla. Eugenia Go authored the main structured literature review (SLR) and Haiyang Zhang conducted a pilot SLR. Xiaolun Sun and Divya Kapoor also contributed to the initial stages of this evaluation.

The peer reviewers were Prof. Bernard Hoekman (European University Institute), Nora Neufeld (World Trade Organization), and Prof. Beata Smarzynska (Oxford University).

The team extends its warm thanks to our advisor, John S. Wilson, whose commitment and expertise were greatly valued. Ana Margarida Fernandes (DECTI) provided perceptive comments on the structured literature review. The team is grateful to several current and former World Bank Group staff who shared their insights and expertise with the team, and the team especially thanks the country teams in the four case study countries (Peru, Lao People's Democratic Republic, Benin, and Armenia) and in Cambodia for facilitating field missions.

Overview

highlights

Role and Achievements

Lowering the cost of international trade can promote growth and, with the help of complementary policies, facilitate the achievement of the World Bank Group's twin goals of reducing extreme poverty and promoting shared prosperity. The World Bank Group has played a leading role during the past 12 years in promoting trade facilitation, with some success in lowering trade costs. Its leadership role and achievements in the trade facilitation space are evidenced by:

- *Scope:* 893 trade facilitation interventions of all types, in addition to Advisory Services and Analytics (ASA). One-third of the interventions were in Sub-Saharan Africa, targeting countries with the greatest trade facilitation bottlenecks.

- *Results:* Contribution to a substantial lowering of transaction costs in international trade through interventions spanning the entire spectrum of trade facilitation interventions (border operations, agencies and infrastructure, and rules and procedures).

- *Global public goods:* Thought leadership and convening through its trade facilitation indicators, analytical work, research, and global partnerships that contributed to a positive dynamic in reforms.

What Works

Although the above achievements have contributed to lower trade costs and have generated associated benefits, a rigorous analysis suggests a more nuanced picture of what World Bank Group interventions work, where, when, and in what combinations:

- Successful trade facilitation reforms benefit from support to complementary areas of intervention and support over time. Yet, few projects are designed with such a systematic approach.

- In a context with diverse agency incentives and objectives, strong political support and active coordination play a pivotal role in ensuring the necessary level of integrated activity and information exchange to make trade facilitation successful. Yet, in practice, the World Bank Group has not systematically applied its tools for engaging with and coordinating among diverse stakeholders.

- Many trade regulations are intended to serve socially beneficial purposes such as enhancing public health, safety, and the environment, or reducing informality and corruption. However, insufficient attention has been paid to such objectives and only compliance costs are routinely monitored.

- Current sets of trade facilitation indicators generated and/or used by the World Bank Group each have their strengths, but also have

weaknesses. Having two different rating systems can confuse or frustrate counterparts and clients.

Future Challenges

The Independent Evaluation Group (IEG) recommends that the World Bank Group do the following:

- Promote an approach of complementary (simultaneous and/or sequential) interventions in trade facilitation reforms in countries where trade is a client priority and the World Bank Group has a comparative advantage, substantiated by consistent diagnostics, to enhance the effectiveness of reforms.

- Identify and mitigate political economy constraints to trade facilitation reform implementation through systematic application of its tools for stakeholder analysis and consultation (including public-private dialogue).

- Systematically apply a risk-based approach to identify and monitor the public policy objectives of trade regulations relating to public health, safety, the environment, good governance, formality, and the rule of law, and specifically identify the stakeholders potentially affected by the reforms and the extent of the impact.

- Rationalize its own two major trade facilitation indicator sets to build on the virtues of each and to enhance their responsiveness to implemented reforms.

Why Trade Facilitation Matters

Definition. Trade facilitation has moved to the forefront of the global and World Bank Group's trade agenda. In this evaluation, trade facilitation is defined as "streamlining and harmonizing the activities, practices and formalities required for international trade and associated payments and border logistics while safeguarding legitimate regulatory and policy objectives."

Changing Focus. As tariffs and explicit quotas have been lowered under the World Trade Organization (WTO), attention has increasingly turned to non-tariff impediments that add to the cost and disrupt the flow of trade. It has especially focused on excess transaction costs and uncertainty, operational costs, and regulatory restrictions that may impede or slow the movement of goods across borders.

Strategic Objective. The World Bank Group has identified trade facilitation as critical to its overall trade and development agenda, and has sought to improve the competitiveness of client countries. Its trade strategy explicitly seeks to reduce trade costs to firms. Additionally, the Bank Group has been a leading technical partner to the WTO during the Trade Facilitation Agreement (TFA) process throughout the evaluation period and has taken a leading role in providing technical support to WTO member countries working to conform to its requirements. This includes work financed through two important multidonor trust funds: (i) the recently expired Trade Facilitation Facility and (ii) the World Bank–administered Trade Facilitation Support Program launched in 2014.

The World Bank Group has been helping countries to strengthen trade facilitation, trade logistics, trade policy, and trade finance through its policy dialogue, investment and advisory work, and broader investment climate reform activities. These developments, together with the absence of any previous evaluations focusing on trade facilitation and the connection of trade to the Bank Group's twin goals, motivated IEG to conduct this first trade facilitation evaluation.

Evaluation Approach. The evaluation seeks to provide the Board and Bank Group management and staff with knowledge on the development effectiveness of its support for trade facilitation and lessons for future engagement.

It seeks to answer the following main evaluation questions:

- Question 1: What has been the nature and extent of the World Bank Group's engagement in support of trade facilitation in its client countries?
- Question 2: To what extent have the World Bank Group's trade facilitation interventions contributed to enhance trade flows of client countries by reducing the cost of international trade?
- Question 3: To what extent and in what ways have the World Bank Group's trade facilitation interventions considered the achievement of social objectives of trade regulation such as the advancement of public health, safety, and the environment?
- Question 4: What factors contribute to the success or failure of the World Bank Group's support for trade facilitation?

Nature and Extent of Engagement

The Bank Group's trade facilitation portfolio is substantial and is generally well targeted to countries' needs. Trade facilitation interventions span the spectrum from port infrastructure to harmonization of standards to automation and simplification of rules and regulations.

Portfolio Size. The World Bank Group has played a leading role globally during the past 12 years in promoting trade facilitation reforms, with some measurable success in lowering transaction costs and stimulating trade flows. The Bank Group's leadership and achievements are evident in the scope and magnitude of its work—893 trade facilitation interventions across the institutions of the World Bank Group during the period 2006–17, amounting to almost $8 billion in value. World Bank lending accounts for about 60 percent, and International Finance Corporation (IFC) lending for more than a third of both commitments and projects. Nine Multilateral Investment Guarantee Agency (MIGA) guarantees valued at $105 million and an estimated 401 World Bank ASA engagements for trade facilitation were delivered in the same period. More than a third of trade facilitation projects also included trade-related logistics or policy interventions.

The World Bank supported trade facilitation through investment lending and development policy almost in equal proportion. In turn, technology and rules were mostly supported through policy operations, and border agencies and infrastructure mostly through investment lending. Ninety-eight percent of IFC trade facilitation investments focused on border infrastructure, while 14 of 18 MIGA interventions supported border operations.

Relevance. The Bank Group financed more projects in countries with greater trade facilitation bottlenecks as indicated by indicators of cost and quality. Also, the Bank Group's support was directed to where it was likely to be most effective. For example, consistent with the academic literature, support in lower-income countries emphasized improving "soft" reforms of agencies, operations, and rules, while in wealthier countries it supported "hard" infrastructure such as port improvements.

Regional and Country Distribution. The region that received most trade facilitation support was Sub-Saharan Africa, while countries with the highest number of projects each were in South Asia. In addition to country-level support, the Bank Group also supported regional trade facilitation projects, which accounted for 12 percent of the portfolio. Most of these were delivered through World Bank lending operations and most were focused on Sub-Saharan Africa.

World Bank lending and IFC Advisory operations were concentrated in lower-middle-income countries, IFC investment was concentrated mostly in upper-middle-income countries, and MIGA focused more on low-income countries. In low-income countries, the Bank Group most often implemented interventions related to trade facilitation technological upgrades; in lower-middle-income countries interventions related most commonly to changes in (simplification and streamlining of) rules and standards; and in upper-middle-income countries interventions related most often to border (physical) infrastructure.

Follow-Through. IEG's review of country strategies shows a high degree of alignment between trade facilitation activities targeted in the strategies and subsequent Bank Group support.

Effectiveness of Trade Facilitation Support

Overall, the evidence gathered in this evaluation suggests that the Bank Group has been successful in supporting trade facilitation interventions. Most Bank Group projects supporting trade facilitation reforms achieved their development objective, and all three World Bank Group institutions exceeded their corporate scorecard targets. Investment lending operations were more successful than policy operations (85 percent versus 60 percent success) in achieving development outcomes. The share of successful IFC investment was 90 percent (in line with other infrastructure projects, which dominate the IFC trade facilitation investment portfolio) and in advisory work it was 78 percent. MIGA guarantees achieved 78 percent success. The success rate was higher in higher-income countries. Overall, the Bank Group's effectiveness was somewhat lower in policy support, agency support, and single windows, and in low-income countries.

Intervention-Outcome Links

IEG finds substantial evidence that the Bank Group's interventions are associated with a lowering of transaction costs in international trade across the entire spectrum of trade facilitation reforms—from port investment and management to harmonization of standards to automation and simplification of rules and regulations.

IEG finds a positive relationship between the Bank Group's interventions and country-level development outcomes over time.

Nonetheless, more careful analysis yields qualifications on the dimensions of success and the comparative advantages of the World Bank Group institutions. A positive relationship is observed between the World Bank and IFC support and some improved Doing Business indicators of trade costs such as time to export and import, and regarding some perception-based indicators on the Logistics Performance Index (LPI), such as efficiency of customs, ease of arranging shipments, quality of infrastructure, and competence of services. Though there is a significant and positive relationship overall between World Bank Group interventions and the improvement of trade facilitation services in client countries, there is no apparent link with Doing Business measures of the formal costs or the number of documents required for imports or exports.

Comparative Advantage and Complementarity. The evaluation finds different comparative advantages of the World Bank and IFC, IFC being more successful supporting border infrastructure and the World Bank more successful supporting agencies, border function, and technology and reform of trade rules. Clearly, IFC Advisory Services has benefited World Bank lending; but there have also been missed opportunities. Though all three of the World Bank Group institutions have contributed broadly in line with their comparative advantages, MIGA's involvement in trade facilitation is limited, and (as noted above) IFC investment largely supported upper-middle-income countries in border infrastructure. The large reform agenda that remains in trade facilitation has opportunities for greater synergy through a Maximizing Finance for Development approach, which systematically leverages all sources of finance, expertise, and solutions to support developing countries' sustainable growth.

Costs and Trade Flows. The literature strongly suggests that the cost savings associated with the Bank Group's trade facilitation interventions translate into expansion of trade flows and associated broader economic benefits. Evidence of this link is strongest regarding simplifying border procedures, modernization of border operations, and improving border infrastructure.

Public Policy Objectives. Some trade regulations can be unnecessary, excessively burdensome, or protectionist; nonetheless many have social, security, health, safety, and environmental objectives, and consequences to their effective enforcement. Yet only a minority of World Bank Group interventions focus on these dimensions of trade facilitation. Although 44 percent of the Bank Group's projects mention these objectives of trade facilitation, discussion is usually cursory, and few projects collect any evidence that could be the basis of learning and accountability. IFC trade facilitation advisory operations also show a lack of attention to the broader policy objectives of trade regulations, focusing solely on compliance costs.

Factors Influencing Performance

Political economy factors, institutional capacity, programmatic approaches, and complementary development of non-border infrastructure (transport and information and communications technology) and policy beyond trade facilitation are important factors in explaining success. Globally, the Bank Group's role as knowledge leader and convener also contributes to progress.

Reform Success Factors. The evaluation identifies four factors that strongly influence the success (or failure) of trade facilitation reforms:

- **Managing the political economy relates to incentives and collective action at the government or at the intergovernment levls.** In trade facilitation project evaluations, political economy is the most commonly cited factor for success or failure. When there is a strong government commitment (and associated leadership), even uncooperative agencies can be led to the path of coordination and reform. Yet complexities of coordination are more pronounced in countries with several levels of territorial organization and even greater in regional projects.

  In several countries where the World Bank Group provided support to trade facilitation, changes in regime derailed reform initiatives (for example, Benin, Peru). Conversely, where top government commitment was evident and sustained, even recalcitrant agencies could be led to coordination and reform.

  Single-window projects attempting to introduce one-stop ease to traders impose heavy demands on interagency cooperation and coordination. In each case study country, there were signs that the agency coordination required for a single window and resultant reduction in agency "sovereignty" and prerogatives posed constraints that could be overcome only with strong political leadership and pressure. Without such support, the single window languished.

  External commitments, such as the prospect of WTO or European Union membership or association, or the emergence of a multilateral agreement, can play a motivating role to facilitate collective action and interagency coordination, as in the cases of Lao People's Democratic Republic and Ukraine.

The Bank Group has several instruments for addressing political economy issues and stimulating collective action: stakeholder assessments, diagnostic tools, public-private dialogue, and its convening or "honest broker" role. Yet it often does not use these effectively to promote trade facilitation.

The design of operations in support of trade facilitation reform efforts does not routinely use stakeholder assessments. Explicit analysis of political economy is quite rare in Bank Group ASA and may help to explain the limited effectiveness of agency support interventions.

Diagnostic tools and indicators can motivate action mainly through benchmarking and peer comparisons. Such benchmarking, combined with transparency, may create a virtuous competition or "race to the top." Weaknesses of the trade facilitation indicators, however, such as limited responsiveness to individual reforms, constrain their ability to motivate and track reforms. In its support of trade facilitation, World Bank ASA plays a strong role in gathering political support and focusing the design of interventions. Yet over time the World Bank has used diverse tools and frameworks, often without a consistent approach.

- **Even when political will is present, weak institutional capacity can be a constraint.** In countries with lower capacity, stand-alone technical assistance has proven to be insufficient. For example, in the East Africa Trade and Transport Facilitation Project, all four governments involved were characterized as suffering from low institutional capacity, especially in procurement.

  It is often assumed that technology and automation can substitute for weaknesses in institutional capacity. However, experience shows that the introduction of automation is far from smooth; substantial learning and capacity building are required and resistance is encountered. Benefits can be short-lived.

  Building institutional capacity can be a long-term, arduous process especially when it involves culture change in the respective agency. For instance, although client countries visited by IEG were generally satisfied with the Automated System for Customs Data (ASYCUDA), they faced a long-term process of implementing and upgrading it, and of bringing staff and organizational capacity up to speed to realize its benefits. For lower-capacity countries, stand-alone technical assistance (typical of IFC Advisory Services) was never enough. Among trade facilitation ASA, ASYCUDA predominated in lower-income countries, and in Africa, where institutional capacity is especially low. However, there was relatively little emphasis on building capacity to implement ASYCUDA in these environments.

- **Adopting a systematic approach involving multiple, complementary, and sequential interventions promotes effectiveness, except in border infrastructure interventions, where stand-alone projects work well.** There are clear synergies between the different areas of trade facilitation reform. Complementarity of reforms implies the need for programmatic approaches combining simultaneous or sequential interventions in several areas of trade facilitation reforms and combinations of various Bank Group instruments.

  Systematic support to trade facilitation reforms is important, as evidenced by the quantitative analysis of the Bank Group's portfolio, case study experience, and the literature review. Better

outcomes are achieved when countries are supported through more than one operation and through an integrated combination of lending and technical assistance. The performance of trade facilitation interventions is also higher when they are accompanied by logistics or trade policy support, depending on the trade facilitation intervention target areas.

Yet, although this evaluation confirms the benefits of more systematic engagements whereby the Bank Group supports reforms through multiple or sustained operations over time, few Bank Group projects reference the adoption of a programmatic approach to trade facilitation reforms. In sum, both the long-term nature of some trade facilitation reforms and their complementarity imply the need for programmatic approaches that combine simultaneous or sequential interventions in several areas of trade facilitation reforms, and combinations of various Bank Group instruments. The Bank Group, recognizing its resource constraints, can optimize by coordinating with other donors and giving priority to clients where trade facilitation is a priority and where it has comparative advantages.

- **Complementary development of physical infrastructure (such as roads) and transport policy and regulations governing competition, pricing, and multimodal connectivity are important.** Analysis of the Bank Group portfolio and country data shows that quality of infrastructure is positively associated with time and quality of logistics services. For example, in Lao PDR, logistics costs are estimated to be 30–40 percent higher because of the absence of a dry port.

  Multimodal infrastructure coordination is identified as influencing trade logistics. For example, congestion on roads to Lima's main port—which is supported by an IFC investment—is emerging as a bottleneck to improving port efficiency. Lack of a multimodal strategy for transportation in Senegal seriously impeded the capacity of the Port of Dakar to realize its potential as a regional trade hub. Similarly, lack of integrated rail and road links is one of the challenges affecting the performance of Port Mombasa in Kenya. These examples suggest the need for countries to adopt a comprehensive multimodal approach.

Knowledge Leadership and Convening Power. The World Bank Group demonstrates substantial knowledge leadership through research, indicators, and analytical work that have created positive dynamics in reforms globally by providing targets for reformers as well as a positive feedback loop through measurement of reform efforts. Another key channel of knowledge sharing and convening is international partnerships, such as the World Bank Group's leading role in providing technical support to WTO member countries working to assess and meet their commitments under the TFA. The Bank Group's convening power is exercised both within countries and at the international level. In its operations in support of trade facilitation, the Bank Group often exercises its convening role at the national level across institutions, donors, and the private sector, as in the cases of Armenia and Mozambique, for example. The World Bank's country engagement model makes the institution more effective at exercising its convening power at the national level than at regional or cross-country levels. For instance, in both Armenia and Benin, a leading constraint to trade lay in a neighboring country, yet these issues did not seem to have been transferred to the neighboring countries' policy dialogue because of the focus on individual country priorities.

A core source of the World Bank Group's knowledge leadership is its generation of public goods, among them trade facilitation indicators. The analysis of trade facilitation indicators suggests that though all of them are useful, the Bank Group's dual sets of indicators are either confusing or frustrating to some client countries, and some indicators fail to track reform progress. A newer set of Organisation for Economic Co-Operation and Development (OECD) indicators, the Trade Facilitation Indicators (TFIs) is more granular but is also limited in key dimensions.

Conclusions and Recommendations

During the 12-year evaluation period, the World Bank Group has played a leading role in promoting trade facilitation reforms globally. The World Bank Group's leadership manifests itself through:

i. The scope and magnitude of its trade facilitation interventions;

ii. A direct contribution to lowering trade transaction costs;

iii. Global knowledge leadership and convening power, including the contribution of important public goods such as trade facilitation indicators; and

iv. A generally successful record of working in countries with greater need and applying appropriate interventions to those needs across all levels of income of client countries.

There is qualified evidence of a positive contribution, both in achieving project objectives and achieving outcome goals. The evaluation points to four areas where support to trade facilitation can be strengthened.

Systematic Approach

This evaluation found benefits from more than one type of intervention in more than one area, because several combinations (such as lending operations with advisory services) and areas of intervention (such as agency support, border function, and technology and rules) are mutually complementary. In addition, support over time emerged as important, because some reforms exceeded the lifespan of individual engagements. This, in turn, indicates the value of a systematic approach, using appropriately complementary and sequenced instruments rooted in a solid analytical base. Statistical evidence from the Bank Group's portfolio supports this finding, and case studies confirm the benefits of more systematic engagements whereby the Bank Group supports reforms through multiple or sustained operations over time. However, few Bank Group projects reference a systematic approach to trade facilitation reforms. This seems to indicate that the observed successful complementary support often happens more fortuitously than by design.

At the same time, recognizing the need for a multifaceted approach is not enough. It is essential to identify which factors complement each other. Some interventions (such as those in border infrastructure) work better as self-standing initiatives, while others (such as rules reforms) work better

in combination. Complementarity of technical assistance and some ASA with World Bank lending for project effectiveness, for example, strengthens the case for a more coordinated engagement. Yet the observed fragmentation of ASA approaches and products suggests room for greater consistency. Related to such longer-term engagement, in country case studies, the World Bank Group's convening power among donors and with public and private sector stakeholders was reportedly enhanced where there was continuous presence of relevant staff on the ground. Recognizing that the Bank Group has resource constraints, it can optimize by coordinating with other donors and giving priority to clients where trade facilitation is a priority and where the Bank Group has comparative advantage.

Recommendation 1: **To enhance effectiveness, the World Bank Group should promote an approach of complementary (simultaneous and/or sequential) interventions in trade facilitation reforms in countries where trade is a client priority and where the World Bank Group has a comparative advantage, substantiated by consistent diagnostics.** This also requires collaboration between the World Bank Group institutions under Maximizing Finance for Development (MFD) to allow better use of their assets and resources to plan and support reforms that advance the trade facilitation agenda in client countries.

Political Economy of Trade Facilitation Reforms

Over time the goal of trade facilitation reforms has progressed to include efficiency improvements requiring coordination and streamlining by multiple agencies and, in some cases, multiple levels of government. This shift demands interagency collaboration and coordination, affects resource allocation and incentives connected to formal and informal revenues, and alters power structures within the relevant administrations. In the context of diverse agency incentives and objectives, strong and sustained political leadership and active coordination play a pivotal role in ensuring the level of integrated activity and information exchange needed to achieve the successful and sustained implementation of many trade facilitation reforms. Without such leadership and coordination, these reforms can be stalled or implemented partially or slowly. The Bank Group has helped countries to address such coordination challenges through its advisory work playing an honest broker role, but often not in a systematic way with consistent tools (such as stakeholder analysis and public-private dialogue) to identify reform bottlenecks. Nor does the Bank Group systematically assess and seek to mitigate political risks. Although political economy factors are often considered in an unstructured way, explicit analysis of political economy is quite rare in Bank Group ASA and may explain the lower level of effectiveness of agency support interventions among Bank Group projects.

Recommendation 2: **The World Bank Group should identify and mitigate political economy constraints to trade facilitation reform implementation through systematic application of its tools for stakeholder analysis and consultation (including public-private dialogue).** This would allow the World Bank Group to more consistently use its tools to address risks and build a broad base of support for trade facilitation reforms.

Public Policy Objectives of Trade Regulation

A significant part of trade facilitation reforms supported by the World Bank Group involves regulatory reforms. Regulations serve both economic purposes and such socially beneficial purposes as enhancing public health, safety, and the environment or reducing informality, corruption, and smuggling. Though some regulations may be unnecessary or purely protectionist, others are legitimate expressions of public policy. Hence trade facilitation reforms should be conceptualized, designed, implemented, and evaluated in the context of policy objectives to protect public health, safety, the environment, good governance, and formality in addition to a compliance cost minimization perspective.

World Bank Group project documents show that such public policy objectives are acknowledged only in a minority of cases, most frequently in terms of collecting public revenues and combatting corruption. Insufficient attention has been paid to other objectives (health, safety, and environment) and only compliance costs are routinely monitored. Even data routinely collected by counterpart agencies, such as detection rates of nonconforming shipments, are often not used to guide or inform project design or implementation or to evaluate success.

Recommendation 3: The Bank Group should systematically apply a differentiated approach to identify and monitor, where relevant, the public policy objectives of trade regulations relating to public health, safety, the environment, good governance, formality, and the rule of law. The Bank Group should specifically identify the stakeholders potentially affected by the reforms and the extent of the impact. Wherever relevant, the Bank Group should apply appropriate indicators to monitor the impact of trade facilitation reforms for affected stakeholders in these dimensions. Such an approach would identify both intermediate outcome measures, such as detection rates, and impact indicators. Thus, for example, in addition to measuring the cost savings of traders, the Bank Group would monitor indices of detection of unsafe products or indices of public health and safety, if relevant, to afford a more balanced set of criteria by which to judge trade facilitation reform.

Strengthened Indicators

A comprehensive set of indicators of trade facilitation areas can help identify efficient ways to address the most pressing problems and priorities for trade. The World Bank produces two of the leading sets of indicators—the Doing Business Trading Across Borders indicators and the Logistics Performance Index indicators (LPI) to inform trade facilitation reforms. Each of these two sets of indicators has its strengths, but they frame their subjects differently. These differences result in gaps and inconsistencies. Some component indicators bear a far more consistent relationship to reforms than others. IEG also found some client confusion and frustration over the World Bank's two methodologies. A review of the indicator sets would be useful to identify complementarities, gaps, and potential improvements to the indicator sets and their component and subindicators.

Recommendation 4: The Bank Group should rationalize its own two major trade facilitation indicator sets to build on the virtues of each of them, and to enhance their responsiveness to implemented reforms. The focus should be on having effective benchmarks of performance that are useful to assess and monitor reforms. This proposed indicator review also argues for maintaining continuity of subindicators that have proven accurate in tracking reform. Through the redesign and harmonization of existing indicators and the development of new indicators, the Bank Group should work to ensure that major areas relevant to trade facilitation are measured and monitored over time. Indicators used to monitor project objectives should be of sufficient granularity and specificity to reflect the reforms they are attempting to implement.

management response

Management of the World Bank Group institutions welcomes the report by the Independent Evaluation Group (IEG), *Grow with the Flow: An Independent Evaluation of World Bank Group Support to Facilitating Trade 2006–17.* The report provides an overall positive assessment of the Bank Group's past efforts in promoting trade facilitation and acknowledges the broad scope of the Bank Group's work program and its focus on countries with the greatest bottlenecks. Management is pleased with the report's recognition of the Bank Group's contribution to a substantial lowering of international trade costs, as well as its thought leadership and convening power. Management of the Bank Group institutions acknowledges and broadly agrees with IEG's recommendations.

World Bank and International Finance Corporation Management Comments

Comprehensive approach. Management agrees that trade facilitation reform may require a series of interventions over time and that the World Bank can play an important role in identifying and supporting such reforms through its technical and analytical work as well as its financing. At the same time, it should be recognized that multiple actors are involved in trade-related reforms—the government, other development partners, and the private sector. What is important is to ensure that all critical complementary reform actions are undertaken—whether by the Bank Group, the government, or other players. As IEG observes in part, Bank Group engagements are determined on the basis of client demand, other stakeholders' activities (including the government's own programs), and the Bank Group's priorities and comparative advantages. Hence, even in countries where trade is a strategic priority, clients may seek, or the Bank Group may offer, engagement in a limited area, with a particular type of intervention, where it is agreed that the Bank Group can add the most value.

Political economy of trade facilitation reforms. Management agrees that political economy issues can constrain efforts to facilitate trade. To help understand the political economy related to trade facilitation work, trade facilitation projects across the Bank Group often include the identification of critical stakeholders and the establishment of public-private dialogue mechanisms. Moreover, the Bank Group has developed and deployed various tools to identify and address key political economy issues that may constrain progress. These issues are often discussed at length in project preparation and implementation-support meetings. Given the sensitive nature of these matters, detailed documentation is typically closely held, with relevant findings and conclusions recorded in formal project documentation only in a summary manner

Social impacts of trade facilitation reforms. The report defines "social aspects" broadly to include "public health, safety, the environment, good governance, formality and the rule of law" (para. 3.7), and thereafter refers to "social objectives" and "social impacts" that seem to encompass all these aspects. It is therefore not always clear whether the term *social impacts* also refers to environmental or governance impacts. Given the distinction within the Bank Group on social, environmental, and governance concerns, it would have been useful to find terminology that makes it clearer when the report is referring to all these dimensions. In this context, Bank Group support for trade facilitation can encompass not only trade flows but also broader client objectives, such as improving revenue

collection; enhancing public health, safety, and the environment; and reducing informality, corruption, and smuggling. World Bank projects are also now expected formally to address stakeholder engagement. Where client governments seek Bank Group support to achieve policy objectives through trade facilitation projects, the Bank Group can help determine how such objectives can be identified and what indicators and mechanisms might be used effectively to monitor them (to the extent possible within the time frame of the Bank Group–supported interventions).

Trade facilitation indicator sets. Management agrees that its trade facilitation indicators should focus on establishing effective performance benchmarks that can also inform reform efforts. The Doing Business Trading Across Borders (DB TAD) and Logistics Performance Indicators (LPI) indicators do so. While there is some similarity between the DB TAD and LPI indicators, they are conceptually different and serve different purposes (DB TAB is reform focused, targeting the time and cost for traders to import, export, and produced every year; LPI is perception based, focusing on transport and connectivity, and produced every two years since movement of the indicators is relatively slow). The Bank Group holders of these sets of indicators regularly review their appropriateness and consider potential changes, recognizing that—to ensure consistency, continuity, and comparability over time—changes to existing indicators should occur only for compelling reasons

Role of the private sector. The report touches little on the impact of trade facilitation on the private sector. Beside tariffs and duties, costs to the private sector play a critical role in international trade, and it would have been useful to see some mention of the role of Bank Group trade facilitation interventions in stimulating the private sector to reduce the cost of exporting or importing. Greater competition among trade service providers (such as customs brokers, transport companies, and port service providers), which governments can enhance, can lead to a reduction in the time and costs of trading across borders and a higher quality of service. Trade facilitation interventions could also reduce the variability of customs clearance times and introduce greater certainty, which benefits the private sector.

Multilateral Investment Guarantee Agency Management Comments

The Multilateral Investment Guarantee Agency (MIGA) welcomes the IEG report and finds it useful and important. This very first IEG evaluation of the Bank Group's support to trade facilitation assesses the Bank Group's contributions at the global, regional, country, and project implementation levels. MIGA supported nine trade facilitation guarantee projects during the evaluation period for $105 million in gross exposure.

MIGA support for trade facilitation projects has been focused on border operations. As the evaluation noted, Bank Group support for trade facilitation has been through four intervention areas: border operations, rules, border agencies, and border infrastructure. The evaluation classified the nine MIGA-supported trade facilitation guarantee projects as 18 interventions: border operations (14), rules (2), and border agencies (2). MIGA's trade facilitation guarantee projects have successfully provided

electronic processing and scanning technology for customs modernization initiatives in client countries.

The evaluation classified the social objectives of the Bank Group's trade facilitation projects into six categories: (i) enhanced collection of public revenues; (ii) corruption control; (iii) improved environment; (iv) improved health; (v) reduced transport congestion; and (vi) enhanced public safety. The evaluation found that MIGA has played a disproportionate role in achieving these objectives: with only nine trade facilitation guarantees—accounting for 2 percent by number and 1 percent by volume of the Bank Group portfolio—MIGA accounted for more than 20 percent of all Bank Group trade facilitation projects with social objectives. MIGA notes that improving governance and reducing corruption are core objectives of MIGA's trade facilitation guarantee projects.

management action record

Systematic Approach

IEG FINDINGS AND CONCLUSIONS This evaluation found benefits from more than one type of intervention in more than one area—because several combinations (such as lending operations with advisory services) and areas of intervention (such as agency support, border function, and technology and rules) are mutually complementary. In addition, support over time emerged as important, as some reforms exceeded the lifespan of individual engagements. This, in turn, indicates the value of a systematic approach, using appropriately complementary and sequenced instruments rooted in a solid analytical base. Statistical evidence from the Bank Group's portfolio support this finding, and case studies confirm the benefits of more systematic engagements whereby the Bank Group supports reforms through multiple or sustained operations over time. However, few Bank Group projects reference a systematic approach to trade facilitation reforms. Further, more than a third of country strategies indicate misalignment of the trade facilitation portfolio with country strategic priorities. This seems to indicate that the observed successful complementary support often happens more fortuitously than by design.

At the same time, recognizing the need for a multifaceted approach is not enough. It is essential to identify which factors complement each other. Some interventions (such as in border infrastructure), work better as self-standing initiatives, while others (such as rules reforms) work better in combination. Complementarity of technical assistance and some advisory services and analytics (ASA) with World Bank lending for project effectiveness, for example, strengthens the case for a more coordinated engagement. Yet the observed fragmentation and short-term nature of ASA approaches and products suggests room for greater consistency. Related to such longer-term engagement, in country case studies, the World Bank Group's convening power among donors and with public and private sector stakeholders was reportedly enhanced where there was continuous presence of relevant staff in the field more often seen through the International Finance Corporation Advisory and International Bank for Reconstruction and Development Lending modalities. Recognizing the Bank Group has resource constraints, it can optimize by coordinating with other donors and giving priority to clients where trade facilitation is a priority and where World Bank Group has comparative advantage.

IEG RECOMMENDATIONS **Recommendation 1: To enhance effectiveness, the Bank Group should promote an approach of complementary (simultaneous and/or sequential) interventions in trade facilitation reforms in countries where trade is a client priority and Bank Group has a comparative advantage, substantiated by consistent diagnostics.** This also requires collaboration between the Bank Group institutions under Maximizing Finance for Development (MFD) to allow better use of their assets and resources to plan and support reforms that advance the trade facilitation agenda in client countries.

ACCEPTANCE BY MANAGEMENT Agree.

MANAGEMENT RESPONSE Management agrees that trade facilitation reform may require a series of interventions over time, and that the Bank can play an important role in identifying and supporting such reforms through its technical and analytical work as well as its financing. As IEG observes in part, Bank Group engagements are determined on the basis of client demand, other stakeholders' activities (including the government's own programs), and the Bank Group's priorities and comparative advantages. Hence, even in countries where trade is a strategic priority, clients may seek, and/or the Bank Group may offer, engagement in a limited area, with a particular type of intervention, where it is agreed that the Bank Group can add the most value.

Political Economy of Trade Facilitation Reforms

IEG FINDINGS AND CONCLUSIONS While an earlier generation of trade facilitation reforms was mainly focused on a single national agency (customs), over time the goal of trade facilitation reforms progressed beyond resource generation to include efficiency improvements that required coordination and streamlining by multiple agencies and, in some cases, multiple levels of government. This shift requires interagency collaboration and coordination, affects resource allocation and incentives connected to formal and informal revenues, and alters power structures within the relevant administrations. In the context of diverse agency incentives and objectives, strong and sustained political leadership and active coordination play a pivotal role in ensuring the necessary level of integrated activity and information exchange needed to achieve the successful implementation of many trade facilitation reforms. Without such leadership and coordination, these reforms can be stalled or implemented only partially or slowly. The Bank Group has helped countries address such coordination challenges through its advisory work playing an honest broker and convening role, but often not in a systematic way with consistent tools (such as stakeholder analysis and public-private dialogue) to identify reform bottlenecks. Nor does the Bank Group systematically assess and seek to mitigate political risks. Although political economy factors are often considered in an unstructured way, explicit analysis of political economy is quite rare in Bank Group ASA and may explain the lower level of effectiveness of agency support interventions among Bank Group projects.

IEG RECOMMENDATIONS **Recommendation 2: The World Bank Group should identify and mitigate political economy constraints to trade facilitation reform implementation through systematic application of its tools for stakeholder analysis and consultation (including public-private dialogue).** This would allow Bank Group to more consistently use its tools to address risks and build a broad base of support for trade facilitation reforms.

ACCEPTANCE BY MANAGEMENT Partially agree.

MANAGEMENT RESPONSE Management agrees that political economy issues can constrain efforts to facilitate trade. To help understand the political economy related to trade facilitation work, trade facilitation projects across the Bank Group often include the identification of critical stakeholders and the establishment of public-private dialogue mechanisms. Moreover, the Bank Group has developed and deployed various tools to identify and address key political economy issues that may constrain progress. These issues are often discussed at length in project preparation and implementation-support meetings. Given the sensitive nature of these matters, detailed documentation is typically closely held, with relevant findings and conclusions recorded in formal project documentation only in a summary manner.

Public Policy Objectives of Trade Regulation

IEG FINDINGS AND CONCLUSIONS Most regulations, including trade regulations, serve not only an economic purpose—to enhance the efficiency of the economic system—but also a public policy purpose and social values, such as enhancing public health, safety, and the environment, or reducing informality, corruption, and smuggling. Although some regulations may be completely unnecessary or protectionist in intent, in general, trade facilitation reforms should be considered in the context of social values and policy objectives in addition to a pure compliance cost minimization perspective.

Bank Group project documents show that social objectives are acknowledged only in a minority of cases, most frequently in terms of collecting public revenues and combatting corruption. However, insufficient attention has been paid to other social objectives and only compliance costs are routinely monitored. Even data routinely collected by counterpart agencies, such as detection rates of nonconforming shipments, are often not used as project objectives or monitoring criteria.

IEG RECOMMENDATIONS **Recommendation 3: The Bank Group should systematically apply a differentiated approach to identify and monitor, where relevant, the public policy objectives of trade regulations relating to public health, safety, the environment, good governance, formality and the rule of law. Bank Group should specifically identify the stakeholders potentially impacted by the reforms and the extent of the impact.** Wherever relevant, Bank Group should apply appropriate indicators to monitor the impact of trade facilitation reforms for affected stakeholders in these dimensions. Such an approach would identify both intermediate outcome measures, such as detection rates, and impact indicators. Thus, for example, in addition to measuring the compliance cost savings of traders, Bank Group would monitor where relevant indexes of detection of noncompliant cargo and/or indexes of public health and safety to afford a more balanced set of criteria by which to judge trade facilitation reform.

ACCEPTANCE BY MANAGEMENT Partially agree.

MANAGEMENT RESPONSE Bank Group support for trade facilitation can encompass not only trade flows but also broader client objectives, such as improving revenue collection; enhancing public health, safety, and the environment; and reducing informality, corruption, and smuggling. World Bank projects are also now expected formally to address stakeholder engagement. Where client governments seek Bank Group support to achieve policy objectives through trade facilitation projects, the Bank Group can help determine how such objectives can be identified and what indicators and mechanisms might be used effectively to monitor them (to the extent possible within the time frame of the Bank Group–supported interventions).

Strengthened Indicators

IEG FINDINGS AND CONCLUSIONS A comprehensive set of indicators of trade facilitation areas can help motivate and benchmark reforms and identify the most pressing problems and priorities with regards to trade. The World Bank produces two of the leading sets of indicators—the Doing Business Trading Across Borders indicators and the Logistics Performance Index indicators (LPI) to inform trade facilitation reforms. Each of the two sets of Bank Group indicators has its strengths but they frame their subjects differently.

These differences result in gaps and inconsistencies. Some component indicators bore a far more consistent relationship to reforms than others. IEG also found some client confusion and frustration over the World Bank's two methodologies. A review of the indicator sets would be useful to identify complementarities, gaps, and potential improvements to the indicator sets and their component and subindicators.

IEG RECOMMENDATIONS **Recommendation 4: Bank Group should rationalize its own two major trade facilitation indicator sets to build on the virtues of each of them, and to enhance their responsiveness to implemented reforms.** The focus should be on having effective benchmarks of performance that are useful to assess and monitor reforms. This proposed indicator review also argues for maintaining continuity of subindicators that have proven accurate in tracking reform. Through the redesign and harmonization of existing indicators and/or the development of new indicators, Bank Group should work to ensure that major areas relevant to trade facilitation are measured and monitored over time. Indicators used to monitor project objectives should be of sufficient granularity and specificity to reflect the reforms they are attempting to measure.

ACCEPTANCE BY MANAGEMENT Partially agree.

MANAGEMENT RESPONSE Management agrees that its trade facilitation indicators should focus on establishing effective performance benchmarks that can also inform reform efforts. The DB TAD and LPI indicators do so. While there is some similarity between the DB TAD and LPI indicators, they are conceptually different and serve different purposes (DB TAB is reform-focused, targeting the time and cost for traders to import and export, and produced every year; LPI is perception-based, focusing on transport and connectivity, and produced every two years since movement of the indicators is relatively slow). The Bank Group holders of these sets of indicators regularly review their appropriateness and consider potential changes, recognizing that—to ensure consistency, continuity, and comparability over time—changes to existing indicators should occur only for compelling reasons.

chairperson's summary: committee on development effectiveness

The Committee on Development Effectiveness met to consider the reports entitled *Two to Tango: An Evaluation of World Bank Group Support to Fostering Regional Integration* and *Grow with the Flow: An Independent Evaluation of Bank Group Support to Facilitating Trade 2006–17* and their respective Management Responses.

Noting complementarity between the two topics, the committee agreed to discuss the reports jointly. Members welcomed the evaluations as valuable learning tools and timely inputs to inform further the World Bank Group's Board and International Development Association (IDA) Deputies discussions. They commended the management of the Bank Group institutions for their achievements and encouraged them to continue advancing efforts to strengthen partnerships with regional development banks and private sector and nontraditional stakeholders. Members highlighted the relevance of trade and regional integration to achieve the Sustainable Development Goals, some of them suggesting reinforcing alignment with the capital package commitments on growth, development of local business opportunities and job creation.

Members were encouraged to hear management's commitment to enhance their efforts to embed more systematically trade and other regional integration issues in Regional and Practice Group updates, as well as Country Partnership Frameworks. While praising management for the positive development outcomes in the Sub-Saharan Africa Region, some Members suggested that other Regions with high integration potential, such as Latin America and the Caribbean, would benefit from a more explicit regional integration approach. They noted that the World Bank could strengthen its role as an advocate for regional integration through analytical work. The Committee welcomed management's commitment to strengthen the design of regional projects under the IDA Regional Window and improve the assessment of spillover effects. They highlighted that issues on the use of Development Policy Financing, reallocation of resources, recalibration and structure of the IDA Regional Window should be put for consideration of IDA Deputies during their IDA19 Replenishment discussions.

Members also noted the desirability of greater consistency across the Doing Business and the Logistics Performance indexes. Members encouraged the World Bank to more actively attempt to stimulate broader demand for regional integration at the country level and noted that a more regional approach to trade, with stronger accountability and clearer incentives for staff, would be helpful at the regional level.

1

Why Trade Facilitation Matters

highlights

Definition. Trade facilitation involves streamlining and harmonizing the activities, practices, and formalities required for international trade and associated payments and border logistics while safeguarding legitimate regulatory and policy objectives.

Changing focus. Trade is a key driver of economic growth and shared prosperity, and as such are essential to the twin goals. As tariffs and explicit quotas have been lowered under the World Trade Organization (WTO), attention has increasingly turned to non-tariff impediments that add to the cost of trade and disrupt its flow, especially excess transactions and operational costs and regulatory restrictions that may slow down or altogether inhibit the movement of goods across borders.

Strategic objective. The World Bank Group has identified trade facilitation as critical to its overall trade and development agenda, aiming to improve the competitiveness of client countries. Its trade strategy explicitly seeks to reduce trade costs to firms.

Evaluation approach. This evaluation is IEG's first to focus on Bank Group support for trade facilitation. Applying multiple methodologies, it considers the nature and contribution of Bank Group support while recognizing the linkages to other trade-related areas such as logistics, finance, and policy. It inquires whether these activities considered the social objectives of trade regulations. It looks for identifiable internal and external factors contributing to success or failure.

Trade is a key stimulus to economic growth, fundamental to the competitiveness of developing country firms and industries. With appropriate complementary policies and programs, it can be a major source of employment and enhanced consumer welfare for the poor (with the understanding that there are winners and losers resulting from enhanced trade).[1] Trade is a key growth driver whose benefits can be broad. Reducing trade costs has been identified as a key way to both enhance trade-based growth and increase the benefits of trade to the poor.[2] Thus trade is central to both the World Bank Group's twin goals and to IEG's strategic engagement area of inclusive growth.

High transaction costs related to moving goods and providing services across borders often constrain potential trade flows, limiting the gains from trade.[3] An example of transaction cost is the constellation of regulatory and physical procedures for moving goods and services from one country to another (see box 1).

Trade facilitation has grown in importance as an area of empirical and policy interest. As tariffs and explicit non-tariff barriers have been lowered under the World Trade Organization (WTO), attention has increasingly turned to non-tariff impediments that add to the cost and disrupt the flow of trade, especially excess transactions and operational costs that may slow down or inhibit the movement of goods across borders. In the empirical literature, trade costs are found to pose more binding barriers to trade than tariffs (Anderson and Van Wincoop 2004; Hummels 2007). These costs tend to disproportionately hurt lower-income countries, which are more likely to suffer from high trade costs (and are more likely to face higher costs if they are landlocked, small states, or fragile and conflict-affected), and smaller firms, where fixed costs create diseconomies of scale.

Thus, trade facilitation—reducing the transaction and operational costs associated with moving goods and providing services across borders—has moved to the forefront of the global and World Bank Group's trade agenda. Trade facilitation reforms are especially beneficial to poor countries—the WTO estimated that it can reduce trade costs by 15 percent for low- and middle-income countries.[4] According to the Organisation for Economic Co-operation and Development (OECD), each 1 percent reduction in trade-related transaction costs yields a worldwide benefit of $43 billion (Grainger 2011). Other simulations show global gains of $80 billion from trade facilitation reforms (Hufbauer and Schott 2013; Decreux and Fontagne 2011; Iwanow and Kirkpatrick 2009; Portugal-Perez and Wilson 2012; WTO 2015; Zaki 2014).

For the above reasons, trade facilitation is a global priority, reflected in the Sustainable Development Goals (SDGs). Hoekman (2016) shows the direct link of trade costs to the SDGs, including SDG 2 (ending hunger), SDG 8 (decent work and economic growth), SDG 9 (industry, innovation, and infrastructure), and SDG 17 (on global partnership).

Globally, the WTO Trade Facilitation Agreement (TFA), after a decade of negotiation and ratification by 117 (now 136) countries, came into force in early 2017. Key TFA articles cover transparency; fees,

Box 1.1 | Defining Trade Facilitation

Standard definitions of trade facilitation can include reform of all aspects of logistics, export promotion, trade finance, and aspects of trade policy. Based on the literature review and expert interviews, IEG's working definition of trade facilitation for this evaluation is, **Streamlining and harmonizing the activities, practices and formalities required for international trade and associated payments and border logistics while safeguarding legitimate regulatory and policy objectives (for example, protecting public health and the environment).** The scope of the definition involves several elements:

(1) Development and implementation by relevant agencies of cost-effective, trade-friendly clearance processes and procedures that uphold regulatory control.

(2) Extension of risk management and selective intervention techniques to all agencies operating at the border.

(3) Compliance improvement regimes that employ a mix of incentives (rewards) and disincentives (punishments) to encourage higher levels of voluntary compliance.

(4) Design, deployment, or improvement of hard infrastructure and information technology to achieve cost-effective border clearance.

Source: Adapted from McLinden et al. 2010.

charges, and formalities; and institutional arrangements. With the TFA in force, the focus is moving on to the implementation of the agreement.[5]

The World Bank Group was a leading technical partner to the WTO during the TFA negotiations. The Bank Group has led the provision of technical support to member countries working to conform to WTO requirements, including through two important multidonor trust funds: (i) the recently expired Trade Facilitation Facility (TFF); and (ii) the World Bank–administered Trade Facilitation Support Program (TFSP) launched in 2014.

The World Bank Group has been helping countries to strengthen trade facilitation, trade logistics, trade policy, and trade finance under the rubric of *Aid for Trade* and through its policy dialogue, broader investment and advisory work, and investment climate reform activities.

Trade facilitation is also identified in strategies, policies, and programs of many bilateral and regional donors such as the Asian Development Bank and the Inter-American Development Bank.

World Bank Group Policies and Strategies

In its strategies, the World Bank Group has identified trade facilitation as critical to its overall trade and development agenda. The strategic objective of the World Bank Group's support to trade facilitation is to improve the competitiveness of client countries by reducing the cost of international trade while protecting or enhancing broader social interests related to trade, such as the environment and public health and safety.

Although Bank Group technical assistance and advisory work has increased since 2014, trade facilitation has long been high on the Bank Group's agenda:

- The 2001 Board Paper, "Leveraging Trade for Development: World Bank Role," called for "supplementing the old agenda of reforming border barriers with the behind-the-border agenda of improving trade-related regulations, trade facilitation systems, investment climate, and trade in services" (World Bank Group 2010).
- In 2005, the Bank Group began tracking trade facilitation systematically as reflected in the appearance of the Trading Across Borders indicators in Doing Business 2006 (World Bank 2005). This monitoring effort also allowed trade facilitation to become part of the IFC's Doing Business Reform advisory work.
- In 2007, the World Bank began periodically producing the Logistics Performance Index (LPI), covering the "performance and reliability of supply chains" including trade facilitation.
- The Bank Group's 2011 Trade Strategy for 2011–21 was partly a response to the disruption in international trade from the 2008 global financial crisis. It recognized that "The priorities for current policy are to reduce trade costs for firms, including through more efficient trade facilitation and logistics; improve trade competitiveness by ensuring businesses have access to key inputs such as (trade) finance; and increase cooperation between trading partners to integrate markets, thereby allowing economies of scale to be realized and further specialization and diversification to occur." It reflected an important shift of emphasis from trade liberalization to a broader view of trade as part of the growth and poverty reduction agenda.[6]
- In 2015, the World Bank Group linked its trade agenda with the twin goals through employment and opportunity and through consumer welfare in a flagship report titled The Role of Trade in Ending Poverty (published jointly with the WTO).

IEG's review of a sample of country strategies (Country Partnership Frameworks and Country Assistance Strategies) finds that two-thirds of them (66 percent) address trade facilitation (as defined in this evaluation) substantively,[7] or propose a work program to address it. This ratio is particularly high in the Middle East and North Africa, Sub-Saharan Africa, and Latin America and the Caribbean Regions. The 66 percent share far exceeds the 20 percent of country strategies that similarly address trade policy. Fifty-five percent of country strategies cover trade logistics substantively, while just under half cover trade finance.

Organizational Arrangements

Before the World Bank Group's reorganization in 2014, responsibility for trade facilitation had been spread across departments including the Trade Department in Poverty Reduction and Economic Management Vice Presidency; the Transport Units in the World Bank, IFC, and the Multilateral Investment Agency (MIGA); the Finance and Private Sector Development Vice Presidency and IFC advisory.

With the 2014 reorganization, most activities related to trade policy and trade facilitation in the World Bank Group moved to the Global Practice (GP) on Trade and Competitiveness (T&C GP). In addition, "government-facing" IFC advisory services related to trade facilitation were merged into the T&C GP.

The consolidation under T&C GP, and the opportunity created by the TFA, led to an apparent surge in advisory work and technical assistance on trade facilitation (see portfolio section). The Transport and ICT GP led most operations dealing with trade logistics, collaborating with T&C GP on trade facilitation components. Other parts of the World Bank, IFC, and MIGA, led several activities related to infrastructural elements of trade logistics and trade finance.

In 2018, another reorganization eliminated the T&C GP, distributing its activities between two other GPs, with most trade-related staff assigned to the Macroeconomics, Trade, and Investment GP, but with many advisory staff in the Finance, Competitiveness and Innovation (FCI) GP.

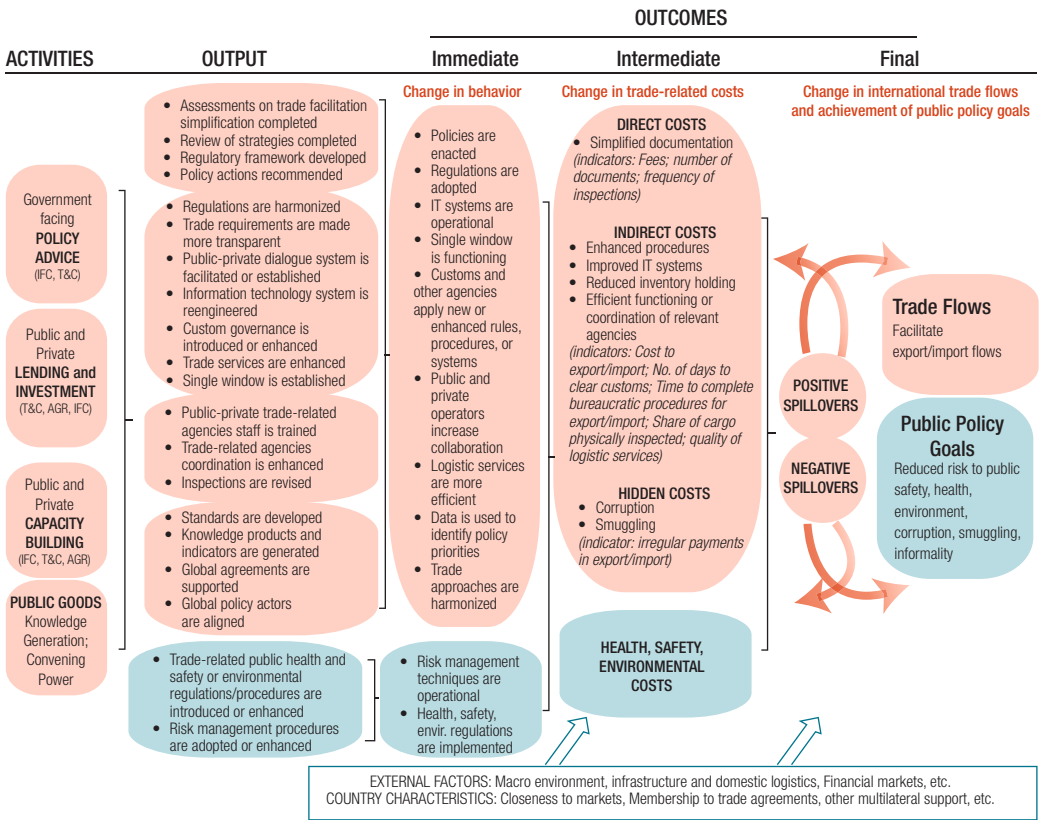
Evaluation Objectives, Logic, and Design

This is IEG's first evaluation focused on the Bank Group's support of trade facilitation. Although prior IEG evaluations have touched upon trade facilitation,[8] their coverage of the subject was tangential. Given the gap, the increasing focus of trade-related activity on facilitation, the rapid scaling-up of activities relating to client country compliance with the TFA, and the connection of trade to the Bank Group's twin goals, IEG decided to conduct this evaluation to inform the Board, the Management of the Bank Group institutions, and relevant staff by taking stock of, and drawing lessons from, the Bank Group's support of trade facilitation. This evaluation considers the Bank Group's support to trade facilitation at the country level while recognizing the linkages to other trade-related areas such as trade logistics, trade finance, and trade policy.

In line with the strategic objective of reducing trade costs the intervention logic of the evaluation identifies the activities,[9] outputs, and outcomes of the World Bank Group's support to trade facilitation (figure 1.1):

- The activities supported by the Bank Group in this area include policy advice, lending and investments, and capacity building. IEG's portfolio review indicates four substantive areas of such support: (i) border operations, comprising technological and processing upgrades; (ii) rules, comprising simplifications and streamlining of rules, procedures, and standards; (iii) border agencies, comprising capacity building and organizational improvements; and

FIGURE 1.1 | Intervention Logic of World Bank Group Portfolio Support to Trade Facilitation



(iv) border infrastructure, comprising investments in ports, airports, and other border-related physical infrastructure (table 1.1). In addition, the Bank Group provides a set of public goods within the realm of trade facilitation, represented by the creation of cross-country data sets and multilateral cooperation with relevant bodies such as WTO, the United Nations Conference on Trade and Development (UNCTAD), the World Customs Organization (WCO), the Asian Development Bank, and the Inter-American Development Bank.

- Each of these trade-related activities generates a set of outputs. Hence, government-facing policy advice generates assessments, reviews, and recommendation on policy actions. Similarly, public and private lending supports the harmonization of regulations, the creation of public-private dialogue systems, the establishment of single windows, and automatization of procedures.
- The outputs are intended to produce three types of outcomes:
  - Short-term changes in behavior. These are intermediate outcomes that include, for example, enactment and implementation of new regulations and policies, the application of new or enhanced IT systems, the functioning of more efficient logistics services, or the introduction of risk-based application of regulations.

TABLE 1.1 | Independent Evaluation Group Portfolio Review Typology

Intervention Area	Description	Specific Interventions
Border operations	Improvement of border operations including through software, hardware or other technology upgrades; risk-based management; payments and collections; and systems supporting law enforcement.	General technology upgrades; Hardware upgrades; Software upgrades; Upgrades for payments & revenue; Upgrades for security; Risk-based management.
Rules	Simplification and streamlining of rules, procedures, documentation and standards.	Simplification of rules; Streamlining of standards; Single window; Service standards.
Border agencies[a]	Strengthening Border Agencies, Cross-agency Dialogue, Coordination, and Integration.	Capacity building Organizational improvements; Agency coordination; Regional integration; Systems improvement; PPD/PPP; Agency setup.
Border infrastructure	Improvement of border-related Infrastructure and Logistics.	Terminals; Port stations; Storage; Border buildings and facilities.

Note: [a] Border Agencies pools the original intervention categories of *Strengthening Border Agencies* and *Cross-Agency Dialogue, Coordination and Integration* proposed in the approach paper's Portfolio Review Framework (for additional details on the approach paper's portfolio review framework see table B.1. in appendix B).

- **Reduction of costs.** Changes in behavior result in lower costs associated with international trade. Different interventions affect different costs—for example, simplified documentation can reduce direct costs (such as tariffs, quotas, documentation costs), more efficient procedures can reduce indirect costs (such as regulatory compliance, logistical, financing), and easier compliance can reduce hidden costs (such as bribery, informal competition).[10]
- Positive and negative spillover effects. Spillover effects are generated by the reduction of international trade costs. For example, changes in costs may shift trade flows from less efficient to more efficient locations or industries, which will have winners and losers at the country, sector, and firm levels. Streamlined procedures may reduce the incentives and opportunities for smuggling or for illegal payments (positive spillovers). Higher trade volumes may carry environmental externalities (negative spillovers).

The combination of changes in costs and spillovers translates into a final outcome: changes in the flows of exports and imports of Bank Group–supported countries and their trading partners. Furthermore, since regulations serve a social purpose, reforms associated with trade facilitation may have a positive or negative impact on public health and safety, the environment, rule of law, and other social priorities, depending on the quality of their design and the effectiveness of their implementation, monitoring, and compliance.

This evaluation assesses the contribution of the World Bank Group through its support of trade facilitation by addressing four main evaluation questions:

- Question 1: What has been the nature and extent of the World Bank Group's engagement in support of trade facilitation in its client countries?
- Question 2: To what extent have the Bank Group's trade facilitation interventions contributed to enhance trade flows of client countries by reducing the cost of international trade?
- Question 3: To what extent and in what ways have World Bank Group's trade facilitation interventions considered the achievement of social objectives of trade regulation such as the advancement of public health, safety, and the environment?
- Question 4: To what extent did internal factors (for example, design, supervision, team composition, monitoring and evaluation [M&E] framework, collaboration, funding, etc.) or external factors (for example, client commitment and political economy, private sector engagement, other trade-related activities such as logistics, policy, finance, etc.) contribute to the success or failure of the Bank Group's support for trade facilitation?

The evaluation examines the global, regional, country, project, and implementation levels. It looks at multiple levels, using multiple analytic methods, and analyzes the steps and linkages laid out in the intervention logic. The main methods and data sources, detailed fully in appendix B, include: (i) portfolio review and analysis; (ii) structured literature reviews; (iii) staff and stakeholder interviews; (iv) country case studies of Armenia, Benin, Lao PDR, and Peru; (v) several in-depth project evaluations involving field validations; (vi) review of databases and indicators including the Logistics Performance Index, Doing Business Trading Across Borders, and OECD Trade Facilitation Indicators; (vii) econometric and statistical analysis; and (viii) review of country strategies. The analysis presented in chapters 2 through 4 uses the information, derived from multiple sources and, where possible, triangulated to derive evaluative findings:

- Chapter 2 examines the nature and extent of World Bank Group engagement in trade facilitation, focusing on the country level. It draws from the portfolio review and analysis, the review of country strategies, relevant literature, and the case studies.
- Chapter 3 assesses the contribution of the Bank Group to facilitating trade, drawing from microevaluative evidence, econometric analysis, interviews, the reviews of internal and external literature, the review of country strategies, and country case studies.
- Chapter 4 explores factors affecting the performance of the World Bank Group, drawing evidence from the portfolio review and analysis, case studies, econometric analysis, interviews, and the literature review.
- Finally, chapter 5 draws general conclusions and derives recommendations for future Bank Group support of trade facilitation.

---

1 The expansion of international trade has been essential to development and poverty reduction. Lowering tariffs and nontariff barriers between countries is an essential element of this agenda, but this must form part of a wider approach that recognizes the specific constraints facing the extreme poor—and for many, their disconnection from markets—if they are to benefit from trade. This includes challenges facing women, the rural poor, those in the informal economy, and those in fragile and conflict-affected states. Thus, to have the greatest impact toward ending poverty,

trade policy must be made and implemented in conjunction with other areas of policy (World Bank and WTO 2015). The World Bank's 2017 "Forward Look" emphasizes that "a better and stronger [World Bank Group] is essential to help reach the twin goals, meet the [Sustainable Development Goals], help create markets, catalyze private investment, and better promote cooperation, integration, connectivity and trade, human development, and collective action on global public goods (GPGs), as well as helping countries manage against a backdrop of volatile capital flows to emerging and developing markets." The International Finance Corporation's (IFC's) "IFC 3.0" approach articulated in "Strategy and Business Outlook FY18 -FY20 Creating Markets and Mobilizing Private Capital" states that "Strong growth, global trade, and economic integration have raised standards of living for the world's poor over the last 15 years." To encourage economic diversification and job growth, "IFC continues to focus on increasing cross-border trade and investment flows with a view to sharing knowledge and capital that would facilitate regional integration, and address climate change."

[2] "First, research and analysis undertaken in recent years illustrate that improving 'connectivity' is essential to increasing the benefits of trade for the poor, including projects to reduce trade transactions and information costs (such as trade facilitation, infrastructure, etc.) that limit their integration with both domestic and global markets as well as supply chains. The costs of 'connectivity' are often fixed, and so disproportionately affect small firms, farmers, and the poor, prohibiting their participation in trade and limiting inclusiveness. Tackling trade costs, therefore, is a core element of the Trade Strategy because they have a direct bearing on poverty reduction" (World Bank Group 2011, vi).

[3] In today's highly integrated world economy where value chains span many countries, the level of trade-related transactions and operating costs is a major determinant of the ability of the most efficient firms to expand their market share (Hoekman et al. 2016).

[4] The structured literature review by the Independent Evaluation Group (IEG) found literature indicating that trade costs pose more binding barriers to trade than tariffs (Anderson and Van Wincoop 2004; Hummels 2007). Supporting this, customs unions are found to have substantially larger trade-enhancing effects even in the presence of preferential trade agreements among the same set of trading partners (Chen and Novy 2011; Duval, Neufeld, and Utoktham 2016; Handley and Limão 2015). Further, in 2010, a simple average of applied most-favored-nation (MFN) tariffs in the world were estimated to be about 6 percent (World Bank 2017), whereas the ad valorem equivalents of trade costs (including logistics) were at least thirteen times greater in magnitude (Arvis et al. 2016).

[5] See, for example, OECD and WTO (2015). The effects of aid for trade on reducing trade costs also have great potential. Busse et al. (2011) used panel data estimation for a sample of 99 developing countries for the period 2004-09 and showed that aid for trade and aid-for-trade facilitation are closely associated with lower trade costs and therefore may play an important role in helping developing countries benefit from trade. Importantly, they found the impact was not only significant in statistical terms but economic terms as well. Cali and te Velde (2011) examined the impact of aid for trade on trade costs and exports and found that a $1 million increase in aid-for-trade facilitation is associated with a 6 percent reduction in the cost of packing, loading, and shipping to the transit hub. OECD/WTO (2013) found that one dollar invested in aid for trade is on average associated with an increase of nearly $8 in exports from all developing countries and an increase of $20 in exports for the poorest countries. These effects are even higher for exports of parts and components.

[6] The 2011 World Bank Group Trade Strategy emphasizes four major areas:

i. Trade Competitiveness and Diversification: Activities in this area will center on the economy-wide incentive framework created by prevailing policies and regulations, including trade policy (restrictions on imports and foreign direct investment); trade in services as a new means to access international best practices and expand exports; and the design and implementation of specific actions to address market and information failures.
ii. Trade Facilitation, Transport Logistics, and Trade Finance: The objective of this pillar is to reduce the costs associated with moving goods along international supply chains, whether these are measured in terms of time, money, or reliability. Trade facilitation also lowers import costs and therefore has a direct impact on the prices paid by the poor for the goods they consume.
iii. Support for Market Access and International Trade Cooperation: There are three priorities in this area: (i) continued analysis of the impacts on developing countries of policies implemented by major countries, international trade rules and actions that would benefit economic development prospects; (ii) assisting governments to remove tariff

and non-tariff barriers to regional market integration; and (iii) supporting international cooperation on trade-related regulatory reform (especially services policies).

iv. Managing Shocks and Promoting Greater Inclusion: The main priorities in this area include: (i) assisting the most vulnerable to manage trade shocks; (ii) making trade a more prominent part of the solution to global food price volatility, as opposed to part of the problem; (iii) doing more to address the gender dimension in trade support activities; and (iv) extending the benefits of trade to lagging regions within countries by ensuring that poor people in these areas can better connect to places where agglomeration occurs.

[7] In IEG's review of a sample of Country Assistance Strategies, it defined trade facilitation as having been substantively discussed where it met both quantitative criteria (one or more paragraphs of dedicated overage) and qualitative criteria (good issue coverage and/or reference to data and literature supporting the coverage).

[8] See, for example, the following IEG publications: *Assessing World Bank Support for Trade, 1987–2004* (World Bank 2006); *Evaluation of the International Finance Corporation's Global Trade Finance Program 2006–12* (World Bank 2014b); *Investment Climate Reforms: An Independent Evaluation of World Bank Group Support to Reforms of Business Regulations* (World Bank 2015b); and *World Bank Group Engagement in Small States* (World Bank 2016e).

[9] Some interventions reduce risks to importers and exporters by decreasing the variability of outcomes of trade processing.

[10] Compliance costs are those experienced by exporters or importers associated with following the procedures required for moving goods in or out of a country. There are also other trade costs, such as the direct cost of shipping.

2

Extent and Nature of World Bank Group Engagement in Trade Facilitation

highlights

Portfolio Size

- During the past 12 years, the World Bank Group has supported trade facilitation with an $8 billion portfolio across all its institutions. World Bank lending accounts for about 60 percent of both total commitments and projects (excluding ASA), with IFC responsible for more than a third of commitments and projects. MIGA delivered nine guarantees for trade facilitation during the evaluation period, accounting for $105 million in gross exposure.

Portfolio Distribution and Intervention Targeting

- The Bank Group financed more projects in countries with greater trade facilitation bottlenecks and there is evidence of tailoring to country needs.

Regional and Country Distribution

- Sub-Saharan Africa received the greatest share of Bank Group support, while countries with the highest number of projects each were in South Asia.

- Regional projects played a key role in the trade facilitation portfolio, accounting for 12 percent of projects, delivered mostly through World Bank lending operations in Sub-Saharan Africa.

Strategic Alignment

- IEG's review of country strategies shows a moderate to high degree of alignment between the programming of trade facilitation in the workplan and corresponding Bank Group support.

The Bank Group's Operational Engagement in Trade Facilitation

IEG's portfolio identification and review reveals that, over the 12-year period FY2006–FY17, the World Bank Group supported 372 projects with a total commitment of $7.8 billion.[1] Of this, World Bank lending—through investment and policy operations—accounts for almost two-thirds of projects in the portfolio (221) and about $4.8 billion in volume (66 percent).[2] IFC's support accounts for more than one-third of the projects (142), delivered mainly through Investment Services (74)—accounting for a commitment value of $2.8 billion. Advisory Services (AS) accounted for 68 projects and expenditures of $143 million. MIGA delivered nine guarantees for trade facilitation over the evaluation period accounting for $105 million in gross exposure. In addition, the World Bank delivered more than 400 trade facilitation advisory and analytic work (ASA) services, accounting for $114 million in total expenditures (table 2.1).[3]

Bank Group interventions fall into four areas (as shown in figure 1.1): improving border operations, simplifying rules and procedures, strengthening border agencies, and enhancing border infrastructure.[4] IEG identified 893 interventions about equally distributed across the four areas.

Overall, the Bank Group's support to trade facilitation was evenly distributed across the four intervention areas—but a differentiated and potentially complementary approach can be seen when it is distributed by institution. IFC investments focused almost exclusively on border infrastructure while World Bank lending, IFC Advisory, and MIGA focused more on the other three intervention areas. This differentiation suggests the strengths of each institution, with World Bank and IFC Advisory Services focusing on "softer" regulatory and institutional support, while IFC investments focused on improving "harder" physical border infrastructure, namely port terminals and storage facilities (table 2.2).

TABLE 2.1 | World Bank Group Trade Facilitation Projects by Institution (FY06–17)

Institution	Projects (no.)	Projects (percent)	Amount ($, millions)	Amount (percent)
World Bank lending	221	59	4,782	61
IFC-IS	74	20	2,814	36
IFC-AS	68	18	143	2
MIGA	9	2	105	1
Subtotal	372	100	7,844	100
World Bank ASA	401	—	114	—
Total	773	—	7,958	—

Source: Independent Evaluation Group portfolio review (ASA estimated based on sample).

Note: AS = Advisory Services; ASA = Advisory Services and Analytics; IFC = International Finance Corporation; IS = Investment Services; MIGA = Multilateral Investment Guarantee Agency.

TABLE 2.2| World Bank Group Trade Facilitation Intervention Areas and Interventions by Institution

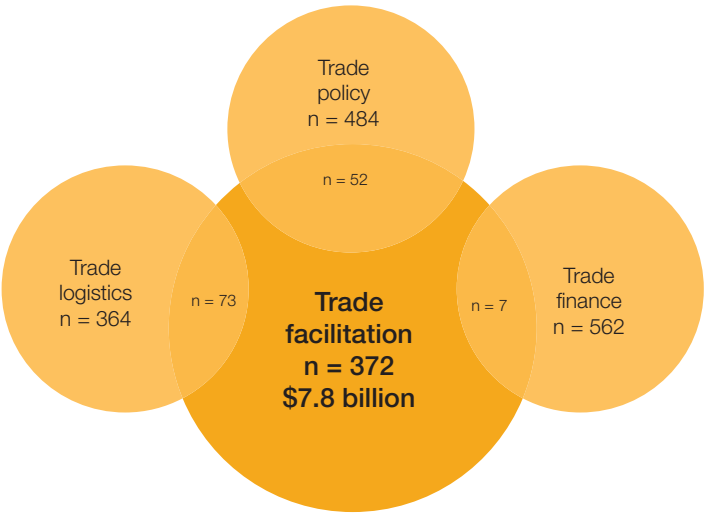
Intervention Area	World Bank Lending		IFC-AS		IFC-IS		MIGA		Total	
	Intvns (no.)	(%)	Intvns (no.)	(%)	Intvns (no.)	(%)	Intvns (no.)	(%)	Intvns (no.)	(%)
Border operations	193	34.2	57	28.8	2	–	14	77.8	266	30
Rules	145	25.8	77	28.9	–	–	2	11.1	225	25
Border agencies	156	27.6	61	30.8	–	–	2	11.1	219	25
Border infrastructure	70	12.4	3	1.5	110	98.2	0	0.0	183	20
Total	565	100.0	198	100.0	112	98.0	18	100.0	893	100

Source: Independent Evaluation Group portfolio review.
Note: Table excludes interventions for logistics. AS = Advisory Services; IFC = International Finance Corporation; Intvns = interventions; IS = Investment Services; MIGA = Multilateral Investment Guarantee Agency.

Projects with trade facilitation interventions were often designed with complementary interventions in trade logistics and trade policy. More than a third of trade facilitation projects included trade logistics or trade policy interventions. Such projects typically involved improving connectivity within a country (most often through transport or road infrastructure), and trade facilitation focused on border infrastructure, border agencies, and rules and procedures. This trade facilitation and logistics subset of projects took place in Sub-Saharan Africa, East Asia and the Pacific, and Europe and Central Asia. By contrast, trade finance interventions were rarely associated with trade facilitation interventions (figure 2.1).[5]

An example in which the Bank Group combined trade facilitation and trade logistics is the series of connectivity development policy loans (DPLs) which the World Bank implemented in Indonesia in 2001 together with occasional IFC investments. These DPLs supported intra-island, inter-island, and international connectivity (trade facilitation).[6] The objective of the connectivity DPLs was to strengthen institutions and processes in handling traffic and trade volume through prior actions on road, transport, and information and communications technology (ICT) improvements (logistics), together with a trade and customs single window, risk-based management, port stations, and organizational improvements (trade facilitation). Additionally, an IFC investment operation supported the expansion of the Tanjung Priok Port—Indonesia's busiest and most advanced seaport, handling more than half of Indonesia's transshipment cargo traffic—by increasing terminal capacity through additional hectares of container yard, new container-handling equipment, and the construction of access roads.[7]

FIGURE 2.1 | World Bank Group Portfolio of Trade Facilitation and Related Areas



Source: Independent Evaluation Group portfolio review.

Note: Figures represent Independent Evaluation Group estimates extrapolated from sample review (see identification methodology section). Excludes World Bank Advisory Services and Analytics.

The World Bank delivered trade facilitation support through three Global Practices, while IFC delivered through a single industry group. For the World Bank's lending and ASA portfolios, three Global Practices accounted for most of its support to trade facilitation, namely, Macroeconomics and Fiscal Management, Transport and ICT, and Trade & Competitiveness. In addition, the Governance Global Practice provided trade facilitation ASA. Almost two-thirds of IFC Advisory support concentrated in the Trade & Competitiveness business line, while the Infrastructure industry group delivered almost all IFC investments (72 out of 74). MIGA delivered nine trade facilitation–related guarantees through its Services sector.

Sub-Saharan Africa accounted for 30 percent of the Bank Group's trade facilitation projects (a total of 99). However, South Asia had a higher average per country (5.6 projects) compared to Sub-Saharan Africa (3.2 per country). At the same time, many top-ranking countries (in terms of the number of project approvals over the evaluation period) were in Latin America and the Caribbean (LAC) and Europe and Central Asia (ECA). These countries include Colombia, Peru, and Armenia, with 13, 11, and 10 projects each, respectively. The median was three projects per country.

The Bank Group also supported regional trade facilitation projects (12 percent of the portfolio) mostly delivered through World Bank loans in Sub-Saharan Africa. A total of 46 trade facilitation projects were regional projects, of which 65 percent were loans and 61 percent were in Sub-Saharan Africa. These projects focused on facilitating trade but also on improving logistics related to road or other transport infrastructure. These interventions were focused on technology upgrades, risk-based management, agency coordination, and organizational improvements to facilitate trade.

Box 2.1 | Support to the Economic and Monetary Community of Central Africa

In 2007, intraregional trade among the six member countries of CEMAC (Economic and Monetary Community of Central Africa)[a] was less than 5 percent of the total trade in the region, mainly because of the dominance of specific commodities in all countries' trade mix and the inefficient transit system hindering regional integration. Additionally, although the framework for CEMAC was in place, its functioning remained problematic mainly because of poor administrative capacity. The Bank Group provided support[a] that sought to fill these gaps by reducing physical and nonphysical barriers and improving information and communications technology between stakeholders, applying its substantial experience with similar regional integration initiatives in southeastern Europe and East Africa.

Source: Independent Evaluation Group portfolio review and analysis.

Note: a. CEMAC- Transport-Transit Facilitation project, project number P079736, FY07.

Across income categories, the distribution of trade facilitation projects varied by institution, with World Bank lending and IFC Advisory operations concentrated more in lower-middle-income countries, IFC investment mostly in upper-middle-income countries, and MIGA focusing more on low-income countries. More than 40 percent of trade facilitation projects were for lower-middle-income countries. World Bank Lending and IFC Advisory Services concentrated their support in lower-middle-income countries (41 percent and 54 percent, respectively), while 57 percent of IFC's Investment portfolio supported upper-middle-income countries. By contrast, five of the nine MIGA guarantees were approved for low-income countries.

Support to trade facilitation at the country level is characterized by a high degree of clustering of interventions, involving multiple interventions in multiple areas, except for infrastructure interventions, which tended to stand alone. More than 20 percent of countries were supported in

TABLE 2.3 | Countries Supported in 1, 2, 3, and 4 Intervention Areas

	Countries Supported by 1 Intervention Area	Countries Supported by 2 Intervention Areas	Countries Supported by 3 Intervention Areas	Countries Supported by 4 Intervention Areas
Number	19	22	28	19
Share (%)	22	25	32	22

Note: Number of countries is 88. Table excludes Tajikistan, for which one trade facilitation intervention was classified as "other."

all four intervention areas, and more than 30 percent in three areas. For example, in Lao PDR, the Bank Group's support included the delivery of a Diagnostic Trade Integration Study (DTIS) which identified trade facilitation as one of five priorities to promote import-export competitiveness: (i) a risk-based management system, (ii) simplification of rules and procedures, (iii) organizational improvements, (iv) the development of an information technology (IT) strategy, and (v) an implementation plan to support operations of the non-customs border agencies and enhance cross-agency communications. Because of this clustering, half of interventions are clustered in 20 percent of countries (table 2.4).

The focus of trade facilitation interventions implemented by the Bank Group during the evaluation period differed across country groups. Almost 37 percent of interventions in low-income countries focused on border operations, with the most common interventions being risk-based management, simplification of rules, and software technology upgrades (such as ASYCUDA). The first two of these intervention types were also most frequent for lower-middle-income countries. On the other hand, more than 37 percent of interventions in upper-middle-income countries were for border infrastructure, with a focus on border terminals (figure 2.2.a).

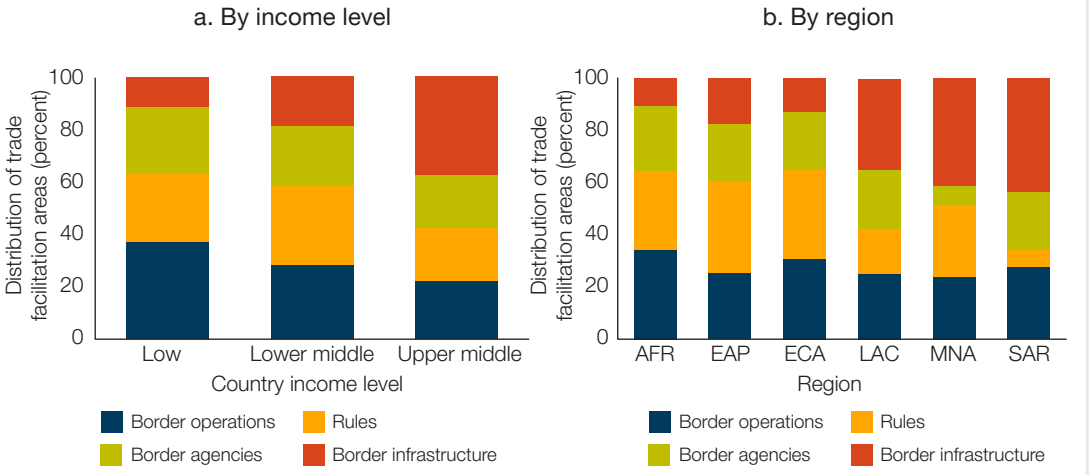
Trade facilitation intervention areas also varied significantly by region. Rules and border operations were more common in Sub-Saharan Africa, East Asia and the Pacific, and Europe and Central Asia (figure 2.2.b). Examples include an intervention in Benin[8] seeking to simplify standards by strengthening the metrology, standards, testing, and quality (MSTQ) systems outreach, and a policy support operation in Tanzania[9] to reduce the number of permanent police checkpoints along the Dar es Salaam-Rusumo corridor. In South Asia, Latin America and the Caribbean, and the Middle East and North Africa, infrastructure investments, approximately a third of the total, were more common.

TABLE 2.4 | Portfolio of World Bank Lending Interventions, by Intervention Area

	Policy Support		Investment		Total	
Intervention Area	Interventions (no.)	(Percent)	Interventions (no.)	(Percent)	Interventions (no.)	(Percent)
Border operations	84	37	108	32	192	34
Rules	42	19	114	34	156	28
Border agencies	92	41	54	16	146	26
Border infrastructure	9	4	61	18	70	12
Total	227	100.0	337	100.0	564	100

Source: Independent Evaluation Group portfolio review.
Note: Table excludes interventions for logistics and one intervention from a Program for Results project.

FIGURE 2.2 | World Bank Group Distribution of Trade Facilitation Intervention Areas by Income Level and Region



Source: Independent Evaluation Group portfolio review.

Note: Figure excludes interventions for logistics and interventions for regional projects. AFR = Sub-Saharan Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; and SAR = South Asia.

In Colombia, for example, an IFC investment operation focused on upgrading terminal and cargo cranes as well as expanding storage in the Port of Santa Marta. An IFC investment in Mexico[10] aimed to improve quay cranes and develop storage in the Port of Tuxpan.

Reforms of border agencies accounted for at least a fifth of interventions in most regions except in the Middle East and North Africa. This was the case in Armenia,[11] where the government sought to strengthen customs administration through various structural improvements including salary increases to attract and retain more highly skilled staff.

The World Bank supported trade facilitation through investment projects and development policy almost in the same proportion. Border operations and rules reforms were mostly supported through policy operations, while border agencies and infrastructure were mostly supported through investment lending.

Out of the 221 World Bank lending projects, 116 were policy operations, 104 were loans, and one was a Program for Results operation. Across intervention areas, policy operations supported rules (41 percent), followed by border operations (37 percent), while investment (as opposed to policy) projects supported approximately one-third of border agencies and border operations interventions (table 2.4). Investment projects focused on capacity building, developing general technology upgrades, and supporting organizational improvements. Policy projects focused mainly on improving risk-based management, streamlining standards, and simplifying rules, with a relative emphasis on software technological upgrades (such as ASYCUDA) and establishment of single windows.

Given the different capital requirements of diverse types of interventions, it is not surprising that World Bank lending volume commitments were highest for border infrastructure–related interventions, and lowest for rules-related interventions. For a sample of 81 projects, IEG found that the average commitment of a trade facilitation intervention is small (about $1–3 million) except for infrastructure, regional integration, and single window operations.[12]

Intervention Relevance

As evidenced in the previous sections, the World Bank Group supported trade facilitation reforms in 90 countries during the period FY07–FY16 with just under 900 trade facilitation interventions. But has this support been directed to those countries that most needed help in trade facilitation? To answer this question, IEG looked at (i) the intensity and scope of Bank Group support relative to client country conditions and (ii) the relationship between support delivered and support planned in client countries.

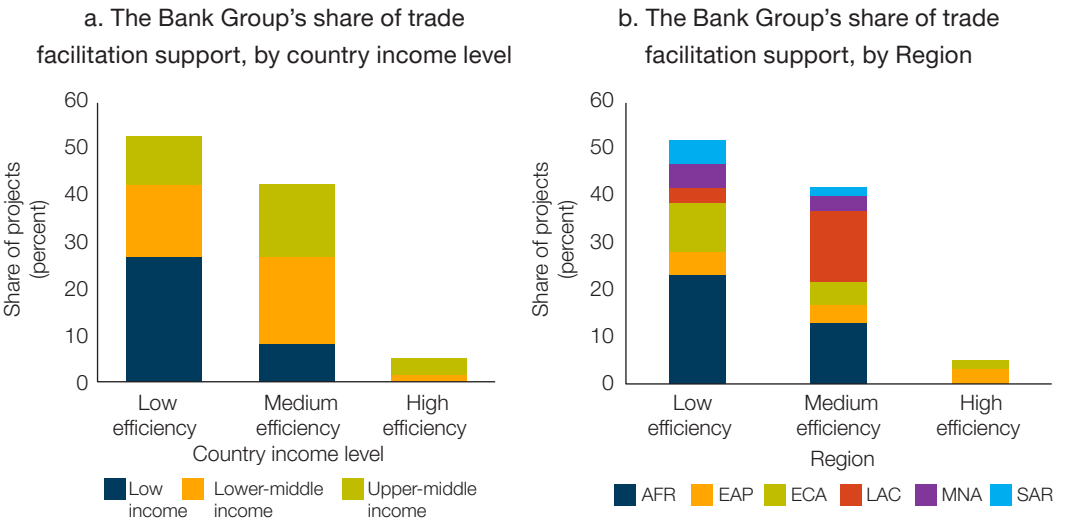
Intensity and Scope of Bank Group Support across Client Countries

The Bank Group financed more projects in countries with greater trade facilitation bottlenecks.[13] Using the Efficiency of Customs Services Indicator of the Logistics Performance Index (LPI), for which higher scores reflect higher performance, the share of World Bank Group's projects shows a negative relationship with increasing levels of quality. This suggests that the Bank Group concentrated its trade facilitation support on countries most needing it. The same pattern holds true for the LPI Quality of Logistics Indicator.

The Bank Group also targeted trade facilitation interventions more intensely at low-income countries, which had more trade facilitation bottlenecks throughout the evaluation period (figure 2.3a). This pattern holds for other LPI indicators for the entire evaluation portfolio, and across all regions except for Latin America and the Caribbean. For example, the World Bank Group increased the number of projects in Eastern Europe and Central Asia during a period when scores for the efficiency of customs clearance processes worsened. Similarly, the share of projects in Sub-Saharan Africa clearly increased as the quality of logistics services scores worsened (figure 2.3b and figures D.1 and D.2 in appendix D).

By another indicator, the evidence suggests that during the evaluation period, the World Bank Group aligned the type of support that would be most effective in the specific country context. IEG's structured literature review indicates that improvements in "soft" trade facilitation measures (border operations, rules, and border agencies) are more effective for poorer countries, while "hard" improvements in physical border infrastructure are more beneficial to countries with higher per capita income (Portugal-Perez and Wilson 2012). Further, cross-country evidence suggests that the overall quality of institutions tends to matter more in promoting trade in low-income countries, whereas hard infrastructure becomes increasingly important as per capita incomes rise.[14] The pattern of the World Bank Group's trade facilitation portfolio is generally consistent with these findings: the Bank Group provided lower-income countries with more support in areas of border operations, border agencies, and rules and standards, while it supported higher-income countries more with physical infrastructure (figure 2.4).

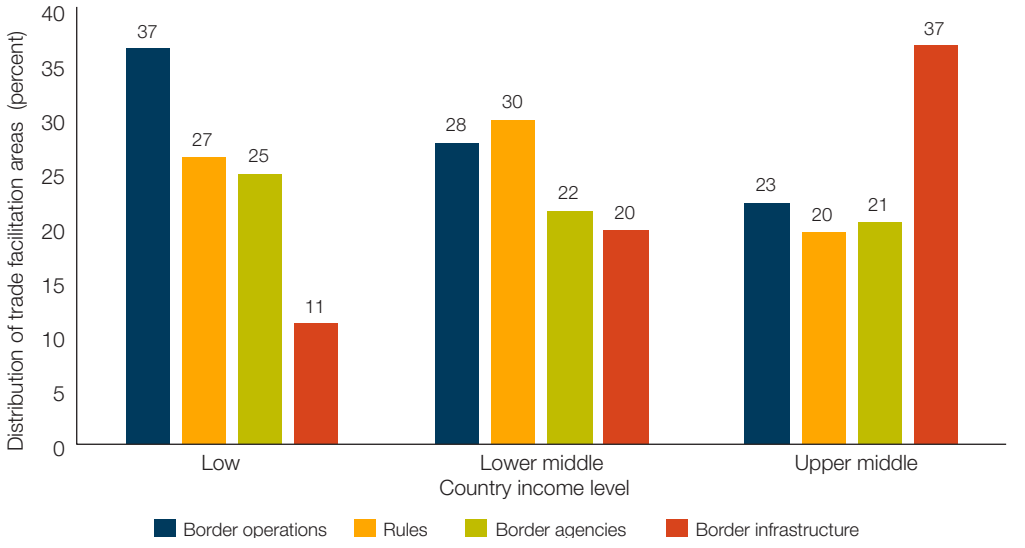
FIGURE 2.3 | World Bank Group Trade Facilitation Support, across Levels of Logistic Performance Index's Efficiency of Customs Clearance Indicator



Source: Independent Evaluation Group portfolio review.

Note: The indicator is measured in a scale of 1 to 5 where 1 is the lowest score and 5 is the highest score. Quality cutoffs are based on tertiles of this measure. The number of country-years is 59. AFR = Sub-Saharan Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; and SAR = South Asia.

FIGURE 2.4 | Distribution of Trade Facilitation Intervention Areas, by Income Level



Source: Independent Evaluation Group calculations.

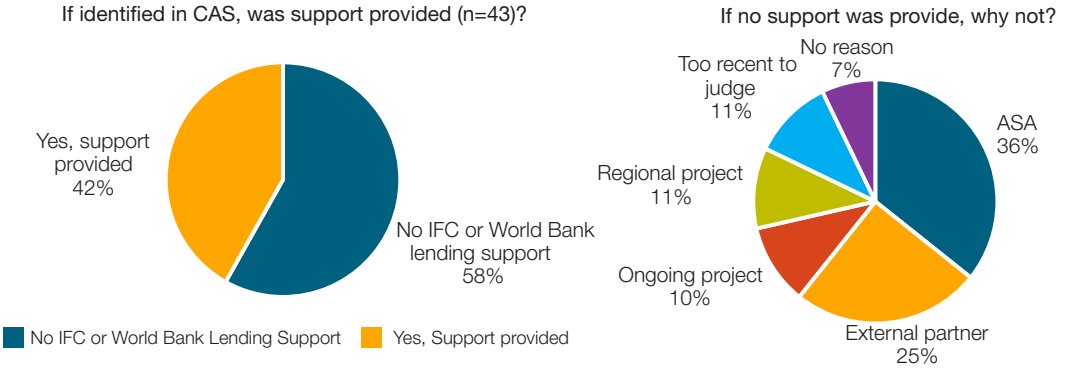
Alignment between Country Strategies and the Portfolio

To gauge the degree of alignment between strategies and activities in Bank Group support to trade facilitation, IEG first examined whether trade facilitation activities that were envisioned in the indicative work program were included in the portfolio. Out of a population of 133 countries, IEG drew a random sample of 69 countries that had a country strategy document during the evaluation period, and reviewed their most recent Country Assistance Strategy.[15]

Initially, the review of country strategies showed only a modest degree of alignment between the inclusion of trade facilitation in the indicative work program and corresponding Bank Group support (figure 2.5). In 44 percent of country documents, trade facilitation was identified in the work program while in 56 percent of cases it was not. Of the cases where trade facilitation was identified, support through IFC investment and advisory services, World Bank lending, or a MIGA guarantee was provided in 42 percent of the cases.

However, a careful review indicated a high degree of alignment. Of the remaining 58 percent of cases, trade facilitation ASA was delivered to more than one-third of clients. For example, the FY14–17 Country Partnership Strategy for the Kyrgyz Republic included the "Customs Union and Competitiveness" analytical project in the indicative work program, which was subsequently approved.[16] This ASA project was part of a programmatic approach in support of the National Private Sector Development Strategy, aiming to build government capacity to enter a customs union through a combination of knowledge and convening services. In another quarter of the cases, another external partner was identified in the document as supporting trade facilitation reform. This highlights the importance of coordination, in a world where multiple players, such as the WTO, WCO, OECD, UNCTAD, or other bilateral or multilateral donors may play a role in supporting trade facilitation. In 10

FIGURE 2.5 | Trade Facilitation: Importance in Country Strategy vs. Bank Group Project Approvals



Source: Independent Evaluation Group.

Note: Left pie from 43 of 97 documents reviewed. "Yes, Support Provided" = World Bank Group approved non-ASA trade facilitation projects. "No Bank Support" = World Bank Group did not approve non-ASA trade facilitation projects. Projects aggregated by country and strategy period and matched to country strategies. ASA = Advisory Services and Analytics; CAS = Country Assistance Strategy; IFC = International Finance Corporation.

percent of cases there was already an ongoing trade facilitation project, while in another 11 percent of cases, there was a regional trade facilitation project that included the country. For example, the FY14–FY17 Country Partnership Strategy for Djibouti stated that China, India, and some Arab countries were financing relevant reforms. In addition, there was an ongoing MIGA guarantee for the development, financing, design, construction, operation, and maintenance of the new container terminal at Doraleh. A few strategies were too recent to have follow-on activity in the portfolio, leaving only two country strategies where there was an unexplained lack of alignment. Overall this suggests a high degree of alignment between identified priorities and actual program delivery.

Summary and Conclusion

During the past 12 years, the World Bank Group's support has been relevant in prioritizing countries with greater trade facilitation bottlenecks. It has adapted to country needs and contexts. Regional projects were important in the World Bank Group's overall support, accounting for 12 percent of all projects. There is generally a good alignment between the identified strategy to support trade facilitation and actual Bank Group support delivered.

---

[1] The Independent Evaluation Group (IEG) designed a portfolio review framework and an identification methodology, benefiting from multiple interviews with stakeholders and subject-matter experts and a review of internal and external literature and project-level documentation. While IEG evaluations often cover one decade of World Bank Group activities, the period covered in this evaluation has been extended to fiscal year (FY)06 to provide a period before the global financial crisis of 2008, which had strong effects on international trade and the Bank Group portfolio from FY09 onward.

[2] Trade facilitation amounts (the sum of commitments, expenditures, and guarantees) for each intervention category were estimated by IEG staff for a sample of 88 World Bank Lending operations. Based on this, individual project trade facilitation values were estimated for all non-ASA projects in the portfolio and then aggregated to obtain a total of $4.8 billion.

[3] IEG's identification methodology used the Bank Group's internal project coding framework as well as targeted keyword searches in text-based data sets to systematically capture and categorize the portfolio subsets relevant to trade facilitation. Targeted keyword searches in project titles were done for both lending and ASA. See appendix A for more details. A subsequent IEG deep dive suggested based on a sample indicated that the number of ASAs meeting this evaluation's definition of trade facilitation is substantially lower.

[4] An intervention can be a component of a larger project. A trade facilitation project had on average just over two interventions.

[5] The portfolio review framework identifies area related to trade facilitation such as trade finance, general logistics, and trade policy (such as tariffs and quotas). Logistics includes general logistics and logistics with a trade linkage. While specific logistics interventions were coded in IEG's portfolio review, trade finance and trade policy interventions were only identified.

[6] The Connectivity DPL series include P124006, FY13 and P144774, FY14.

[7] Project number 27117, FY10.

[8] "Competitiveness and Integrated Growth Opportunity Project" (P104881, FY08).

[9] "Tanzania Poverty Reduction Credit" (P112762, FY12).

[10] "Tuxpan" (32817, FY15).

[11] "Second Poverty Reduction Support Credit" (P093459, FY06).

[12] See appendix D, figure D.4 for details.

[13] "Support" refers to the first project the Bank Group approved for each country during the evaluation period.

[14] See Iwanow and Kirkpatrick (2009) and Portugal-Perez and Wilson (2012). Portugal-Perez and Wilson also suggest that, on average, the marginal effect of the "soft" dimensions of trade facilitation tend to decrease with higher per capita income, while the reverse is true for the "hard" (physical infrastructure) dimension. This aligns with the findings of Iwanow and Kirkpatrick that in Sub-Saharan Africa, institutional quality matters more, whereas infrastructure is not necessarily more productive than in the rest of the world.

[15] The random sample included 80 countries of which 11 were excluded because: (i) Country Assistance Strategy (CAS) documents were not available (Palau, Somalia, and Syria); (ii) CAS was prepared prior to the evaluation period (Eritrea, Hungary, Turkmenistan, Iran, and Venezuela); and (iii) country strategies are discussed within the regional CAS (Grenada, Saint Lucia, Saint Vincent and the Grenadines). The keywords that were used to search for trade issues in the documents were "logistic, customs, inspection(s), border, port(s), exports, integration, agreement(s), accession, procedure(s), rules, clearance, goods, connectivity, infrastructure, competitiveness, ports, railway, airport, trade finance, trade facilitation, cross border, tariff /barrier, container / freight.t"

[16] P156845 FY16, Economic and Sector Work.

3

Effectiveness

highlights

Development Success

- Most World Bank Group projects supporting trade facilitation reforms achieved their development objective, and all three institutions exceeded their corporate scorecard targets. The World Bank's investment lending appears to be substantially more effective than its policy operations.

- At the trade facilitation intervention level, the overall success rate averaged 79 percent.

Intervention-Outcome Links

- A before-and-after test yields a positive link between Bank Group interventions and country indicators.

- More rigorous difference-in-difference tests and panel analysis yield more nuanced outcomes. Positive relationships are observed between World Bank and IFC support and improved time to export and import and better Logistics Performance Index indicators, such as efficiency of customs, ease of arranging shipments, quality of infrastructure, and competence of services. Yet there is no apparent link

between the Bank Group's interventions and improvements in indicators related to the cost and to the number of documents required.

- **Comparative advantage.** The evaluation finds different comparative advantages of the World Bank and IFC, with IFC more successful supporting border infrastructure and the World Bank more successful supporting agencies, border function, technology, and reform of trade rules.

- **Costs and trade flows.** The literature shows a strong link between trade costs and trade flows (the lower the costs, the higher the flows). Evidence of this link is strongest for simplifying border procedures, modernizing border operations, and improving border infrastructure.

- **Beyond compliance costs.** Despite the strong potential social, security, health, safety, and environmental (as well as public revenue) implications of enforcing trade regulations, only a minority of the Bank Group's interventions focus on these dimensions of trade facilitation, and even fewer collect evidence that could be the basis of learning and accountability.

In this chapter, IEG examines the effectiveness of the World Bank Group's support for trade facilitation by analyzing two aspects of its performance: (i) achievement of project- and intervention-level objectives of its trade facilitation projects and (ii) outcome-level impact: exploring the extent to which the Bank Group's trade facilitation is associated with positive outcomes in reducing trade costs in client countries. It seeks to answer whether examples of successful Bank Group contribution to trade facilitation reforms (box 3.1) are isolated examples or a general pattern.

The evaluation uses a sample of 48 trade facilitation projects (with IEG validated ratings and data available at the individual intervention level) to assess the achievement of project objectives. This included 23 World Bank projects, 10 IFC investments, 9 IFC advisory services projects, and 6 MIGA guarantees.[1] To measure the achievement of individual trade facilitation interventions, IEG analyzed the components of 88 World Bank lending projects in Implementation Completion and Results Reviews (ICRRs), and added to these the abovementioned IFC investment and advisory projects and 6 MIGA guarantees, for a total of 113 projects containing 254 trade facilitation interventions.[2]

Box 3.1 | World Bank Group–Supported Trade Facilitation Reform in the Lao People's Democratic Republic

In the early 2000s, Lao PDR adopted important market-oriented reforms. After liberalizing trade and moving toward greater regional integration, the government began to make trade facilitation a priority. From 2006 through 2017, the Bank Group provided continuous support for trade facilitation through a combination of analytical work, lending and grant investment operations, and policy grant operations, with the objectives of (i) improving the efficiency and effectiveness of customs administration; (ii) simplifying, modernizing, and standardizing non-customs border operations; and (iii) improving trade facilitation policy, interagency coordination, and government capacity. The World Bank Group–supported reforms were mostly successful, resulting in (i) substantially reduced border clearance times—mean time to clear imports, exports, and transits went from 17.9 hours in 2009 to 6.5 hours in 2016; (ii) a substantial improvement in government's capacity to manage trade-related reforms; (iii) an Automated System for Customs Data (ASYCUDA) successfully installed and rolled out to all major border points; (iv) a Trade Information Portal linking all trade-related information for stakeholders successfully deployed and then replicated in a number of other countries; and (v) Lao PDR gaining accession to the World Trade Organization in 2013 after a 15-year-long process.

Source: Independent Evaluation Group Lao PDR country case study..

Most World Bank Group investment lending projects supporting trade facilitation reforms achieved their stated development objectives. Within the World Bank, 74 percent of projects (17 out of 23) successfully achieved their development outcomes (that is, obtained a development objective rating of moderately satisfactory or above). This is in line with the 75 percent FY17 World Bank corporate scorecard target (figure 3.1). Yet effectiveness seems to be substantially different across types of lending instrument. Investment lending operations were more successful, with 85 percent achieving development outcomes (well above the scorecard target), compared to 60 successes for policy support operations. The shares of successful IFC trade facilitation investment and advisory work projects were both above the FY17 target of 65 percent, at 90 percent and 78 percent, respectively. MIGA guarantees achieved 78 percent success, above the corporate target of 63 percent used in FY16 and the historical MIGA success rate of 62 percent from FY11–FY16 (RAP 2017).

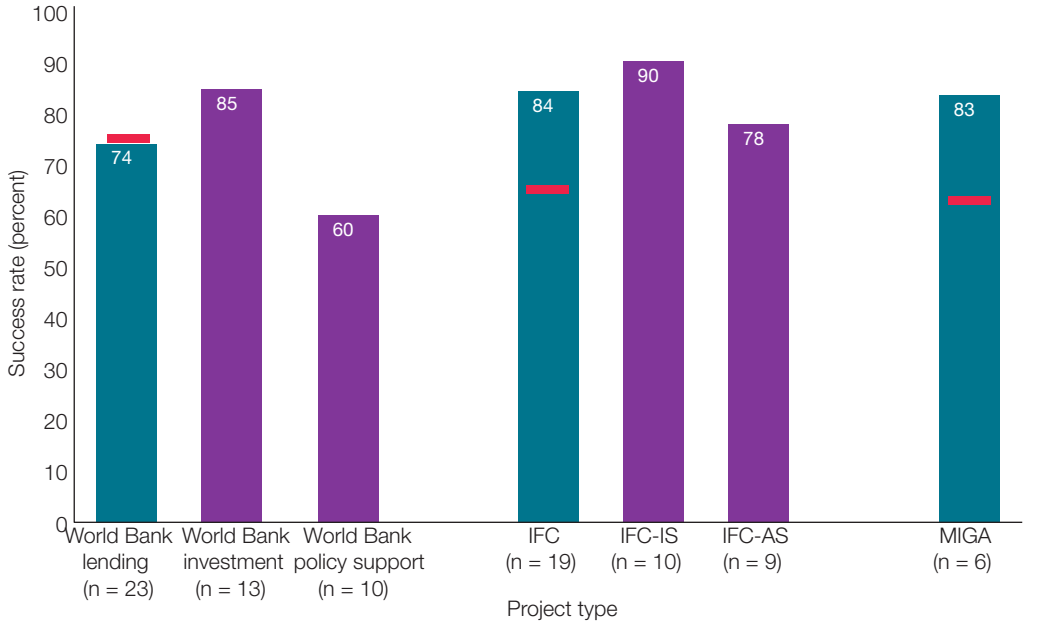
Overall, at the trade facilitation intervention level, the success rate averaged 79 percent (that is, with ratings of "achieved" or "mostly achieved"). In contrast to the project-level analysis, success was most frequent for (trade facilitation) interventions delivered through policy support than for investment lending (figure 3.1). This is related in part to the fact that, at the intervention level, only trade facilitation–related prior actions were rated, whereas overall project outcome ratings are based on the overall performance of all project components, including prior actions not related to trade facilitation (see box 3.2). In fact, for all the policy support projects included in the analysis (67) the trade facilitation interventions account for just 16 percent.[3] Finally, the success rate for intervention was higher at higher levels of income, and, across intervention areas, border agencies interventions appear to be relatively less successful (figure 3.1).

Box 3.2 | Customs Automation in St. Lucia

Through an Economic and Social development policy loan in St. Lucia the World Bank sought to support the Customs Department in implementing the Automated System for Customs Data (ASYCUDA) software, together with training for customs administration personnel and a corporate strategic and business plan outlining a sequential implementation of ASYCUDA. The second and third of these interventions were achieved, but the first one was not. Thus, while two interventions were rated achieved the overall outcome of the development policy loan was rated moderately unsatisfactory because "The reform program was too ambitious and there was a substantial disconnect between the wide scope of pursued objectives and the brief time nature of the [project]."

Source: Independent Evaluation Group portfolio review. World Bank 2012.

FIGURE 3.1 | Success Rate of Trade Facilitation Projects



Source: Independent Evaluation Group portfolio review and World Bank 2016 Corporate Scorecard.

Note: Red bars show FY17 targets except for MIGA, for which the line shows actual share of projects with satisfactory outcomes for FY16. The MIGA-wide success rate for FY11–16 is 63%. AS = IFC Advisory Services; IFC = International Finance Corporation; IS = IFC investment Services; MIGA - Multilateral Investment Guarantee Agency.

Assessing the Impact of the Bank Group's Trade Facilitation Interventions

To assess the performance of the Bank Group's trade facilitation portfolio in terms of outcome achievement, IEG identified a set of 10 outcome indicators.[4] These indicators were collected from two sources: The LPI and the Doing Business Trading Across Borders indicators (table 3.1). These indicators provide quantitative ratings of the cost and time to import for a hypothetical transaction and qualitative ratings of efficiency of customs clearance and ease of arranging shipments. Together, these indicators measure the quality of trade facilitation services across a total of 167 countries during 2006–14. They are independent of project design and do not measure the specific areas that Bank Group projects aim to improve. Yet, overall, they represent a good set of proxies measuring the intermediate outcome of trade facilitation projects.[5]

IEG performed a simple before-and-after test which clearly shows a positive relationship between Bank Group support to trade facilitation reforms in client countries and improvements in outcome indicators. With this approach, IEG (i) compared the value of each indicator in each country supported by the World Bank Group before and after the trade facilitation project was approved; and (ii) tested if the mean values of the before-and-after indicators were significantly different.[6] As table 3.2 shows, this simple statistical test indicates that, for the Bank Group's entire portfolio, trade facilitation support had a significant and positive association with improvements in virtually

TABLE 3.1 | Description of Intermediate Outcome Indicators Used in the Performance Analysis

Description	Source	Unit	Coverage
Efficiency of customs clearance process	Logistics Performance Index	1–low to 5–high	167 countries, 2004–16
Ease of arranging competitively priced shipments	Logistics Performance Index	1–low to 5–high	167 countries, 2004–16
Cost to export	Doing Business	54.real US$ per container	185 countries, 2004–16
Cost to import	Doing Business	54.real US$ per container	185 countries, 2004–16
Documents to export	Doing Business	number	185 countries, 2004–16
Documents to import	Doing Business	number	185 countries, 2004–16
Time to export	Doing Business	days	185 countries, 2004–16
Time to import	Doing Business	days	185 countries, 2004–16
Quality of trade and transport-related infrastructure	Logistics Performance Index	1–low to 5–high	167 countries, 2004–16
Competence and quality of logistics services	Logistics Performance Index	1–low to 5–high	167 countries, 2004–16

Sources: World Bank Logistics Performance Index and Doing Business.

all trade facilitation outcome indicators. In other words, the countries that the Bank Group supported with trade facilitation projects experienced a statistically significant improvement in trade facilitation services as measured by the LPI and Doing Business indicators.

Further, IEG conducted two additional tests on the contribution of the Bank Group's interventions to improving trade facilitation services using the same outcome indicators. Because the before-and-after test has methodological limitations, notably the focus only on "treated" countries, the subsequent analysis used difference-in-difference and panel analysis to compare the performance of "treated" countries with that of "not treated" countries. These two methods compare the behavior of comparator countries, that is, countries that do not benefit from the World Bank Group's support in trade facilitation reforms,[7] providing another perspective on the contribution of Bank Group support.[8]

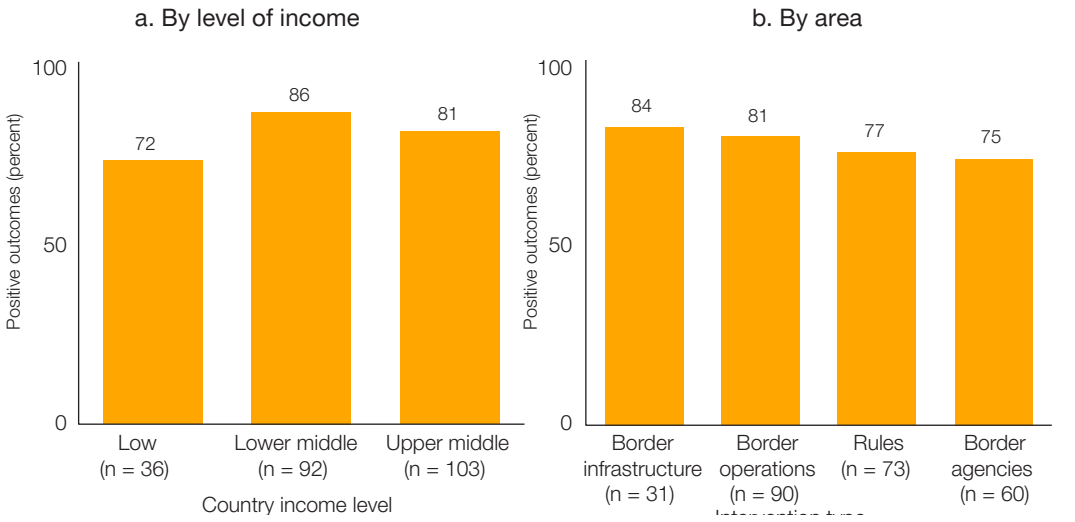
TABLE 3.2 | Relationship of Intermediate Outcome Indicators to Interventions in the Before/After Performance Analysis

1	LPI	Efficiency customs	+	+
2	LPI	Ease of arranging	+	+
3	DB	$ to X	+	
4	DB	$ to M	+	
5	DB	Doc to X	+	+
6	DB	Doc to M	+	+
7	DB	Time to X	+	+
8	DB	Time to M	+	+
9	LPI	Quality of infrastructure	+	+
10	LPI	Competence of service	+	+

Source: Independent Evaluation Group calculations.

Note: "+" indicates a statistically significant coefficient—10% or lower—in the expected direction (increasing quality or decreasing cost); missing indicates insignificant coefficient. There were no "–" relationships found. DB=Doing Business Indicators, providing quantitative measure of the cost, time or number of documents to import (M) or export (X) for a hypothetical transaction and LPI (Logistics Performance Index) ratings provide qualitative ratings of efficiency of customs clearance, ease of arranging shipments, quality of infrastructure, and competence and quality of trade logistics services.

FIGURE 3.2 | Trade Facilitation Interventions with Positive Outcomes, by Country Income and Area



Source: Independent Evaluation Group portfolio review.

Note: a. Number of interventions is 231 for 107 projects. Figure excludes 23 interventions that were part of 6 regional projects.
b. Number of interventions is 254 for 113 projects.

The additional tests are in line with previous results, confirming the association of World Bank Group interventions with positive outcomes, although with a more limited set of significant relationships. The evaluation carried out these tests on the entire portfolio of trade facilitation projects, and for the World Bank and IFC separately (table 3.3). Overall the tests show some evidence of a positive contribution, albeit for a limited number of indicators. Yet these tests show no relationship of supported interventions to improvements in indicators of costs or number of documents required for imports or exports.

These additional tests show some significant and positive relationship between the World Bank Group's interventions and the improvement of trade facilitation services in client countries, when compared to non-treated countries, even for a limited number of indicators. This contribution is not as clear and consistent as in the before-and-after tests. Notably, all the tests performed show no relationship of supported interventions to improvements in indicators of "costs" or "number of documents" required for imports or exports. Instead, a positive relationship is observed with "time to export and import" and with several LPI perception-based indicators: "efficiency of customs," "ease of arranging," "quality of infrastructure," and "competence of services."[9] This pattern of positive contribution persists when the World Bank and IFC are analyzed separately (table 3.3). The interventions of both institutions appear positively related to several indicators of performance, irrespective of the test carried out.[10]

TABLE 3.3 | Effectiveness Results on Outcome Indicators, by Institution

Overall Portfolio			World Bank Group		World Bank		IFC	
			DID	Panel	DID	Panel	DID	Panel
1	LPI	Efficiency customs	+		+			
2	LPI	Ease of arranging	+	+				
3	DB	$ to X						
4	DB	$ to M						
5	DB	Doc to X						
6	DB	Doc to M		+				
7	DB	Time to X		+		+		+
8	DB	Time to M		+		+		+
9	LPI	Quality of infrastructure	+		+		+	
10	LPI	Competence of service	+		+			+

Note: "+" indicates a statistically significant coefficient—10% or lower—in the right direction (increasing quality or decreasing cost); missing indicates non-significant coefficient. "–" indicates a statistically significant coefficient—10% or lower—in the wrong direction (decreasing quality or increasing cost). Regression results are reported in appendix E, tables E.4–E.6 (for World Bank Group), E.7–E.9 (for World Bank) and E.10-E.12 (for International Finance Corporation).DB = Doing Business; DID = difference in difference; LPI = Logistics Performance Index.

Across intervention areas, the analysis suggests different comparative advantages of the World Bank and IFC; IFC appears more successful in supporting border infrastructure and the World Bank more successful in the other areas. To understand whether the Bank Group's contribution was higher in some areas than in others, the analysis examined the association with outcomes of Bank Group interventions in the four specific areas of support (agency support, border operations, infrastructure, and rules; table 3.4). IEG performed the same tests for the World Bank and IFC in each of the four areas of support for the outcome indicators that showed statistically meaningful results.[11] The results of these tests show once more that, overall, the World Bank Group's interventions are associated with positive movement in outcome indicators for the four areas of trade facilitation support. However, there are differences between IFC and the World Bank. IFC interventions show a more consistent favorable association with outcomes in infrastructure support, whereas World Bank support in this area shows mixed outcomes. On the other hand, in the other three areas, there is evidence of the World Bank's effectiveness, while evidence for IFC effectiveness is mixed.

Several examples from the portfolio analysis illustrate the differences in performance across the World Bank Group's institutions. In Grenada, the World Bank successfully improved customs systems and procedures by upgrading the ASYCUDA software.[12] An IFC advisory services project in Colombia,[13] which sought to achieve measurable performance improvements through technical support for functionality of the Colombia's single-window trade portal, VUCE, failed to achieve its targets in reduction of the time, cost, and number of documents to import and export goods. By contrast, in border infrastructure, an IFC investment operation in Argentina sought to strengthen the port sector by helping to expand a key container handling facility in the port of Buenos Aires to ensure the efficient and timely export of containerized cargo.[14] The operation was successful in increasing yard capacity and enabling the handling of larger vessels, thereby helping to reduce the cost of transportation and benefiting shippers, shipping lines, and consumers alike. By contrast, there was not enough evidence that a competitiveness development policy loan in Mexico,[15] which included a prior action to improve the quality of port services partly through modernized customs facilities with new buildings and equipment (video and dynamic scales) managed to improve the quality of port services, even though the prior action was considered as having been met. World Bank (2009b, 5).

In sum, various sources of evidence—namely, project ratings, simple statistical tests, econometric results, and portfolio reviews—all point to the same conclusion: that the World Bank Group's support for trade facilitation shows some positive contribution to changes in outcome variables that are proxies for the quality of trade facilitation services in client countries. However, the analysis also finds a difference in performance between the World Bank and IFC, with IFC showing a higher contribution in infrastructure and the World Bank showing higher contribution in the other trade facilitation areas. Further, the Bank Group's interventions are associated with success only in some dimensions of measured outcomes, particularly those related to quality and time, and not in others such as cost and documentation.

TABLE 3.4 | Effectiveness: Significant Association of Intervention Areas with Improvement in Country Outcome Indicators (Doing Business and Logistics Performance Index)

Intervention Area	Difference-in-Difference			Panel		
	World Bank Group	World Bank	International Finance Corporation	World Bank Group	World Bank	International Finance Corporation
Agency support	✓✓	✓				
Border function and technology	✓✓✓	✓	✓	✓	✓✓✓	X
Border infrastructure	✓✓✓	✓✓	✓✓✓		X X	✓
Rules		✓		✓✓	✓✓	✓

Sources: Independent Evaluation Group portfolio review, Doing Business and Logistics Performance Index; Independent Evaluation Group calculations.

Note: Checkmarks indicate significant positive association with improvement of one indicator, X indicates significant negative association with one indicator, blank indicates no significant association). Caution: Sample of treated countries in each cell is small. Regression results are reported in appendix E, tables E.12–E.23 (for WBG), E.24–E.35 (for World Bank GRoup) and E.36–E.47 (for International Finance Corporation).

Impact of Trade Facilitation Reforms on Trade Flows

Following the intervention logic, the evaluation next examined the relationship between improvements in trade facilitation services in client countries and changes in the trade flows of those countries. As presented in chapter 1, given the clear link between interventions and indicators of reduced trade costs, the logic then leads to the empirical relationship between trade costs and trade flows. In the underlying intervention logic, trade moves from less efficient locations to more efficient ones in response to cost-reducing reforms, or it can simply grow in volume in countries with more efficient trade facilitation characteristics.

The literature shows compelling evidence of a negative relationship between trade costs and trade flows—that is, reduced trade costs (in time and money) are associated with increased trade. The structured literature review conducted by this evaluation found that the presumed relationship between trade facilitation reforms and trade flows is supported in the literature both theoretically and empirically, with some caveats. Multiple articles estimated that trade costs dwarf the impact of tariffs on trade flows (Anderson and Van Wincoop 2004; Arvis et al. 2016; Hummels 2007). In fact, some studies that estimate the benefits of implementing reforms under the WTO Trade Facilitation Agreement (TFA) predict an increase in global trade flows of at least $80 billion a year (Hufbauer and Schott 2013; Decreux and Fontagne 2011; Iwanow and Kirkpatrick 2009; Portugal-Perez and Wilson 2012; WTO 2015; Zaki 2014). The WTO anticipates annual growth in global exports of 2 percent and GDP of 0.34 percent attributable to TFA under a conservative scenario (WTO 2015). Another study forecasts export expansion of product and destination diversity of at least 0.23 percent for every 1 percent improvement in a country's score as a percentage of full implementation of the TFA. The largest gains are predicted for Latin America and Sub-Saharan Africa (Beverelli, Neumueller, and Teh 2015). A 2017 survey of policy

makers in more than 60 developing countries and 38 donor countries and institutions revealed that, within a broad array of aid that can promote trade, both recipients and donors rank TFA areas as their top priority (WTO and OECD 2017).

The structured literature review found evidence of a strong but varying association between increased trade flows and some types of trade facilitation interventions. Evidence that simplified border procedures increase trade flows is robust for both exports and imports. Further, simplified border procedures contribute to both the volume of trade and to diversification of exports. Because simplifying border procedures reduces the fixed-cost component of trade, some studies have found that it leads small and medium-sized enterprises (SMEs) to export more (Hoekman and Shepherd 2015; WTO 2015). Cross-agency dialogue, coordination, and integration to harmonize standards for sanitary and phytosanitary measures and technical regulations are empirically linked to greater trade volumes and product variety. Furthermore, general information availability is found to be disproportionately beneficial to exports from SMEs than to exports from larger firms (Fontagné, Orefice, and Piermartini 2016). Evidence is too limited on the effects of strengthening border agencies to draw a conclusion about its link to trade flows. Modernization of border operations, often in the form of automation or adoption of ICT in border procedures, is associated with lower trade costs which, in turn translate to increased trade flows (Moïsé and Sorescu 2013). Finally, investments in border-related infrastructure are empirically shown to contribute to lower trade costs, which manifest in larger trade flows in terms of both volume and product variety (Bernhofen, El-Sahli, and Kneller 2016; Blonigen and Wilson 2007; Clark, Dollar, and Micco 2004; Shepherd and Wilson 2009; Feenstra and Ma 2014).

Evidence on synergies between different trade facilitation reforms and optimal sequencing is not systematic, but the academic literature supports the view that landlocked countries benefit more from reduced trade costs and reduced uncertainty of trade costs associated with trade facilitation reforms. There is also evidence that reforms lowering costs of both trade facilitation and trade logistics are associated with increased trade flows, and that “hard” and “soft” infrastructure improvements complement each other (Hoekman and Nicita 2011; Francois and Manchin 2013; Iwanow and Kirkpatrick 2009; Portugal-Perez and Wilson 2012).

The relationship between trade costs and trade flows is not straightforward. Other factors influencing trade can be at play. A reduction in trade costs only leads to increased trade flows if trade costs are among the most binding constraints. Trade costs may not be a binding constraint to trade flows everywhere and always. For example, in some client countries, although trade facilitation was regarded as important, other constraints to trade were understood by experts to be more binding. In Peru, for example, infrastructure beyond the ports, logistics service providers, and road network connectivity were described by many local experts and stakeholders as the three most binding constraints to trade. Similarly, in Armenia, several stakeholders regarded constraints such as private sector capacity, domestic infrastructure quality and costs, transport constraints in neighboring countries, and policies in other areas as more constraining on export growth than trade facilitation, which was regarded by some as “reformed enough.” More generally, in none of the case study countries was “customs and trade regulations” rated as the top constraint or even among the top three to businesses in the most recent World Bank enterprise survey. Even in Peru, where 27 percent

of exporting firms found such regulations to be a major or severe constraint, a higher percentage of exporting firms found corruption, electricity supply, and business licensing and permits to be a major problem affecting their capacity to import or export. In some countries, political economy and governance challenges were understood as bigger constraints than the cost of trade.

Health, Safety, Environment, Good Governance, Formality Project Impacts

In its goal to eliminate extreme poverty and enhance shared prosperity, the Bank Group seeks to advance a variety of public policy objectives and values in the reforms it promotes. Trade regulations, like other regulations, can serve a social as well as economic purpose—such as protection of public health, safety, and the environment or promotion of good governance, formality,[16] and the rule of law. Reforms can have an impact on these public policy priorities. For example, a risk-based enforcement of sanitary inspections can reduce trading costs but may also have either a positive or negative effect on the spread of disease and thus on public health. IEG's 2015 evaluation *Investment Climate Reforms: An Independent Evaluation of World Bank Group Support to Reforms of Business Regulations* observed that "regulatory reform must be understood in the context of broader social values, including protection of the poor and vulnerable." It identified the need to develop an approach to identify the social effects of regulatory reforms and which groups were affected both within and beyond the business community. At the same time, it is recognized that some regulations are not intended to advance socially beneficial objectives (or are wholly unnecessary to do so), and some may instead be intended simply to protect certain privileged interests. In response to IEG's evaluation, in 2015 Bank Group Management stated that it "plans to develop a selective approach that distinguishes between reforms that attempt to do away with laws and regulations that convey very little in way of social benefits, and reforms inducing trade-offs between business interests and social interests. Management plans to develop a set of criteria to help prioritize interventions for which social value assessments would be done and in what form."

In the specific area of trade regulation, a subset of the broader focus of the earlier evaluation, it is reasonable to probe to what extent socially beneficial objectives of trade regulations have been explicitly acknowledged and addressed in World Bank Group-supported trade reforms?[17] Was there any evidence of a systematic effort to identify regulations that induced trade-offs between business and broader public interests (box 3.3).

The portfolio analysis shows that only a small minority of trade facilitation projects identify these objectives. To study this type of objective systematically, the evaluation analyzed 131 trade facilitation projects with IEG microevaluations,[18] according to how the projects treated (or did not treat) social objectives. The analysis used a broad definition of socially beneficial objectives related to trade facilitation that encompassed six categories: enhanced collection of public revenues (under the assumption that these serve a social function), corruption control, improved environment, improved health, reduced transport congestion, and enhanced public safety. It found that 44 percent (58 of 131 projects) mentioned any such policy objective, mostly related to public revenues. When the public revenue goal is excluded, this share drops to 29 percent.

Box 3.3 | Potential Hazards of Trade Facilitation Reforms in Challenging Environments

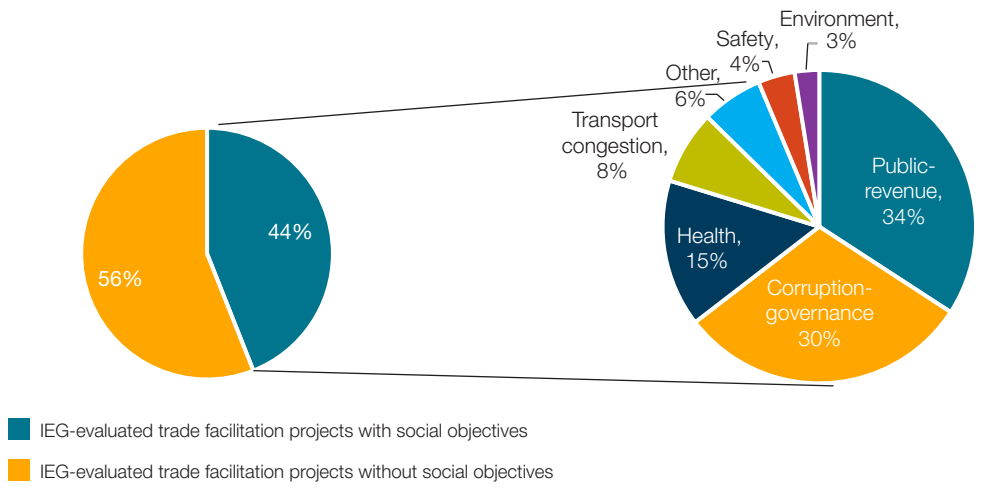
The Trade Logistics Western Balkans Project (572687) introduced risk-based methods in food and veterinary inspections in the Former Yugoslav Republic of Macedonia to target high risk shipments while simultaneously reducing inspection rates. The objective was to reduce the time and cost of the inspection process for the private sector. The project did not define any objective regarding detection rates and did not monitor them. A 2017 Bank evaluation "finds little evidence that the reform was successful in its attempt to improve the targeting of risky shipments." The hazard of reducing the frequency of inspections for food safety and animal health in absence of effective risk-targeting is self-evident.

Within the 58 projects mentioning such public policy objectives, there were 79 trade facilitation–specific interventions that referenced non-economic policy or social objectives. Two types of objectives predominated, accounting for about two-thirds of all references: enhancing collection of public revenues (34 percent) and corruption control (30 percent) (figure 3.3). While public health objectives were found in 15 percent of references, other social objectives including protection of the environment and public safety were rarely mentioned.

The distribution of references to these publicly beneficial objectives is uneven across areas of intervention and regions. In World Bank projects, most of the references to such objectives appear in two intervention areas: border operations (48 percent) and agency support (24 percent). IFC projects rarely refer to such objectives in their project documents (only six references were found). References to this type of objective are found in most World Bank lending projects, mostly in policy support (64 percent). MIGA, with only 9 guarantees related to projects with trade facilitation components, accounted for more than 20 percent of all references to such objectives (17). Finally, most of the references are made in projects in low- and lower-middle-income country projects, especially in Africa (33 percent), Latin America and the Caribbean, and Europe and Central Asia. Box 3.4 provides an example of a trade facilitation project referencing public policy objectives beyond compliance costs in Haiti.

Even where public policy objectives beyond compliance cost reduction are substantively mentioned, evidence that could provide the basis for learning and accountability about them is rarely collected. Of 79 references to social objectives in trade facilitation projects, two-thirds of the references were less than a paragraph, while 24 percent were substantive (two or more paragraphs) and only 3 percent provided evidence in the form of either reference to literature or to data. Furthermore, 35 percent of such references offered no indicators or data by which to judge potential achievement, compared to 44 percent that showed any evidence of a positive outcome regarding social objectives,

FIGURE 3.3 | Incidence of Policy Objectives in Trade Facilitation Projects and Interventions



Source: Independent Evaluation Group portfolio review and analysis. The total number of trade facilitation projects evaluated is 131, of which 58 (44%) discuss social objectives.
Note: IEG = Independent Evaluation Group.

16 percent that showed a failure to achieve social objectives, and 4 percent where the evidence was unclear.

Additional evidence from an in-depth analysis of IFC advisory work confirms the lack of attention paid to such objectives. Drawing from six field validations of IFC advisory services in trade facilitation,[19] the evaluation found that those projects used only "private sector savings" or "cost compliance savings" as impact indicators. Yet in some cases, IFC assisted agencies performing border functions that had clear social purposes, such as sanitary and phytosanitary inspection. In spite of the potential of such interventions to either improve (through better risk targeting) or weaken (through less frequent inspection) protection of public health and safety, project results focused on outcome indicators such as time and cost reduced and number of documents or procedures simplified. Impacts of project activities on rates of detection or on public health, safety, and environmental outcomes were not tracked.

With a few exceptions, case studies showed little evidence of explicit stakeholder attention to social objectives. When specifically asked, a few stakeholders recognized such social objectives. In Armenia, for example, some public officials believed risk-based inspection and automated systems were helping advance social objectives related to food safety, revenue collection, and smuggling. In Peru, explicit efforts were made to reduce crime and corruption through security measures in and around the Lima port. In contrast, in Lao PDR, the phytosanitary reforms undertaken were intended to facilitate international trade, with no reference to improvement of domestic food safety.

The evaluation carried out a literature review that found very few articles analyzing the link between trade facilitation and achievement of social objectives of trade regulations. The review concludes that there is currently little empirical evidence on how trade reforms affect the achievement of national security, public

Box 3.4 | Example of a Trade Facilitation Project with Reference to Public Objectives

Haiti's "Third Economic Governance Reform Operation" (P117944, FY10) was a Development Policy Loan that included a prior action requiring the recipient to complete the interconnection of information systems operated in the Ministry of Finance's Customs Directorate and the General Directorate of Taxes (DGI) to improve: (i) revenue collection and mobilization; and (ii) efficiency and transparency in public financial management. In this context, the project referred to the objectives of revenue collection and corruption control. Use of the new interconnected system was expected to help improve coordination between the Central Office and other agencies and strengthen the accuracy and comprehensiveness of the information used by customs offices, thereby allowing better tracking of movements of imported goods; reducing the processing of goods clearance; and reducing opportunities for fraud and corruption. The project offered quantitative indicators to measure achievement of revenue collection, but DGI lost its data in an earthquake. By contrast, there were no indicators by which to judge the achievement of reducing fraud and corruption; nor was this issue discussed in evaluation documents.

safety, and sanitary and phytosanitary objectives. Moffitt, Stranlund, and Osteen (2010) states that the economic literature on managing risks and welfare from the introduction of invasive species through trade flows is fairly nascent (Moffitt, Stranlund, and Osteen 2010).Several studies link trade facilitation reforms to reduced corruption, but most of them use qualitative methods. Few studies provide quantitative empirical evidence.One study, for example, suggests that piecemeal reforms do not reduce corruption (Bryane 2012), while another study links preshipment inspection to "crime displacement." A third study contains a theoretical discussion of how risk-based regulation can deal with contaminated shipments (Ameden, Cash, and Zilberman 2007). Other studies discuss an indirect link of inefficient trade facilitation to corruption through its impact on export delays (Freund, Hallward-Driemeier, and Rijkers 2016). A case study on Cameroon links customs reform to indicators of revenue collection and of discretion and corruption. An issue brief by the Chief Economist's office of the African Development Bank (Cantens, Raballand, and Bilangna 2010) develops a theoretical link between trade facilitation and social benefits by suggesting that trade facilitation will "foster transparency and incentivize those involved in informal trade to formalize their activities."

Conclusion

This chapter has found that the World Bank Group has generally succeeded in achieving development objectives in supporting trade facilitation reforms. Yet some differences were found in the success

of instruments and institutions. The typical before-and-after accounts of projects yield a generally positive report, but it is important to compare to a counterfactual, controlling for global trends and other explanatory factors. A more nuanced analysis suggests greater effect with regard to some outcomes than others (for example, Doing Business time versus dollar cost indicators), and differences between types and combinations of interventions. Yet it also points to the limits of detailed project data and indicators for producing such learning. IEG's structured literature review shows clear evidence of a strong link between reducing trade costs and increasing trade flows. A relatively neglected area of attention is the potential social consequences of Bank Group–supported trade facilitation reforms. Although there is reason to expect neutral or positive consequences in many cases, this is usually assumed and rarely measured. Chapter four now considers some factors explaning the World Bank Group's success, and the qualities of indicators measuring the outcomes of trade faciltiation.

---

[1] The evaluation used project ratings validated by the Independent Evaluation Group (IEG) for those projects with an estimated trade facilitation commitment greater than 50 percent of the project's total commitment value. Using that criterion, a total of 63 projects was included in the assessment. Of those, 23 World Bank projects had ratings available (10 policy support projects and 13 investment projects). Policy support interventions were rated as "achieved" or "mostly achieved" if relevant prior actions were not only met but also successfully implemented. An additional 10 International Finance Corporation (IFC) investment projects, 9 IFC advisory projects, and 6 Multilateral Investment Guarantee Agency guarantees had microevaluative ratings available, bringing the total sample of projects used in the analysis to 48 projects. IEG used ratings updated up to August 21, 2017. Of the 63 major projects, 40 did not have ratings available. Of these, 31 were still active as of that date and 9 were closed but were either additional financing (4 projects), had total commitments of under $5 million (1 project), were cancelled (1 project), or had not been rated by IEG as of April 4, 2018 (3 projects).

[2] Evidence of achievement was retrieved from Implementation, Completion and Results Review, Expanded Project Supervision Report, Project Completion Report, and Project Evaluation Report documents. Policy support interventions were rated as "achieved" or "mostly achieved" if relevant prior actions were not only met but also successfully implemented. Some of these projects were not primarily focused on trade facilitation but had trade facilitation interventions within them. Each intervention within a project was assigned a score of "achieved," "mostly achieved," "mostly not achieved," or "not achieved" based on whether the objective of the intervention was achieved or not according to IEG's validation.

[3] The total number of prior actions for the 67 projects is 731. Calculations are based on the Bank Group's Development Policy Actions Database as of April 18, 2017 and IEG's trade facilitation portfolio.

[4] Other indicators could not be used because they lacked sufficient country or time coverage to perform the analysis.

[5] IEG does not give priority to one indicator or the other, but takes them together as indicators of strong or weak evidence of performance.

[6] This test validates statistically a positive or negative change in outcome indicators of countries treated following the World Bank Group trade facilitation project support.

[7] While in the panel analysis comparator countries are simply included in the data set and identified by a dummy variable, in the difference-in-difference test comparator countries are identified through the propensity score match technique. See methodological appendix E for more details.

[8] IEG does not assign more importance to one test over the other, but considers them together as indicators of strong or not convincing evidence of performance.

9 The Logistics Performance Index defines these indicators as follows: The efficiency of customs and border management clearance ("Customs"); the ease of arranging competitively priced shipments ("Ease of arranging

shipments"); the competence and quality of logistics services—trucking, forwarding, and customs brokerage ("Quality of logistics services"); and the quality of trade and transport infrastructure ("Infrastructure")."

[10] IEG is not assigning importance to one indicator over another or to one method over another. As mentioned earlier, these indicators are external to project design and hence cannot be strictly considered as measuring closely the areas supported by the World Bank Group's interventions. Hence, they are used as proxies of the overall quality of the logistics and trade services regime in the country without form of priority.

[11] Caution is indicated in interpreting results owing to the small number of observations. For each area of support, the analysis focused on a small set of outcome indicators. In table 3.4, areas in blue are indicators excluded from the analysis.

[12] Project number P101322, FY08.

[13] Project number 564767, FY09.

[14] Project number 27364, FY09.

[15] Project number P098299, FY06.

[16] Governments in general want traded goods to be recorded and compliant with tax and regulatory requirements. Informality can describe trade that is not measured, not taxed, and/or not subject to regulatory procedures.

[17] The third main evaluative question in the approach paper was: "To what extent and in what ways have Bank Group trade facilitation interventions considered the achievement of social objectives of trade regulation such as the advancement of public health, safety, and the environment?"

[18] This refers to projects with an Implementation, Completion and Results Review, Project Completion Report, Expanded Project Supervision Report, or Project Evaluation Report.

[19] The six projects were 572687 -Western Balkans Trade Logistics project, WBTLP; 564767 - Colombia Trade Logistics; 577188 - Honduras Trade Logistics; 588147 - Armenia Investment Climate Reform project; 576907 -Rwanda Investment Climate Reform; 564407 - Armenia Regulatory Simplification Doing Business reform.

4

highlights

Factors Influencing Performance of Trade Facilitation Reforms

Success Factors

The evaluation identifies four factors that contribute to the effectiveness of trade facilitation reforms:

- Managing the political economy related to the incentives and capacity for collective action at the government or at the inter-government levels is key. When there is a strong government commitment, even uncooperative agencies can be led to the path of coordination and reform. Yet coordination complexities are more pronounced in countries with several levels of territorial organization and even greater in regional projects. The Bank Group has several instruments for addressing political economy issues and stimulating collective action, but is often not systematic in applying them.

- Even when political will is present, institutional capacity can be constraining. Building capacity can be a long-term process. In lower-

capacity countries, one-time technical assistance has proven to be insufficient.

- Adopting an approach that involves multiple and complementary interventions promotes effectiveness, except regarding border infrastructure.

- Complementary development of physical infrastructure (such as roads) and transport policy and regulations governing competition, pricing, and multimodal connectivity are important.

The World Bank Group demonstrates substantial knowledge leadership and convening power. Qualitative evidence suggests important intellectual contributions and a leading role in global partnerships on trade facilitation. Convening power is exercised both within countries and at the international level.

One core source of the World Bank Group's knowledge leadership lies in its generation of public goods, among them trade facilitation indicators. The analysis of trade facilitation indicators suggests that while all of them are useful, some client countries find World Bank Group's dual indicator sets either confusing or frustrating. A newer OECD indicator is more granular, but it is also limited in key dimensions.

This chapter examines the main factors that determine the performance of the trade facilitation reforms supported by the World Bank Group. Four key factors are identified as particularly important: (i) managing the political economy related to the incentives and capacity for coordinated action at government level or between government agencies; (ii) the implementing agencies' institutional capacity; (iii) adopting a systematic approach to address synergies and complementarities of reforms; and (iv) complementary development of general (as opposed to border) infrastructure. The analysis draws on multiple evaluation sources, including portfolio analysis (microevaluative evidence); econometric analysis; in-depth analysis of support for port infrastructure, ASYCUDA, (trade) single windows, standards; a structured literature review; and desk studies of indicators and ASA. The chapter identifies success factors and challenges for the World Bank Group's support to trade facilitation.

Box 4.1 | Microevaluative Lessons of Success (and Failure) in Trade Facilitation

A review of a sample of 72 interventions examined in project evaluations validated by the Independent Evaluation Group of the World Bank, the International Finacne Corporation, and the Multilateral Investment Guarantee Agency suggests that the top factors constraining development success include (in declining frequency):

- Client institutional capacity as seen in Mozambique (P106355), where procurement deficiencies and administrative court bottlenecks contributed to project delays.
- Political economy as seen in Bulgaria (P094018), where strong government commitment enabled the project implementation team within the Ministry of Finance to have authority over coordinating agencies, all relevant stakeholders were mobilized, and project objectives achieved.
- Monitoring and evaluation as observed in Dominica (P094869), where outcome indicators were so poorly specified that supervision missions were uncertain what to monitor to assess progress.
- Implementation planning as seen in a regional project in the East Africa Trade and Transport Facilitation Project (P079734), where a need was found to better map out steps, timing, and responsibilities and to reduce scale and complexity.
- Coordination and outreach as seen in the West and Central Africa Air Transport Safety project, where implementation arrangements needed modification to ensure greater coordination between the project implementing teams and the implementing agencies.

Source: Independent Evaluation Group portfolio analysis.

Political Economy and Coordination across Agencies

Trade facilitation reforms may generate potential winners and losers, and this may affect incentives to lead and to cooperate. Political economy, manifested as political leadership, support and coordination, and collaboration among agencies is thus key to successful trade facilitation reforms. Various rounds of the biennial aid monitoring exercise of the OECD-WTO (2011, 2015) confirm that political economy and coordination between government agencies are success factors. In Francophone Africa, for example, the frequent change of officials created political instability and jeopardized continuity of customs reforms (Montagnat-Rentier and Parent, 2012). A WTO (2015) review of more than 150 case studies from various national and internationally supported trade facilitation projects found that projects implemented successfully enjoyed strong and consistent political support. One way to achieve such political support is to enshrine trade facilitation objectives in national development plans. It can impose discipline for a process that requires commitment of time and resources over an extended period as opposed to quick fixes that may, in the long run, institutionalize bad practices (Montagnat-Rentier and Parent 2012). IEG's "deep dives" relating to single windows, ports, and standards each raise important coordination challenges requiring leadership and coordination to overcome. For example, an in-depth review of 17 major trade facilitation projects with border infrastructure components found political economy to be the leading success factor, followed closely by the related issues of coordination and governance.

In-depth analysis of single-window arrangements found that projects pose heavy demands on interagency cooperation and coordination that can require strong leadership to achieve. Beyond customs automation, national single windows involve a coordinated electronic information exchange that dramatically simplifies user interface with all government agencies concerned with trade. They include substantial legislative, procedural, technological, and bureaucratic reforms, not only in customs, but in all agencies involved in border management (see box 4.2). Commonly cited success factors identified in the literature for single windows include having a well-functioning coordinating body or steering committee, establishing adequate technical parameters and infrastructure, and adequate risk-management procedures. Success depends critically on extensive prior consultations with public and private stakeholders. The involvement of the private sector is important in ensuring that commercial instruments, such as electronic payment arrangements with commercial banks, are in place in time for the rollout of the single window (Nizeyimana and De Wulf 2016).

Political support was also a relevant factor in the evaluation's country case studies. In Peru, for instance, leadership for the implementation of the single window (supported by a 2006 World Bank policy operation) had been the subject of a dispute between two powerful government agencies. The dispute delayed implementation and resulted in a suboptimal outcome: one of the agencies assumed leadership over the single window and the other agency developed its own single window within its functional area.

When there is strong government commitment, even uncooperative agencies can be led to the path of coordination and reform. In Benin, for example, when the president took a direct interest in trade

Box 4.2 | Global Experience with Single Windows

A UN synthesis of single-window experience found that as of 2011, 49 countries had introduced a trade single window of which only 20 had linked all relevant agencies. It derived lessons of experience, including the following:

- i. **Different forms of single windows:** Depending on their readiness and priorities, countries have implemented very different forms of single windows with various levels of interagency collaboration and automation.
- ii. **Evolutionary and staged development:** Because the change management is complex, single window development typically follows a gradual evolutionary and staged pathway.
- iii. **Impact of single windows in different forms:** National single windows were successful in developing and transition economies, bringing simplified and automated business procedures. They introduced change and brought about collaboration between government agencies and the private sector. In many advanced trading economies, such as China, the European Union, and the United States, other forms were used.
- iv. **Cross-border information exchange:** Regional single windows remain a challenge, requiring cross-country data harmonization, a common legal framework, and a sustainable business model. Further international collaboration to develop common interconnectivity strategies, policies, data harmonization, and standards will be required for them to progress.

Source: Tsen 2011.

facilitation reforms and maintained his focus on it, progress towards a single window quickly took effect. In each country case study, there were signs that the agency coordination required for a single window and resulting reduction in agency "sovereignty" and prerogatives created obstacles that could be overcome only with strong political leadership and pressure. Conversely, in the absence of strong leadership, reforms languished. Continuity matters, too. In several countries where the World Bank Group provided support to trade facilitation, changes in regime diverted or derailed ongoing reform initiatives. For example, in Benin, a change in presidential administration led to sudden course changes in ongoing reforms, such as the trade single-window concession.

Complexities of interagency coordination are more pronounced in large countries with several levels of territorial organization. The First Competitiveness DPL in Mexico, for example, supported

interinstitutional arrangements such as a cooperation agreement between 15 states and an interinstitutional regulatory accounting working group (World Bank 2009b). Another example is Indonesia's Second Connectivity DPL, where the multiplicity of institutions involved and the complexity of connectivity slowed down project implementation. A lesson from the Indonesia operation was that "a wide cross-cutting DPL does not automatically elicit the coordination efforts that engaging multiple agencies requires, so that inadequate coordination may impede the achievements sought" (World Bank 2015a, 9).

The challenges of coordination and collaboration among government agencies at the country level are mirrored (or even magnified) between countries in regional projects. In about a third of Bank Group projects involving ports, for example, interagency and intergovernmental coordination were key determinants of performance. In the West and Central Africa Air Transport Safety and Security Project, for example, coordination challenges led to an almost two-year delay in project implementation. Similarly, in Croatia, a bulk cargo terminal (part of the Trade and Transport Integration project) was completed six years behind schedule. It was not yet operational at project closure, owing to the lack of coordination and cooperation among corridor participants. Projects that depend on regional cooperation are in general challenging and require special attention to facilitate a sustained dialogue among stakeholders at project design stage and through implementation.

Projects that require regional coordination are much more complex; consequently, efforts to create regional single windows have not yet borne much fruit. Initiatives within the European Union (EU) and Association of Southeast Asian Nations (ASEAN) countries, for example, have encountered considerable hurdles to cross-country harmonization that have not yet been overcome yet (see box 4.2). More broadly, regional trade facilitation initiatives often succumb to weak coordination or differing political agendas of participating countries. For example, Nigeria dropped out of the Abidjan-Lagos Trade and Transport Facilitation Project because the joint border posts that were built never operated jointly; neighboring governments did not integrate their operations and procedures.

Most Bank Group trade facilitation projects focus more on national issues such as cross-agency coordination and building consensus (across government agencies but also with the private sector) than on regional or cross-country issues. This can be partly explained by the World Bank's country engagement model. In two country case studies (Armenia and Benin), the evaluation found that a leading constraint to trade lay in a neighboring country, yet those issues had not been part of the neighboring countries' policy dialogue, owing to the Bank Group's focus on individual country priorities.

External commitments, such as the prospect of WTO or EU membership or association, are part of the political economy of trade reforms and can motivate collective action and interagency coordination and crystalize political resolve. In Lao PDR, for example, the desire for WTO accession drove the political commitment to implement trade facilitation reforms. The policy objective created the right incentives including collaboration across agencies and enforcement of decisions. An example was the successful implementation of a trade portal that provided information on all agencies and formalities involved in import and export transactions. Before the trade portal was

operational, Lao PDR's complicated and archaic business regulations created a substantial barrier to trade, requiring the modernization and streamlining of regulations. Lao PDR introduced the first trade portal in a developing country, which became a good practice model for several other countries. In addition to strong technical design and an ongoing awareness campaign, two critical success factors were (i) coordination: a trade facilitation secretariat brought people to the table, with each ministry represented by a focal point; and (ii) enforcement: the prime minister issued a decree mandating an agency to collaborate, share information, and respond to queries.

Prospects for association with the EU have played a powerful role in motivating countries in Eastern Europe to harmonize with international standards. In Ukraine, for example, IFC's Advisory Services projects identified a challenging policy objective in the "alignment of national regulations with EU rules to secure access for domestic producers which was not completed." Similarly, World Bank projects helped Moldova's move "towards full harmonization of national product standards with EU standards," including the removal of requirement for Moldovan exporters to the EU to comply with national standards in addition to EU standards." As of 2013, Moldova's Ministry of Economy data showed about 8,000 international and EU standards were adopted as national standards. While substantial trade facilitation reforms typically precede WTO accession, a significant reform agenda remains after accession. The drive for reforms often slows down after membership is obtained, and may require another source of motivation to sustain the pace.

The Bank Group has several instruments to address political economy issues and stimulate collective action, such as stakeholder assessments (and mapping), diagnostic tools, and stakeholder engagement (for example, public-private dialogue) through its convening (honest broker) role. However, stakeholder assessments are not routinely used in designing operations in support of trade facilitation reform efforts. The Trade and Competitiveness Global Practice issued a "toolkit" to guide stakeholder mapping in public-private dialogue that uses an example relating to trade logistics in Togo, but there is no indication of its systematic application (World Bank 2016d). Often substantial work is being done to assess stakeholder interests and incentives but in less structured and formal ways. For example, in Armenia, both IFC and the World Bank had separately engaged public and private sector stakeholders in discussions of trade facilitation reform, but not under a common framework. There is some recent evidence of scaled up approaches to some of these challenges. Ongoing work under the multidonor Trade Facilitation Support Program executed by the World Bank is explicitly focused on "strengthening inter-agency coordination and enhancing public sector-private sector dialogue on trade facilitation matters through the establishment of National Trade Facilitation Committees (Gonzalez 2017).

Institutional Capacity

Even when political will is present, limited institutional capacity can hinder implementation. Institutional capacity is frequently identified as an important performance factor for the World Bank Group's Trade Facilitation operations. Mismanagement, poor internal administration, and poor training often limit success. In its deep dive on ports, IEG found institutional capacity to be a success factor cited in 62 percent of projects evaluated. In the literature review for single windows,

bureaucratic and procedural reforms were emphasized as a prerequisite for success. The capacity of non-customs agencies was of critical concern in adapting multiagency systems and platforms. In the standards deep dive, the portfolio review showed institutional capacity was the second most commonly cited factor of success or failure.

The 2018 Project Performance Assessment Report (PPAR) for Cambodia's Trade Facilitation and Competitiveness Project (associated with this evaluation) derived the lesson that prior to submitting a project, the Bank Group should conduct "a realistic assessment of the government's capacity to implement complex components (such as a national single window) and identif[y] challenges associated with the implementation of project components (such as private provision of infrastructure). Lack of implementation readiness can lead to significant delays and cancellation of components, and undermine the project's performance." In the East Africa Trade and Transport Facilitation Project, for example, all four governments involved (Kenya, Rwanda, Tanzania, Uganda) were characterized as suffering from low institutional capacity, especially in procurement. This led to a generally slow pace in finalizing and managing contracts both for infrastructure works and consultancy services.[1] Similarly, in Vietnam, government's slow pace in approving project-related requests led to delays and increased the cost. Finally, the government in Bangladesh passed a new rule to allow bonded (duty-free) facility to non-readymade garment exports. However, customs officials did not understand the rationale for introducing this facility, and only three export products took advantage of it. Regression tests (appendix D) on the World Bank Group portfolio confirm the importance of quality of regulatory environment, including the capacity to enforce and implement regulations.

It is often assumed that technology and automation can substitute for weaknesses in institutional capacity and political will. However, the evaluation's literature review and case studies show that introducing automation is far from smooth; substantial learning and capacity building are required, and resistance may be encountered. Furthermore, benefits from automation are sometimes short-lived, as in Cameroon, for example, when traders and officials learned to exploit system loopholes (Cantens, Raballand, and Bilangna 2010).

Building institutional capacity can be a long-term and arduous process, especially when it involves culture change in relevant public agencies. For instance, the evaluation visited client countries that were generally satisfied with ASYCUDA. However, they faced a long-term process of implementing and upgrading it (box 4.3), and bringing staff and organizational capacity up to speed to realize its benefits.

In lower-capacity countries, stand-alone technical assistance (typical of IFC Advisory Services) has proven to be insufficient. Armenia, Benin, and Lao PDR, for example, had benefited from multiple or longer-term engagements, which seemed to work better for comprehensive automation and building up skills and institutional capacity. Unfinished business of one operation was sometimes passed on to the next (for example, in Benin, upgrading customs procedures, skills, and technology was a continuing process shared over a series of World Bank and IFC projects). In the context of ASYCUDA, though many reforms were institutionally demanding, there was generally little project

Box 4.3 | ASYCUDA in Lao People's Democratic Republic

The World Bank supported Lao PDR's adoption of the Automated System for Customs Data (ASYCUDA) under the 2008 Customs and Trade Facilitation Project (P101750) and its 2013 Supplemental Financing (P144992) through which the Bank Group supported ASYCUDA installation, modification, training, and capacity building over an extended period. In December 2011, a prototype for the ASCYUDA system was introduced that represented a major shift from a manual process to an automated customs system. The prototype was tested at a pilot site and validated in April 2012. It was subsequently rolled out to 24 border checkpoints by 2017 that accounted for 98 percent of formal trade in Lao PDR. As of 2017, the system served up to 300,000 import and export customs transactions a year. Sustainability of the system was supported by establishing a user fee and placement of the income from the fee into a dedicated escrow account supporting the maintenance and further development of the system.

Source: Independent Evaluation Group Lao PDR country case study.

emphasis on building institutional capacity. Among trade facilitation ASA, ASYCUDA predominated in lower-income countries, and regionally in Africa, where institutional capacity is especially low. In Grenada, customs officials noted that although IFC's technical assistance on ASYCUDA was pertinent, their greatest need was assistance on "cultural change" in customs.[2]

Reform Complementarities and the World Bank Group's Approach

Different areas of trade facilitation reforms can create reform synergies. Automation can support the effectiveness of trade logistics, for example. Institutional capacity is a necessary condition for successful project implementation. Modernizing and streamlining rules and regulations can minimize transaction costs and enhance the effects of reforms in other policy areas. Complementarity of reforms implies the need for approaches that combine simultaneous or sequential trade facilitation interventions in several areas and the use of various World Bank Group instruments.

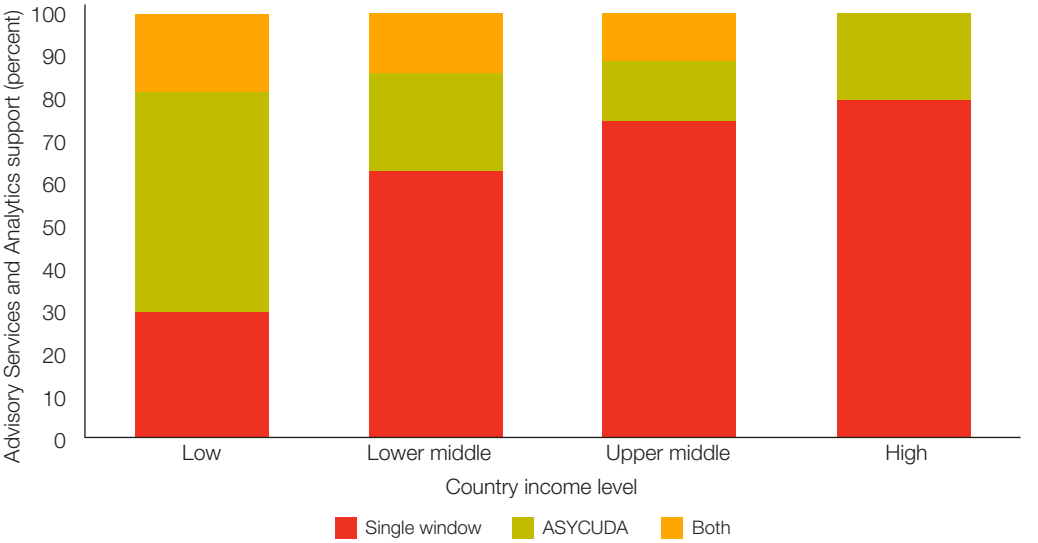
National single windows (NSWs), with their strong requirements to harmonize information exchange and procedures among agencies, illustrate well the complementarity of various reform efforts and the challenges associated with a successful implementation. The World Bank identifies eight "critical areas" for the introduction of an NSW, any of which may become an obstacle for successful implementation: 1) the legal and regulatory framework for trade; 2) the e-governance model for the NSW; 3) The e-operational model for the NSW; 4) the e-fee structure for the NSW; 5) service-level agreements for the NSW; 6) business process reengineering and continuous change management;

7) organizational and human resource ICT management in border management agencies; and 8) functional and technical architecture for the NSW (McLinden, 2011). The evaluation found that single-window reform is often combined or sequenced with customs automation, a more limited reform. The portfolio analysis suggests that the World Bank has placed more focus on ASYCUDA, which emphasizes the customs agency, in lower-income countries, which generally have lower institutional capacity. In middle-income and higher-income countries, support for the single window predominates (figure 4.1).

Using the above client country categorization, intensity of support as measured by multiple interventions is associated with higher positive outcomes in at least three of four trade facilitation support areas (agency support, border function, and technology and rules, but less for border infrastructure) (table 4.1). These results remain consistent across different indicators and methods, but not across all four intervention areas. Specifically, when supporting trade facilitation through infrastructure interventions, some evidence seems to indicate that better outcomes (as measured by Doing Business and Logistics Performance Index indicators) are associated with support that is limited to one project while, for the intervention in the areas of border functions and technology and rules, outcomes are stronger when support is more intense (table 4.1). Finally, support to border agencies shows a weak positive association with intensity of support (table 4.1).

The experience of Mauritius illustrates the value of a programmatic Bank Group approach to trade facilitation reform. The World Bank approved a programmatic series of two DPLs in 2012 and 2013, streamlining trade regulations and processes (that is, rules).[3] The first DPL supported a joint public-private sector task force with the mandate of streamlining trade regulations, including the elimination of unnecessary export permits on several products (prior action of DPL 2). The DPLs generated

FIGURE 4.1 | World Bank Advisory Services and Analytics Support for ASYCUDA and Single Windows, by Country Income



Source: Independent Evaluation Group Advisory Services and Analytics support deep dive.

TABLE 4.1 | Econometric Tests on Outcomes of World Bank Group Trade Facilitation Support, by "Intensity" of Support

	All Interventions	Agency Support	Border Function and Technology	Infrastructure	Rules
Difference in difference	✓✓✓✓✓X	✓	✓ X	X X X	
Panel	✓XX	✓	✓✓✓✓	✓✓	✓✓✓

Source: IEG calculations.

Note: Checkmark indicates significant positive association of one indicator with presence of more than one intervention per country, X indicates significant positive association of one indicator with presence of only one intervention per country, blank indicates no significant association. Caution: Sample of treated countries in each cell is small. Results for difference in difference are based on a small number of observations of treated countries. Regression results are reported in appendix E, tables E.48–E.73.

significant momentum in streamlining trade regulations (World Bank 2015c, 5). The DPLs also facilitated the establishment of a single window, initially with the approval of a detailed action plan to develop a trade portal (DPL 1), followed by the adoption of a functional model for the single window (DPL 2).

The World Bank's involvement in St. Lucia contrasts with its experience in Mauritius. A stand-alone Social and Economic Development DPL in St. Lucia in 2010 experienced a disconnect between the broad scope and time frame for implementation pursued and the brief time frame of disbursement.[4] This disconnect resulted in a failure to launch the ASYCUDA World software (World Bank 2012, 16). As indicated earlier, for lower-capacity countries, stand-alone technical assistance (typical of IFC Advisory Services) is not enough to sustainably build capacity. Multiple or longer-term engagements appear to work better.

Econometric analysis also suggests that countries achieve better outcomes when they are supported through a combination of lending instruments and technical assistance. One analysis compared the performance of countries where the Bank Group provided support with lending and advisory services with the performance of other countries where the World Bank supported with only one instrument. In a first test, groups of countries receiving both investment lending and policy operations were compared with those receiving only one or the other.[5] Countries supported with both types of instruments show stronger positive outcomes in reduced time to export and the LPI rating for efficiency of customs. Further, the analysis compared the performance of countries supported by IFC Advisory Services and a development policy operation with countries not supported with this combination. The results also yielded some evidence of more positive outcomes (reduced Doing Business time to import and to export) for countries that combine the two instruments (appendix E).

These econometric results align with the qualitative evidence collected through the evaluation's case studies. In Lao PDR, for example, aware of the country's low institutional capacity, the World Bank's trade facilitation support was matched from the beginning with technical assistance and

was managed in the field office. By contrast, in Peru, stakeholders interviewed perceived the World Bank to be too "hands-off" in recent years, supporting reform only through development policy operations. Thus, for example, the drive to introduce a single window was not matched by the Bank Group's technical support, despite low institutional capacity. Other donor initiatives, including the United States–ASEAN Connectivity through Trade and Investment (U.S.-ACTI) project, later provided technical support, but it was not coordinated with the World Bank's support.

Econometric analysis also indicates better outcomes are associated with some types of trade facilitation support when it is accompanied by (non-trade facilitation) logistics or trade policy support. Chapter 2 showed that many trade facilitation projects or interventions in the Bank Group's portfolio are implemented in countries with other projects or interventions supporting logistics (roads, rail, etc.) or trade policy (tariffs and quotas). IEG analyzed the extent to which such combinations of support (trade facilitation support plus separate projects on trade logistics or trade policy), were associated with better outcome indicators than trade facilitation support alone. Overall, interventions on rules appear more effective when combined with either trade logistics or trade policy.

This was the case, for example, in Guatemala,[6] where a DPL supporting participation in the Central America Free Trade Agreement (DR-CAFTA) also included the simplification and harmonization of procedures to trade with El Salvador and Honduras by establishing one-stop offices (single windows) and other measures to reduce customs processing times and costs. The combined effect was a larger-than-expected increase in nontraditional exports.[7]

By contrast, the econometric analysis (table 4.2) suggests a lack of complementarity (weak interdependence) between (i) reforms to border functions and logistics support, (ii) border infrastructure and trade policy support, and (iii) agency and trade policy support. For

TABLE 4.2 | Panel Tests on Outcome Indicators of World Bank Group Trade Facilitation Support, by Combination of Trade Facilitation Support with Logistics and Policy

	Outcome Better with Trade Facilitation Alone or Jointly with Logistics Project?	Outcome Better with Trade Facilitation Alone or Jointly with Trade Policy Project?
Agency support	No evidence or inconclusive	Alone
Border function and technology	Alone	Mixed results, inconclusive
Border infrastructure	Jointly	Alone
Rules	Jointly	Jointly

Source: Independent Evaluation Group calculations based on portfolio data and Doing Business and Logistics Performance Index indicators of outcomes. Reported results based on relationships that were statistically significant (10% level) and in the expected direction.

Note: Regression results are reported in annex E, tables E.74–E.82.

Caution: Sample of treated countries in each cell is small.

example, an IFC investment project in the P.T. Jakarta International Container Terminal in Indonesia (27117, FY10) concentrated on developing port infrastructure including new yards, roads, cranes, and gates. The stand-alone project, rated "successful," achieved a substantial increase in capacity, allowing for a significant increase in trade flows through the port. Conversely, the East Africa Trade and Transport Facility project (P079734, FY06) attempted to address all four trade facilitation areas of intervention (border agencies, border operations, rules, and border infrastructure). Although there were important outputs, such as simplified documentation, coupled with the use of modern technologies and joint offices and inspections at borders and ports, the ICRR found little direct evidence of enhanced customs efficiency.

Complementary Development of Physical Infrastructure and Transport Policy

As suggested above, the quality of physical (such as roads and transport) and technological infrastructure is a crucial factor for achieving outcomes in trade facilitation support. The academic literature and portfolio analysis support the conclusion that the state of physical and technological infrastructure is related to the success of trade facilitation reforms. Indicators of overall quality of infrastructure in several studies are robustly correlated with trade flows (Francois and Manchin 2013; Portugal-Perez and Wilson 2012; Clark, Dollar, and Micco 2004). Similarly, Portugal-Perez and Wilson (2012) distinguish trade facilitation measures between "hard" (physical infrastructure) and "soft," and find that hard and soft trade facilitation aspects reinforce each other in improving export flows.

Transportation costs, which influence trade competitiveness, are a function not only of the quality of infrastructure, but also of transport policy and regulations. A literature survey on aid for trade highlights the importance of investment in infrastructure that is underpinned by sensible regulations and credible competition policies for transport services (Cadot et al. 2014, Clark, Dollar, and Micco 2004). Trucking regulations in Africa illustrate the role of policy. Although transport costs in African countries are generally not higher than those in other developing countries, transport prices are significantly higher because of protective trucking regulations. The deregulation of the trucking sector in 1994 in Rwanda, for example, resulted in a drop of 75 percent in transport prices (Teravaninthorn and Raballand 2008).

Evidence from World Bank Group trade facilitation operations corroborates the key role played by physical infrastructure. Econometric results from the Bank Group's portfolio[8] show that quality of infrastructure exhibits a positive association with some outcome indicators, including time for imports and quality of logistics services. Lao PDR's experience underscores the importance of physical infrastructure. For example, some interview respondents estimated logistics costs to be 30–40 percent higher because of the absence of a dry port, while others pointed out that they need to pay for a truck round trip cost (at approximately $3,000) to transport goods valued at about $500. Similarly, in the main Peruvian port of Callao (which is supported by an IFC investment), port efficiency is substantially constrained by traffic congestion around the

port, which serves most of Peruvian exports. In addition, regression analysis showed a positive interaction between indicators of infrastructure quality and trade facilitation interventions (appendix E).

Multimodal infrastructure coordination is also identified as important to trade logistics. Lack of a multimodal strategy for transportation in Senegal, for example, substantially impeded the capacity of the Port of Dakar to realize its potential as a regional trade hub. Similarly, lack of integrated rail and road links is one of the challenges affecting the performance of Port Mombasa in Kenya. Recognizing this problem, Gonzalez, Guasch, Serebrisky (2008) suggested that countries need to adopt a comprehensive multimodality law allowing the use of a single bill of lading and providing insurance across modes.

Bank Group Knowledge Leadership and Convening Power

During the evaluation, IEG learned about the Bank Group's substantial knowledge leadership and convening power. Some of this was difficult to evaluate, as the evidence was largely qualitative. Regarding the World Bank Group's knowledge leadership, as one indication of the importance of the World Bank's research, a recent Overseas Development Institute assessment of evidence on trade facilitation could identify only 14 "high-quality studies" evidencing the impact of trade facilitation reforms on trade performance. Of these, seven were authored or co-authored by World Bank researchers (Basnett and Massa 2015). In its own structured literature review, IEG did not quantify the number of citations of articles by World Bank authors or co-authors, but notes the multiple key articles and books that emerged from the World Bank Group during the evaluation period (see appendix C on the structured literature review and bibliography).

Interviews with international organizations and international experts indicated that the World Bank was a central partner to the WTO and other global bodies in underpinning progress toward the Trade Facilitation Agreement and other global trade discussions. The World Bank's technical support and convening power were both credited with helping advance the cause of the TFA. Its ability to work on the ground simultaneously with many developing country governments was credited with accelerating agreement and, currently, with facilitating diagnostic and implementation work. Along the way, the Bank Group has drawn on its convening power to host or cohost events engaging country and international stakeholders to advance the cause of trade facilitation.

Expert interviews suggest that the World Bank Group was catalytic in mobilizing donors to create the Trade Facilitation Support Program (TFSP) which it now administers. This is now the "central vehicle" for the Bank Group's support of the TFA and has provided a further platform for its convening and knowledge-sharing roles (Gain 2017). For example, the Bank Group and the WTO launched a 2017 competition, inviting WTO member countries to share "Smart Lessons" on implementing trade facilitation reforms. Finalists presented at the World Trade Organization's Sixth

Global Review of Aid for Trade and the lessons are being disseminated through the WTO and the World Bank Group.

The World Bank Group often exercises a "convening role" at the national level across institutions, donors, and the private sector. In Armenia, for example, an IFC AS project coordinated across public and private sectors, incorporating private sector feedback into IFC policy advice and helping the government to align its reforms with the needs of private businesses. In Benin, the ambitious Abidjan-Lagos Trade and Transit Corridor Project brought key stakeholders together in a National Facilitation Committee and regionally catalyzed coordination through a committee of the Economic Community of West African States (ECOWAS). In its field work, the evaluation found that the Bank Group was often credited with bringing public and private stakeholders together in consultative forums.

One core source of the World Bank Group's knowledge leadership is its generation of public goods, among them trade facilitation indicators. The World Bank Group and other organizations' diagnostic tools and indicators, including Doing Business and the Logistics Performance Index, can motivate action through benchmarking and international comparisons with peers, and by providing an evidence-based consensus for reforms. Doing Business declares its explicitly intention to offer "measurable benchmarks for reforms." The Logistics Performance Index declares its intention to be "an interactive benchmarking tool … to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance."[9] Such benchmarking combined with transparency may create a race-to-the-top environment where countries compete to improve their indicator rankings. Indicators can also contribute to country and global knowledge, research, design of reforms, and to the monitoring and evaluation of reform outcomes.

Globally, there are several competing indicators of national trade facilitation conditions, each with its own merits and limitations. The literature finds a general correlation between such indicators and trade facilitation reforms. A WTO review found that the trade facilitation metrics of the World Bank's Logistics Performance Index, its "Trading Across Borders" measures in the Doing Business indicators, the OECD's Trade Facilitation Indicators, and the World Economic Forum's Enabling Trade Indicators exhibit statistically significant correlations with each other (WTO 2015). A study by Korinek and Sourdin (2011) found that using the Enabling Trade Indicators, the Logistics Performance Index, and components of the Doing Business indicators leads to consistent conclusions on the importance of trade facilitation in increasing trade flows.

Through its indicators, the Bank Group has often enhanced its role in conversations about trade facilitation. Interviews both with international experts and local counterparts suggest that this work has raised the standing of the World Bank Group. Case studies confirmed the prominent role the Bank Group's indicators play in clients' development goals and targets. OECD is a more recent player in developing its own Trade Facilitation Indicators. Each indicator set has different coverage and properties that affect their ability to motivate and measure reforms (see table 4.3). The Doing Business indicator set, for example, is the best known and often finds its way into the World Bank

TABLE 4.3 | Trade Facilitation Indicators and Their Relative Merits

Indicator	Advantages	Disadvantages
Doing Business Trading Across Borders *Source:* Survey of freight forwards and customs and ports authorities.	Widely known. Highly motivating. Adopted widely by governments as a trade facilitation reform goal and by Bank Group staff as reform benchmarks or targets. Concrete and actionable– government officials understand what specific reform actions will influence indicator. Updated in 2016, with "number of documents" measure dropped.	Does not capture all substantive trade facilitation reforms. Focused primarily on simplification of rules and procedures. Changes in methodology created discontinuities in countries' performance in some cases. Does not always measure the degree of implementation nationally. Picks up reforms when introduced at main port of largest city. Hugely sensitive to changes affecting the hypothetical case.
Logistics Performance Index *Source:* Survey of professionals in multinational freight forwarding companies and express carriers who score sub-components.	Broad coverage Some of the components track more closely reforms supported by the World Bank and as such, may provide a more useful reform metric. Some traction as a reform benchmark and motivator, although it is far less known and used than Doing Business.	Fewer potential users understand the basis of its ratings. As a categorical and qualitative rating, it does not map directly to concrete reform steps or measures. Some regard its qualitative ratings as highly subjective or even biased. Less frequently updated.
OECD Trade Facilitation Indicators Survey of government and private sector stakeholders mapped to a multiple scoring system.	More detailed and granular than Doing Business and Logistics Performance Index. Map directly to Trade Facilitation Agreement reforms, helping policy makers in monitoring and assessing. Fact-based – not reliant on perception	Lack of comparable outcome measures. Lack of coverage of trade logistics/ infrastructure. Relatively new so lacking a time series . Less known and its format discourages country ranking which can be motivating. Depends on government self-reporting.

Sources: Independent Evaluation Group desk study, case studies, and expert interviews.

Note: OECD = Organisation for Economic Co-operation and Development.

Group's project targets and even into national reform policies. Yet this evaluation found that Doing Business is a less granular metric of individual reform efforts than some alternatives. Some LPI components appear to track reforms well, but are less well known, less understood, and less mappable to specific reform solutions. OECD's TFI is highly granular and mappable to reforms, but is less known and narrower in scope than Doing Business.[10]

The World Bank's use of indicators at the project level is inconsistent. It relies most often on Doing Business indicators (34 percent of projects in an IEG sample of 50) and occasionally on the

LPI (4 percent). Some of its indicators are customized to projects, and time-release studies are often used internally. In the sample, 20 percent of trade facilitation projects used no quantitative indicators at all.

In its operations in support of trade facilitation, World Bank ASA plays a strong role in coalescing political support and focusing the design of interventions. Originating well before the evaluation period, by 2010 the World Bank was promoting "Trade and Transport Facilitation Assessment" (TTFA) as a "practical tool to identify the obstacles to the fluidity of trade supply chains."[11] However, only a limited number of TTFAs were carried out.[12] Similarly, Diagnostic Trade Integration Studies (DTIS) executed by the World Bank according to a framework agreed with the WTO examines internal and external constraints to trade-based integration with global supply chains and markets.[13] The evaluation found that DTIS played a key role in building consensus and shaping the trade facilitation reform agenda in three of four case study countries (Armenia, Benin, and Lao PDR). In all, IEG identified 35 World Bank DTIS or updates carried out in 28 countries. The evaluation also found that many different ASA instruments informed the Bank Group on trade facilitation, including Investment Climate Assessments and Country Economic Memoranda. Though no systematic, validated evaluative system governs ASA, IEG found that ASA could be related to positive outcomes. Specifically, based on a small sample of nine countries, the evaluation found that countries with World Bank ASA on ASYCUDA and single windows experienced a sharper rate of improvement in the Logistics Performance Index indicator "Efficiency of Customs Clearance" than did countries without such ASA. Finally, in recent years, the Bank Group has "facilitated" in numerous governments' self-assessments mandated under the Trade Facilitation Agreement.[14]

Summary and Conclusion

In this chapter, IEG examined factors influencing the performance of trade facilitation reforms supported by the Bank Group. Four key factors were identified as particularly important: (i) managing the political economy related to the incentives and capacity for coordinated action at the government or at the intergovernmental levels; (ii) the institutional capacity of implementing agencies; (iii) adopting a systematic approach to address synergies and complementarities of reforms; and (iv) the complementary development of general infrastructure and policy.

There is a high degree of complementarity between the various areas of trade facilitation. Complementarity of reforms implies the need for systematic approaches combining simultaneously, or sequentially, interventions in several areas and various World Bank Group instruments. Many trade facilitation reforms involve different stakeholders, including government agencies and private actors; thus, overall success in trade facilitation depends on an effective coordination and cooperation between different stakeholders, an area that the Bank Group can influence and motivate with instruments such as diagnostics, stakeholder analysis, and use of its convening power. Institutional capacity is a necessary condition for successful implementation

of complex projects, but is difficult to achieve, especially when it involves culture change in implementing agencies. Strong and sustained political commitment is key to the successful design and implementation of trade facilitation reforms.

The World Bank's knowledge leadership and convening roles, while difficult to quantify, are clear in the literature, in interviews, and in case studies. The World Bank's leading role in generating trade facilitation indicators makes it important to produce an integrated set of indicators that effectively benchmark and track reform progress.

---

1 Among the lessons cited in the Implementation Completion and Results Report Review (#0003723, September 27, 2016) are the following: "Whilst a regional project almost by definition will be complex, project designers need be realistic in terms of scope, timeline and outcomes. … The financing of preparatory work for regional activities and cross-border infrastructure itself remains problematic for a sovereign lender. … The [World] Bank should have tried to promote more serious joint effort by the countries themselves to figure out the best way to develop multi-national solutions in some of the key areas – and to limit its own initial financing to projects where the path ahead was clearer or a pilot project."

2 Independent Evaluation Group (IEG), Grenada Case Study in Cluster Country Program Evaluation on Small States: Regional Program Evaluation of the Organisation of Eastern Caribbean States -- Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. World Bank, Washington, DC.

3 DPL 1 - P125694; DPL 2 – P128140.

4 Under its "Improving Public Sector Governance and Economic Management" pillar, the development policy operation called for implementation of Automated System for Customs Data (ASYCUDA) World over a three-year period.

5 IEG distinguished three groups of countries: (i) those supported through investment lending only, (ii) those through policy operations alone, and (iii) those supported by both. This test was performed only for World Bank–supported countries.

6 Project number P094897, fiscal year (FY)07. This was the second of a series of three development policy loans for Broad-Based Growth.

7 The indicator increased by 44 percent from 2004 until the end of the project, against a target of 9 percent. However, this choice of indicator was evaluated by IEG as having limits to accurately measure results.

8 See appendix E for details.

9 Doing Business and Logistics Performance Index websites: www.doingbusiness.org and https://lpi.worldbank.org/

10 Indicator work of non-World Bank Group organizations is outside the scope of the current evaluation.

11 See World Bank 2010.

[12] IEG was unable to find an authoritative, up-to-date list of all such products.

[13] DTIS was sometimes represented as a component of a Trade and Transport Facilitation Assessment.

[14] http://www.tfafacility.org/sites/default/files/case-studies/needs_assessments_list_0.pdf

5

Conclusions and Recommendations

This report has evaluated the World Bank Group support for trade facilitation, the focus of growing international reform efforts as an instrument to foster economic development. The evaluation examined the link between trade facilitation, efficiency gains, and lower trade transaction costs, evident both in the relevant literature and in the evaluative evidence from the Bank Group's portfolio of trade facilitation operations. The link between reduced trade costs and enhanced trade flows is well-evidenced in the literature. The Bank Group's experience also provides corroborating evidence of the link between trade and economic growth and (with appropriate complementary policies) with poverty reduction and shared prosperity.[1]

Over the 12-year evaluation period, the World Bank Group has played a leading role in promoting trade facilitation reforms at a global stage. Bank Group leadership manifests itself through:

i. The scope and magnitude of its trade facilitation interventions—893 interventions by the World Bank, IFC, and MIGA, worth nearly $8 billion. One-third of these were in Sub-Saharan Africa and they tended to target countries with the greatest trade facilitation bottlenecks.

ii. Its contribution to lowering transaction costs in international trade through interventions spanning the spectrum of trade facilitation—from ports to harmonization of standards to automation and simplification of rules and regulations.

iii. Thought leadership and convening power, design and implementation of trade facilitation indicators, analytical work, research, and international partnerships that together have contributed to positive and dynamic reforms globally.

Overall, the evaluative evidence suggests that the above achievements have contributed to the expansion of trade flows and associated broader economic benefits. The Bank Group has effectively used its diverse instruments to promote the trade facilitation agenda, and its three constituent institutions

have contributed to it in ways consistent with their respective comparative advantages and business models.

Despite the progress achieved, it remains a challenge to implement and sustain trade facilitation reforms. Lessons of experience inform how to achieve success—and avoid failure—in each area of trade facilitation reform:

- There is strong evidence of an association between Bank Group interventions and general progress in reducing trade transaction costs. However, attributing progress to the Bank Group's interventions requires more rigor, with its additionality far more evident in some areas, through some instruments, and in some combinations, than in others. IEG also found distinct complementarities between certain combinations of interventions, with implications for packaging or sequencing reforms.
- Many reform efforts fail, particularly in areas such as national and regional single windows and border infrastructure where political economy challenges prevail; for example, changes in trade regimes, shifts in policies, or disparate agendas among agencies or relevant stakeholders.
- In simplifying rules and procedures, the Bank Group's emphasis during the evaluation period has been on reducing costs with relatively little attention given to protecting or monitoring the public policy objectives of regulations.
- Another challenging area is that of policy reform indicators. Although World Bank Group trade facilitation indicators have motivated reforms, they do not always capture important reforms and can be weak in tracking reform implementation.
- Finally, while all three World Bank Group institutions have contributed broadly in line with their comparative advantages, MIGA's involvement is limited, and IFC investment has been largely focused on border infrastructure in upper-middle-income countries. In the era of Maximizing Finance for Development (MFD), the limited past synergy merits attention.

A large future reform agenda remains in trade facilitation. The international commitment to the WTO Trade Facilitation Agreement (TFA) enhances the opportunity for impact. The substantial program in country diagnostics and technical assistance supported by a multidonor trust fund in support of the TFA provides an entrée to broad engagement. It is hoped that internal organizational changes in the World Bank may improve coordination between trade facilitation experts and country economists, better aligning strategies and portfolio composition. Based on the evidence gathered and analysis carried out by this evaluation, there are four areas for enhancing the Bank Group's effectiveness in support of trade facilitation reforms: (i) a systematic approach, (ii) the political economy of trade facilitation reforms, (iii) the social policy objectives of trade regulation, and (iv) trade facilitation indicators.

Systematic Approach

This evaluation found benefits from more than one type of intervention in more than one area—because several combinations (such as lending operations with advisory services) and areas of intervention (such as agency support, border function, and technology and rules) are mutually

complementary. In addition, support over time emerged as important, as some reforms exceeded the lifespan of individual engagements. This, in turn, indicates the value of a systematic approach, using appropriately complementary and sequenced instruments rooted in a solid analytical base. Statistical evidence from the Bank Group's portfolio supports this finding, and case studies confirm the benefits of more systematic engagements whereby the Bank Group supports reforms through multiple or sustained operations over time. However, few Bank Group projects reference a systematic approach to trade facilitation reforms. Further, more than a third of country strategies indicate misalignment of the trade facilitation portfolio with country strategic priorities. This seems to indicate that the observed successful complementary support often happens more fortuitously than by design.

At the same time, recognizing the need for a multifaceted approach is not enough. It is essential to identify which factors complement each other. Some interventions (such as in border infrastructure), work better as self-standing initiatives, while others (such as rules reforms) work better in combination. Complementarity of technical assistance and some ASA with World Bank lending for project effectiveness, for example, strengthens the case for a more coordinated engagement. Yet the observed fragmentation of ASA approaches and products suggests room for greater consistency. Related to such longer-term engagement, in country case studies, the World Bank Group's convening power among donors and with public and private sector stakeholders was reportedly enhanced where there was continuous presence of relevant staff on the ground. Recognizing the Bank Group has resource constraints, it can optimize by coordinating with other donors and giving priority to clients where trade facilitation is a priority and where the World Bank Group has a comparative advantage.

Recommendation 1: **To enhance effectiveness, the World Bank Group should promote an approach of complementary (simultaneous and/or sequential) interventions in trade facilitation reforms in countries where trade is a client priority and the World Bank Group has a comparative advantage, substantiated by consistent diagnostics.** This also requires collaboration between the World Bank Group institutions under MFD to allow better use of their assets and resources to plan and support reforms that advance the trade facilitation agenda in client countries.

Political Economy of Trade Facilitation Reforms

Although an earlier generation of trade facilitation reforms was mainly focused on a single national agency (customs), over time the goal of trade facilitation reforms progressed beyond resource generation to include efficiency improvements that required coordination and streamlining by multiple agencies and, in some cases, multiple levels of government. This shift requires interagency collaboration and coordination, affects resource allocation and incentives connected to formal and informal revenues, and alters power structures within the relevant administrations. In the context of diverse agency incentives and objectives, strong and sustained political leadership and active coordination play a pivotal role in ensuring the necessary level of integrated activity and information exchange needed to achieve the successful implementation of many trade facilitation reforms.

Without such leadership and coordination, these reforms can be stalled or implemented only partially or slowly. The Bank Group has helped countries to address such coordination challenges through its advisory work playing an honest broker role, but often not in a systematic way with consistent tools (such as stakeholder analysis and public-private dialogue) to identify reform bottlenecks. Nor does the Bank Group systematically assess and seek to mitigate political risks. Although political economy factors are often considered in an unstructured way, explicit analysis of political economy is quite rare in Bank Group ASA and may explain the lower level of effectiveness of agency support interventions among Bank Group projects.

Recommendation 2: **The World Bank Group should identify and mitigate political economy constraints to trade facilitation reform implementation through systematic application of its tools for stakeholder analysis and consultation (including public-private dialogue).** This would allow the World Bank Group to more consistently use its tools to address risks and build a broad base of support for trade facilitation reforms.

Public Policy Objectives of Trade Regulations

A significant part of trade facilitation reforms supported by the World Bank Group involves regulatory reforms. Regulations serve both economic purposes and such socially beneficial purposes as enhancing public health, safety, and the environment or reducing informality, corruption, and smuggling. Though some regulations may be unnecessary or purely protectionist, others are legitimate expressions of public policy. Hence trade facilitation reforms should be conceptualized, designed, implemented, and evaluated in the context of policy objectives to protect public health, safety, the environment, good governance, and formality in addition to a compliance cost minimization perspective.

The World Bank Group project documents show that such public policy objectives are acknowledged only in a minority of cases, most frequently in terms of collecting public revenues and combatting corruption. Insufficient attention has been paid to other objectives (health, safety, and environment) and only compliance costs are routinely monitored. Even data routinely collected by counterpart agencies, such as detection rates of nonconforming shipments, are often not used to guide or inform project design or implementation or to evaluate success.

Recommendation 3: **The World Bank Group should systematically apply a differentiated approach to identify and monitor, where relevant, the public policy objectives of trade regulations relating to public health, safety, the environment, good governance, formality, and the rule of law. The World Bank Group should specifically identify the stakeholders potentially impacted by the reforms and the extent of the impact.** Wherever relevant, the World Bank Group should apply appropriate indicators to monitor the impact of trade facilitation reforms on affected stakeholders in these dimensions. Such an approach would identify both intermediate outcome measures, such as detection rates, and impact indicators. Thus, for example, in addition to measuring the compliance cost savings of traders, the World Bank Group would monitor indices of detection of unsafe products

and/or indices of public health and safety to afford a more balanced set of criteria by which to judge trade facilitation reform.

Strengthened Indicators

A comprehensive set of indicators of trade facilitation areas can help motivate and benchmark reforms and identify the most pressing problems and priorities with regard to trade. The World Bank produces two of the leading sets of indicators—the Doing Business Trading Across Borders indicators and the Logistics Performance Index indicators to inform trade facilitation reforms. Each of the two sets of Bank Group indicators has its strengths but they frame their subjects differently. These differences result in gaps and inconsistencies. Some component indicators bear a far more consistent relationship to reforms than others.[2] IEG also found some client confusion and frustration over the World Bank's two methodologies. A review of the indicator sets would be useful to identify complementarities, gaps in coverage, and potential improvements to the indicator sets and their components and subindicators.

Recommendation 4: **The World Bank Group should rationalize its own two major trade facilitation indicator sets to build on the virtues of each of them, and to enhance their responsiveness to implemented reforms.** The focus should be on having effective benchmarks of performance that are useful to assess and monitor reforms. This proposed indicator review also argues for maintaining continuity of subindicators that have proven accurate in tracking reform. Through the redesign and harmonization of existing indicators and/or the development of new indicators, the World Bank Group should work to ensure that major areas relevant to trade facilitation are measured and monitored over time. Indicators used to monitor project objectives should be of sufficient granularity and specificity to reflect the reforms they are attempting to implement.

---

[1] See Bartley Johns, Marcus et al. (2015) and World Bank, *Leveraging Trade for Development and Inclusive Growth.* The World Bank Group Trade Strategy, 2011–2021. (Washington, World Bank, 2011).

[2] Although not the subject of this evaluation, the OECD Trade Facilitation Indicators focus sharply on TFA topics (as intended) but do not generate comparable information on complementary areas, such as outcomes, infrastructure, and other aspects of reform outside the scope of the TFA. Some World Bank Group observers criticize the methodology as less robust than that of the World Bank indicators.

bibliography

Anderson, James E., and Eric Van Wincoop. 2004. "Trade Costs." *Journal of Economic Literature* 42 (3): 691–751.

Anson, Jose, Olivier Cadot, and Marcelo Olarreaga. 2006. "Tariff Evasion and Customs Corruption: Does Pre-Shipment Inspection Help?" *The BE Journal of Economic Analysis & Policy* 5 (1).

Arvis, Jean Francois, Jean-Francois Marteau, and Gael Raballand. 2010. *The Cost of Being Landlocked: Logistics Costs and Supply Chain Reliability*. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-8408-4.

Arvis, Jean-François, Yann Duval, Ben Shepherd, Chorthip Utoktham, and Anasuya Raj. 2016. "Trade Costs in the Developing World: 1996–2010." *World Trade Review* 15 (3): 451–74. https://doi.org/10.1017/S147474561500052X.

Atkin, David, and Dave Donaldson. 2015. "Who's Getting Globalized? The Size and Implications of Intra-National Trade Costs." NBER Working Paper no. 21439. National Bureau of Economic Research, Cambridge, Massachusetts.

Baldwin, Richard, and Anthony J. Venables. 2013. "Spiders and Snakes: Offshoring and Agglomeration in the Global Economy." *Journal of International Economics* 90 (2): 245–54. https://doi.org/10.1016/j.jinteco.2013.02.005.

Basnett, Y., and I. Massa. 2015. *Trade Facilitation: Rapid Evidence Assessment.* London: Overseas Development Institute.

Bernhofen, Daniel M., Zouheir El-Sahli, and Richard Kneller. 2016. "Estimating the Effects of the Container Revolution on World Trade." *Journal of International Economics* 98 (January): 36–50. https://doi.org/10.1016/j.jinteco.2015.09.001.

Beverelli, Cosimo, Simon Neumueller, and Robert Teh. 2015. "Export Diversification Effects of the WTO Trade Facilitation Agreement." *World Development* 76 (December): 293–310. https://doi.org/10.1016/j.worlddev.2015.07.009.

Blonigen, Bruce A., and Wesley W. Wilson. 2007. "Port Efficiency and Trade Flows." *Review of International Economics* 16 (1): 21–36. https://doi.org/10.1111/j.1467-9396.2007.00723.x.

Borchert, Ingo, Batshur Gootiiz, Arti Grover Goswami, and Aaditya Mattoo. 2017. "Services Trade Protection and Economic Isolation." *The World Economy* 40 (3): 632–52. https://doi.org/10.1111/twec.12327.

Brooks, D. H., and D. Hummels. 2009. *Infrastructure's Role in Lowering Asia's Trade Costs: Building for Trade.* Cheltenham, UK; Northampton, Massachusetts: Asian Development Bank Institute and Edward Elgar Publishing.

Cadot, Olivier, ed. 2011. *Where to Spend the Next Million? Applying Impact Evaluation to Trade Assistance*. London: Centre for Economic Policy Research.

Cadot, Olivier, Ana Fernandes, Julien Gourdon, Aaditya Mattoo, and Jaime de Melo. 2014. "Evaluating Aid for Trade: A Survey of Recent Studies." *The World Economy* 37 (4): 516–29. https://doi.org/10.1111/twec.12138.

Calì, Massimiliano, and Dirk Willem te Velde. 2011. "Does Aid for Trade Really Improve Trade Performance?" *World Development* 39 (5): 725–40. https://doi.org/10.1016/j.worlddev.2010.09.018.

Cantens, Thomas, Gaël Raballand, and Samson Bilangna. 2010. "Reforming Customs by Measuring Performance: A Cameroon Case Study." *World Customs Journal* 4 (2): 55–74.

Carballo, Jerónimo, Georg Schaur, and Christian Volpe Martincus. 2016. "Trust No One? Security and International Trade." IDB Working Paper Series. Inter-American Development Bank, Washington DC.

Chaney, Thomas. 2008. “Distorted Gravity: The Intensive and Extensive Margins of International Trade.” *American Economic Review* 98 (4): 1707–21. https://doi.org/10.1257/aer.98.4.1707.

Chen, Chunlai, Jun Yang, and Christopher Findlay. 2008. “Measuring the Effect of Food Safety Standards on China’s Agricultural Exports.” *Review of World Economics* 144 (1): 83–106. https://doi.org/10.1007/s10290-008-0138-z.

Chen, Natalie, and Dennis Novy. 2011. “Gravity, Trade Integration, and Heterogeneity across Industries.” *Journal of International Economics* 85 (2): 206–21. https://doi.org/10.1016/j.jinteco.2011.07.005.

Christ, Nannette, and Michael J. Ferrantino. 2011. “Land Transport for Export: The Effects of Cost, Time, and Uncertainty in Sub-Saharan Africa.” *World Development* 39 (10): 1749–59. https://doi.org/10.1016/j.worlddev.2011.04.028.

Clark, Ximena, David Dollar, and Alejandro Micco. 2004. “Port Efficiency, Maritime Transport Costs, and Bilateral Trade.” *Journal of Development Economics* 75 (2): 417–50. https://doi.org/10.1016/j.jdeveco.2004.06.005.

Cubas, Diana, C. Briceno-Garmendia, and H. C. Bofinger. 2016. “OECS Ports: An Efficiency and Performance Assessment.” World Bank, Washington DC.

Czubala, W., B. Shepherd, and J. S. Wilson. 2009. “Help or Hindrance? The Impact of Harmonised Standards on African Exports.” *Journal of African Economies* 18 (5): 711–44. https://doi.org/10.1093/jae/ejp003.

de Jong, Eelke, and Christian Bogmans. 2011. “Does Corruption Discourage International Trade?” *European Journal of Political Economy* 27 (2): 385–98. https://doi.org/10.1016/j.ejpoleco.2010.11.005.

Dennis, Allen. 2010. “Global Economic Crisis and Trade: The Role of Trade Facilitation.” *Applied Economics Letters* 17 (18): 1753–57. https://doi.org/10.1080/13504850903409771.

Dennis, Allen, and Ben Shepherd. 2011. “Trade Facilitation and Export Diversification.” *The World Economy* 34 (1): 101–22. https://doi.org/10.1111/j.1467-9701.2010.01303.x.

Devlin, J., and P. Yee. 2005. “Trade Logistics in Developing Countries: The Case of the Middle East and North Africa.” *The World Economy, 28*(3), 435-56.

Diagne, Ibrahima. 2010. “Developing a Single Window to Facilitate Trade in Senegal.” World Bank, Washington, DC.

Disdier, A. C., and S. Marette. 2010. “The Combination of Gravity and Welfare Approaches for Evaluating Nontariff Measures.” *American Journal of Agricultural Economics* 92 (3): 713–26. https://doi.org/10.1093/ajae/aaq026.

Disdier, Anne-Célia, Lionel Fontagné, and Mondher Mimouni. 2008. “The Impact of Regulations on Agricultural Trade: Evidence from the SPS and TBT Agreements.” *American Journal of Agricultural Economics* 90 (2): 336–50.

Djankov, Simeon, Caroline Freund, and Cong S. Pham. 2010. “Trading on Time.” *The Review of Economics and Statistics* 92 (1): 166–73.

Draper, Charles. 2000. “Reforming Customs Administration: The Unlikely Case of Bangladesh.” World Bank, Washington, DC. http://siteresources.worldbank.org/INTRANETTRADE/Resources/Draper_customs.pdf.

Duval, Yann, Nora Neufeld, and Chorthip Utoktham. 2016. “Do Trade Facilitation Provisions in Regional Trade Agreements Matter? Impact on Trade Costs and Multilateral Spillovers.” ARTNeT Working Paper No. 164.

Ehrich, Malte, and Axel Mangelsdorf. 2018. “The Role of Private Standards for Manufactured Food Exports from Developing Countries.” *World Development* 101 (January): 16–27. https://doi.org/10.1016/j.worlddev.2017.08.004.

Essaji, Azim. 2008. “Technical Regulations and Specialization in International Trade.” *Journal of International Economics* 76 (2): 166–76. https://doi.org/10.1016/j.jinteco.2008.06.008.

Feenstra, Robert C., and Hong Ma. 2014. “Trade Facilitation and the Extensive Margin of Exports: Trade Facilitation and Exports.” *Japanese Economic Review* 65 (2): 158–77. https://doi.org/10.1111/jere.12031.

Fernandes, Ana M., Esteban Ferro, and John S. Wilson. 2017. “Product Standards and Firms’ Export Decisions.” *The World Bank Economic Review*, April. https://doi.org/10.1093/wber/lhw071.

Fernandes, Ana M., Russell H. Hillberry, and Claudia N. Berg. 2016. “Expediting Trade: Impact Evaluation of an in-House Clearance Program.”

Fernandes, Ana M., Russell H. Hillberry, and Alejandra Mendoza Alcantara. 2015. “Trade Effects of Customs Reform: Evidence from Albania.”

———. 2017. “An Evaluation of Border Management Reforms in a Technical Agency.” Policy Research Working Paper no. WPS 8208. World Bank, Washington, DC.

Ferro, Esteban, Tsunehiro Otsuki, and John S. Wilson. 2015. “The Effect of Product Standards on Agricultural Exports.” *Food Policy* 50 (January): 68–79. https://doi.org/10.1016/j.foodpol.2014.10.016.

Ferro, Esteban, Alberto Portugal-Perez, and John S. Wilson. 2014. “Aid to the Services Sector: Does It Affect Manufacturing Exports?” *The World Economy* 37 (4): 530–41. https://doi.org/10.1111/twec.12151.

Fink, Carsten, Aaditya Mattoo, and Ileana Cristina Neagu. 2002. “Trade in International Maritime Services: How Much Does Policy Matter?” *The World Bank Economic Review* 16 (1): 81–108.

Fontagné, Lionel, Anne-Célia Disdier, and Matthias Beestermöller. 2016. “Impact of European Food Safety Border Inspections on Agri-Food Exports: Evidence from Chinese Firms.”

Fontagné, Lionel, Gianluca Orefice, and Roberta Piermartini. 2016. “Making (Small) Firms Happy. The Heterogeneous Effect of Trade Facilitation Measures.”

Fontagné, Lionel, Gianluca Orefice, Roberta Piermartini, and Nadia Rocha. 2015. “Product Standards and Margins of Trade: Firm-Level Evidence.” *Journal of International Economics* 97 (1): 29–44. https://doi.org/10.1016/j.jinteco.2015.04.008.

Francois, Joseph, and Miriam Manchin. 2013. “Institutions, Infrastructure, and Trade.” *World Development* 46 (June): 165–75. https://doi.org/10.1016/j.worlddev.2013.02.009.

Freund, C., and N. Rocha. 2011. “What Constrains Africa’s Exports?” *The World Bank Economic Review* 25 (3): 361–86. https://doi.org/10.1093/wber/lhr016.

Freund, Caroline, Mary Hallward-Driemeier, and Bob Rijkers. 2016. “Deals and Delays: Firm-Level Evidence on Corruption and Policy Implementation Times.” *The World Bank Economic Review* 30 (2): 354–82. https://doi.org/10.1093/wber/lhv001.

Fugazza, Marco. 2017. “Fish Trade and Policy : A Primer on Non-Tariff Measures.” UNCTAD Research Paper No. 7. United Nations Conference on Trade and Development, Geneva. http://unctad.org/en/Publications Library/ser-rp-2017d7_en.pdf.

Gain, William. 2017. "WTO TFA Implementation: Learning from Early Results." The Trade Post Blog. World Bank, Washington, DC. http://blogs.worldbank.org/trade/wto-tfa-implementation-learning-early-results

Gonzalez, Anabel. 2017. "Now that the Trade Facilitation Agreement Has Entered into Force…" The Trade Post Blog. World Bank, Washington, DC. https://blogs.worldbank.org/trade/now-trade-facilitation-agreement-has-entered-force

Gonzalez, Anabel. 2017. "Now that the Trade Facilitation Agreement Has Entered into Force…" The Trade Post Blog. World Bank, Washington, DC. https://blogs.worldbank.org/trade/now-trade-facilitation-agreement-has-entered-force

Gonzalez, J. A., J. L. Guasch, and T. Serebrisky. 2008. "Improving Logistics Costs for Transportation and Trade Facilitation." Policy Research Working Paper. World Bank, Washington, DC.

Grainger, Andrew. 2011. "Developing the Case for Trade Facilitation in Practice." *World Customs Journal* 5 (2): 65–76.

Haddad, Mona, Marc Juhel, and World Bank, eds. 2010. *Trade and Transport Facilitation Assessment: A Practical Toolkit for Country Implementation*. Washington, DC: World Bank.

Handley, Kyle, and Nuno Limão. 2015. "Trade and Investment under Policy Uncertainty: Theory and Firm Evidence." *American Economic Journal: Economic Policy* 7 (4): 189–222. https://doi.org/10.1257/pol.20140068.

Harrigan, James. 2010. "Airplanes and Comparative Advantage." *Journal of International Economics* 82 (2): 181–94. https://doi.org/10.1016/j.jinteco.2010.07.002.

Helble, Matthias, Catherine L. Mann, and John S. Wilson. 2012. "Aid-for-Trade Facilitation." *Review of World Economics* 148 (2): 357–76.

Hillberry, Russell H., and Xiaohui Zhang. 2015. "Policy and Performance in Customs: Evaluating the Trade Facilitation Agreement."

Hoekman, Bernard. 2016. "Trade and the SDGs: Making 'Means of Implementation' a Reality." Commonwealth Trade Hot Topics, no. 128. https://www.tralac.org/news/article/9568-trade-and-the-sdgs-making-means-of-implementation-a-reality.html

Hoekman, Bernard, and Alessandro Nicita. 2010. "Assessing the Doha Round: Market Access, Transactions Costs and Aid for Trade Facilitation." *The Journal of International Trade & Economic Development* 19 (1): 65–79. https://doi.org/10.1080/09638190903327476.

———. 2011. "Trade Policy, Trade Costs, and Developing Country Trade." *World Development* 39 (12): 2069–79. https://doi.org/10.1016/j.worlddev.2011.05.013.

Hoekman, Bernard, and Ben Shepherd. 2015. "Who Profits from Trade Facilitation Initiatives? Implications for African Countries." *Journal of African Trade* 2 (1–2): 51–70. https://doi.org/10.1016/j.joat.2015.08.001.

Hornok, Cecília, and Miklós Koren. 2015. "Administrative Barriers to Trade." *Journal of International Economics* 96 (July): S110–22. https://doi.org/10.1016/j.jinteco.2015.01.002.

Hummels, David. 2007. "Transportation Costs and International Trade in the Second Era of Globalization." *The Journal of Economic Perspectives* 21 (3): 131–54.

Hummels, David L., and Georg Schaur. 2013. "Time as a Trade Barrier." *American Economic Review* 103 (7): 2935–59. https://doi.org/10.1257/aer.103.7.2935.

Hummels, David, and Volodymyr Lugovskyy. 2006. “Are Matched Partner Trade Statistics a Usable Measure of Transportation Costs?” *Review of International Economics* 14 (1): 69–86.

Iwanow, Tomasz, and Colin Kirkpatrick. 2009. “Trade Facilitation and Manufactured Exports: Is Africa Different?” *World Development* 37 (6): 1039–50. https://doi.org/10.1016/j.worlddev.2008.09.014.

Japan International Cooperation Agency (JICA). 2014. “Innovative Approaches for Accelerating Connectivity in Africa - One Stop Border Post (OSBP) Development.” Japan International Cooperation Agency, Tokyo.

Kieck, Erich. 2010. “Coordinated Border Management: Unlocking Trade Opportunities through One Stop Border Posts.” *World Customs Journal* 4 (1): 3–13.

Korinek, J., and P. Sourdin. 2011. “To What Extent Are High-Quality Logistics Services Trade Facilitating?” OECD Trade Policy Papers, No. 108. OECD Publishing, Paris. https://doi.org/10.1787/5kggdthrj1zn-en.

Lanz, Rainer, Michael Roberts, and Sainabou Taal. 2016. “Reducing Trade Costs in LDCs: The Role of Aid for Trade.” WTO Staff Working Paper, World Trade Organization, Geneva.

Li, Yuan, and John C. Beghin. 2012. “A Meta-Analysis of Estimates of the Impact of Technical Barriers to Trade.” *Journal of Policy Modeling* 34 (3): 497–511. https://doi.org/10.1016/j.jpolmod.2011.11.001.

Limao, Nuno, and Anthony J. Venables. 2001. “Infrastructure, Geographical Disadvantage, Transport Costs, and Trade.” *The World Bank Economic Review* 15 (3): 451–79.

Liu, Lan, and Chengyan Yue. 2012. “Investigating the Impact of SPS Standards on Trade Using a VES Model.” *European Review of Agricultural Economics* 39 (3): 511–28. https://doi.org/10.1093/erae/jbr036.

———. 2013. “Investigating the Impacts of Time Delays on Trade.” *Food Policy* 39 (April): 108–14. https://doi.org/10.1016/j.foodpol.2013.01.001.

Looi Kee, Hiau, Alessandro Nicita, and Marcelo Olarreaga. 2009. “Estimating Trade Restrictiveness Indices.” *The Economic Journal* 119 (534): 172–99.

Mangelsdorf, Axel, Alberto Portugal-Perez, and John S. Wilson. 2012. “Food Standards and Exports: Evidence for China.” *World Trade Review* 11 (03): 507–26. https://doi.org/10.1017/S1474745612000195.

Martinez-Zarzoso, Inma, and Laura Márquez-Ramos. 2008. “The Effect of Trade Facilitation on Sectoral Trade.” *The BE Journal of Economic Analysis & Policy* 8 (1).

Maskus, Keith E., Tsunehiro Otsuki, and John S. Wilson. 2013. “Do Foreign Product Standards Matter? Impacts on Costs for Developing Country Exporters.” *Asia-Pacific Journal of Accounting & Economics* 20 (1): 37–57. https://doi.org/10.1080/16081625.2013.744685.

McLinden, G., E. Fanta, D. Widdowson, and T. Doyle (eds.). 2010. *Border Management Modernization.* Washington, DC: World Bank.

Melo, Oscar, Alejandra Engler, Laura Nahuehual, Gabriela Cofre, and José Barrena. 2014. “Do Sanitary, Phytosanitary, and Quality-Related Standards Affect International Trade? Evidence from Chilean Fruit Exports.” *World Development* 54 (February): 350–59. https://doi.org/10.1016/j.worlddev.2013.10.005.

Mendoza Alcantara, Alejandra, Ana M. Fernandes, and Russell H. Hillberry. 2015. “Understanding the Operations of Freight Forwarders: Evidence from Serbia.”

Michael, Bryane. 2012. “Do Customs Trade Facilitation Programs Help Reduce Customs-Related Corruption?” *International Journal of Public Administration* 35 (2): 81–97. https://doi.org/10.1080/01900692.2011.635491.

Moffitt, L. Joe, John K. Stranlund, and Craig D. Osteen. 2010. "Securing the Border from Invasives: Robust Inspections under Severe Uncertainty." *Economics Research International* 2010: 1–9. https://doi.org/10.1155/2010/510127.

Moïsé, Evdokia, and Florian Le Bris. 2013. "Trade Costs - What Have We Learned? A Synthesis Report" OECD Trade Policy Papers No. 150. OECD Publishing, Paris. https://doi.org/10.1787/5k47x2hjfn48-en.

Moïsé, Evdokia, and Silvia Sorescu. 2013. "Trade Facilitation Indicators: The Potential Impact of Trade Facilitation on Developing Countries' Trade." OECD. Trade Policy Papers No. 144. OECD Publishing, Paris.

Montagnat-Rentier, Gilles, and Gilles Parent. 2012. "Customs Administration Reform and Modernization in Francophone Sub-Saharan Africa, 1995-2010."

Nizeyimana, Christian, and Luc De Wulf. 2016. "Rwanda Electronic Single Window Supports Trade Facilitation." *World Customs Journal* 9 (2): 73–84.

Organisation for Economic Co-operation and Development (OECD), Trade and Agriculture Directorate, and Source OECD (Online service), eds. 2009. *Overcoming Border Bottlenecks: The Costs and Benefits of Trade Facilitation*. OECD Trade Policy Studies. Paris: OECD Publishing.

Organisation for Economic Co-operation and Development (OECD) and World Trade Organization (WTO). 2015. *Aid for Trade at a Glance 2015: Reducing Trade Costs for Inclusive, Sustainable Growth.* Geneva: WTO, and Paris: OECD Publishing.

Otsuki, Tsunehiro, John S. Wilson, and Mirvat Sewadeh. 2001. "Saving Two in a Billion: Quantifying the Trade Effect of European Food Safety Standards on African Exports." *Food Policy* 26 (5): 495–514.

Pelkmans, Jacques, Anabela Correia de Brito, and Céline Kauffmann. 2016. "The Contribution of Mutual Recognition to International Regulatory Co-Operation." OECD Regulatory Policy Working Papers No. 2. OECD Publishing, Paris. https://doi.org/10.1787/5jm56fqsfxmx-en.

Persson, Maria. 2013. "Trade Facilitation and the Extensive Margin." *The Journal of International Trade & Economic Development* 22 (5): 658–93. https://doi.org/10.1080/09638199.2011.587019.

Porto, Sá, Otaviano Canuto, and Cristiano Morini. 2015. "The Impacts of Trade Facilitation Measures on International Trade Flows."

Portugal-Perez, Alberto, José-Daniel Reyes, and John S. Wilson. 2010. "Beyond the Information Technology Agreement: Harmonisation of Standards and Trade in Electronics." *The World Economy* 33 (12): 1870–97. https://doi.org/10.1111/j.1467-9701.2010.01300.x.

Portugal-Perez, Alberto, and John S. Wilson. 2009. "Why Trade Facilitation Matters to Africa." *World Trade Review* 8 (03): 379–416. https://doi.org/10.1017/S147474560900439X.

———. 2012. "Export Performance and Trade Facilitation Reform: Hard and Soft Infrastructure." *World Development* 40 (7): 1295–1307. https://doi.org/10.1016/j.worlddev.2011.12.002.

Raballand, Gael, Salim Refas, Monica Beuran, and Gozde Isik. 2012. *Why Does Cargo Spend Weeks in Sub-Saharan African Ports? Lessons from Six Countries*. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-9499-1.

Rajan, Raghuram G., and Arvind Subramanian. 2005. "Aid and Growth: What Does the Cross-Country Evidence Really Show?" NBER Working Paper No. 11513. National Bureau of Economic Research. Cambridge, Massachusetts

———. 2011. “Aid, Dutch Disease, and Manufacturing Growth.” *Journal of Development Economics* 94 (1): 106–18. https://doi.org/10.1016/j.jdeveco.2009.12.004.

Ranganathan, R., and V. Foster. 2011. “East Africa’s Infrastructure: A Continental Perspective.” Policy Research Working Paper. World Bank, Washington, DC.

Sequeira, Sandra, and Simeon Djankov. 2014. “Corruption and Firm Behavior: Evidence from African Ports.” *Journal of International Economics* 94 (2): 277–94. https://doi.org/10.1016/j.jinteco.2014.08.010.

Shepherd, Ben. 2009. “Speed Money: Time, Corruption, and Trade.”

———. 2010. “Geographical Diversification of Developing Country Exports.” *World Development* 38 (9): 1217–28. https://doi.org/10.1016/j.worlddev.2010.02.005.

———. 2013. “Trade Times, Importing and Exporting: Firm-Level Evidence.” *Applied Economics Letters* 20 (9): 879–83. https://doi.org/10.1080/13504851.2012.756574.

———. 2015. “Product Standards and Export Diversification.” *Journal of Economic Integration* 30 (2): 300–333. https://doi.org/10.11130/jei.2015.30.2.300.

Shepherd, Ben, and John S. Wilson. 2009. “Trade Facilitation in ASEAN Member Countries: Measuring Progress and Assessing Priorities.” *Journal of Asian Economics* 20 (4): 367–83. https://doi.org/10.1016/j.asieco.2009.03.001.

Shepherd, Ben, and Norbert L.W. Wilson. 2013. “Product Standards and Developing Country Agricultural Exports: The Case of the European Union.” *Food Policy* 42 (October): 1–10. https://doi.org/10.1016/j.foodpol.2013.06.003.

Taglioni, Daria, and Deborah Winkler. 2016. *Making Global Value Chains Work for Development*. Washington, DC: World Bank. https://doi.org/10.1596/978-1-4648-0157-0.

Teravaninthorn, Supee, and Gael Raballand. 2008. *Transport Prices and Costs in Africa: A Review of the Main International Corridors*. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-7650-8.

Torres, C., Briceño-Garmendia, and C. Dominguez. 2011. “Senegal’s Infrastructure: A Continental Perspective.” Policy Research Working Paper. World Bank, Washington, DC.

Tsen, Jonathan Koh Tat. 2011. *Ten Years of Single Window Implementation: Lessons Learned for the Future.* Discussion paper presented at the Global Trade Facilitation Conference 2011, Geneva, December 12 and 13. https://www.unece.org/fileadmin/DAM/trade/Trade_Facilitation_Forum/BkgrdDocs/TenYearsSingleWindow.pdf.

United Nations Economic Commission for Africa (UNECA). 2013. *Trade Facilitation from an African Perspective*. Addis Ababa: UNECA.

USAID. 2017. “Improving the Effectiveness of the WTO SPS and TBT Enquiry Points and Notification Authorities in 12 African Countries.”

van de Walle, Dominique, and Ren Mu. 2007. “Fungibility and the Flypaper Effect of Project Aid: Micro-Evidence for Vietnam.” *Journal of Development Economics* 84 (2): 667–85. https://doi.org/10.1016/j.jdeveco.2006.12.005.

Velea, Irina, Olivier Cadot, and John S. Wilson. 2010. “Do Private Inspection Programs Affect Trade Facilitation?”

Vijil, Mariana. 2014. “Aid for Trade Effectiveness: Complementarities with Economic Integration.” *The World Economy* 37 (4): 555–66. https://doi.org/10.1111/twec.12140.

Vijil, Mariana, and Laurent Wagner. 2012. “Does Aid for Trade Enhance Export Performance? Investigating the Infrastructure Channel” *The World Economy* 35 (7): 838–68. https://doi.org/10.1111/j.1467-9701.2012.01437.x.

Volpe Martincus, Christian, Jerónimo Carballo, and Alejandro Graziano. 2015. “Customs.” *Journal of International Economics* 96 (1): 119–37. https://doi.org/10.1016/j.jinteco.2015.01.011.

World Customs Organization (WCO). 2017. “Annual Report 2016-2017.” Brussels: World Customs Organization.

Wilmsmeier, Gordon, Jan Hoffmann, and Ricardo J. Sanchez. 2006. “The Impact of Port Characteristics on International Maritime Transport Costs.” *Research in Transportation Economics* 16 (January): 117–40. https://doi.org/10.1016/S0739-8859(06)16006-0.

World Bank. 2001. “Leveraging Trade for Development: World Bank Role.” Development Committee Paper DC2001-004/1, World Bank, Washington, DC.

———. 2005. *Doing Business 2006: Creating Jobs.* Washington, DC: World Bank.

———. 2006. *Assessing World Bank Support for Trade, 1987–2004.* Independent Evaluation Group. Washington, DC: World Bank.

———. 2008. “Integrity for Hire: An Analysis of a Widespread Customs Reform.” *The Journal of Law and Economics* 51 (1): 25–57.

———. 2009a. *Doing Business 2010: Reforming through Difficult Times*. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-7961-5.

———. 2009b. “Mexico—First Competitiveness Development Policy Loan P098299.” Independent Evaluation Group, Implementation Completion and Results Report Review 13132, World Bank, Washington, DC.

———. 2009c. “Bangladesh—Transitional Support Credit.” Independent Evaluation Group, Implementation Completion and Results Report Review, World Bank, Washington, DC.

———. 2011. *Leveraging Trade for Development and Inclusive Growth. The World Bank Group Trade Strategy, 2011–2021.* Washington, DC: World Bank. http://siteresources.worldbank.org/TRADE/ Resources/WBG-TradeStrategyJune10.pdf.

———. 2012. “St. Lucia—Economic And Social Development Policy Loan.” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR13868, World Bank, Washington, DC.

———. 2014a. “Africa—West Africa Air Transport Safety and Security.” Independent Evaluation Group, Implementation Completion and Results Report Review. World Bank, Washington, DC.

———. 2014b. *Evaluation of the International Finance Corporation’s Global Trade Finance Program 2006–12.* Independent Evaluation Group. Washington, DC: World Bank.

———. 2015a. “Indonesia—Second Connectivity Development Policy Loan.” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR14703, World Bank, Washington, DC.

———. 2015b. *Investment Climate Reforms: An Independent Evaluation of World Bank Group Support to Reforms of Business Regulations.* Independent Evaluation Group. Washington, DC: World Bank.

———. 2015c. “Mauritius—First and Second Public Sector Performance Development Policy Projects.” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR14811, World Bank, Washington, DC.

———. 2016a. “Africa—East Africa Trade and Transport Facilitation Project.” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR0020493, World Bank, Washington, DC.

———. 2016b. *Connecting to Compete 2016: The Logistics Performance Index and Its Indicators.* World Bank Washington, DC. https://wb-lpi-media.s3.amazonaws.com/LPI_Report_2016.pdf.

———. 2016c. “Croatia—Trade and Transport Integration Project.” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR0020565, World Bank, Washington, DC.

———. 2016d. *Public-Private Dialogue Stakeholder Mapping Kit: A Practical Guide for Stakeholder Analysis in PPD Using Net-Map Method.* Washington, DC: World Bank.

———. 2016e. *World Bank Group Engagement in Small States. Independent Evaluation Group. Washington, DC: World Bank.*

———. 2017a. *Doing Business 2018: Reforming to Create Jobs.* Washington, DC: World Bank. http://www.doingbusiness.org/~/media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB2018-Full-Report.pdf.

———. 2017b. “Vietnam—Mekong Delta Transport Infrastructure Development.” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR0020646, World Bank, Washington, DC.

———. 2017c. *Results and Performance of the World Bank Group 2017.* Independent Evaluation Group. Washington DC: World Bank.

World Bank Group. 2010. International Trade Strategy Approach Paper: Background and Strategy Issues for Discussion. Washington, DC: World Bank Group. http://siteresources.worldbank.org/INTTSC/Resources/WBG_Trade_Strategy_Discussion_Paper(approach).pdf.

———. 2011. *Leveraging Trade for Development and Inclusive Growth: The World Bank Group Trade Strategy, 2011–2021.* Washington, DC: World Bank Group.

———. 2017. “Forward Look: A Vision for the World Bank Group in 2030—Progress and Challenges.” Washington, DC: World Bank Group.

World Bank Group and WTO (World Trade Organization). 2015. *The Role of Trade in Ending Poverty.* Geneva: WTO.

WTO (World Trade Organization). 2012. Trade Facilitation Fact Sheet. https://www.wto.org/english/tratop_e/tradfa_e/tf_factsheet_e.htm

———. 2015. *World Trade Report 2015 - Speeding up Trade: Benefits and Challenges of Implementing the WTO Trade Facilitation Agreement.* World Trade Organization, Geneva.

——— and Organisation for Economic Co-operation and Development (OECD). 2017. *Aid for Trade at a Glance 2017*. Paris: OECD Publishing. https://doi.org/10.1787/aid_glance-2017-en.

Wulf, Luc de, and José B. Sokol, eds. 2004. *Customs Modernization Initiatives: Case Studies*. Washington, DC: World Bank.

Yang, Dean. 2008a. “Can Enforcement Backfire? Crime Displacement in the Context of Customs Reform in the Philippines.” *The Review of Economics and Statistics* 90 (1): 1–14.

Yi, Kei-Mu. 2010. “Can Multistage Production Explain the Home Bias in Trade?” *American Economic Review* 100 (1): 364–93. https://doi.org/10.1257/aer.100.1.364.

APPENDIXES

Grow with the Flow

An Evaluation of the World Bank Group's Support to Facilitating Trade 2006–17

IEG
Independent Evaluation Group

WORLD BANK GROUP
World Bank • IFC • MIGA

WHAT WORKS

Appendix A. Methodology for Trade Facilitation Evaluation

Evaluation Questions

This evaluation assesses the contribution of the World Bank Group to reducing trade costs and enhancing trade flows of client countries while respecting social objectives through its support of trade facilitation. This overarching objective elicited four guiding questions (box A.1):

Box A.1. Four Questions Guiding the Evaluation

Question 1: What has been the nature and extent of World Bank Group engagement in support of trade facilitation in its client countries?

a. What has been the nature (e.g. instruments, countries) and evolution over time of Bank Group support to trade facilitation?

b. To what extent has Bank Group support been aligned to relevant Bank Group strategies?

c. To what extent is the Bank Group focusing on areas that the state of current knowledge suggests will have the greatest development impact?

Question 2: To what extent have Bank Group trade facilitation interventions contributed to enhance trade flows of client countries by reducing the cost of international trade?

a. To what extent and in what ways have Bank Group trade facilitation interventions contributed to reduce the cost of international trade of client countries?

b. To what extent and in what ways has Bank Group trade facilitation interventions contributed to increase the flow of exports and imports of client countries?

Question 3: To what extent and in what ways have Bank Group trade facilitation interventions considered the achievement of social objectives of trade regulation such as the advancement of public health, safety, and the environment?

Question 4: To what extent have internal factors (e.g. design, supervision, team composition, M&E framework, collaboration, funding, etc.) or external factors (e.g. client commitment and political economy, private sector engagement, other trade-related activities such as logistics, policy, finance, etc.) contributed to the success or failure of Bank Group trade facilitation support? What are good practices and lessons of experience?

Overarching Principles

Three central principles embodied in the evaluation design are multilevel analysis, theory-based evaluation, and mixed methods. The evaluation is multilevel, looking at the global, country, project, and intervention levels. It is theory-driven, grounded in and testing the intervention logic of Bank Group support to trade facilitation elaborated in the approach paper. This model was

constructed based on a preliminary review of the literature and portfolio, as well as multiple interviews with Bank Group and external experts. This analysis is characterized as a multilevel evaluation (global, regional, country, project, and intervention) involving the quantitative aspects, such as those in the analysis of the portfolio data, and qualitative aspects, such as those in the literature review, case studies, and interviews. Finally, the evaluation applies a mixed-methods approach that combines a range of methods for data collection and analysis, and triangulated (especially between quantitative and qualitative evidence) to ensure the robustness of the findings.

Table A.1. Overview of Methodological Design: Main Methodological Components

Evaluation Component	Description
Intervention logic	Considers Bank Group support to trade facilitation at the country level while recognizing linkages to other trade-related areas such as logistics, finance, and policy. The intervention logic of the evaluation identifies the activities, outputs, and outcomes of Bank Group support to trade facilitation. Bank Group activities include policy advice, lending and investments, and capacity building, in addition to public goods, including the creation of cross-country data sets and multilateral cooperation with relevant agencies. Activities generate a set of outputs such as assessments, harmonization of regulations, establishment of single windows, etc. These in turn link to three separate sets of outcomes: short-term changes in behavior (e.g. implementation of new or revised regulations, systems, or services); intermediate outcomes (including reduced direct, indirect, or hidden costs associated with trade); and positive and negative spillover effects.
Structured literature review	Structured review of the academic and professional literature using a rigorous methodology governing search strategy (with established key words/phrases, inclusion/ exclusion criteria). This was used to better understand (i) the theoretical basis of the evaluation; (ii) the state of knowledge of diverse types of trade facilitation (e.g. customs modernization); (iii) the impact of trade facilitation (and several types of reforms) on trade flows; and (iv) the impact of complementary or sequential interventions, including related interventions in trade logistics, finance, and policy. Narrower reviews structured similarly were applied to the impact of trade facilitation on trade flows and to each of the three "deep dives" described below.
Portfolio review and analysis	Structured identification and analysis of the major interventions used by each of the World Bank Group institutions in supporting trade facilitation based on the evaluation framework and consultations with Bank Group staff, preliminary literature review, and initial portfolio sampling informed by consultations.
Semistructured Interviews with World Bank Group staff, key informants, global and country stakeholders	Interviews based on the evaluation questions to gather qualitative and quantitative information and lessons of experience. Key informant interviews were based on a "snowball" approach of identifying relevant interviewees and building on their recommendations for additional contacts.

Evaluation Component	Description
Case studies of the World Bank Group's role and contribution in supporting trade facilitation in four countries	Four country-level case studies involving a desk review and country visit both to capture and assess the causal pathways presented in the intervention logic model and the underlying assumptions for each causal step with respect to some specific interventions. Countries were selected purposely based on screening criteria to identify cases providing the best combination and diversity of trade facilitation support. In each country, the team sought to identify relevant country priorities; Bank Group strategies and interventions relevant to these priorities (and their alignment with them); the nature, complementarity, coordination, and sequencing of interventions over the evaluation period; the role of key stakeholders and other players in the trade facilitation space; the contribution of the Bank Group to observed country-level outcomes and the sustainability (or risks to sustainability) of outcomes.
Subject matter "deep dives" and desk studies	Deep dives consisting of focused "mini" structured literature reviews and portfolio analysis on the topics of support for reform of ports, ASYCUDA and single windows, and standards and desk reviews of IFC Advisory Services, World Bank Advisory Services and Analytics, and trade facilitation indicators. Each deep dive sought to identify common design features of an intervention category, relevance of the intervention to achieve trade facilitation goals, factors that facilitate or constrain its implementation, and the role of stakeholders (other than the Bank Group) at the country or global level.
Review of databases and indicators	Collation of relevant indicators of outcome for trade facilitation from internal and external databases, including Logistic Performance Indicators (World Bank), Doing Business (World Bank), Enterprise Surveys, OECD Trade Facilitation Database, and the Global Enabling Trade database (World Economic Forum), for two purposes: (i) to identify global, country-level, and industry/firm-level trade facilitation priorities and needs and relate such findings to Bank Group support over time; and (ii) as outcome variables in the econometric analysis. The team identified other datasets to provide control and explanatory variables in the econometric analysis.
Econometric and statistical analysis	Design and application of econometric tests to establish and validate the relationship between Bank Group activities in support of trade facilitation as identified in the portfolio review and the outcomes identified in the intervention logic of the evaluation based on component indicators in the Doing Business Trading Across Borders and Logistics Performance Indices. The analysis examined relationships between Bank Group interventions and reduced costs of trade along with a set of control variables of factors identified in the relevant literature as important determinants (for example, quality of infrastructure, quality of institutions, and stage of economic development). The analysis conducted robustness tests to verify the validity of the findings.

Note: ASYCUDA = Automated System for Customs Data; IFC = International Finance Corporation; OECD = Organisation for Economic Co-operation and Development.

Table A.2. Detailed Design Matrix

Evaluation Questions	Information Required	Information Sources	Data Collection Methods	Data Analysis Methods	Limitations
Overarching questions: "To what extent has the World Bank Group contributed to the improvement of trade competitiveness in client countries by supporting trade facilitation interventions?"					
Question 1: *What has been the nature and extent of World Bank Group engagement in support of trade facilitation in its client countries?*	Bank Group Strategy Papers and Country Strategy Papers (e.g. Country Assistance Strategy, Country Partnership Framework), regional and sectoral strategies Project data on World Bank, IFC, and MIGA portfolio approved in FY06–17 (e.g. date of approval, commitment volume, source of funds, including trust funds, investment size, and project size, countries and regions, priority areas, sector, outcome indicators) Bank Group's strategic goals, guidelines, and strategies on trade facilitation	Bank Group portfolio data and project-level documents (e.g. PAD, ICR, ICRR, ISRs) Country Assistance Strategies, Country Partnership Framework documents Bank Group Strategy Papers, Forward Look, project-level data, policy and project-level documents (e.g. annual reports, IEG evaluations, Board reports, commitment documents) Bank Group staff and stakeholder interviews	Data extraction from Bank Group databases, institutional databases, and Bank Group institutions' key project-level and institutional documents External and government databases Semistructured interviews of relevant stakeholders and experts Case study–based review	Literature review Portfolio review of qualitative and quantitative data involving mapping and description of the main characteristics of portfolio Synthesis and analysis of interviews Review of development strategies	Data analysis may be limited owing to missing, unavailable, incomplete, and/or mixed quality data Literature may have substantial gaps on context and instruments
Question 2: *To what extent have World Bank Group trade facilitation interventions contributed to enhance trade flows of client countries by reducing the cost of international trade?*	Assessments and evaluations of trade facilitation support carried out by the Bank Group Data, indicators, and measures of success in facilitating trade	Bank Group portfolio data and project-level documents (e.g. PAD, ICR, ICRR, ISRs) on main interventions Benchmark data from sources internal and external to Bank	Literature review regarding effectiveness of trade facilitation support. Historical trends in Bank Group support and effectiveness of instruments	Econometric analysis at portfolio level and qualitative analysis at country level (case studies) Staff and stakeholder interviews	Harmonization of data derived from external sources with Bank Group data Potentially limited public sources available

		Group projects (including the World Bank's Logistic Performance Indicators and Doing Business Indicators, UN Comtrade, etc.) Internal or independent evaluations of trade facilitation carried out by multilateral development banks or other development agencies Bank Group internal project documents	Synthesis from relevant literature and research reports Data extraction from portfolio, documents, and strategies on main categories of support Data extraction from internal and external databases on outcome indicators Government data (from case studies) Semistructured interviews	Analysis of external databases and case studies Synthesis and analysis of interview outputs	Data analysis may be limited owing to missing, unavailable, incomplete, and/or mixed quality data Limited micro-evaluative information, coverage (caused by sampling) Availability of client and partner support Use of proxy indicators and proxy data
Question 3 *To what extent and in what ways have World Bank Group trade facilitation interventions considered the achievement of social objectives of trade regulation such as the advancement of public health, safety, and the environment?*	Bank Group Strategy Papers and Country Strategy Papers Review of World Bank, IFC, and MIGA portfolios approved in FY06–17 on social issues (e.g., health, safety, environment)	Bank Group portfolio data and project-level documents (e.g. PAD, ICR, ICRR, ISRs) Country Assistance Strategies, Country Partnership Framework documents Bank Group Strategy Papers Bank Group staff and stakeholder interviews	Data extraction from Bank Group databases and project-level documents External and government databases on social indicators Structured interviews of relevant stakeholders and experts Case study–based review	Portfolio review of qualitative and quantitative data involving mapping and description of the main social objectives and indicators Synthesis and analysis of interviews Review of development strategies	Data analysis may be limited owing to missing, unavailable, incomplete, and/or mixed quality data on social indicators Documentary evidence may have substantial gaps on social objectives of trade facilitation objectives and indicators
Question 4 *To what extent have internal factors (e.g. design, supervision, team composition, M&E framework, collaboration, etc.) or external factors (e.g. client commitment,*	Bank Group portfolio data Data from external sources Bank Group project review	Bank Group portfolio data and project-level documents (e.g. PAD, ICR, ICRR, ISRs) Benchmark data for Bank Group instruments from	Literature review regarding drivers of effectiveness Historical trends in Bank Group support and effectiveness of instruments	Interview response analysis Econometric analysis of data pertaining to drivers of	Respondent bias Data analysis may be limited owing to missing, unavailable, incomplete,

private sector engagement, other trade-related activities such as logistics, policy, finance, etc.) contributed to the success or failure of World Bank Group trade facilitation support?	(quantity, quality, and design) Lessons learned from documents and interviews Data, indicators, and measures of success in facilitating trade	sources external to Bank Group projects Internal or independent evaluations of trade facilitation carried out by multilateral development banks or other development agencies Literature review	Synthesis from relevant literature and research reports Data extraction from internal and external databases Interviews of Bank Group leadership team members and staff Key informant consultations and interviews	success or failure Qualitative analysis of factors of success in project documents Case studies to obtain contextual information on the success and failures of trade facilitation measures	and/or mixed quality data Limits of micro-evaluative information and coverage

Note: ICR = Implementation Completion and Results Report; ICRR = Implementation Completion and Results Report Review; IEG = Independent Evaluation Group; IFC = International Finance Corporation; ISRs = Implementation Status and Results Reports; MIGA = Multilateral Investment Guarantee Agency; PAD = project appraisal document.

Ensuring Validity of Findings

IEG took several steps to guarantee a consistent approach across evaluation team members—for example, using a case study template to ensure a common framework and evaluative lens across studies. Among the steps taken for quality control were:

i. The intervention logic and frameworks or approaches for key methods were reviewed by the Methods Advisory Team.

ii. Data entry for portfolio was peer reviewed by portfolio team members.

iii. Structured literature review was supervised by expert advisor, quality checked by team, and peer reviewed by an independent Development Economics (DEC) research economist.

iv. Case studies were peer reviewed within team and three of four were sent to country teams for verification (less successful because the team received only one response).

v. Deep-dive studies were quality checked and peer reviewed within the team.

vi. Econometric analysis was advised and reviewed by an econometrician member of the Methods Advisory team. Furthermore, multiple designs and models were tested and robustness checks applied to enhance validity.

Furthermore, the team applied triangulation across evaluation components, that is, validating hypotheses or findings based on one source with information from other sources. For example, a series of hypotheses derived from a workshop on the case studies was checked against evidence

from deep dives, interviews, portfolio analysis, and the econometric analysis. In addition, IEG's normal quality controls were exercised through internal and external review processes.

Description of Methodologies

The principal methods include the intervention logic (theory of change); the main and focused structured literature reviews; the portfolio review and analysis; semistructured interviews with World Bank Group staff, key informants, and country stakeholders; case studies of the World Bank Group's role and contribution in supporting trade facilitation in four countries; subject matter "deep dives" on ports, Automated System for Customs Data (ASYCUDA) and single window, and standards; desk studies on IFC Advisory Services and Indicators; a review of databases and indicators; and econometric and statistical analysis. Brief descriptions of these methods are found in table A.1, with greater detail in the approach paper,[1] while the methodologies for portfolio review, econometric analysis, and structured literature review are fully elaborated in appendices B, C, and E. Beyond those methodologies, below is further detail on the methodologies for the deep dives and for the case studies.

Methodology for Deep Dives

Deep dives consisting of focused "mini" structured literature reviews and portfolio analyses on the diverse types of World Bank Group support for trade facilitation. The topics were support for reform of ports, ASYCUDA and single window, and standards. Each also drew from any relevant information from case studies and interviews. Each of the deep dives used the combined information sources to identify the following:

- Common design features of this intervention
- Relevance of the intervention to achieve trade facilitation goals
- Contribution of the World Bank Group
- Factors that facilitate or constrain its implementation
- Role of other stakeholders at the country and global levels
- Lessons learned

Framework and Methodology for Case Studies

For selected countries, the case studies use a set of broader questions on World Bank Group engagement questions to get the "big picture" at the country level:

- What are the trade facilitation priorities for trade (see data, strategy, analytical work)?

- Are Bank Group strategies and interventions aligned with these priorities (complementary)?
- Have interventions been part of a programmatic or one-off approach (well-sequenced)?
- Who are the other major players in this space? Have efforts been well coordinated?

At the intervention level, the topics noted above for deep dives shaped the template:

- Common design features of this intervention
- Relevance of the intervention to achieve trade facilitation goals
- Contribution of the World Bank Group, coordination, synergies (across the World Bank, International Finance Corporation, and Multilateral Investment Guarantee Agency, and across interventions)
- Factors that facilitate or constrain its implementation
- Role of other stakeholders (beyond the World Bank Group) at the country level
- Lessons learned
- Sustainability of outcomes

Figure A.1. Framework for Case Study Trade Facilitation Interventions

Countries were selected purposively for study to maximize the opportunity for learning. Selection was based initially on an examination of multiple variables, including country income, regional and geographic (such as landlocked) characteristics, number and diversity of portfolio interventions

(by type, institutions, and instruments), and changes in outcome variables (positive or negative) during the evaluation period.

Figure A.2. Example of Variables Considered in Selection of Benin as Country Case Study

Country details			PRA interventions & Evaluation notes (green/orange highlights)												External data & country desc						
Reg	Code	Country Name	No. Inst	No. Projs (eval)	Rules & docs		Agency support		Customs modern-ization		Cross-agency support		Border infra		LPI	DB docs	DB time	Trade % GDP	LL	Land / pop	Inc
AFR	BEN	Benin	3	7(2)	3	general + single win + standards	4	customs + port authority	3	techUp - inc. ASYCUDA	1	border agency coord	1	ports, terminals	↓	→	↑	↗	NO	S / M	L

Limitations of Methodologies

Notwithstanding these steps, there were limitations to the evaluation methodologies related to the choices made about scope and design and related to data availability, resource constraints, and specific methodologies.

- The team made a necessary trade-off between breadth and depth of analysis. he overall scope of the evaluation excluded important related fields in trade policy, logistics, and trade finance. Deep dives could only cover a limited number of areas within the broader range of Bank Group areas of activity with other areas covered based on other sources. Some issues, such as those specific to landlocked states and fragile and conflict countries, were not considered.

- Country case studies were selected purposively, in part based on the richness of the portfolio and country characteristics that biased the team toward countries where the World Bank Group had adopted a more programmatic approach with multiple interventions. Each of the four country cases (and indeed associated Project Performance Assessment Reports) occurred in countries with multiple interventions and instruments. In seeking depth, the team recognizes that additional cases would have represented more contexts and variations in intervention patterns from which additional learning would have been possible.

- As with other interventions, the portfolio analysis was limited in part by the extent to which projects were closed and had micro evaluations. The lack of a consistent and validated framework for evaluation of Advisory Services and Analytics as well as more limited systematic coding and data recording limited portfolio review and analysis as a source of information on this set of instruments.

- Discontinuities in indicators, such as the recent change in methodology of the Doing Business Trading Across Borders dataset and the limited number of biannually issued

Logistics Performance Index (LPI) ratings constrained the econometric analysis. As discussed in the main text, each of the indicators is in fact a proxy for actual outcomes, based either on perceptions or hypothetical cases.

- The econometric analysis brought with it the usual perils limiting the ability to draw valid inferences from the results, including data limitations (with some targets of operations suffering from lack of sufficient observations for meaningful results to emerge), potential biases from small numbers of observations and/or high associated variances, and potential omitted variable biases.
- Interview respondents were chosen based on expertise or position, and are not a representative sample of the population of experts and stakeholders in the field of trade facilitation, potentially limiting the generalization of findings.

[1] http://documents.worldbank.org/curated/en/264211508921411734/pdf/120638-WP-PUBLIC.pdf.

Appendix B. Portfolio Review and Analysis of World Bank Group Support for Trade Facilitation FY06–17

Portfolio Review Framework and Identification Methodology

The evaluation's portfolio review framework and identification methodology benefited from valuable interactions with stakeholders and subject-matter experts as well as from the review of available literature and project-level documentation. During the early phases of the review, IEG interacted with World Bank Group staff working on trade facilitation and related areas (e.g. transport, logistics, regional integration). These interactions together with a review of relevant internal and external literature and project-level documentation informed the evaluation approach by highlighting important concepts and frameworks as well as revealing industry coding, system flags, and keywords that would facilitate the identification of the portfolio and its initial classification. During the evaluation phase, IEG shared lists of identified projects with relevant Bank Group departments to ensure completeness and accuracy of the portfolio.

Portfolio Review Framework

IEG's portfolio review framework is designed to reflect the major interventions used by each of the World Bank Group institutions to address trade facilitation concerns in client countries (and regions). IEG developed this framework using an iterative consultation process with both internal IEG stakeholders and broader World Bank Group stakeholders through the abovementioned interactions to test the internal validity of the instrument. A compact version of this framework is shown in table B.1.

The portfolio review framework was used to understand the effectiveness of these interventions. The evaluation framework accounted for the fact that trade facilitation may be one of many elements addressed by a project; for example, a World Bank investment delivered by the Transport Global Practice may contain a small trade facilitation component while much of the project's funds are used to help upgrade the country's roads network. Therefore, to understand the effectiveness of the trade facilitation intervention in this context, IEG designed an effectiveness framework parallel to the intervention framework depicted in figures A.2 and A.2 in Appendix A. This effectiveness framework relied on evaluative information available in Implementation Completion and Results Reports and Implementation Completion and Results Reviews, Expanded Project Supervision Reports, Project Completion Reports, and Project Evaluation Reports in terms of both indicators and their results as well as qualitative information on the achievement of their targets. IEG developed a three-level categorical array to capture this information; the categories include positive results

(full or substantial achievement of targets), negative results (modest or negligible achievement of targets), and no data or information available to assess the achievement of targets.

Table B.1. Applied IEG Portfolio Review Framework

Intervention Area	Description	Specific Interventions
Rules	Simplification of rules, procedures, documentation and streamlining of standards	1. *Simplification of rules*: simplification of rules, procedures, and documentation. 2. *Streamlining of standards*: streamlining/simplification of standards, norms, and parameters. 3. *Single window*: establishment/upgrade of single window. 4. *Service standards*: service standards, e.g. published rules and procedures.
Border agencies[a]	Strengthening border agencies, cross-agency dialogue, coordination, and integration	1. *Capacity building*: human resources and capacity building. 2. *Organizational improvements*: organizational or strategic improvements. 3. *Agency coordination*: border agency coordination or rationalization. 4. *Regional integration*: regional integration of border agencies. 5. *Systems improvement*: system improvement. 6. *PPD/PPP*: public and private dialogue or partnership. 7. *Agency setup*: set-up of an agency or agencies.
Border infrastructure	Improvement of border-related infrastructure and logistics	1. *Terminals*: terminals and facilities, e.g. freight ports and terminals, transfer and multimodal terminals. 2. *Port stations*: ports and stations—improvements to facilitate trade (nonpassenger). 3. *Storage*: storage, e.g. warehouses, inland container depots. 4. *Infrastructure buildings*: infrastructure—buildings and facilities supporting customs and border management

Intervention Area	Description	Specific Interventions
Border operations	Improvement of border operations including through software, hardware, or other technology upgrades; risk-based management; payments and collections; and systems supporting law enforcement	1. *General technology upgrades*: technology upgrades for the modernization of border operations—agency-specific equipment and facilities (e.g. high-tech lab equipment) or trading networks or centers. 2. *Hardware technology upgrades*: new or improved hardware (e.g. inspection scanners). 3. *Software technology upgrades*: new or improved software (e.g. ASYCUDA). 4. *Upgrades for payments and revenue*: technology and nontechnology upgrades for revenue and payment collection systems at the border. 5. *Upgrades for security*: technology and nontechnology upgrades for systems supporting law enforcement (protection and security). 6. *Risk-based management*: risk management, e.g. risk-based simplification.

Note: ASYCUDA = Automated System for Customs Data.
a. "Border agencies" pools the original intervention categories of Strengthening Border Agencies and Cross-Agency Dialogue, Coordination and Integration proposed in the approach paper's Portfolio Review Framework (for additional details on the approach paper's Portfolio Review Framework see table A.1.1. in appendix 1).

Identification Methodology

IEG's identification methodology utilized the Bank Group's internal project coding framework as well as targeted keyword searches in text-based datasets to systematically capture and categorize the portfolio subsets relevant to trade facilitation. IEG employed the following steps to identify the evaluation's portfolio of projects:

i. Projects were identified and retrieved using the World Bank Group's systems and system codes (sector, thematic, and industry codes).

ii. For projects that do not contain at least one of the relevant system codes, IEG performed a targeted keyword search in text-based datasets (project-level abstracts, objectives, and descriptions).[1]

iii. IEG individually reviewed projects identified in steps (i) and (ii) to systematically categorize these projects and develop a unified picture of the features underpinning the trade facilitation portfolio.

For the World Bank, IEG identified several sector and theme codes from both the new and old Operations Policy and Country Services (OPCS) coding frameworks as relevant to the trade facilitation evaluation. Given that projects may contain one or more sector and one or more theme codes, IEG selected into its trade facilitation portfolio any project that contained at least one of the relevant trade facilitation codes. In addition, for Policy Operations, IEG searched inside the prior actions database for operations that contained at least one prior action classified under a relevant sector or theme code. Additional co-portfolios were identified for projects that contained at least one sector or theme code relevant to trade policy, logistics, or trade finance (see table A.1 in Appendix A). In addition, IEG ran a targeted keyword search in project titles (both lending and Advisory Services and Analytics) and in a text-based dataset that contains project abstracts and other memo fields (lending only).

Table B.2. World Bank and Advisory Services and Analytics System Codes Used to Identify the Trade Facilitation Portfolio

Source:	OPCS Sector and Theme Codes: http://www.worldbank.org/projects/sector?lang=en&page= http://www.worldbank.org/projects/theme?lang=en&page= File from World Bank Business Intelligence (BI) Portal and Analysis for Office (AO) Application and Development Policy Actions Database (DPAD). Text-based dataset from ImageBank.
Trade Facilitation	Sector Codes: within Industry and Trade • Public Administration – Industry, Trade and Services • Trade • Other Industry, Trade and Services Theme Codes: within Trade and Integration • Trade Facilitation and Market Access • Other Trade and Integration Keyword searches: project title (both World Bank lending and Advisory Services), and World Bank lending project abstracts, keywords field, sector and theme field, and topic field
Co-portfolios	Sector/Theme Codes: • Trade Logistics (000142); Trade Policy (000143) • Transport (TA, TF, TH, TP, TV, TW, TY, TZ)

Note: IEG review and interviews with World Bank Group subject-matter experts and management.

For International Finance Corporation (IFC) Investments and Advisory Services, IEG identified key sector and industry codes as well as product lines relating to trade facilitation and logistics. Projects were selected for review if they contained at least one of sector, industry, and product line codes described in table B.3. In addition, IEG ran a targeted keyword search in a text-based dataset containing project objectives and descriptions. This strategy resulted in a list of approximately 94 IFC Investments and 139 IFC Advisory Services projects accounting for 2 percent and 5 percent of their portfolio, respectively. For IFC Advisory Services, the manual review revealed that just over two-thirds of its projects meet the definition adopted by the evaluation; resulting in a portfolio of just over 90 IFC Advisory Services.

Table B.3. International Finance Corporation (IFC) Investment and Advisory Codes Used to Identify the Trade Facilitation Portfolio

Source:	IFC Sector Names, Product Names, and Industry Group Codes File from iDesk (MIS Extract) and ASOP (Project Product Detailed Listing). Text-based dataset from ASOP and IFC Portal.
Trade Facilitation	IFC Advisory • Business Line Products: TAC – Trade Facilitation and Logistics • Keyword searches in ASOP Memo Listings: project objective, project description IFC Investment • Industry Group Sector Level 3: Ports • Tertiary Sector Name (sector code) ◦ Port and Harbor Operations (E-BB) ◦ Other Support Activities for Transportation – Grain Terminals, Cargo Terminals, Airport Operations (E-BD) • Keyword searches in IFC Portal: project description
Co-portfolios	IFC Investment – Logistics: • Industry Group Sector Level 3 ◦ Railways; Roads; Shipping; Transportation and Warehousing • Tertiary Sector Name (sector code) ◦ Air Transportation (E-AA); Rail Transportation (E-AB); Water Transportation (E-AC); Other Including General Freight Trucking (E-AE); Highway Operations – Includes Toll Roads (E-BC); Storage – including Agricultural Products (E-CA)

Source: IEG review and interviews with World Bank Group subject-matter experts and management.

For the Multilateral Investment Guarantee Agency (MIGA), IEG used a targeted keyword search to identify projects that support trade facilitation in client countries. MIGA codifies its projects using sector codes, but these codes were not sufficient to identify projects that may

support trade facilitation. Therefore, IEG used a targeted keyword search in a text-based dataset containing project description information (see table B.4).

Table B.4. International Finance Corporation (IFC) Investment and Advisory Codes Used to Identify the Trade Facilitation Portfolio

Source:	MIGA Sector Codes: https://www.miga.org/Pages/Projects/AdvSearch.aspx File from MIGA Portal (both project list and memo listing)
Trade Facilitation	Keywords searches in MIGA Portal: project description
Co-portfolios	Sector Codes: Transportation

Source: IEG review and interviews with World Bank Group subject-matter experts and management.

[1] Stemmed keywords used were trade, facilitate, logist, trade_pol, trade_log, trade_fin, standard, metrology, conformity, border, connectivity, inspection, customs, tfa, tfsp, tariff, corridor.

Appendix C. Literature Review: Methodology, Summary, and Bibliography

Executive Summary

This literature review has two main objectives. The first is to survey the findings on effectiveness of trade facilitation measures on outcomes such as trade flows and trade costs. The second objective is to gain a detailed understanding of the contributions of various kinds of trade facilitation measures to increasing trade and reduction of trade costs. In doing so, the review provides the framework for establishing a causal relationship with trade facilitation support interventions of the World Bank Group, thereby informing on the effectiveness of past interventions and improving future ones.

Trade facilitation is generally taken to encompass policy measures that aim to reduce the costs of international trade outside of traditional market access policy tools. Its objective is to examine how processes governing the movement of goods across national borders can be improved so that trade costs are minimized, without compromising border protection objectives (Grainger 2011).

Trade facilitation reforms have received growing attention as a tool of development with the recognition that trade presents a way of achieving sustained growth and poverty reduction. The field also increased in prominence in the context of lower market access barriers following rounds of multilateral and regional trade negotiations. Various estimates reveal that trade costs dwarf the impact of tariffs on trade flows (Anderson and Van Wincoop 2004; Arvis et al. 2016; Hummels 2007).

A proper analysis of the relationship between trade facilitation and trade costs requires reliable means of measuring the trade facilitation input and the outcomes of interest. This review discusses the challenges of finding good metrics for both sets of variables, their availability, and limitations.

Trade facilitation can encompass an extensive set of activities that impinge on trade costs. But this review limits its focus on reforms aimed at "streamlining and harmonizing the activities, practices, and formalities required for international trade, and associated payments and border logistics." They correspond to the IEG typology of measures as follows:

i. simplification of rules, procedures, and documentation;

iv. cross agency dialogue, coordination, and integration;

v. strengthening border agencies;

vi. modernization of border operations; and

vii. border-related infrastructure and logistics.

Each area of trade facilitation typology interacts with other aspects of the process, as a chain and network set of procedures inevitably do. Rather than a mutually exclusive classification, the typology is meant as an organizing framework for the review.

Simplification of border procedures are empirically demonstrated to reduce trade costs and increase trade flows for both exports and imports. In particular, exports of developing countries are observed to respond positively along both the intensive and extensive margins. Intensive margin refers to the additional volume of trade, whereas extensive margin refers to new products being exported, or export markets that were not previously served. In so far as simplifying border procedures reduces the fixed costs component of trading, they also lead to greater participation of smaller firms in international trade. Finally, the reduction in time spent on border procedure compliance is also associated with less corruption and higher customs revenues.

Measures aimed at improving cross-agency dialogue, coordination, and integration in terms of harmonizing standards relating to sanitary and phytosanitary measures and technical regulations are empirically linked to greater trade volumes and product variety. Furthermore, general information availability is found to be disproportionately beneficial to exports from small and medium-sized enterprises (SMEs) compared with larger firms. However, the literature informing on benefits of other types of coordination activities and mechanisms such as single windows and one-stop border posts rely more heavily on case studies.

Empirical work on the effects of strengthening border agencies remains very limited. At the same time, the metrics for this type of facilitation reform is also the least developed among the typologies considered. But the lacunae are also palpable even in terms of case studies because many reforms aimed at improving border agencies at both the institutional and human resource levels were carried out in the wake of large country shocks such as conflicts and economic crises. Moreover, restructuring and trainings also tend to be necessary accompaniments to other types of reforms. Under these scenarios, the effects accruing to border agency improvement become hard to isolate.

Modernization of border operations, frequently taking the form of automation or adoption of information and communications technology (ICT) in border procedures, is associated with lower trade costs. This in turn translates to increased trade flows. Positive effects are also observed in terms of higher customs duties collection and shorter border clearance times. Nearly all the evidence for this facilitation typology comes from case studies.

Finally, investments in border-related infrastructure are empirically shown to contribute to lower trade costs, which manifest in larger trade flows measured as both volume and

product variety. Nonetheless, studies that shed light on the infrastructure aspects that are most important for improving port efficiency are still very limited.

In terms of outcomes, the effect of trade facilitation measures is most established for trade costs and trade flows. The evidence on global value chain trade and participation of SMEs, although available, is less abundant; even less evidence is available on second-order effects on employment, foreign direct investment, and poverty. At the same time, impacts on customs revenue and border clearance times tend to lean heavily on case studies.

Behind the border factors such as the general state of infrastructure, business environment, governance, and overall quality of institutions interact with border trade facilitation measures, and greatly influence their efficacy and efficiency. Cross-country evidence suggests that the overall quality of institutions tends to matter more in promoting trade for low-income countries, whereas hard infrastructure increases in importance as per capita incomes rise (Iwanow and Kirkpatrick 2009; Portugal-Perez and Wilson 2012). At the country level, the exact complementarities and the order of priority among trade facilitation reforms will naturally vary based on what the key bottlenecks in the trading process of a country are. Comprehensive diagnostic tools provided by institutions such as the World Bank Group can help in this regard.

The empirical literature on trade facilitation predicts substantial gains across all country groups and geographical regions from bringing down trade costs (WTO 2015). The recognition of the potential gains is accompanied by an increase in official development assistance directed for trade facilitation (OECD 2017). Available cross-country studies suggest positive effects on exports (Calì and te Velde 2011; Helble, Mann, and Wilson 2012). Nonetheless, the literature on the effectiveness of aid for trade is nascent and there remain difficulties with the scope of definitions of aid for trade in available databases. At the same time, empirical work at the country level is particularly scant.

Structured Literature Review: IEG Methods Literature

Objective and Scope (Based on the IEG Approach Paper)

This literature review has two main objectives. The first is to survey the findings on effectiveness of trade facilitation measures on outcomes such as trade flows, reduction in cost of trade, and other related outcomes. Studies on the role of complementary or sequential interventions that may influence the impact of facilitation measures are also included.

The second objective is to gain a detailed understanding of the contributions of various kinds of trade facilitation measures to increasing trade or reducing trade costs. Examples include customs automation, risk-based inspections, border management, border logistics, single windows, and border agency coordination.

In addressing these two objectives, the review provides the framework for establishing a causal link between trade facilitation support interventions of the World Bank Group and trade outcomes, thereby informing on the effectiveness of past interventions and improving future ones. At the same time, the review points to areas where evidence is lacking or remains inconclusive, hence pointing to questions where future research can make meaningful contributions.

At its broadest, trade facilitation encompasses any set of undertakings that can potentially affect the speed and volume of trade flows. The IEG definition focuses on a narrow set of activities that involve "streamlining and harmonizing the activities, practices, and formalities required for international trade, and associated payments and border logistics; while safeguarding legitimate regulatory and policy objectives" (IEG Approach Paper, 2017, p.1).

Search Strategy

The identification of relevant literature followed four main strategies: (i) key publications of international organizations on trade facilitation; (ii) Google Scholar; (iii) EconLit publications database; and (iv) the World Bank Open Knowledge Repository (OKR).

Key Publications

Key reports on trade facilitation of international organizations were consulted. The 2015 World Trade Report of the World Trade Organization (WTO) and the various publications of the Organisation for Economic Co-operation and Development (OECD) are themselves reviews on trade facilitation. Forty-two journal articles, reports, and working papers were identified as references for the review based on these sources.

Google Scholar

The search exercise in Google Scholar was particularly useful in finding references that are outside mainstream economics publications such as Food Policy and the World Customs Journal. The key words used are "trade facilitation"; "trade facilitation and trade costs"; "customs automation" or "customs modernization"; "border procedure" or "customs procedure"; and "shipment inspection." These are listed in column 1 of table C.1.

No filters were applied for "trade facilitation" and "trade facilitation and trade costs." However, for working papers of an empirical nature, and for the other search words, only the more recent publications are considered (2010 onward). This is premised on the assumption that detailed customs procedures and management practices have undergone changes in the 21st century, and the most relevant publications are the ones closest to the present. Each search yielded hundreds of results, hence only the top 40 results were considered for the first two search phrases, whereas only the top 15 results were included for the other search phrases. This exercise gathered 125 materials as potential sources.

Table C.1. Summary of Google Scholar Search Results

Search Phrase	References (no.)	Search Filter
Trade facilitation	Top 40	No filters
Trade facilitation and trade costs	Top 40	
Customs automation/modernization	Top 15	2010 onward if non-refereed work
Border/customs procedure	Top 15	
Shipment inspection	Top 15	

EconLit Publications Database

The EconLit search is productive in identifying most recent publications that have yet to be cited frequently because they are recent. It also yielded unique articles pertaining to types of trade facilitation measures focusing on border and customs modernization and procedures.

Using the key words “trade facilitation”; “trade facilitation and trade costs”; “customs automation” or “customs modernization”; “border procedure” or “customs procedure”; and “shipment inspection,” the search exercise produced a list of 778 publications. Filters were not employed for journal articles, but only publications after 2010 are considered for non-refereed papers.

Table C.2. Summary of EconLit Search Results

Search Phrase	References (no.)	Search Filter
Trade facilitation	495	No filters
Trade facilitation and trade costs	172	
Customs automation/modernization	57	2010 onward if non-refereed work
Border/customs procedure	23	
Shipment inspection	31	

World Bank Open Knowledge Repository

The OKR search was focused on the journal and working paper collections. The search produced several most recent works on trade facilitation. It is a reliable source of country-focused studies. Filters were not applied for journal articles. Only working papers published from 2010 onward are considered. This is in keeping with research culture that in general, working papers that are competently done find their way into refereed publications after some time. This exercise yielded a list of 316 publications.

Table C.3. Summary of Open Knowledge Repository Search Results

Search Phrase	References (no. journals and working papers)	Search Filter
Trade facilitation	23, 113	No filters for journal articles and reports, but only 2010 onward for working papers
Trade facilitation and trade costs	11, 67	
Customs automation/modernization	0, 31	
Border/customs procedure	4, 53	
Shipment inspection	0, 14	

Inclusion and Exclusion Criteria

The four search strategies produced a list of 1261 publications. The first step in narrowing down is to weed out duplicates. In cases where both working paper and peer-reviewed versions of the paper are available, the latter is the preferred source. This elimination process left 732 publications.

The next step involved scanning through each paper's introduction or data section (for empirical papers) to determine their definition of trade facilitation. This allowed for the exclusion of papers that do not meet either of the criteria: (i) conformity to the IEG definition of trade facilitation (for example, trade facilitation measures that pertain to export promotion activities/agencies); and (ii) informative of complementarity and sequencing issues in trade facilitation. This narrowed the list to 243 publications.

For papers of a descriptive nature, only those that can relate observed outcomes on trade flows and trade costs are considered. When many facilitation reforms are instituted in proximity with each other, attribution of results to measures becomes nearly impossible.

For empirical work, only papers that at least satisfy a set of methodological criteria for establishing causal relationships are considered. Specifically, papers were selected that:

i. Use panel, pooled cross section, or time series data. Cross section data is inherently limited for inferring causal relationships.

ii. Acknowledge and deal with issues of selection and endogeneity.

iii. For papers using the gravity model as the main tool for analyses, considered alternative models to ordinary least squares (OLS) that can address heteroscedasticity in multiplicative models.

The inclusion criteria are less stringent when literature in a particular area is scarce such as in port infrastructure and aid effectiveness. In such cases, findings from available literature are cited, while at the same time informing of their limitation.

The application of the full inclusion/exclusion criteria left us with a total of 109 references to work with. Finally, back referencing of the 109 led to 18 other references.

Extraction and Synthesis

The collected literature is mainly organized according to the IEG typology of measures, distinguishing between the different areas of facilitation and a general grouping of outcomes. Another section is used to organize the materials on (i) trade facilitation in general; (ii) the interactions of the different facilitation typologies with each other, and country infrastructure and institution contexts; and (iii) aid effectiveness.

The findings for each group of literature are summarized with a table at the end of each discussion.

Table C.4. Typology of Trade Facilitation Measures

Trade Facilitation Type	Description
Simplification of rules, procedures, and documentation	• Simplification and streamlining of trade-related rules, procedures, and documentation • Simplification of standards and conformity assessments through risk-based approaches • Establishing or improving single windows and collection systems
Cross-agency dialogue, coordination, integration	Policy dialogue and advisory services to encourage domestic and international cross-agency coordination
Strengthening border agencies	Technical assistance and specialized trainings to improve the organization of customs and other non-customs agencies involved in border operations
Modernization of border operations	Investments and technical assistance in specialized software (e.g. ASYCUDA), hardware (e.g. scanners), and ICT system (e.g. payment and revenue systems, websites, and portals)
Border-related infrastructure and logistics	Investments in physical infrastructure at the border such as port facilities, and border-proximate infrastructure

Source: IEG Approach Paper (2017).
Note: ASYCUDA = Automated System for Customs Data; ICT = information and communications technology.

Table C.5. Synthesis of Trade Facilitation Typology and Outcomes

Outcome/Typology	Trade Cost	Intensive Margin	Extensive Margin	Global Value Chains	Small and Medium-Sized Enterprises	Corruption and Customs Revenue
Simplification of border procedures	Border formalities and procedures are crucial factors in reducing trade costs. This is confirmed in country-level empirical studies in Albania, Mexico, and Serbia, where simplification of border procedures through risk management practices, authorized economic operators (AEOs), and in-house clearing programs reduced clearance times, their variability, or both. An empirical study of causes of border delays in Peru demonstrates the importance of distinguishing among the border processes.	Reducing the cost and time spent in complying with border procedures leads to greater trade flows. The increase is particularly large for developing countries whose exports of time-sensitive global value chain (GVC) and agriculture products suffer with procedure-related delays. Imports also increase with simpler border procedures, which in turn supports GVC trade.	Reducing the cost and time spent in complying with border procedures increases the variety of products being exported, and expands the number of new firm and country buyers. The increase largely accrues to developing countries, and the size of the effects are larger than could be gained from market access concessions.	Lengthy import licensing procedures reduce imports of intermediate products, that are used as inputs for GVC trade. Conversely, the adoption of simpler inspection procedures through an AEO in Mexico increased exports of time-sensitive GVC inputs.	A cross-country study associates shorter export times with increased participation of smaller firms. However, the reduction of physical inspection rates in Albania did not have differential effects across firm sizes.	Longer trade procedures are associated with more corruption. Corruption in turn deters exports. A cross-country analysis suggests that preshipment inspection (PSI) can be a tool for increasing customs revenues, although success at the country level is far from guaranteed, as the cases of Argentina, Columbia, Indonesia, and the Philippines demonstrate.
Cross-agency cooperation	Variable costs of firms in developing countries increase significantly with investments to	Information availability is a strong predictor of trade flows for middle- and low-income countries. At the	Information availability increases the range of products exported by small firms. Conversely,		Small firms exhibit larger positive responses in trade volumes and export	

Outcome/Typology	Trade Cost	Intensive Margin	Extensive Margin	Global Value Chains	Small and Medium-Sized Enterprises	Corruption and Customs Revenue
	comply with sanitary and phytosanitary (SPS) requirements.	same time, the degree to which available information is harmonized with that of other countries affects their impact of trade. This is demonstrated in the case of SPS requirements and technical barriers to trade. Imposition of these requirements has a negative impact on trade flows. However, harmonizing them with international standards mitigates their trade-dampening effect. In cases where they help exporters overcome information asymmetry about their product, the overall effect may even be positive.	the imposition of strict SPS regulations reduces the variety of products exported and discourages firms from entering a new market. The negative effects of SPS regulations are mitigated, and can possibly be reversed, when they are harmonized with international standards.		variety to information availability. But small firms also reduce their exports more when faced with SPS measures.	
Strengthening border agencies	There are very few materials for facilitation measures under this typology. The metrics are very undeveloped, and the empirical literature is naturally limited by this. At the same time, focused case studies are also few because: (i) customs re-organization tends to take place in the contexts of social and economic crises; and (ii) border strengthening measures are usually necessary accompaniments of reforms in the other typologies. A cross-country study suggests that good governance reduces import times substantially. This appears to be supported in a case study on performance contracts in Cameroon.					

Outcome/Typology	Trade Cost	Intensive Margin	Extensive Margin	Global Value Chains	Small and Medium-Sized Enterprises	Corruption and Customs Revenue
Modernization of border-related infrastructure	Automation reduces the time spent at the border and has one of the largest effects on trade costs in developing countries. This appears to be supported by experiences documented in case studies which observe savings in time and costs associated with inventory management.	Formalities related to automation, as defined in the OECD Trade Facilitation Indicators, is one of the strongest predictors of trade flows for low- and middle-income countries. The electronic single window in Costa Rica is associated with increased export flows.	The phased introduction of an electronic single window in Costa Rica is empirically linked to the expansion of exporting firms, the number of products they export, and the number of destinations.			Case studies suggest that the adoption of border management information and communications technology systems is usually accompanied by increased collection of customs revenues.
Border-related infrastructure and logistics	Having efficient ports is associated with lower maritime shipping charges. Port efficiency in turn is influenced by containerization, regulation, prevalence of organized crime, and a country's general infrastructure.	More efficient ports lead to higher trade flows. Globally, containerization is found to be one of the factors behind the trade expansion of the latter half of the 20th century.	More efficient ports tend to export a greater variety of products.			

Bibliography

Anderson, James E., and Eric Van Wincoop. 2004. "Trade Costs." Journal of Economic Literature 42 (3): 691–751.

Anson, Jose, Olivier Cadot, and Marcelo Olarreaga. 2006. "Tariff Evasion and Customs Corruption: Does Pre-Shipment Inspection Help?" The BE Journal of Economic Analysis & Policy 5 (1).

Arvis, Jean Francois, Jean-Francois Marteau, and Gael Raballand. 2010. The Cost of Being Landlocked: Logistics Costs and Supply Chain Reliability. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-8408-4.

Arvis, Jean-François, Yann Duval, Ben Shepherd, Chorthip Utoktham, and Anasuya Raj. 2016. "Trade Costs in the Developing World: 1996–2010." World Trade Review 15 (3): 451–74. https://doi.org/10.1017/S147474561500052X.

Atkin, David, and Dave Donaldson. 2015. "Who's Getting Globalized? The Size and Implications of Intra-National Trade Costs." NBER Working Paper No. 21439. National Bureau of Economic Research, Cambridge, Massachusetts.

Baldwin, Richard, and Anthony J. Venables. 2013. "Spiders and Snakes: Offshoring and Agglomeration in the Global Economy." Journal of International Economics 90 (2): 245–54. https://doi.org/10.1016/j.jinteco.2013.02.005.

Bernhofen, Daniel M., Zouheir El-Sahli, and Richard Kneller. 2016. "Estimating the Effects of the Container Revolution on World Trade." Journal of International Economics 98 (January): 36–50. https://doi.org/10.1016/j.jinteco.2015.09.001.

Beverelli, Cosimo, Simon Neumueller, and Robert Teh. 2015. "Export Diversification Effects of the WTO Trade Facilitation Agreement." World Development 76 (December): 293–310. https://doi.org/10.1016/j.worlddev.2015.07.009.

Blonigen, Bruce A., and Wesley W. Wilson. 2007. "Port Efficiency and Trade Flows." Review of International Economics 16 (1): 21–36. https://doi.org/10.1111/j.1467-9396.2007.00723.x.

Borchert, Ingo, Batshur Gootiiz, Arti Grover Goswami, and Aaditya Mattoo. 2017. "Services Trade Protection and Economic Isolation." The World Economy 40 (3): 632–52. https://doi.org/10.1111/twec.12327.

Cadot, Olivier, ed. 2011. Where to Spend the Next Million? Applying Impact Evaluation to Trade Assistance. London: Centre for Economic Policy Research.

Cadot, Olivier, Ana Fernandes, Julien Gourdon, Aaditya Mattoo, and Jaime de Melo. 2014. "Evaluating Aid for Trade: A Survey of Recent Studies." The World Economy 37 (4): 516–29. https://doi.org/10.1111/twec.12138.

Calì, Massimiliano, and Dirk Willem te Velde. 2011. "Does Aid for Trade Really Improve Trade Performance?" World Development 39 (5): 725–40. https://doi.org/10.1016/j.worlddev.2010.09.018.

Cantens, Thomas, Gaël Raballand, and Samson Bilangna. 2010. "Reforming Customs by Measuring Performance: A Cameroon Case Study." *World Customs Journal* 4 (2): 55–74.

Carballo, Jerónimo, Georg Schaur, and Christian Volpe Martincus. 2016. "Trust No One? Security and International Trade." IDB Working Paper Series. Inter-American Development Bank, Washington DC.

Chaney, Thomas. 2008. "Distorted Gravity: The Intensive and Extensive Margins of International Trade." American Economic Review 98 (4): 1707–21. https://doi.org/10.1257/aer.98.4.1707.

Chen, Chunlai, Jun Yang, and Christopher Findlay. 2008. "Measuring the Effect of Food Safety Standards on China's Agricultural Exports." Review of World Economics 144 (1): 83–106. https://doi.org/10.1007/s10290-008-0138-z.

Chen, Natalie, and Dennis Novy. 2011. "Gravity, Trade Integration, and Heterogeneity across Industries." Journal of International Economics 85 (2): 206–21. https://doi.org/10.1016/j.jinteco.2011.07.005.

Christ, Nannette, and Michael J. Ferrantino. 2011. "Land Transport for Export: The Effects of Cost, Time, and Uncertainty in Sub-Saharan Africa." World Development 39 (10): 1749–59. https://doi.org/10.1016/j.worlddev.2011.04.028.

Clark, Ximena, David Dollar, and Alejandro Micco. 2004. "Port Efficiency, Maritime Transport Costs, and Bilateral Trade." Journal of Development Economics 75 (2): 417–50. https://doi.org/10.1016/j.jdeveco.2004.06.005.

Cubas, Diana, Cecilia Briceno-Garmendia, and Heinrich C. Bofinger. 2015. "OECS Ports: An Efficiency and Performance Assessment." Policy Research Working Paper No. 7162. World Bank, Washington, DC.

Czubala, W., B. Shepherd, and J. S. Wilson. 2009. "Help or Hindrance? The Impact of Harmonised Standards on African Exports." Journal of African Economies 18 (5): 711–44. https://doi.org/10.1093/jae/ejp003.

Dennis, Allen. 2010. "Global Economic Crisis and Trade: The Role of Trade Facilitation." Applied Economics Letters 17 (18): 1753–57. https://doi.org/10.1080/13504850903409771.

Dennis, Allen, and Ben Shepherd. 2011. "Trade Facilitation and Export Diversification." The World Economy 34 (1): 101–22. https://doi.org/10.1111/j.1467-9701.2010.01303.x.

Diagne, Ibrahima. 2010. "Developing a Single Window to Facilitate Trade in Senegal." Investment Climate in Practice, No. 11. World Bank, Washington, DC.

Disdier, A. C., and S. Marette. 2010. "The Combination of Gravity and Welfare Approaches for Evaluating Nontariff Measures." American Journal of Agricultural Economics 92 (3): 713–26. https://doi.org/10.1093/ajae/aaq026.

Disdier, Anne-Célia, Lionel Fontagné, and Mondher Mimouni. 2008. "The Impact of Regulations on Agricultural Trade: Evidence from the SPS and TBT Agreements." American Journal of Agricultural Economics 90 (2): 336–350.

Djankov, Simeon, Caroline Freund, and Cong S. Pham. 2010. "Trading on Time." The Review of Economics and Statistics 92 (1): 166–173.

Draper, Charles. 2000. "Reforming Customs Administration: The Unlikely Case of Bangladesh." World Bank, Washington, DC. http://siteresources.worldbank.org/INTRANETTRADE/Resources/Draper_customs.pdf.

Duval, Yann, Nora Neufeld, and Chorthip Utoktham. 2016. "Do Trade Facilitation Provisions in Regional Trade Agreements Matter? Impact on Trade Costs and Multilateral Spillovers." ARTNeT Working Paper Series.

Ehrich, Malte, and Axel Mangelsdorf. 2018. "The Role of Private Standards for Manufactured Food Exports from Developing Countries." World Development 101 (January): 16–27. https://doi.org/10.1016/j.worlddev.2017.08.004.

Essaji, Azim. 2008. "Technical Regulations and Specialization in International Trade." Journal of International Economics 76 (2): 166–76. https://doi.org/10.1016/j.jinteco.2008.06.008.

Feenstra, Robert C., and Hong Ma. 2014. "Trade Facilitation and the Extensive Margin of Exports: Trade Facilitation and Exports." Japanese Economic Review 65 (2): 158–77. https://doi.org/10.1111/jere.12031.

Fernandes, Ana M., Esteban Ferro, and John S. Wilson. 2017. "Product Standards and Firms' Export Decisions." The World Bank Economic Review, April. https://doi.org/10.1093/wber/lhw071.

Fernandes, Ana M., Russell H. Hillberry, and Claudia N. Berg. 2016. "Expediting Trade: Impact Evaluation of an in-House Clearance Program."

Fernandes, Ana M., Russell H. Hillberry, and Alejandra Mendoza Alcantara. 2015. "Trade Effects of Customs Reform: Evidence from Albania."

Ferro, Esteban, Tsunehiro Otsuki, and John S. Wilson. 2015. "The Effect of Product Standards on Agricultural Exports." Food Policy 50 (January): 68–79. https://doi.org/10.1016/j.foodpol.2014.10.016.

Ferro, Esteban, Alberto Portugal-Perez, and John S. Wilson. 2014. "Aid to the Services Sector: Does It Affect Manufacturing Exports?" The World Economy 37 (4): 530–41. https://doi.org/10.1111/twec.12151.

Fink, Carsten, Aaditya Mattoo, and Ileana Cristina Neagu. 2002. "Trade in International Maritime Services: How Much Does Policy Matter?" The World Bank Economic Review 16 (1): 81–108.

Fontagné, Lionel, Anne-Célia Disdier, and Matthias Beestermöller. 2016. "Impact of European Food Safety Border Inspections on Agri-Food Exports: Evidence from Chinese Firms."

Fontagné, Lionel, Gianluca Orefice, and Roberta Piermartini. 2016. "Making (Small) Firms Happy. The Heterogeneous Effect of Trade Facilitation Measures."

Fontagné, Lionel, Gianluca Orefice, Roberta Piermartini, and Nadia Rocha. 2015. "Product Standards and Margins of Trade: Firm-Level Evidence." Journal of International Economics 97 (1): 29–44. https://doi.org/10.1016/j.jinteco.2015.04.008.

Francois, Joseph, and Miriam Manchin. 2013. “Institutions, Infrastructure, and Trade.” World Development 46 (June): 165–75. https://doi.org/10.1016/j.worlddev.2013.02.009.

Freund, C., and N. Rocha. 2011. “What Constrains Africa’s Exports?” The World Bank Economic Review 25 (3): 361–86. https://doi.org/10.1093/wber/lhr016.

Freund, Caroline, Mary Hallward-Driemeier, and Bob Rijkers. 2016. “Deals and Delays: Firm-Level Evidence on Corruption and Policy Implementation Times.” The World Bank Economic Review 30 (2): 354–82. https://doi.org/10.1093/wber/lhv001.

Fugazza, Marco. 2017. “Fish Trade and Policy.” UNCTAD. http://unctad.org/en/PublicationsLibrary/ser-rp-2017d7_en.pdf.

Grainger, Andrew. 2011. “Developing the Case for Trade Facilitation in Practice.” World Customs Journal 5 (2): 65–76.

Haddad, Mona, Marc Juhel, and World Bank, eds. 2010. Trade and Transport Facilitation Assessment: A Practical Toolkit for Country Implementation. World Bank Study. Washington, D.C.

Handley, Kyle, and Nuno Limão. 2015. “Trade and Investment under Policy Uncertainty: Theory and Firm Evidence.” American Economic Journal: Economic Policy 7 (4): 189–222. https://doi.org/10.1257/pol.20140068.

Harrigan, James. 2010. “Airplanes and Comparative Advantage.” Journal of International Economics 82 (2): 181–94. https://doi.org/10.1016/j.jinteco.2010.07.002.

Helble, Matthias, Catherine L. Mann, and John S. Wilson. 2012. “Aid-for-Trade Facilitation.” Review of World Economics 148 (2): 357–376.

Hillberry, Russell H., and Xiaohui Zhang. 2015. “Policy and Performance in Customs: Evaluating the Trade Facilitation Agreement.”

Hoekman, Bernard, and Alessandro Nicita. 2010. “Assessing the Doha Round: Market Access, Transactions Costs and Aid for Trade Facilitation.” The Journal of International Trade & Economic Development 19 (1): 65–79. https://doi.org/10.1080/09638190903327476.

———. 2011. “Trade Policy, Trade Costs, and Developing Country Trade.” World Development 39 (12): 2069–79. https://doi.org/10.1016/j.worlddev.2011.05.013.

Hoekman, Bernard, and Ben Shepherd. 2015. “Who Profits from Trade Facilitation Initiatives? Implications for African Countries.” Journal of African Trade 2 (1–2): 51–70. https://doi.org/10.1016/j.joat.2015.08.001.

Hornok, Cecília, and Miklós Koren. 2015. “Administrative Barriers to Trade.” Journal of International Economics 96 (July): S110–22. https://doi.org/10.1016/j.jinteco.2015.01.002.

Hummels, David. 2007. “Transportation Costs and International Trade in the Second Era of Globalization.” The Journal of Economic Perspectives 21 (3): 131–154.

Hummels, David L, and Georg Schaur. 2013. “Time as a Trade Barrier.” American Economic Review 103 (7): 2935–59. https://doi.org/10.1257/aer.103.7.2935.

Hummels, David, and Volodymyr Lugovskyy. 2006. "Are Matched Partner Trade Statistics a Usable Measure of Transportation Costs?" Review of International Economics 14 (1): 69–86.

Iwanow, Tomasz, and Colin Kirkpatrick. 2009. "Trade Facilitation and Manufactured Exports: Is Africa Different?" World Development 37 (6): 1039–50. https://doi.org/10.1016/j.worlddev.2008.09.014.

Japan International Cooperation Agency (JICA). 2014. "Innovative Approaches for Accelerating Connectivity in Africa: One Stop Border Post (OSBP) Development." Japan International Cooperation Agency.

Jong, Eelke de, and Christian Bogmans. 2011. "Does Corruption Discourage International Trade?" European Journal of Political Economy 27 (2): 385–98. https://doi.org/10.1016/j.ejpoleco.2010.11.005.

Kieck, Erich. 2010. "Coordinated Border Management: Unlocking Trade Opportunities through One Stop Border Posts." World Customs Journal 4 (1): 3–13.

Lanz, Rainer, Michael Roberts, and Sainabou Taal. 2016. "Reducing Trade Costs in LDCs: The Role of Aid for Trade." WTO Staff Working Paper. World Trade Organization, Geneva.

Li, Yuan, and John C. Beghin. 2012. "A Meta-Analysis of Estimates of the Impact of Technical Barriers to Trade." Journal of Policy Modeling 34 (3): 497–511. https://doi.org/10.1016/j.jpolmod.2011.11.001.

Limao, Nuno, and Anthony J. Venables. 2001. "Infrastructure, Geographical Disadvantage, Transport Costs, and Trade." The World Bank Economic Review 15 (3): 451–479.

Liu, L., and C. Yue. 2012. "Investigating the Impact of SPS Standards on Trade Using a VES Model." European Review of Agricultural Economics 39 (3): 511–28. https://doi.org/10.1093/erae/jbr036.

Liu, Lan, and Chengyan Yue. 2013. "Investigating the Impacts of Time Delays on Trade." Food Policy 39 (April): 108–14. https://doi.org/10.1016/j.foodpol.2013.01.001.

Looi Kee, Hiau, Alessandro Nicita, and Marcelo Olarreaga. 2009. "Estimating Trade Restrictiveness Indices." The Economic Journal 119 (534): 172–199.

Mangelsdorf, Axel, Alberto Portugal-Perez, and John S. Wilson. 2012. "Food Standards and Exports: Evidence for China." World Trade Review 11 (03): 507–26. https://doi.org/10.1017/S1474745612000195.

Martinez-Zarzoso, Inma, and Laura Márquez-Ramos. 2008. "The Effect of Trade Facilitation on Sectoral Trade." The BE Journal of Economic Analysis & Policy 8 (1).

Maskus, Keith E., Tsunehiro Otsuki, and John S. Wilson. 2013. "Do Foreign Product Standards Matter? Impacts on Costs for Developing Country Exporters." Asia-Pacific Journal of Accounting & Economics 20 (1): 37–57. https://doi.org/10.1080/16081625.2013.744685.

Melo, Oscar, Alejandra Engler, Laura Nahuehual, Gabriela Cofre, and José Barrena. 2014. "Do Sanitary, Phytosanitary, and Quality-Related Standards Affect International Trade? Evidence from

Chilean Fruit Exports." World Development 54 (February): 350–59. https://doi.org/10.1016/j.worlddev.2013.10.005.

Mendoza Alcantara, Alejandra, Ana M. Fernandes, and Russell H. Hillberry. 2015. "Understanding the Operations of Freight Forwarders: Evidence from Serbia."

Michael, Bryane. 2012. "Do Customs Trade Facilitation Programs Help Reduce Customs-Related Corruption?" International Journal of Public Administration 35 (2): 81–97. https://doi.org/10.1080/01900692.2011.635491.

Moffitt, L. Joe, John K. Stranlund, and Craig D. Osteen. 2010. "Securing the Border from Invasives: Robust Inspections under Severe Uncertainty." Economics Research International 2010: 1–9. https://doi.org/10.1155/2010/510127.

Moïsé, Evdokia, and Florian Le Bris. 2013. "Trade Costs: What Have We Learned?" OECD Trade Policy Papers 150. Organisation for Economic Co-operation and Development, Paris. https://doi.org/10.1787/5k47x2hjfn48-en.

Moïsé, Evdokia, and Silvia Sorescu. 2013. "Trade Facilitation Indicators: The Potential Impact of Trade Facilitation on Developing Countries' Trade." Organisation for Economic Co-operation and Development, Paris.

Montagnat-Rentier, Gilles, and Gilles Parent. 2012. "Customs Administration Reform and Modernization in Francophone Sub-Saharan Africa, 1995-2010."

Nizeyimana, Christian, and Luc De Wulf. 2016. "Rwanda Electronic Single Window Supports Trade Facilitation." World Customs Journal 9 (2): 73–84.

OECD, OECD Trade and Agriculture Directorate, and Source OECD (Online service), eds. 2009. Overcoming Border Bottlenecks: The Costs and Benefits of Trade Facilitation. OECD Trade Policy Studies. Paris: Organisation for Economic Co-operation and Development.

Otsuki, Tsunehiro, John S. Wilson, and Mirvat Sewadeh. 2001. "Saving Two in a Billion: Quantifying the Trade Effect of European Food Safety Standards on African Exports." Food Policy 26 (5): 495–514.

Pelkmans, Jacques, Anabela Correia de Brito, and Céline Kauffmann. 2016. "The Contribution of Mutual Recognition to International Regulatory Co-Operation." OECD Regulatory Policy Working Papers 2. Organisation for Economic Co-operation and Development, Paris. https://doi.org/10.1787/5jm56fqsfxmx-en.

Persson, Maria. 2013. "Trade Facilitation and the Extensive Margin." The Journal of International Trade & Economic Development 22 (5): 658–93. https://doi.org/10.1080/09638199.2011.587019.

Porto, Sá, Otaviano Canuto, and Cristiano Morini. 2015. "The Impacts of Trade Facilitation Measures on International Trade Flows."

Portugal-Perez, Alberto, José-Daniel Reyes, and John S. Wilson. 2010. "Beyond the Information Technology Agreement: Harmonisation of Standards and Trade in Electronics: HARMONISATION OF STANDARDS AND TRADE." The World Economy 33 (12): 1870–97. https://doi.org/10.1111/j.1467-9701.2010.01300.x.

Portugal-Perez, Alberto, and John S. Wilson. 2009. "Why Trade Facilitation Matters to Africa." World Trade Review 8 (03): 379–416. https://doi.org/10.1017/S147474560900439X.

———. 2012. "Export Performance and Trade Facilitation Reform: Hard and Soft Infrastructure." World Development 40 (7): 1295–1307. https://doi.org/10.1016/j.worlddev.2011.12.002.

Raballand, Gael, Salim Refas, Monica Beuran, and Gozde Isik. 2012. Why Does Cargo Spend Weeks in Sub-Saharan African Ports? Lessons from Six Countries. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-9499-1.

Rajan, Raghuram G., and Arvind Subramanian. 2005. "Aid and Growth: What Does the Cross-Country Evidence Really Show?" NBER Working Paper No. 11513. National Bureau of Economic Research, Cambridge, Massachusetts.

———. 2011. "Aid, Dutch Disease, and Manufacturing Growth." Journal of Development Economics 94 (1): 106–18. https://doi.org/10.1016/j.jdeveco.2009.12.004.

Sequeira, Sandra, and Simeon Djankov. 2014. "Corruption and Firm Behavior: Evidence from African Ports." Journal of International Economics 94 (2): 277–94. https://doi.org/10.1016/j.jinteco.2014.08.010.

Shepherd, Ben. 2009. "Speed Money: Time, Corruption, and Trade."

———. 2010. "Geographical Diversification of Developing Country Exports." World Development 38 (9): 1217–28. https://doi.org/10.1016/j.worlddev.2010.02.005.

———. 2013. "Trade Times, Importing and Exporting: Firm-Level Evidence." Applied Economics Letters 20 (9): 879–83. https://doi.org/10.1080/13504851.2012.756574.

———. 2015. "Product Standards and Export Diversification." Journal of Economic Integration 30 (2): 300–333. https://doi.org/10.11130/jei.2015.30.2.300.

Shepherd, Ben, and John S. Wilson. 2009. "Trade Facilitation in ASEAN Member Countries: Measuring Progress and Assessing Priorities." Journal of Asian Economics 20 (4): 367–83. https://doi.org/10.1016/j.asieco.2009.03.001.

Shepherd, Ben, and Norbert L.W. Wilson. 2013. "Product Standards and Developing Country Agricultural Exports: The Case of the European Union." Food Policy 42 (October): 1–10. https://doi.org/10.1016/j.foodpol.2013.06.003.

Sourdin, Patricia, and Jane Korinek. 2011. "To What Extent Are High-Quality Logistics Services Trade Facilitating?" OECD Trade Policy Papers 108. Organisation for Economic Co-operation and Development, Paris. https://doi.org/10.1787/5kggdthrj1zn-en.

Taglioni, Daria, and Deborah Winkler. 2016. Making Global Value Chains Work for Development. Washington, DC: World Bank. https://doi.org/10.1596/978-1-4648-0157-0.

Teravaninthorn, Supee, and Gael Raballand. 2008. Transport Prices and Costs in Africa: A Review of the Main International Corridors. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-7650-8.

UNECA. 2013. Trade Facilitation from an African Perspective. Addis Ababa: United Nations, Economic Commission for Africa.

USAID. 2017. "Improving the Effectiveness of the WTO SPS and TBT Enquiry Points and Notification Authorities in 12 African Countries." United States Agency for International Development, Washington, DC.

Velea, Irina, Olivier Cadot, and John S. Wilson. 2010. "Do Private Inspection Programs Affect Trade Facilitation?"

Vijil, Mariana. 2014. "Aid for Trade Effectiveness: Complementarities with Economic Integration." The World Economy 37 (4): 555–66. https://doi.org/10.1111/twec.12140.

Vijil, Mariana, and Laurent Wagner. 2012. "Does Aid for Trade Enhance Export Performance? Investigating the Infrastructure Channel." The World Economy 35 (7): 838–68. https://doi.org/10.1111/j.1467-9701.2012.01437.x.

van de Walle, Dominique, and Ren Mu. 2007. "Fungibility and the Flypaper Effect of Project Aid: Micro-Evidence for Vietnam." Journal of Development Economics 84 (2): 667–85. https://doi.org/10.1016/j.jdeveco.2006.12.005.

Volpe Martincus, Christian, Jerónimo Carballo, and Alejandro Graziano. 2015. "Customs." Journal of International Economics 96 (1): 119–37. https://doi.org/10.1016/j.jinteco.2015.01.011.

World Customs Organization (WCO). 2017. "Annual Report 2016-2017." World Customs Organization, Brussells.

Wilmsmeier, Gordon, Jan Hoffmann, and Ricardo J. Sanchez. 2006. "The Impact of Port Characteristics on International Maritime Transport Costs." Research in Transportation Economics 16 (January): 117–40. https://doi.org/10.1016/S0739-8859(06)16006-0.

World Bank. 2009. Doing Business 2010: Reforming through Difficult Times. Doing Business. Washington, DC: World Bank. https://doi.org/10.1596/978-0-8213-7961-5.

———. 2016. "Connecting to Compete 2016: The Logistics Performance Index and Its Indicators." World Bank, Washington, DC. https://wb-lpi-media.s3.amazonaws.com/LPI_Report_2016.pdf.

———. 2018. Doing Business 2018: Reforming to Create Jobs. Washington, DC: World Bank. http://www.doingbusiness.org/~/media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB2018-Full-Report.pdf.

World Trade Organization (WTO). 2012. Trade Facilitation Fact Sheet. https://www.wto.org/english/tratop_e/tradfa_e/tf_factsheet_e.htm

———. 2015. "World Trade Report 2015 - Speeding up Trade: Benefits and Challenges of Implementing the WTO Trade Facilitation Agreement." World Trade Organization, Geneva.

World Trade Organization (WTO), and Organisation for Economic Co-operation and Development (OECD). 2017. Aid for Trade at a Glance 2017. Paris: OECD Publishing. https://doi.org/10.1787/aid_glance-2017-en.

Wulf, Luc de, and José B. Sokol, eds. 2004. Customs Modernization Initiatives: Case Studies. Washington, DC: World Bank.

Yang, Dean. 2008a. "Can Enforcement Backfire? Crime Displacement in the Context of Customs Reform in the Philippines." The Review of Economics and Statistics 90 (1): 1–14.

———. 2008b. "Integrity for Hire: An Analysis of a Widespread Customs Reform." The Journal of Law and Economics 51 (1): 25–57.

Yi, Kei-Mu. 2010. "Can Multistage Production Explain the Home Bias in Trade?" American Economic Review 100 (1): 364–93. https://doi.org/10.1257/aer.100.1.364.

Appendix D. Additional Figures and Tables

Table D.1. Distribution of Interventions by Intervention Area

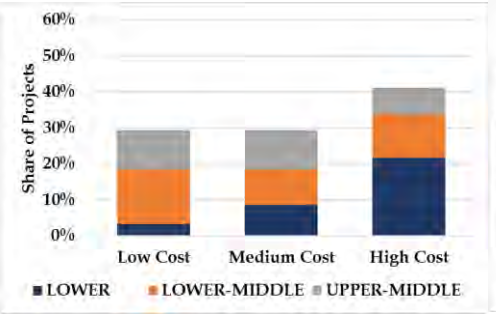
	Intervention area				
Intervention	**Border operations**	**Rules**	**Border Agencies**	**Border Infrastructure**	**Total**
Risk-based management	93	-	-	-	**93**
Terminals	-	-	-	86	**86**
Simplification of rules	-	82	-	-	**82**
Streamlining of standards	-	72	-	-	**72**
General tech. upgrades	68	-	-	-	**68**
Capacity building	-	-	65	-	**65**
Organizational improvements	-	-	60	-	**60**
Software tech. upgrades	50	-	-	-	**50**
Port stations	-	-	-	49	**49**
Single window	-	44	-	-	**44**
Agency coordination	-	-	43	-	**43**
Storage	-	-	-	30	**30**
Service standards	-	27	-	-	**27**
Upgrades for payments & revenue	26	-	-	-	**26**
Hardware tech. upgrades	20	-	-	-	**20**
Infrastructure buildings	-	-	-	18	**18**
Systems improvement	-	-	18	-	**18**
PPD/PPP	-	-	13	-	**13**
Agency setup	-	-	10	-	**10**
Regional integration	-	-	10	-	**10**
Upgrades for security	9	-	-	-	**9**
Total	**266**	**225**	**219**	**183**	**893**

Source: Independent Evaluation Group portfolio review.

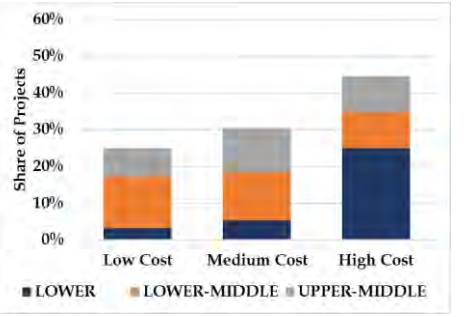
First World Bank Group Support by Income Levels, across Tertiles of Selected Doing Business and Logistics Performance Indicators.

Figure D.1. Doing Business –Trading Across Borders, Selected Indicators

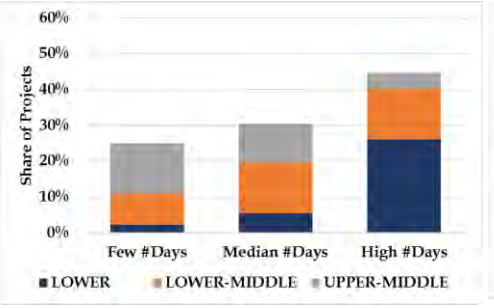
a. Export Cost per Container (XCostC)



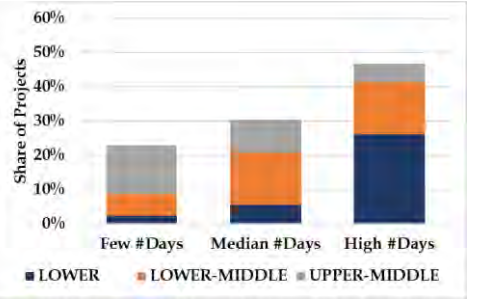
b. Import Cost per Container (ICostC)



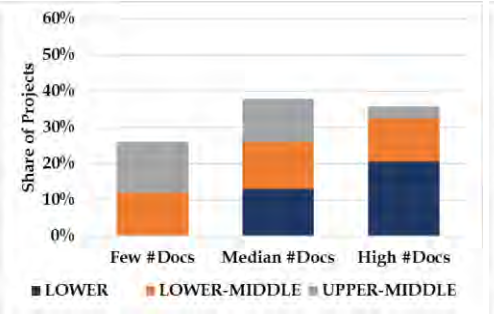
c. Number of Days Required to Export (Day2X)



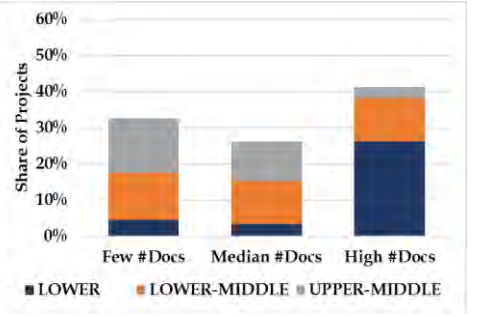
d. Number of Days Required to Import (Day2I)



e. Number of Documents Required to Export (Doc2X)



f. Number of Documents Required to Import (Doc2I)

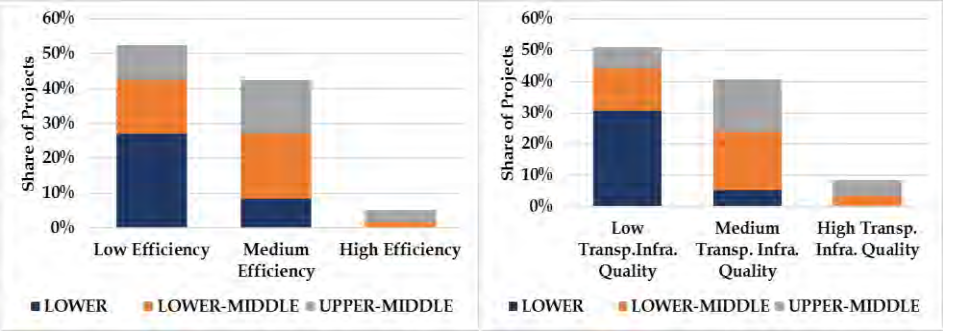


Source: Independent Evaluation Group portfolio review.
Note: All horizontal axes show indicator tertiles. First support is defined as the first trade facilitation project approval by country during the evaluation period.

Figure D.2. Logistics Performance Index, Selected Areas

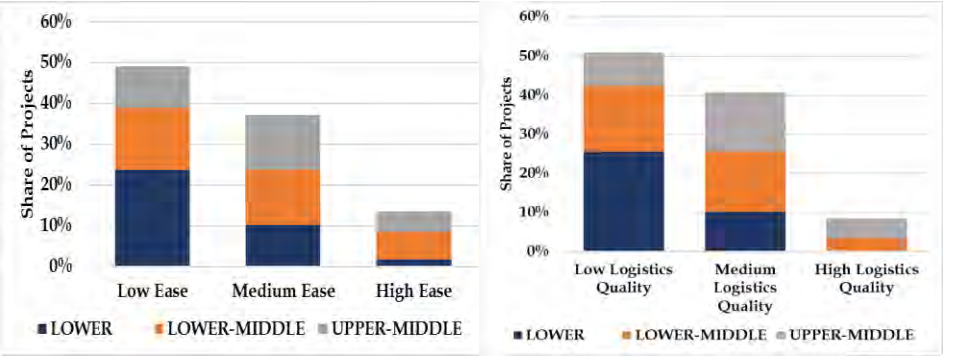
a. Efficiency of Customs Clearance Process (EffCustC)

b. Quality of Trade and Transport-Related Infrastructure (QtyTTI)



c. Ease of Arranging Competitively Priced Shipments (EaseAShipmt)

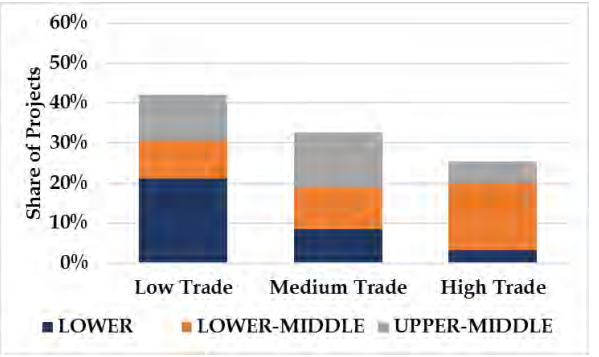
d. Competence and Quality of Logistics Services (QtyLogSer)



Source: Independent Evaluation Group portfolio review.
Notes XCostC and ICostC are measured in constant 2010 US$; EffCustC, QtyTTI, EaseAShipmt, and QtyLogSer are measured in a scale of 1 to 5 where 1 is the lowest score and 5 is the highest score. All horizontal axes show indicator tertiles. First support is defined as the first trade facilitation project approval by country during the evaluation period.

Figure D.3. Openness – Selected World Development Indicator

Trade Share of GDP (TradeGDP)

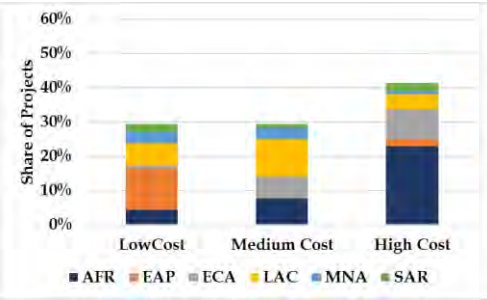


Source: Independent Evaluation Group portfolio review.
Note: All horizontal axes show indicator tertiles. First support is defined as the first trade facilitation project approval by country during the evaluation period.

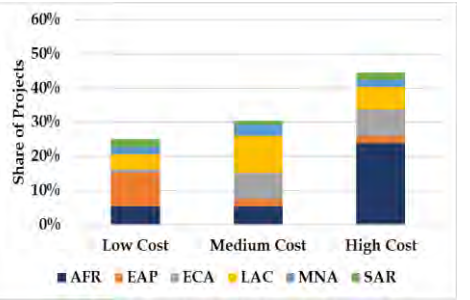
First World Bank Group Support by Region, across Tertiles of Selected Doing Business and Logistics Performance Indicators.

Figure D.4. Doing Business: Trading Across Borders, Selected Indicators

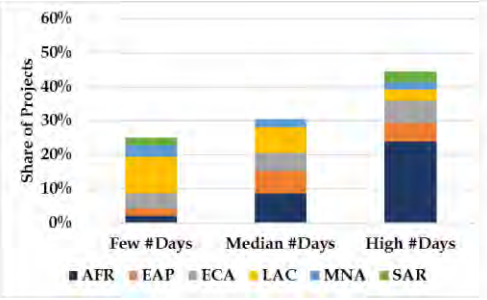
a. Export Cost per Container (XCostC)



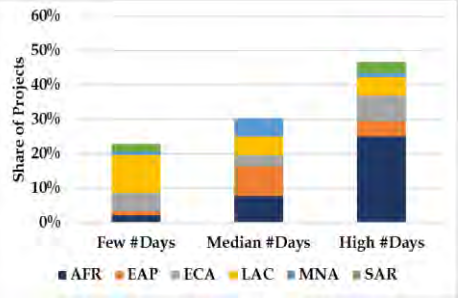
b. Import Cost per Container (ICostC)



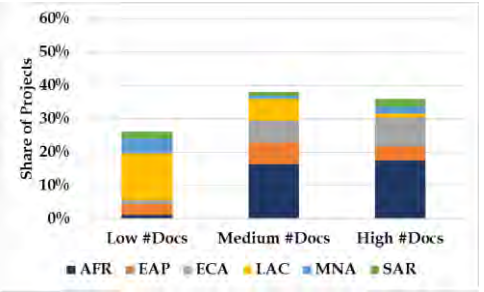
c. Number of Days Required to Export (Day2X)



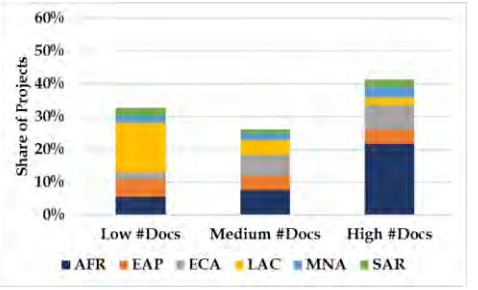
d. Number of Days Required to Import (Day2I)



e. Number of Documents Required to Export (Doc2X)



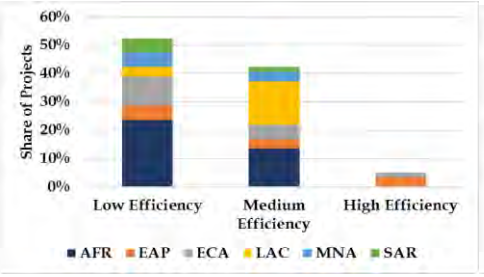
f. Number of Documents Required to Import (Doc2I)



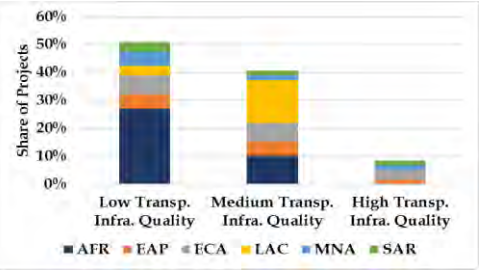
Source: Independent Evaluation Group portfolio review.
Note: All horizontal axes show indicator tertiles. First support is defined as the first trade facilitation project approval by country during the evaluation period.

Figure D.5. Logistics Performance Index, Selected Areas

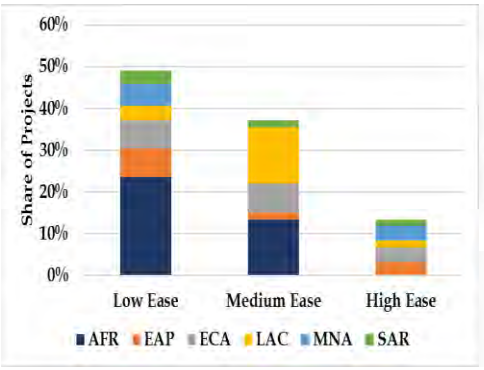
a. Efficiency of Customs Clearance Process (EffCustC)



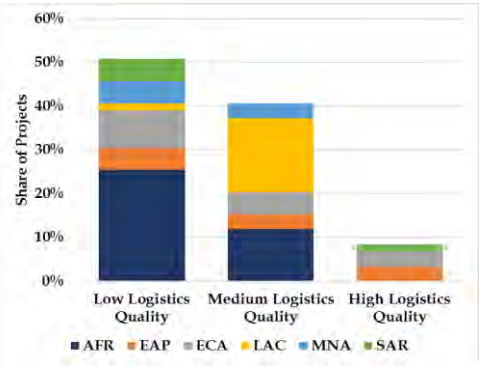
b. Quality of Trade and Transport-Related Infrastructure (QtyTTI)



c. Ease of Arranging Competitively Priced Shipments (EaseAShipmt)



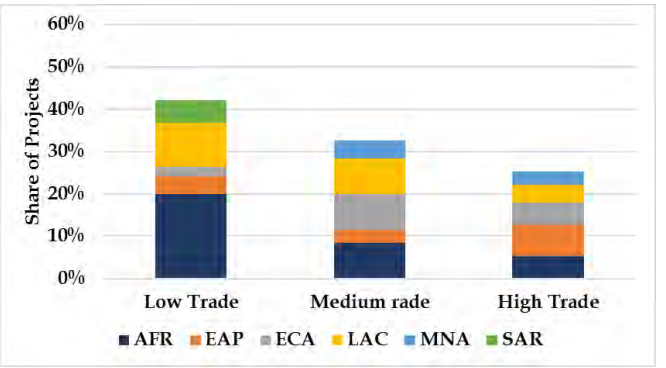
d. Competence and Quality of Logistics Services (QtyLogSer)



Source: Independent Evaluation Group portfolio review.
Note: XCostC and ICostC are measured in constant 2010 US$; EffCustC, QtyTTI, EaseAShipmt, and QtyLogSer are measured in a scale of 1 to 5 where 1 is the lowest score and 5 is the highest score. All horizontal axes show indicator tertiles. First support is defined as the first trade facilitation project approval by country during the evaluation period.

Figure D.6. Openness – Selected World Development Indicator

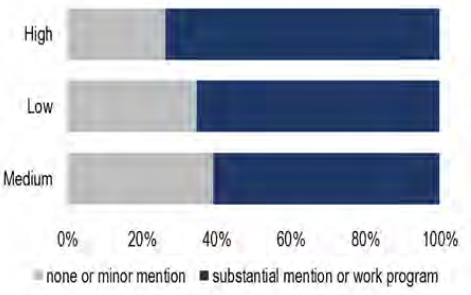
Trade Share of GDP (TradeGDP)



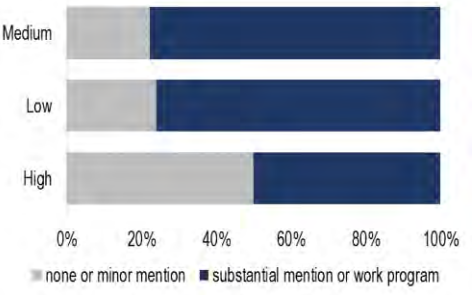
Source: Independent Evaluation Group portfolio review.
Note: All horizontal axes show indicator tertiles. First support is defined as the first trade facilitation project approval by country during the evaluation period.

Figure D.7. Country Assistance Strategy Analysis: Distribution of Overall Trade Facilitation by Trade Indicators

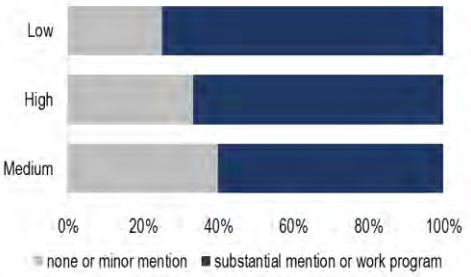
a. Trade as Percent of GDP QT (n = 65)



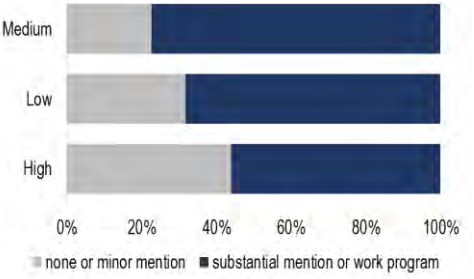
b. Trade Infrastructure Logistics Performance Index QT (n = 63)



c. Export Data (Time) QT (n = 69)



d. Export Cost (Containers) QT (n = 69)



Source: Independent Evaluation Group review.

Figure D.8. IEG Estimated World Bank Lending Operations: Average Commitments per Trade Facilitation Intervention

		Average TFAC amount per intervention (US$Million)			
Intervention Area	**Intervention**	**Non-Regional Projects**		**Regional Projects**	
Border Operations	Upgrades for payments & revenue	3.35	(9)	0.08	(1)
	Hardware technology upgrades	1.75	(6)	-	-
	General technology upgrades	1.48	(27)	5.36	(12)
	Software technology upgrades	1.36	(15)	7.36	(3)
	Risk-based management	0.44	(19)	3.21	(3)
	Upgrades for security	0.23	(2)	24.66	(2)
Rules	Single window	6.16	(5)	8.57	(4)
	Simplification of rules	0.83	(15)	2.90	(3)
	Service standards	0.53	(9)	0.10	(1)
	Streamlining of standards	0.50	(11)	3.08	(5)
Border Agencies	Regional integration	13.75	(2)	1.33	(2)
	Systems improvement	3.18	(3)	1.06	(2)
	PPD/PPP	3.12	(2)	-	-
	Agency coordination	1.31	(5)	7.63	(9)
	Capacity building	1.02	(32)	2.34	(8)
	Organizational improvements	0.80	(18)	2.05	(7)
	Agency setup	-	-	1.47	(1)
Border Infrastructure	Infrastructure buildings	41.01	(5)	39.25	(8)
	Terminals	37.04	(17)	8.40	(2)
	Port stations	14.99	(13)	11.95	(4)
	Storage	3.71	(6)	2.70	(1)

Source: Independent Evaluation Group portfolio review.
Note: The figures in the table are based on IEG estimates calculated from 62 nonregional projects and 19 regional projects. Numbers in parenthesis represent number of observations. PPD/PPP = public-private dialogue/public-private partnership.

Appendix E. Econometric Methodology and Findings

In this evaluation three statistical tests were performed to gauge the effectiveness of World Bank Group trade facilitation support: (i) before and after; (ii) matched difference-in-difference; (iii) panel data analysis. The unit of analysis is the treated country, namely a country receiving Bank Group support in facilitating trade over 2006–16.

Before and After

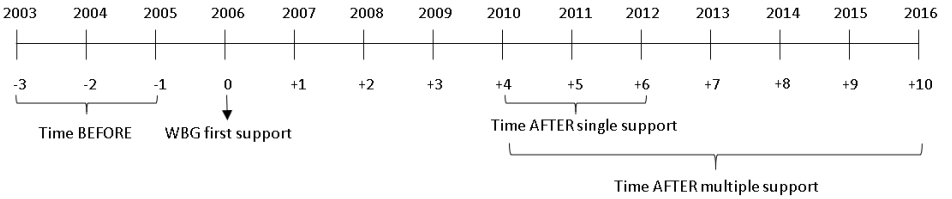
The before and after test is performed only on the set of countries that received Bank Group trade facilitation support over the evaluation period. The difference of the means of the trade facilitation outcome indicators between two periods (before and after) for two paired samples (treated and nontreated) is assessed by applying the one-sided Student's t-test to establish statistical significance.[1]

Matched Difference-In-Difference

The matched difference-in-difference estimator is performed by comparing the average performance of the trade facilitation outcome indicators between countries with similar characteristics, with the sole exception of the treatment status, **before** and **after** the *year of the first* Bank Group trade facilitation support received. The *year of first support* is represented by the project approval fiscal year.

The time "**before**" corresponds to the *three years* (t_{-1}, t_{-2}, t_{-3}) preceding the first year of treatment (t_0) or approval year. The time "**after**" is equal to (i) the *three years subsequent to a three-year gap* from the *first year* of support (i.e. t_{+4}, t_{+5}, t_{+6}) for countries with only one project during the evaluation period, or (ii) *all years* after a three-year gap from the first year of support (i.e. t_{+4}, t_{+5}, t_{+6}, t_{+7}, t_{+8}, t_{+9}, t_{+10}) for countries receiving two or more projects over the evaluation period. For illustrative purposes, figure E.1 shows the "time before" and the "time after" for the case of a country benefiting from trade facilitation support for the first time in 2006 (t_0). The three-year lag after the year of first support is applied to consider the fact that projects take some time to be implemented and show results.

Figure E.1. "Time Before" and "Time After" World Bank Group Trade Facilitation Support Beginning in 2006.



Similarity of nontreated countries to treated countries is assessed through propensity score matching. The treatment model estimated is binary and is modeled using a Probit regression. The set of covariates included in the treatment model specification are (i) the economy regional classification, (ii) income group, (iii) trade openness (trade as percent of GDP), all according to the World Bank's World Development Indicators 2017; and (iv) landlocked status, according to the CEPII geo-distance database.[2] These variables have been used with the objective of identifying similar countries from three perspectives: geographic, level of economic development, and intensity of trade. The matching method used is the nearest-neighbors (five closest neighbors) with replacement, imposing common support and match with all tied observations.

The difference-in-difference estimator is performed on a "matched" sample of countries, where each treated country is matched with the five closest neighbors, using the following specifications:

$$y = \beta_0 + \beta_1 D^{Post} + \beta_2 D^{Treat} + \beta_3 D^{Post} D^{Treat} + \beta_4 X + \beta_5 Z + \mathcal{E}$$

where:

- *y* is the trade facilitation outcome variable (International Logistics Performance Index; Doing Business: Trading Across Border);[3]
- D^{Treat} is a dummy variable capturing the treatment status (0 = nontreated; 1 = treated);
- D^{Post} is a dummy variable identifying the time before and the time after the Bank Group trade facilitation intervention (0 = before; 1 = after);
- *X* is a vector of explanatory variables identified by the portfolio review (i.e. cumulative number of trade facilitation projects received over the evaluation period; type of lending instrument used (Development Policy Finance, Investment Project Finance); these controls are used only when they were the variables of interest.

- *Z* is a vector of control variables accounting for:
    - Quality of infrastructure (World Economic Forum's Global Competitiveness Index — 2.01 Quality of overall infrastructure);
    - Quality of governance (Worldwide Governance Indicators — Regulatory Quality and Control of Corruption);
    - Trade restrictions (World Bank's World Development Indicators — Tariff rate, applied, simple mean, all products (%));
    - Regional classification (World Development Indicators 2017 classification) — to control for fixed effects;
    - Income group (World Development Indicators 2017 classification) — to control for fixed effects.

and the variable of interest is β_3.

Tests of collinearity were performed to identify the control variables to include in the regressions. The model is estimated for each institution (i.e., World Bank Group, World Bank, and International Finance Corporation), as well as each institutions' trade facilitation intervention area.[4]

Because of potential endogeneity between control variables and Bank Group support (given that it is not possible to isolate the contribution of the Bank Group to those control variables) and since the main objective of the analysis is to establish a simple correlation (not attribution), the results reported in the text refer to the previous model excluding the control variables:

$$y = \beta_0 + \beta_1 D^{Post} + \beta_2 D^{Treat} + \beta_3 D^{Post} D^{Treat} + \beta_4 X + \mathcal{E}$$

Panel Data Analysis

The panel data analysis is carried out on a short panel dataset consisting of treated countries and untreated unmatched countries over the evaluation period 2006–16. The panel data model is estimated through a within or fixed effects estimator using the following specifications:

$$y_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 Z_{i,t} + \partial_i + \lambda_t + \epsilon_{i,t}$$

where:

- y_{it} is the trade facilitation outcome variable (International Logistics Performance Index; Doing Business: Trading Across Border) for country i at time t;

- X_{it} is a vector of explanatory variables identified by the portfolio review, such as country's treatment status, cumulative number of trade facilitation projects received over the evaluation period, type of lending instrument used (Development Policy Finance, Investment Project Finance); trade logistics and trade policy support.

- Z_{it} is a vector of control variables accounting for quality of infrastructure (World Economic Forum's Global Competitiveness Index - 2.01 Quality of overall infrastructure); quality of governance (Worldwide Governance Indicators - Regulatory Quality and Control of Corruption); trade restrictions (World Bank's World Development Indicators - Tariff rate, applied, simple mean, all products (%));

- δ_i is country fixed effects;

- λ_t is time fixed effects.

and the variable of interest is β_1 .

Tests of collinearity were performed to identify the control variables to include in the regressions. The panel model is estimated for each institution (i.e. World Bank Group, World Bank, and International Finance Corporation), as well as each institutions' trade facilitation intervention area identified.

Because of potential endogeneity between control variables and Bank Group support (given that it is not possible to isolate the contribution of the Bank Group to those control variables) and since the main objective of the analysis is to establish a simple correlation (not attribution), the results reported in the text refer to the previous model excluding the control variables:

$$y_{i,t} = \beta_0 + \beta_1 X_{i,t} + \partial_i + \lambda_t + \epsilon_{i,t}$$

Outcome Indicators

The effectiveness of the Bank Group trade facilitation interventions is gauged using the outcome indicators shown in tables E.1 and E.2.

Table E.1. Outcome Indicators: List and Sources

Description	Indicator code	Source
Efficiency of customs clearance process (1=low to 5=high)	lplpicustxq	WB Logistics Performance Index
Ease of arranging competitively priced shipments (1=low to 5=high)	lplpiitrnxq	WB Logistics Performance Index
Cost to export (real US$ per container)	icexpcostkd	WB Doing Business
Cost to import (real US$ per container)	icimpcostkd	WB Doing Business
Documents to export (number)	icexpdocs	WB Doing Business
Documents to import (number)	icimpdocs	WB Doing Business
Time to export (days)	icexpdurs	WB Doing Business
Time to import (days)	icimpdurs	WB Doing Business
Quality of trade and transport-related infrastructure (1=low to 5=high)	lplpiinfrxq	WB Logistics Performance Index
Competence and quality of logistics services (1=low to 5=high)	lplpilogsxq	WB Logistics Performance Index

Table E.2. Trade Facilitation Objectives and Corresponding Outcome Indicators, by Intervention Areas

Intervention Area	TF intervention objective	Indicators	Source
Border Agencies	1. Create/ strengthen agencies to reduce bureaucratic delays	Efficiency of customs clearance process (1=low to 5=high)	WB Logistics Performance Index
	2. Facilitate relevant standards adoption by agencies	Ease of arranging competitively priced shipments (1=low to 5=high)	WB Logistics Performance Index
	3. Harmonize border clearance procedures by improving inter-agency cooperation across borders	Competence and quality of logistics services (1=low to 5=high)	WB Logistics Performance Index
	4. Increase access to trade-related information for exporters/ importers and agencies		
Border Infrastructure	1. Improve capacity, efficiency & services at non-port border crossings	Efficiency of customs clearance process (1=low to 5=high)	WB Logistics Performance Index
	2. Improve port capacity, efficiency & services	Ease of arranging competitively priced shipments (1=low to	WB Logistics Performance Index
	3. Reduce trade logistic costs for exporters & importers	Time to export (days)	WB Doing Business
		Time to import (days)	WB Doing Business
		Quality of trade and transport-related infrastructure (1=low to 5=high)	WB Logistics Performance Index
Border Operations	1. Build capacity of border participants to improve efficiency and quality of service provision	Efficiency of customs clearance process (1=low to 5=high)	WB Logistics Performance Index
	2. Meet international standards on risk-based inspection	Ease of arranging competitively priced shipments (1=low to 5=high)	WB Logistics Performance Index
	3. Reduce customs processing times	Time to export (days)	WB Doing Business
		Time to import (days)	WB Doing Business
		Quality of trade and transport-related infrastructure (1=low to 5=high)	WB Logistics Performance Index
		Competence and quality of logistics services (1=low to 5=high)	WB Logistics Performance Index
Rules	1. Establish or simplify trade-related institutional frameworks	Cost to export (real US$ per container)	WB Doing Business
	2. Streamline rules and procedures related to risk-based inspections	Cost to import (real US$ per container)	WB Doing Business
	3. Streamline rules and procedures related to transport logistics	Documents to export (number)	WB Doing Business
	4. Streamline rules and procedures through single window	Documents to import (number)	WB Doing Business
		Time to export (days)	WB Doing Business
		Time to import (days)	WB Doing Business

Table E.3. Variables Used in Regression Tables

Institution	Variable name	Description	Source
WBG	wbg_d	WBG TF treatment dummy (0=non-treated country; 1=treated country)	Portfolio Review
	wbg_p	WBG before/after TF support dummy (0=before WBG support; 1=after WBG support)	Portfolio Review
	wbg_d2	WBG TF treatment dummy (0=non-treated country; 0=treated country for years before first year of treatment; 1=treated country from year of first treatment onward)	Portfolio Review
	1.wbg_d#1.wbg_p	Interaction term between wbg_d=1 and wbg_p=1	Portfolio Review
	wbg_prjd	WBG number of TF projects dummy (1=one project; 2=two projects or more)	Portfolio Review
	1.wbg_d2#1.wbg_prjd	Interaction term between wbg_d2=1 and wbg_prjd=1	Portfolio Review
	1.wbg_d2#2.wbg_prjd	Interaction term between wbg_d2=1 and wbg_prjd=2	Portfolio Review
	wbg_tld2	WBG Trade Logistics support dummy (0=non-treated country; 0=treated country for years before first year of treatment; 1=treated country from year of first treatment onward)	Portfolio Review
	1.wbg_d2#0b.wbg_tld2	Interaction term between wbg_d2=1 and wbg_tld2=0	Portfolio Review
	1.wbg_d2#1.wbg_tld2	Interaction term between wbg_d2=1 and wbg_tld2=1	Portfolio Review
	wbg_tpd2	WBG Trade Policy support dummy (0=non-treated country; 0=treated country for years before first year of treatment; 1=treated country from year of first treatment onward)	Portfolio Review
	1.wbg_d2#0b.wbg_tpd2	Interaction term between wbg_d2=1 and wbg_tpd2=0	Portfolio Review
	1.wbg_d2#1.wbg_tpd2	Interaction term between wbg_d2=1 and wbg_tpd2=1	Portfolio Review
	dpfifcas_d	WB-DPF and IFC-AS TF support dummy (0=non-treated country; 0=treated country without DPF and IFC-AS support; 1=treated country with both DPF and IFC-AS support)	Portfolio Review
WB	wb_d	WB TF treatment dummy (0=non-treated country; 1=treated country)	Portfolio Review
	wb_p	WB before/after TF support dummy (0=before WB support; 1=after WB support)	Portfolio Review
	wb_d2	WB TF treatment dummy (0=non-treated country; 0=treated country for years before first year of treatment; 1=treated country from year of first treatment onward)	Portfolio Review
	1.wb_d#1.wb_p	Interaction term between wb_d=1 and wb_p=1	Portfolio Review
	wblendinstr_d2	WB TF lending instrument multinomial variable (1=None; 2=IPF; 3=DPF; 4=IPF&DPF)	Portfolio Review
	1.wb_d2#2.wblendinstr_(	Interaction term between wb_d2=1 and wblendinginstr_d2=2	Portfolio Review
	1.wb_d2#3.wblendinstr_(	Interaction term between wb_d2=1 and wblendinginstr_d2=3	Portfolio Review
	1.wb_d2#4.wblendinstr_(	Interaction term between wb_d2=1 and wblendinginstr_d2=4	Portfolio Review
IFC	ifc_d	IFC TF treatment dummy (0=non-treated country; 1=treated country)	Portfolio Review
	ifc_p	IFC before/after TF support dummy (0=before IFC support; 1=after IFC support)	Portfolio Review
	ifc_d2	IFC TF treatment dummy (0=non-treated country; 0=treated country for years before first year of treatment; 1=treated country from year of first treatment onward)	Portfolio Review
	1.ifc_d#1.ifc_p	Interaction term between ifc_d=1 and ifc_p=1	Portfolio Review
External Factors	gci201	2.01 Quality of overall infrastructure, 1-7 (best)	WEF GCI
	wgiregqual	Regulatory Quality	WGI
	wgicorrupt	Control of Corruption	WGI
	tmtaxmrchsmarzs	Tariff rate, applied, simple mean, all products (%)	WB WDI
Note	DiD - PRJ1	DiD for 1 project	
	DiD - PRJ2+	DiD for 2+ projects	

In the tables below, difference-in-difference results are reported with and without fixed effects. The sample sizes reported in the tables refer to the sample of "treated" countries, not the total sample size of the regression results, which is much larger. Furthermore, while a smaller sample size might impact the point estimate of the coefficients and potentially its significance, hence working against finding meaningful results, it does not impact the sign of the coefficient, which is what the analysis considers.

Effectiveness Results on Outcome Indicators, by Institution[5]

World Bank Group

Table E.4.

wbg: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.178**	0.207**	15.35	-38.83	-0.340	-0.0987	-4.420	-5.287	0.288***	0.273***
	(0.0903)	(0.0919)	(215.6)	(258.3)	(0.444)	(0.561)	(3.291)	(3.683)	(0.110)	(0.0963)
R-squared	0.017	0.015	0.014	0.013	0.004	0.017	0.022	0.014	0.024	0.018
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	63	63	69	69	69	69	69	69	63	63
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 476 to 704.

Table E.5.

wbg: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.140*	0.175**	53.44	-8.802	-0.285	-0.121	-4.493	-5.211	0.239***	0.238***
	(0.0794)	(0.0810)	(196.9)	(234.1)	(0.394)	(0.497)	(3.043)	(3.362)	(0.0912)	(0.0864)
R-squared	0.605	0.490	0.261	0.299	0.394	0.326	0.340	0.274	0.697	0.577
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	63	63	69	69	69	69	69	69	63	63
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 476 to 704.

Table E.6.

wbg: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wbg_d2	0.0257	0.0718*	-22.21	12.93	-0.124	-0.222*	-1.615**	-2.093**	0.00514	0.0615
	(0.0384)	(0.0426)	(60.78)	(104.3)	(0.101)	(0.132)	(0.709)	(0.873)	(0.0405)	(0.0421)
R-squared	0.124	0.075	0.064	0.049	0.055	0.079	0.217	0.216	0.183	0.108
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	79	79	83	83	83	83	83	83	79	79
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

World Bank

Table E.7.

wb: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.251**	0.122	131.7	110.6	-0.138	0.120	-2.616	-5.216	0.220*	0.247**
	(0.100)	(0.105)	(255.4)	(309.8)	(0.498)	(0.636)	(3.760)	(4.338)	(0.120)	(0.108)
R-squared	0.020	0.018	0.015	0.013	0.010	0.017	0.014	0.009	0.024	0.016
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	50	50	56	56	56	56	56	56	50	50
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 398 to 601.

Table E.8.

wb: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wb_d2	0.0443	0.0236	16.61	8.139	-0.119	-0.170	-1.414*	-2.282**	0.0146	0.0527
	(0.0558)	(0.0532)	(62.01)	(86.59)	(0.106)	(0.140)	(0.850)	(1.108)	(0.0637)	(0.0530)
R-squared	0.125	0.070	0.063	0.049	0.054	0.076	0.212	0.215	0.183	0.106
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	59	59	62	62	62	62	62	62	59	59
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 398 to 601.

Table E.9.

wb: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.197**	0.0783	138.5	114.7	-0.0882	0.140	-2.247	-4.709	0.149	0.200**
	(0.0907)	(0.0937)	(232.2)	(278.9)	(0.433)	(0.552)	(3.362)	(3.866)	(0.103)	(0.0977)
R-squared	0.493	0.353	0.278	0.309	0.349	0.299	0.255	0.260	0.584	0.443
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	50	50	56	56	56	56	56	56	50	50
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

International Finance Corporation

Table E.10.

ifc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	0.0803	-0.0162	-203.6	-156.6	-0.520	-0.193	-6.325	-6.333	0.175	0.156
	(0.109)	(0.104)	(287.7)	(354.6)	(0.666)	(0.781)	(4.714)	(5.306)	(0.130)	(0.115)
R-squared	0.022	0.035	0.008	0.005	0.015	0.006	0.012	0.008	0.026	0.016
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	34	34	34	34	34	34	34	34	34	34
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 271 to 323.

Table E.11.

ifc: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
ifc_d2	0.0446	0.0208	-74.10	-58.40	-0.223	-0.213	-2.492**	-2.752**	0.0423	0.0693*
	(0.0391)	(0.0389)	(71.06)	(78.63)	(0.145)	(0.171)	(1.044)	(1.144)	(0.0390)	(0.0399)
R-squared	0.126	0.070	0.065	0.050	0.059	0.077	0.227	0.219	0.185	0.110
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	50	50	45	45	45	45	45	45	50	50
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 271 to 323.

Table E.12.

ifc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	0.0553	-0.0268	-115.1	-82.02	-0.318	-0.0103	-5.488	-5.629	0.157*	0.138
	(0.0816)	(0.0853)	(263.8)	(315.1)	(0.566)	(0.618)	(4.381)	(4.844)	(0.0943)	(0.0869)
R-squared	0.704	0.594	0.246	0.243	0.427	0.341	0.280	0.241	0.750	0.669
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	34	34	34	34	34	34	34	34	34	34
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Effectiveness Results on Outcome Indicators, by Intervention Areas

World Bank Group

Agency Support

Table E.13.

wbgAgSupCoInt: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.274**	0.168	100.1	77.80	-0.225	0.182	-3.257	-5.579	0.319**	0.282**
	(0.119)	(0.137)	(274.9)	(318.0)	(0.636)	(0.762)	(4.833)	(5.339)	(0.147)	(0.131)
R-squared	0.033	0.027	0.011	0.007	0.002	0.012	0.008	0.008	0.041	0.041
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	35	35	37	37	37	37	37	37	35	35
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 268 to 391.

Table E.14.

wbgAgSupCoInt: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.188**	0.0911	56.11	25.69	-0.181	0.142	-3.378	-5.738	0.208*	0.197*
	(0.0889)	(0.115)	(259.8)	(308.8)	(0.536)	(0.631)	(4.243)	(4.697)	(0.106)	(0.105)
R-squared	0.682	0.546	0.325	0.339	0.440	0.396	0.340	0.347	0.731	0.635
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	35	35	37	37	37	37	37	37	35	35
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 268 to 391.

Table E.15.

wbgAgSupCoInt: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wbg_d2	0.0286	0.0484	-6.203	31.76	-0.0739	-0.0977	-1.859**	-2.380*	-0.0177	0.0678
	(0.0633)	(0.0537)	(69.27)	(90.69)	(0.0948)	(0.142)	(0.942)	(1.256)	(0.0547)	(0.0546)
R-squared	0.124	0.071	0.063	0.049	0.053	0.074	0.215	0.214	0.183	0.108
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	50	50	50	50	50	50	50	50	50	50
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Infrastructure

Table E.16.

wbgBordrInfra: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.348**	0.292**	0.891	-65.40	0.0646	0.328	-1.506	-1.941	0.388**	0.315**
	(0.136)	(0.140)	(323.7)	(367.7)	(0.609)	(0.763)	(5.421)	(6.070)	(0.163)	(0.155)
R-squared	0.039	0.041	0.015	0.014	0.042	0.023	0.023	0.017	0.038	0.029
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	27	27	29	29	29	29	29	29	27	27
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 241 to 294.

Table E.17.

wbgBordrInfra: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.344***	0.289**	-8.588	-71.01	0.0432	0.356	-2.117	-2.171	0.388***	0.313**
	(0.111)	(0.116)	(278.7)	(312.8)	(0.535)	(0.615)	(4.655)	(5.232)	(0.123)	(0.126)
R-squared	0.485	0.399	0.260	0.258	0.316	0.229	0.263	0.226	0.535	0.441
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	27	27	29	29	29	29	29	29	27	27
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 241 to 294.

Table E.18.

wbgBordrInfra: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wbg_d2	0.0910	0.0825	-96.83	-94.25	0.0511	-0.0201	-0.782	-1.339	0.0830	0.0801
	(0.0845)	(0.0697)	(101.9)	(110.6)	(0.108)	(0.193)	(1.320)	(1.520)	(0.0624)	(0.0630)
R-squared	0.129	0.073	0.066	0.051	0.052	0.073	0.205	0.206	0.187	0.108
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	34	34	34	34	34	34	34	34	34	34
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Functions and Technology

Table E.19.

wbgBorFncTech: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.216**	0.0730	-39.08	-130.3	0.0439	0.378	-3.172	-5.538	0.231**	0.234**
	(0.0924)	(0.0988)	(268.7)	(307.6)	(0.579)	(0.743)	(4.311)	(4.656)	(0.107)	(0.100)
R-squared	0.027	0.012	0.009	0.007	0.012	0.023	0.014	0.007	0.043	0.027
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	38	38	41	41	41	41	41	41	38	38
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 336 to 418.

Table E.20.

wbgBorFncTech: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.205**	0.0602	-76.92	-190.9	-0.0894	0.223	-4.018	-6.510	0.209**	0.229**
	(0.0880)	(0.102)	(266.9)	(304.6)	(0.551)	(0.719)	(4.124)	(4.586)	(0.0979)	(0.0994)
R-squared	0.566	0.430	0.217	0.214	0.308	0.298	0.237	0.179	0.624	0.511
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	38	38	41	41	41	41	41	41	38	38
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 336 to 418.

Table E.21.

wbgBorFncTech: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wbg_d2	0.0429	0.0203	-15.74	91.28	-0.233*	-0.225	-2.241***	-2.750***	0.0325	0.0917**
	(0.0467)	(0.0451)	(58.83)	(119.4)	(0.139)	(0.150)	(0.777)	(0.902)	(0.0415)	(0.0461)
R-squared	0.126	0.070	0.063	0.051	0.061	0.078	0.225	0.221	0.184	0.113
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	52	52	53	53	53	53	53	53	52	52
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Rules

Table E.22.

wbgRulesProcDoc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.112	0.0706	74.10	-28.05	-0.346	-0.290	-4.178	-5.872	0.232*	0.254**
	(0.107)	(0.125)	(248.9)	(309.2)	(0.588)	(0.690)	(4.272)	(4.843)	(0.132)	(0.111)
R-squared	0.013	0.005	0.009	0.004	0.006	0.006	0.011	0.008	0.013	0.018
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	43	43	45	45	45	45	45	45	43	43
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 327 to 460.

Table E.23.

wbgRulesProcDoc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.114	0.0765	73.24	-34.47	-0.332	-0.345	-4.298	-6.202	0.246**	0.269***
	(0.101)	(0.114)	(230.2)	(286.9)	(0.492)	(0.574)	(3.846)	(4.449)	(0.115)	(0.0993)
R-squared	0.552	0.386	0.225	0.211	0.381	0.301	0.261	0.228	0.590	0.497
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	43	43	45	45	45	45	45	45	43	43
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 327 to 460.

Table E.24.

wbgRulesProcDoc: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wbg_d2	0.0311	0.00883	12.67	23.70	-0.126	-0.0224	-2.110**	-2.427***	0.0278	0.112***
	(0.0377)	(0.0427)	(55.17)	(76.34)	(0.110)	(0.137)	(0.814)	(0.919)	(0.0488)	(0.0397)
R-squared	0.125	0.070	0.063	0.049	0.054	0.073	0.221	0.217	0.184	0.117
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	54	54	55	55	55	55	55	55	54	54
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

World Bank
Agency Support

Table E.25.

wbAgSupCoInt: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.319**	0.0566	14.21	46.87	-0.289	0.0564	-1.523	-0.952	0.221	0.232*
	(0.123)	(0.148)	(300.1)	(343.1)	(0.705)	(0.842)	(5.336)	(5.690)	(0.153)	(0.137)
R-squared	0.054	0.055	0.011	0.009	0.011	0.025	0.036	0.028	0.068	0.053
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	29	29	31	31	31	31	31	31	29	29
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 240 to 333.

Table E.26.

wbAgSupCoInt: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.386***	0.116	-34.55	-36.48	-0.299	0.0110	-1.645	-1.203	0.283**	0.298**
	(0.103)	(0.138)	(287.8)	(331.7)	(0.627)	(0.714)	(4.904)	(5.201)	(0.123)	(0.119)
R-squared	0.682	0.522	0.246	0.310	0.463	0.471	0.322	0.339	0.700	0.626
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	29	29	31	31	31	31	31	31	29	29
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 240 to 333.

Table E.27.

wbAgSupCoInt: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wb_d2	0.0354	-0.00583	11.44	62.75	-0.119	-0.132	-1.755	-1.958	-0.00906	0.0738
	(0.0902)	(0.0676)	(92.25)	(121.1)	(0.125)	(0.190)	(1.148)	(1.441)	(0.0762)	(0.0699)
R-squared	0.124	0.070	0.063	0.050	0.053	0.074	0.212	0.209	0.183	0.107
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	38	38	38	38	38	38	38	38	38	38
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Infrastructure

Table E.28.

wbBordrInfra: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.528***	0.418	236.5	343.1	0.493	1.393	4.998	6.859	0.532**	0.527**
	(0.176)	(0.261)	(428.0)	(479.1)	(0.834)	(1.110)	(7.103)	(8.396)	(0.247)	(0.234)
R-squared	0.054	0.078	0.019	0.024	0.013	0.037	0.051	0.057	0.055	0.069
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	13	13	15	15	15	15	15	15	13	13
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 115 to 160.

Table E.29.

wbBordrInfra: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.309**	0.271	159.2	214.3	0.367	1.190	4.607	5.971	0.240	0.281
	(0.128)	(0.175)	(357.2)	(397.8)	(0.661)	(0.781)	(5.002)	(5.695)	(0.173)	(0.175)
R-squared	0.668	0.583	0.356	0.424	0.453	0.428	0.554	0.471	0.735	0.727
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	13	13	15	15	15	15	15	15	13	13
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 115 to 160.

Table E.30.

wbBordrInfra: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wb_d2	0.0669	0.0926	3.764	34.69	0.153	0.292	3.121***	2.923*	0.1000	0.172*
	(0.170)	(0.128)	(124.2)	(157.6)	(0.112)	(0.203)	(1.196)	(1.568)	(0.108)	(0.0912)
R-squared	0.125	0.071	0.063	0.049	0.053	0.076	0.217	0.210	0.185	0.111
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	16	16	19	19	19	19	19	19	16	16
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Functions and Technology

Table E.31.

wbBorFncTech: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.133	-0.0494	124.0	161.5	0.366	0.796	-0.482	0.153	0.117	0.195*
	(0.106)	(0.115)	(291.7)	(322.3)	(0.621)	(0.797)	(4.669)	(4.828)	(0.122)	(0.116)
R-squared	0.044	0.041	0.018	0.019	0.014	0.024	0.024	0.030	0.062	0.038
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	33	33	36	36	36	36	36	36	33	33
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 294 to 375.

Table E.32.

wbBorFncTech: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.152	-0.0236	72.52	86.71	0.225	0.659	-1.133	-0.913	0.143	0.228**
	(0.0962)	(0.106)	(290.3)	(330.4)	(0.571)	(0.745)	(4.388)	(4.649)	(0.108)	(0.106)
R-squared	0.440	0.346	0.270	0.307	0.374	0.363	0.257	0.282	0.503	0.398
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	33	33	36	36	36	36	36	36	33	33
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 294 to 375.

Table E.33.

wbBorFncTech: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wb_d2	0.0835	0.0210	-78.72	-49.82	-0.206	-0.153	-2.867***	-3.029**	0.0701	0.116**
	(0.0625)	(0.0514)	(64.43)	(83.92)	(0.152)	(0.153)	(1.009)	(1.189)	(0.0549)	(0.0573)
R-squared	0.129	0.070	0.065	0.049	0.057	0.075	0.230	0.220	0.187	0.114
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	41	41	41	41	41	41	41	41	41	41
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Rules

Table E.34.

wbRulesProcDoc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.130	0.0815	171.4	110.4	-0.464	-0.207	-2.969	-5.710	0.145	0.225
	(0.153)	(0.164)	(294.7)	(357.6)	(0.702)	(0.827)	(5.141)	(5.822)	(0.186)	(0.155)
R-squared	0.013	0.052	0.014	0.008	0.007	0.010	0.022	0.017	0.024	0.023
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	30	30	32	32	32	32	32	32	30	30
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 225 to 355.

Table E.35.

wbRulesProcDoc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d#1.wb_p	0.155	0.101	177.3	121.3	-0.436	-0.194	-2.868	-5.546	0.182	0.265*
	(0.142)	(0.140)	(256.3)	(299.8)	(0.561)	(0.670)	(4.358)	(4.952)	(0.166)	(0.141)
R-squared	0.522	0.404	0.264	0.254	0.380	0.288	0.304	0.244	0.609	0.500
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	30	30	32	32	32	32	32	32	30	30
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 225 to 355.

Table E.36.

wbRulesProcDoc: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
wb_d2	0.00533	0.0160	8.600	-7.104	-0.129	-0.0850	-1.856**	-2.914**	0.0174	0.0645
	(0.0548)	(0.0679)	(69.14)	(98.25)	(0.143)	(0.189)	(0.918)	(1.271)	(0.0605)	(0.0521)
R-squared	0.124	0.070	0.063	0.049	0.054	0.073	0.213	0.217	0.183	0.106
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	39	39	38	38	38	38	38	38	39	39
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

International Finance Corporation
Agency Support

Table E.37.

ifcAgSupCoInt: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	-0.0994	-0.0265	-173.7	-88.29	0.811	1.253	-2.496	-0.226	0.0736	-0.0901
	(0.157)	(0.177)	(341.0)	(549.4)	(0.863)	(1.091)	(5.641)	(6.488)	(0.175)	(0.183)
R-squared	0.067	0.017	0.030	0.020	0.013	0.013	0.020	0.021	0.033	0.030
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	9	9	9	9	9	9	9	9	9	9
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 84 to 89.

Table E.38.

ifcAgSupCoInt: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	-0.120	-0.0520	-252.5	-109.0	0.475	0.843	-3.240	-0.654	0.0340	-0.113
	(0.121)	(0.161)	(329.5)	(556.2)	(0.762)	(0.996)	(5.516)	(4.959)	(0.119)	(0.153)
R-squared	0.664	0.601	0.292	0.233	0.442	0.308	0.453	0.476	0.757	0.671
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	9	9	9	9	9	9	9	9	9	9
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 84 to 89.

Table E.39.

ifcAgSupCoInt: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
ifc_d2	0.0229	0.00590	20.84	88.28	-0.0287	0.0133	-2.401*	-2.771	0.0222	0.0212
	(0.0477)	(0.0569)	(94.21)	(130.9)	(0.111)	(0.109)	(1.338)	(1.981)	(0.0598)	(0.0519)
R-squared	0.124	0.070	0.063	0.050	0.052	0.073	0.211	0.209	0.183	0.104
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	17	17	14	14	14	14	14	14	17	17
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Infrastructure

Table E.40.

ifcBordrInfra: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	0.228	0.144	-284.7	-395.8	-0.762	-0.513	-7.147	-6.754	0.227	0.110
	(0.154)	(0.134)	(418.0)	(474.8)	(0.787)	(0.888)	(6.600)	(7.144)	(0.178)	(0.161)
R-squared	0.041	0.048	0.016	0.021	0.072	0.024	0.033	0.038	0.035	0.031
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	17	17	17	17	17	17	17	17	17	17
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 160 to 162.

Table E.41.

ifcBordrInfra: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	0.246*	0.120	-240.2	-338.3	-0.624	-0.429	-7.046	-6.828	0.243	0.131
	(0.137)	(0.125)	(375.4)	(402.3)	(0.567)	(0.749)	(5.827)	(6.789)	(0.150)	(0.140)
R-squared	0.504	0.419	0.307	0.373	0.570	0.408	0.305	0.297	0.607	0.510
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	17	17	17	17	17	17	17	17	17	17
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 160 to 162.

Table E.42.

ifcBordrInfra: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
ifc_d2	0.117*	0.0675	-122.8	-148.1	0.00158	-0.163	-2.556*	-3.002*	0.0769	0.0492
	(0.0599)	(0.0536)	(119.4)	(114.6)	(0.127)	(0.235)	(1.525)	(1.775)	(0.0523)	(0.0595)
R-squared	0.132	0.072	0.067	0.052	0.052	0.074	0.217	0.214	0.187	0.105
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	26	26	22	22	22	22	22	22	26	26
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Functions and Technology

Table E.43.

ifcBorFncTech: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	0.0841	-0.122	-290.0	-92.32	0.0292	0.349	-4.092	-6.163	0.131	0.270*
	(0.132)	(0.160)	(500.1)	(903.4)	(2.183)	(2.202)	(9.629)	(12.46)	(0.172)	(0.160)
R-squared	0.105	0.036	0.012	0.016	0.015	0.044	0.005	0.004	0.089	0.093
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	6	6	6	6	6	6	6	6	6	6
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 52 to 62.

Table E.44.

ifcBorFncTech: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	0.0662	-0.144	-257.6	-102.9	0.342	0.791	0.149	3.202	0.108	0.245*
	(0.138)	(0.153)	(573.2)	(955.0)	(1.411)	(1.071)	(10.55)	(12.52)	(0.154)	(0.139)
R-squared	0.279	0.277	0.493	0.508	0.497	0.655	0.440	0.534	0.392	0.403
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	6	6	6	6	6	6	6	6	6	6
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 52 to 62.

Table E.45.

ifcBorFncTech: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
ifc_d2	-0.00848	-0.0945*	-60.29	-28.57	-0.0741	0.132	-2.130	-1.219	0.0390	0.0608
	(0.0475)	(0.0559)	(105.7)	(144.1)	(0.107)	(0.147)	(1.745)	(1.142)	(0.0573)	(0.0651)
R-squared	0.124	0.073	0.064	0.049	0.052	0.074	0.210	0.205	0.184	0.105
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	16	16	13	13	13	13	13	13	16	16
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Rules

Table E.46.

ifcRulesProcDoc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	-0.0994	-0.177	-11.77	139.1	-0.337	-0.162	-3.412	-0.558	-0.0369	-0.0317
	(0.101)	(0.127)	(387.1)	(501.0)	(1.101)	(1.154)	(6.831)	(7.734)	(0.120)	(0.110)
R-squared	0.080	0.016	0.006	0.003	0.006	0.017	0.008	0.012	0.054	0.037
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	17	17	17	17	17	17	17	17	17	17
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 151 to 161.

Table E.47.

ifcRulesProcDoc: DID										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.ifc_d#1.ifc_p	-0.0854	-0.165	73.91	171.0	-0.284	-0.237	-2.213	-0.571	-0.0195	-0.0192
	(0.100)	(0.118)	(337.9)	(448.7)	(0.967)	(0.978)	(6.367)	(7.049)	(0.118)	(0.0986)
R-squared	0.532	0.370	0.358	0.343	0.372	0.413	0.295	0.279	0.524	0.436
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	17	17	17	17	17	17	17	17	17	17
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 151 to 161.

Table E.48.

ifcRulesProcDoc: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
ifc_d2	0.0256	-0.0476	-15.76	61.43	-0.328	-0.157	-1.870	-1.685**	0.00611	0.0767
	(0.0408)	(0.0368)	(63.94)	(87.35)	(0.235)	(0.228)	(1.141)	(0.814)	(0.0496)	(0.0471)
R-squared	0.124	0.071	0.063	0.049	0.062	0.074	0.212	0.207	0.183	0.108
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	27	27	25	25	25	25	25	25	27	27
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Effectiveness Results on Outcome Indicators, by Intensity of Support

World Bank Group

All Portfolio

Table E.49.

wbg: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.102	0.275*	142.4	13.39	-0.267	-0.317	0.597	0.681	0.130	0.152
	(0.140)	(0.145)	(586.3)	(691.1)	(1.036)	(1.175)	(9.046)	(8.535)	(0.160)	(0.177)
R-squared	0.033	0.031	0.017	0.022	0.012	0.023	0.025	0.005	0.043	0.023
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	12	12	14	14	14	14	14	14	12	12
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 113 to 146.

Table E.50.

wbg: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.153	0.293**	131.1	3.257	-0.314	-0.390	0.446	0.548	0.165	0.189
	(0.123)	(0.147)	(445.9)	(589.2)	(0.885)	(1.048)	(8.379)	(8.271)	(0.139)	(0.153)
R-squared	0.554	0.425	0.316	0.268	0.406	0.377	0.283	0.203	0.600	0.478
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	12	12	14	14	14	14	14	14	12	12
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 113 to 146.

Table E.51.

wbg: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.218*	0.198*	-14.63	-49.35	-0.353	-0.0381	-5.677*	-6.828*	0.351**	0.336***
	(0.115)	(0.117)	(224.9)	(271.1)	(0.488)	(0.639)	(3.403)	(4.078)	(0.143)	(0.115)
R-squared	0.014	0.013	0.017	0.014	0.006	0.017	0.024	0.020	0.021	0.022
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	51	51	55	55	55	55	55	55	51	51
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 363 to 558.

Table E.52.

wbg: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.135	0.138	27.89	-19.01	-0.272	-0.0553	-5.831**	-6.801*	0.250**	0.256***
	(0.0943)	(0.0964)	(205.4)	(235.0)	(0.423)	(0.543)	(2.944)	(3.525)	(0.109)	(0.0917)
R-squared	0.631	0.527	0.281	0.344	0.413	0.342	0.392	0.313	0.728	0.623
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	51	51	55	55	55	55	55	55	51	51
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 363 to 558.

Table E.53.

wbg: Panel FE										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#1.wbg_prjd	0.0114	0.0681	-19.58	8.142	-0.0924	-0.207	-1.474**	-1.790**	-0.0101	0.0424
	(0.0337)	(0.0423)	(58.55)	(102.4)	(0.0955)	(0.127)	(0.695)	(0.832)	(0.0369)	(0.0416)
1.wbg_d2#2.wbg_prjd	0.0851	0.0872	-35.79	37.68	-0.285	-0.301	-2.333**	-3.641***	0.0683	0.141**
	(0.0645)	(0.0604)	(84.83)	(127.3)	(0.184)	(0.213)	(1.045)	(1.372)	(0.0677)	(0.0575)
R-squared	0.129	0.075	0.064	0.049	0.061	0.079	0.220	0.224	0.189	0.118
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	79	79	83	83	83	83	83	83	79	79
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Intervention Areas

Agency Support

Table E.54.

wbgAgSupCoInt: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.163	0.175	79.61	-2.673	-0.700	-0.552	-1.787	-5.149	0.158	0.178
	(0.180)	(0.190)	(512.1)	(545.6)	(1.069)	(1.211)	(8.795)	(10.02)	(0.209)	(0.171)
R-squared	0.090	0.081	0.011	0.003	0.066	0.090	0.094	0.010	0.122	0.118
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	12	12	13	13	13	13	13	13	12	12
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 99 to 138.

Table E.55.

wbgAgSupCoInt: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.112	0.107	118.1	77.06	-0.775	-0.763	-1.168	-2.987	0.0728	0.123
	(0.123)	(0.155)	(387.6)	(430.1)	(0.914)	(1.129)	(8.006)	(8.440)	(0.154)	(0.124)
R-squared	0.756	0.670	0.574	0.606	0.495	0.485	0.537	0.499	0.771	0.746
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	12	12	13	13	13	13	13	13	12	12
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 99 to 138.

Table E.56.

wbgAgSupCoInt: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.294*	0.113	139.9	147.5	0.112	0.681	-3.218	-5.123	0.356*	0.290
	(0.166)	(0.201)	(310.5)	(381.2)	(0.771)	(0.946)	(5.260)	(6.014)	(0.212)	(0.196)
R-squared	0.017	0.012	0.025	0.021	0.005	0.013	0.027	0.032	0.018	0.017
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	23	23	24	24	24	24	24	24	23	23
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 169 to 253.

Table E.57.

wbgAgSupCoInt: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.256**	0.0646	116.5	107.0	0.175	0.690	-2.939	-5.320	0.281*	0.230
	(0.123)	(0.172)	(326.7)	(403.4)	(0.643)	(0.777)	(4.656)	(5.424)	(0.148)	(0.159)
R-squared	0.658	0.513	0.341	0.344	0.474	0.421	0.362	0.357	0.736	0.598
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	23	23	24	24	24	24	24	24	23	23
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 169 to 253.

Table E.58.

wbgBordrInfra: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.543*	0.443**	992.6	619.9	0.00833	-0.400	13.18	16.20	0.459	0.442*
	(0.271)	(0.216)	(1,128)	(1,289)	(1.791)	(2.279)	(17.25)	(20.46)	(0.294)	(0.247)
R-squared	0.168	0.128	0.276	0.168	0.074	0.027	0.182	0.120	0.155	0.162
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	4	4	4	4	4	4	4	4	4	4
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Infrastructure

Table E.59.

wbgBordrInfra: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.566*	0.440**	581.4	260.7	-0.748	-1.115	7.360	11.14	0.423*	0.391*
	(0.290)	(0.207)	(744.9)	(698.2)	(0.904)	(1.396)	(9.298)	(11.65)	(0.219)	(0.205)
R-squared	0.638	0.625	0.606	0.654	0.584	0.518	0.666	0.531	0.748	0.665
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	4	4	4	4	4	4	4	4	4	4
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 36 to 37.

Table E.60.

wbgAgSupCoInt: Panel FE-PRJ										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#1.wbg_prjd	0.00259	0.0455	-6.692	17.84	-0.0437	-0.0637	-1.579*	-2.083*	-0.0475	0.0387
	(0.0605)	(0.0564)	(59.93)	(76.45)	(0.0955)	(0.131)	(0.840)	(1.170)	(0.0523)	(0.0506)
1.wbg_d2#2.wbg_prjd	0.0981	0.0563	-4.551	78.81	-0.176	-0.212	-2.803*	-3.380*	0.0616	0.145*
	(0.0784)	(0.0664)	(120.9)	(161.1)	(0.132)	(0.226)	(1.690)	(1.979)	(0.0735)	(0.0742)
R-squared	0.131	0.071	0.063	0.050	0.054	0.075	0.218	0.216	0.192	0.117
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	50	50	50	50	50	50	50	50	50	50
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 36 to 37.

Table E.61.

wbgBordrInfra: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.310**	0.258	-45.60	-80.12	0.0635	0.443	-2.414	-3.361	0.366**	0.277
	(0.152)	(0.165)	(319.4)	(360.2)	(0.657)	(0.821)	(5.658)	(6.343)	(0.184)	(0.178)
R-squared	0.025	0.032	0.022	0.020	0.039	0.023	0.026	0.019	0.027	0.021
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	23	23	25	25	25	25	25	25	23	23
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 204 to 258.

Table E.62.

wbgBordrInfra: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.305**	0.251*	-56.21	-91.95	0.0977	0.540	-2.876	-3.621	0.367***	0.276*
	(0.119)	(0.135)	(287.8)	(321.9)	(0.587)	(0.671)	(4.986)	(5.605)	(0.138)	(0.143)
R-squared	0.488	0.401	0.253	0.238	0.298	0.213	0.249	0.225	0.519	0.432
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	23	23	25	25	25	25	25	25	23	23
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 204 to 258.

Table E.63.

wbgBordrInfra: Panel FE-PRJ										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#1.wbg_prjd	0.0717	0.0757	-100.1	-84.72	-0.0235	-0.134	-0.864	-1.767	0.0662	0.0809
	(0.0960)	(0.0757)	(119.5)	(130.8)	(0.129)	(0.232)	(1.591)	(1.916)	(0.0699)	(0.0696)
1.wbg_d2#2.wbg_prjd	0.129*	0.0961	-92.20	-107.8	0.157*	0.142	-0.665	-0.732	0.116*	0.0785
	(0.0710)	(0.0686)	(90.18)	(97.81)	(0.0845)	(0.154)	(1.174)	(1.212)	(0.0689)	(0.0619)
R-squared	0.130	0.073	0.066	0.051	0.054	0.076	0.205	0.207	0.189	0.108
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	34	34	34	34	34	34	34	34	34	34
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Functions and Technology

Table E.64.

wbgBorFncTech: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.241*	0.217	-140.2	-352.4	-0.174	0.0573	-3.881	-5.493	0.277	0.259
	(0.145)	(0.139)	(338.1)	(374.7)	(0.894)	(1.049)	(6.606)	(6.403)	(0.174)	(0.165)
R-squared	0.023	0.023	0.009	0.014	0.021	0.026	0.015	0.008	0.032	0.017
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	16	16	18	18	18	18	18	18	16	16
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 151 to 191.

Table E.65.

wbgBorFncTech: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.189	0.174	-185.2	-400.0	-0.377	-0.191	-4.921	-6.243	0.215	0.216
	(0.125)	(0.135)	(307.4)	(369.7)	(0.825)	(1.024)	(5.954)	(5.991)	(0.153)	(0.169)
R-squared	0.709	0.574	0.348	0.274	0.453	0.406	0.423	0.304	0.706	0.605
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	16	16	18	18	18	18	18	18	16	16
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 151 to 191.

Table E.66.

wbgBorFncTech: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.192	-0.0446	46.56	50.39	0.208	0.641	-2.619	-5.515	0.192	0.214*
	(0.120)	(0.138)	(402.2)	(467.5)	(0.760)	(1.040)	(5.739)	(6.697)	(0.135)	(0.121)
R-squared	0.051	0.010	0.010	0.005	0.006	0.023	0.015	0.007	0.070	0.049
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	22	22	23	23	23	23	23	23	22	22
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 185 to 227.

Table E.67.

wbgBorFncTech: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.202	-0.0441	16.57	-22.76	0.117	0.525	-2.767	-6.033	0.189	0.238*
	(0.132)	(0.154)	(410.6)	(457.3)	(0.743)	(0.964)	(5.169)	(6.211)	(0.138)	(0.126)
R-squared	0.343	0.270	0.173	0.224	0.195	0.240	0.204	0.164	0.496	0.375
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	22	22	23	23	23	23	23	23	22	22
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 185 to 227.

Table E.68.

wbgBorFncTech: Panel FE-PRJ										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#1.wbg_prjd	-0.00817	0.00336	-5.325	97.48	-0.199	-0.243	-1.825***	-2.214***	0.00614	0.0490
	(0.0378)	(0.0527)	(58.93)	(145.7)	(0.134)	(0.163)	(0.652)	(0.793)	(0.0385)	(0.0495)
1.wbg_d2#2.wbg_prjd	0.142*	0.0529	-38.94	77.45	-0.310	-0.187	-3.166**	-3.941**	0.0834	0.174***
	(0.0747)	(0.0586)	(95.36)	(119.4)	(0.218)	(0.236)	(1.563)	(1.758)	(0.0679)	(0.0635)
R-squared	0.135	0.071	0.064	0.051	0.062	0.078	0.228	0.224	0.187	0.121
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	52	52	53	53	53	53	53	53	52	52
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Rules

Table E.69.

wbgRulesProcDoc: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.142	0.193	426.1	327.1	-0.442	-0.863	1.190	-1.116	0.271	0.239
	(0.233)	(0.291)	(719.4)	(777.1)	(1.186)	(1.380)	(13.82)	(13.83)	(0.275)	(0.260)
R-squared	0.039	0.020	0.014	0.004	0.003	0.004	0.046	0.003	0.044	0.045
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	10	10	10	10	10	10	10	10	10	10
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 73 to 91.

Table E.70.

wbgRulesProcDoc: DID-PRJ1										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.309*	0.300	392.8	330.9	-0.701	-1.180	-0.552	-2.852	0.456**	0.419**
	(0.181)	(0.221)	(600.1)	(711.9)	(0.885)	(1.210)	(12.02)	(12.67)	(0.198)	(0.203)
R-squared	0.673	0.536	0.395	0.254	0.568	0.480	0.416	0.363	0.705	0.643
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	10	10	10	10	10	10	10	10	10	10
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 73 to 91.

Table E.71.

wbgRulesProcDoc: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.0874	0.0174	3.266	-112.4	-0.312	-0.158	-5.122	-7.054	0.198	0.242**
	(0.117)	(0.128)	(254.9)	(338.7)	(0.680)	(0.799)	(3.960)	(5.010)	(0.148)	(0.115)
R-squared	0.006	0.002	0.011	0.005	0.009	0.009	0.013	0.015	0.007	0.012
Region FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Income FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Treated	33	33	35	35	35	35	35	35	33	33
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 254 to 369.

Table E.72.

wbgRulesProcDoc: DID-PRJ2+										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d#1.wbg_p	0.0245	-0.0236	6.402	-119.8	-0.248	-0.137	-4.989	-7.159	0.141	0.195**
	(0.101)	(0.106)	(224.2)	(299.4)	(0.563)	(0.665)	(3.348)	(4.364)	(0.114)	(0.0879)
R-squared	0.554	0.393	0.232	0.229	0.369	0.291	0.267	0.231	0.584	0.491
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Income FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	33	33	35	35	35	35	35	35	33	33
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 254 to 369.

Table E.73.

wbgRulesProcDoc: Panel FE-PRJ										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#1.wbg_prjd	0.0317	0.0139	26.50	34.44	-0.0135	0.0683	-1.791**	-1.890**	0.0292	0.117***
	(0.0379)	(0.0456)	(59.60)	(86.18)	(0.0793)	(0.116)	(0.794)	(0.921)	(0.0490)	(0.0443)
1.wbg_d2#2.wbg_prjd	0.0292	-0.00942	-24.75	-5.358	-0.429*	-0.267	-2.972**	-3.875***	0.0226	0.0909**
	(0.0498)	(0.0522)	(58.98)	(71.46)	(0.243)	(0.249)	(1.219)	(1.488)	(0.0609)	(0.0444)
R-squared	0.125	0.070	0.064	0.049	0.071	0.079	0.225	0.222	0.184	0.117
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	54	54	55	55	55	55	55	55	54	54
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Effectiveness Results on Outcome Indicators, by Lending Instrument

World Bank

All Portfolio

Table E.74.

wb: Panel FE-Lendinstr										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wb_d2#2.wblendinstr_d2	0.0926	0.0792	-4.647	46.59	-0.0767	-0.0674	-0.00480	-0.473	0.0743	0.0760
	(0.0595)	(0.0605)	(67.05)	(94.96)	(0.111)	(0.137)	(0.853)	(1.052)	(0.0768)	(0.0529)
1.wb_d2#3.wblendinstr_d2	-0.0552	-0.0648	55.85	-35.36	-0.158	-0.267	-2.739**	-4.068***	-0.0952	-0.0213
	(0.0505)	(0.0678)	(92.05)	(136.5)	(0.165)	(0.193)	(1.077)	(1.523)	(0.0665)	(0.0567)
1.wb_d2#4.wblendinstr_d2	0.152*	0.0614	-47.07	-3.136	-0.170	-0.286	-3.052**	-3.996**	0.104	0.190**
	(0.0878)	(0.0664)	(113.3)	(128.1)	(0.153)	(0.260)	(1.510)	(1.901)	(0.0874)	(0.0763)
R-squared	0.137	0.075	0.065	0.050	0.055	0.078	0.229	0.229	0.195	0.121
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	59	59	62	62	62	62	62	62	59	59
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Effectiveness Results on outcome Indicators, by Combination of Trade Facilitation Support with Trade Logistics and Trade Policy

World Bank Group

Intervention Areas

Agency Support

Table E.75.

wbgAgSupCoInt: Panel FE-TL										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tld2	0.0456	0.0875	-3.139	35.51	-0.0703	-0.112	-2.035*	-2.832*	-0.00336	0.0777
	(0.0778)	(0.0651)	(71.33)	(91.64)	(0.121)	(0.182)	(1.149)	(1.555)	(0.0648)	(0.0625)
1.wbg_d2#1.wbg_tld2	-0.00424	-0.0272	-12.71	23.78	-0.0814	-0.0672	-1.486	-1.420	-0.0456	0.0487
	(0.0613)	(0.0610)	(119.4)	(159.0)	(0.114)	(0.145)	(1.071)	(1.350)	(0.0763)	(0.0756)
R-squared	0.125	0.075	0.063	0.049	0.053	0.074	0.216	0.216	0.184	0.108
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	50	50	50	50	50	50	50	50	50	50
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Table E.76.

wbgAgSupCoInt: Panel FE-TP										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tpd2	0.0727	0.102	41.59	76.91	-0.0519	-0.0669	-1.629	-1.775	0.0613	0.122*
	(0.0738)	(0.0640)	(74.02)	(95.19)	(0.103)	(0.155)	(1.168)	(1.650)	(0.0693)	(0.0653)
1.wbg_d2#1.wbg_tpd2	-0.0233	-0.0150	-82.77	-40.59	-0.109	-0.147	-2.228*	-3.350**	-0.111*	0.00403
	(0.0767)	(0.0690)	(116.7)	(157.1)	(0.168)	(0.240)	(1.289)	(1.541)	(0.0586)	(0.0665)
R-squared	0.128	0.076	0.065	0.050	0.053	0.074	0.216	0.216	0.195	0.114
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	50	50	50	50	50	50	50	50	50	50
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Infrastructure

Table E.77.

wbgBordrInfra: Panel FE-TL										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tld2	0.0719	0.0546	-10.48	13.45	0.114	0.125	-0.580	-1.763	0.0616	0.0596
	(0.0956)	(0.0827)	(98.33)	(125.2)	(0.0757)	(0.157)	(1.331)	(1.528)	(0.0700)	(0.0647)
1.wbg_d2#1.wbg_tld2	0.132	0.143**	-178.1	-195.7	-0.00818	-0.157	-0.973	-0.940	0.129	0.124
	(0.0969)	(0.0720)	(138.3)	(135.5)	(0.154)	(0.272)	(1.825)	(2.154)	(0.0984)	(0.0922)
R-squared	0.130	0.075	0.070	0.054	0.053	0.075	0.206	0.207	0.188	0.109
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	34	34	34	34	34	34	34	34	34	34
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Table E.78.

wbgBordrInfra: Panel FE-TP										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tpd2	0.174**	0.120	-114.9	-88.79	0.0150	-0.102	-1.478	-2.233	0.157***	0.142**
	(0.0770)	(0.0750)	(150.7)	(162.8)	(0.0851)	(0.171)	(1.523)	(1.569)	(0.0525)	(0.0598)
1.wbg_d2#1.wbg_tpd2	0.0253	0.0526	-77.48	-100.1	0.0897	0.0673	-0.0385	-0.385	0.0243	0.0313
	(0.100)	(0.0796)	(85.14)	(87.77)	(0.153)	(0.269)	(1.492)	(2.092)	(0.0750)	(0.0753)
R-squared	0.135	0.074	0.066	0.051	0.052	0.074	0.208	0.209	0.193	0.112
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	34	34	34	34	34	34	34	34	34	34
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Border Functions and Technology

Table E.79.

wbgBorFncTech: Panel FE-TL										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tld2	0.0906	0.0795	-24.82	-0.135	-0.242	-0.276	-2.689***	-3.205***	0.0557	0.113**
	(0.0553)	(0.0531)	(65.30)	(85.28)	(0.154)	(0.186)	(1.016)	(1.188)	(0.0453)	(0.0540)
1.wbg_d2#1.wbg_tld2	-0.0571	-0.104**	1.821	268.0	-0.216	-0.127	-1.374	-1.870*	-0.0162	0.0472
	(0.0593)	(0.0473)	(100.6)	(273.9)	(0.231)	(0.194)	(0.866)	(1.037)	(0.0708)	(0.0755)
R-squared	0.133	0.079	0.063	0.058	0.061	0.078	0.227	0.223	0.186	0.115
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	52	52	53	53	53	53	53	53	52	52
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Table E.80.

wbgBorFncTech: Panel FE-TP										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tpd2	0.105*	0.0704	47.12	189.9	-0.206	-0.235	-1.367	-1.713	0.0756*	0.120**
	(0.0552)	(0.0507)	(76.38)	(166.3)	(0.158)	(0.187)	(0.896)	(1.109)	(0.0451)	(0.0532)
1.wbg_d2#1.wbg_tpd2	-0.0765	-0.0766	-158.2***	-132.4*	-0.295	-0.203	-4.221***	-5.100***	-0.0508	0.0371
	(0.0571)	(0.0675)	(58.47)	(77.03)	(0.202)	(0.194)	(1.405)	(1.475)	(0.0670)	(0.0737)
R-squared	0.136	0.076	0.068	0.059	0.061	0.078	0.234	0.228	0.189	0.116
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	52	52	53	53	53	53	53	53	52	52
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Rules

Table E.81.

wbgRulesProcDoc: Panel FE-TL										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tld2	0.0356	0.0210	3.154	4.988	-0.0713	0.0544	-1.796**	-1.745*	0.0303	0.111**
	(0.0399)	(0.0463)	(61.56)	(85.99)	(0.104)	(0.124)	(0.907)	(1.044)	(0.0524)	(0.0427)
1.wbg_d2#1.wbg_tld2	0.0145	-0.0371	36.31	70.18	-0.261	-0.213	-2.889**	-4.122**	0.0185	0.114**
	(0.0522)	(0.0519)	(76.72)	(103.1)	(0.208)	(0.240)	(1.355)	(1.950)	(0.0675)	(0.0463)
R-squared	0.125	0.071	0.063	0.049	0.056	0.075	0.223	0.221	0.184	0.117
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	54	54	55	55	55	55	55	55	54	54
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Table E.82.

wbgRulesProcDoc: Panel FE-TP										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
1.wbg_d2#0b.wbg_tpd2	0.0593	0.00713	74.30	75.19	0.0429	0.132	-1.288	-1.430	0.0643	0.136***
	(0.0445)	(0.0540)	(70.45)	(106.3)	(0.0633)	(0.0867)	(0.960)	(1.118)	(0.0503)	(0.0494)
1.wbg_d2#1.wbg_tpd2	-0.0166	0.0117	-70.62	-45.89	-0.354*	-0.231	-3.220***	-3.773***	-0.0342	0.0698
	(0.0468)	(0.0474)	(54.28)	(60.03)	(0.193)	(0.228)	(1.103)	(1.420)	(0.0628)	(0.0493)
R-squared	0.127	0.070	0.067	0.051	0.066	0.078	0.228	0.222	0.188	0.119
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	54	54	55	55	55	55	55	55	54	54
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650.

Effectiveness Results on Outcome Indicators, by Combination of World Bank Development Policy Financing and International Finance Corporation Advisory Services

World Bank Group

Table E.83.

wbg: Panel FE-DPFIFCAS										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	lplpicustxq	lplpiitrnxq	icexpcostkd	icimpcostkd	icexpdocs	icimpdocs	icexpdurs	icimpdurs	lplpiinfrxq	lplpilogsxq
dpfifcas_d	0.0456	-0.0273	60.50	130.7	-0.242	0.0196	-4.075**	-5.019***	0.0377	0.0673
	(0.0568)	(0.0599)	(89.43)	(111.4)	(0.159)	(0.140)	(1.693)	(1.672)	(0.0573)	(0.0468)
R-squared	0.125	0.070	0.064	0.051	0.056	0.073	0.232	0.227	0.184	0.106
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated	18	18	15	15	15	15	15	15	18	18
Robust standard errors in parentheses										
*** p<0.01, ** p<0.05, * p<0.1										

Observations range from 1,573 to 1,650

.

[1] For details about the trade facilitation outcome indicators used in the analysis go to the section on "Outcome Indicators."

[2] Landlocked status assigned to 14 countries not included in the CEPII database. No landlocked status attributed to 10 countries: American Samoa (ASM), Channel Islands (CHI), Curaçao (CUW), Guam (GUM), Isle of Man (IMN), St. Martin (French part) (MAF), Monaco (MCO), Montenegro (MNE), Sint Maarten (Dutch part) (SXM), Virgin Islands (U.S.) (VIR). Landlocked status assigned to 4 countries: Liechtenstein (LIE), Serbia (SRB), South Sudan (SSD), and Kosovo (XKX).

[3] Logistics Performance Index variables are linearly interpolated in 2008, 2009, 2011, 2013, and 2015 to increase data coverage. Original data series covered years 2007, 2010, 2012, 2014, and 2016.

[4] Trade facilitation interventions are grouped into intervention areas, based on the nature and the purpose of the intervention. Four intervention areas are defined: 1. Agency Support, Coordination, and Integration; 2. Border Functions and Technology; 3. Border Infrastructure; 4. Rules, Procedures, and Documentation. The effectiveness of trade facilitation support to client countries is tested on subsets of data resulting from the four intervention areas identified. Trading Across the Borders and Logistics Performance Index outcome indicators are then paired with the intervention area dataset, closely matching their definitions to assess the effectiveness of the trade facilitation support between 2006 and 2016.

Appendix F. Detailed Design Matrix

Evaluation Questions	Information Required	Information Sources	Data Collection Methods	Data Analysis Methods	Limitations
Overarching questions: "To what extent has the World Bank Group contributed to the reduction of trade costs and improvement of trade flows in client countries by supporting trade facilitation interventions?"					
Question 1: What has been the nature and extent of World Bank Group engagement in support of trade facilitation in its client countries?	World Bank Group Strategy Papers and Country Strategy Papers (e.g. Country Assistance Strategy, Country Partnership Framework), regional and sectoral strategies Project data on World Bank, International Finance Corporation, and Multilateral Investment Guarantee Agency portfolio approved in FY06–FY17 (e.g. date of approval, commitment volume, source of funds, including trust funds, investment size and project size, countries and regions, priority areas, sector, outcome indicators) Bank Group's strategic goals, guidelines, and strategies on trade facilitation.	World Bank Group portfolio data and project-level documents, such as project appraisal documents (PADs), Implementation Completion and Results Reports (ICRs), Implementation Completion and Results Report Reviews (ICRRs), Implementation Status and Results Reports (ISRs) Country Assistance Strategies, Country Partnership Framework documents World Bank Group Strategy papers, Forward Look, project-level data, policy and project-level documents (e.g. annual reports, IEG evaluations, Board Reports, Commitment Documents) World Bank Group staff and stakeholder interviews	Data extraction from World Bank Group databases, institutional databases, and Bank Group institutions' key project-level and institutional documents External and government databases Structured interviews of relevant stakeholders and experts Case study–based review	Literature review Portfolio review of qualitative and quantitative data involving mapping and description of the main characteristics of portfolio Synthesis and analysis of interviews Review of development strategies	Data analysis may be limited due to missing, unavailable, incomplete, and/or mixed quality data Literature may have substantial gaps on context and instruments

Question 2: To what extent have World Bank Group trade facilitation interventions contributed to enhance trade flows of client countries by reducing the cost of international trade?	Assessments and evaluations of trade facilitation support carried out by the Bank Group. Data, indicators, and measures of success in facilitating trade.	Bank Group portfolio data and project-level documents (e.g. PADs, ICRs, ICRRs, ISRs) on main interventions Benchmark data from sources internal and external to Bank Group projects (Logistics Performance Index, Doing Business, UN Comtrade, etc.) Internal or independent evaluations of trade facilitation carried out by multilateral development banks or other development agencies Bank Group internal project documents	Literature review regarding effectiveness of trade facilitation support. Historical trends in Bank Group support and effectiveness of instruments Synthesis from relevant literature and research reports Data extraction from portfolio, documents and strategies on main categories of support Data extraction from internal and external databases on indicators of outcome Government data (from case studies) Semistructured interviews	Econometric analysis at portfolio level and qualitative analysis at country level (case studies) Staff and stakeholder interviews Analysis of external databases and case studies Synthesis and analysis of interview outputs	Harmonization of data derived from external sources with Bank Group data Potentially limited public sources available Data analysis may be limited due to missing, unavailable, incomplete, and/or mixed quality data Limited micro-evaluative information, coverage (due to sampling) Availability of client and partner support Use of proxy indicators and proxy data
Question 3 To what extent and in what ways have World Bank Group trade facilitation interventions considered the achievement of	World Bank Group Strategy Papers and Country Strategy Papers Portfolio review on World Bank, International Finance	Bank Group portfolio data and project-level documents (e.g. PADs, ICRs, ICRRs, ISRs)	Data extraction from Bank Group databases and project-level documents	Portfolio review of qualitative and quantitative data involving mapping and description of the main social	Data analysis may be limited due to missing, unavailable, incomplete, and/or

social objectives of trade regulation such as the advancement of public health, safety, and the environment?	Corporation, and Multilateral Investment Guarantee Agency portfolio approved in FY06–FY17 on social issues (e.g., health, safety, environment)	Country Assistance Strategies, Country Partnership Framework documents Bank Group strategy papers Bank Group staff and stakeholder interviews	External and government databases on social indicators Structured interviews of relevant stakeholders and experts Case study–based review	objectives and indicators Synthesis and analysis of interviews Review of development strategies	mixed quality data on social indicators Documentary evidence may have substantial gaps on social objectives of trade facilitation objectives and indicators
Question 4 To what extent have internal factors (e.g. design, supervision, team composition, M&E framework, collaboration, etc.) or external factors (e.g. client commitment, private sector engagement, other trade-related activities, such as logistics, policy, finance, etc.) contributed to the success or failure of World Bank Group trade facilitation support?	Bank Group portfolio data Data from external sources Bank Group project review (quantity, quality, and design) Lessons learned from documentary and interviews Data, indicators, and measures of success in facilitating trade	Bank Group portfolio data and project-level documents (e.g. PADs, ICRs, ICRRs, ISRs) Benchmark data for Bank Group instruments from sources external to Bank Group projects Internal or independent evaluations of trade facilitation carried out by multilateral development banks or other development agencies Literatur review	Literature review regarding drivers of effectiveness Historical trends in Bank Group support and effectiveness of instruments Synthesis from relevant literature and research reports Data extraction from internal and external databases Interviews of Bank Group leadership team members and staff Key informant consultations and interviews	Interview response analysis Econometric analysis of data pertaining to drivers of success or failure Qualitative analysis of factors of success in project documents Case studies to obtain contextual information on the success and failures of trade facilitation measures	Respondent bias Data analysis may be limited due to missing, unavailable, incomplete, and/or mixed quality data Limits of micro-evaluative information and coverage

Appendix G. Summaries of Deep Dives

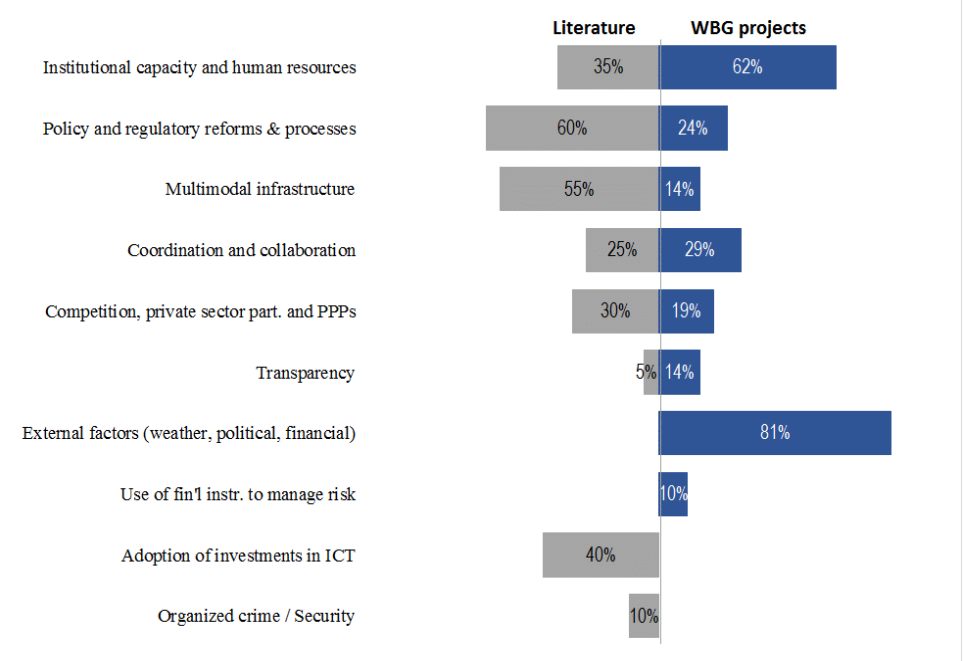
Deep Dive on Ports: Major Findings

IEG's findings from the overall portfolio and literature are enhanced by a set of three deep dives on specific areas of reforms: ports, customs automation and single windows, and standards. In each area, IEG looked at factors associated with success or failure. Figure G.1 summarizes IEG's findings as to success factors identified in the project portfolio and academic literature associated with improvements of ports.[1]

Institutional capacity is the most frequently discussed concern in the World Bank Group interventions on ports. Mismanagement, poor internal administration, and poor training are identified as the key attributes of institutional capacity limiting the success of port improvements. For example, in the East Africa Trade and Transport Facilitation Project, all four governments involved were characterized as suffering from low capacity, especially in procurement. This led to general slowness in finalizing and managing contracts both for infrastructure works and consultancy services. Similarly, in Vietnam the government's slow pace in approving project-related requests led to delays and cost increase. Finally, in Bangladesh the government passed a new rule to allow bonded (duty-free) facility to non-readymade garment exports. However, it is reported that, because of little understanding among customs officials regarding the rationale for introducing this facility, only three export products have so far taken advantage of this facility.

Policy and regulatory reforms are also identified (especially in the literature) as explaining variations in port efficiency. For instance, Devlin and Yee (2005) suggest that the first major step for streamlining trade infrastructure in the Middle East and North Africa Region should be a National Transport Policy to establish strategic direction and general principles for developing individual modes of transport, as well as other parts of logistics chains. Brooks and Hummels (2009) list "inflexible regulatory environments faced by port operators" as one of the reasons for low efficiency in seaports in China. Landlocked countries, more dependent on air freight, need to liberalize access for foreign airlines (Ranganathan and Foster 2011). Finally, a paper on Organization of Eastern Caribbean States (OECS) ports recommends member governments consider "regulations and policies that would separate or establish sharing agreements for cruise ship and cargo operations" to avoid cruises hindering cargo trade. (Cubas, Briceño-Garmendia, and Bofinger 2015, 6).

Figure G.1. Port Reform Success Factors in Literature and Project Documents



Source: Independent Evaluation Group review.
Note: Values represent share of total in which each factor is identified.

Multimodal infrastructure coordination is also identified (especially in the literature) as influencing port efficiency. Torres, Briceño-Garmendia, and Dominguez (2011) indicate that lack of a multimodal strategy for transportation in Senegal seriously impeded the capacity of the Port of Dakar to realize its potential as a regional trade hub. Similarly, Ranganathan and Foster (2011) identify lack of integrated rail and road links as one of the challenges affecting the performance of Port Mombasa in Kenya. Recognizing the same problem, Gonzalez, Guasch, and Serebrisky (2008) also suggested that countries need to adopt a comprehensive multimodality law which allows the use of a single bill of lading and provides insurance across modes.

Coordination and collaboration across agencies and countries also can greatly affect the success of support to ports. In more than 30 percent of World Bank Group projects, this was identified as a factor. In the West and Central Africa Air Transport Safety and Security Project, coordination challenges led to a delay of almost two years in the implementation of the project. Similarly, in Croatia, the bulk cargo terminal (part of the Trade and Transport Integration project) was completed six years behind schedule, and was not yet operational at project closure, owing to the lack of coordination and cooperation among corridor participants. The project's Implementation Completion and Results Report Review (ICRR) states that "Projects that depend on regional cooperation are challenging and special attention needs to be given to facilitating a dialogue among the various stakeholders and

sustaining that dialogue through implementation" (World Bank 2017a, 16). The Implementation Completion and Results Report (ICR) of the First Competitiveness Development Policy Loan (DPL) in Mexico finds that the operation supported interinstitutional arrangements such as a cooperation agreement between 15 states and an interinstitutional regulatory accounting working group (World Bank 2017b). Finally, in the Second Connectivity DPL in Indonesia (World Bank 2015), the multiplicity of institutions involved, along with the complexity of connectivity, slowed down implementation. The ICR review of this program emphasized that "A wide cross-cutting DPL does not automatically elicit the coordination efforts that engaging multiple agencies requires, so that inadequate coordination may impede the achievements sought."

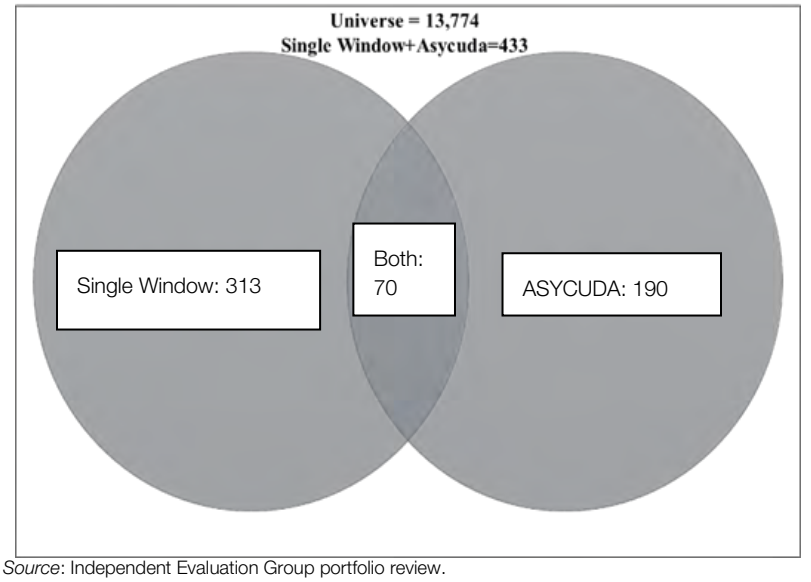
Finally, the state of information and communications technology (ICT) also emerges as a success factor for ports. Port Klang in Malaysia enhanced its capabilities thanks to the introduction of an electronic data interchange (EDI) system to facilitate automated processing of trade documents and to link the port with the other relevant government agencies (Brooks and Hummels 2009). A challenge for OECS customs was the lack of electronic payment options, resulting in extended release times (near 10 times the international standard). Lack of risk-management systems and integrated information systems also impeded success (Cubas, Briceño-Garmendia, and Bofinger 2015).

Deep Dive on Customs Automation: Major Findings

Many governments seek to automate their customs and related border procedures. ASYCUDA (Automated System for Customs Data) and single windows are some of the tools adopted by governments to accelerate customs and border procedures, reduce compliance costs, limit discretion and corruption, and enhance revenue collection.

ASYCUDA is the United Nations Conference on Trade and Development's (UNCTAD's) computerized software to manage customs regarding most foreign trade procedures. It handles documents such as manifests and customs declarations and can allow for EDI between traders and customs. It also deals with customs accounting procedures, transit and suspense procedures configured to local trade regimes but considering standards of the International Standards Organization, World Customs Organization, and United Nations. ASYCUDA also generates useful trade data for analysis. Its modules can help automate risk-based decisions (such as those regarding allocation to a red, yellow, or green channel) and other trade rules to reduce the potential for discretion. According to UNCTAD, ASYCUDA (known in the Francophone world as SYDONIA) is used or is being implemented in 90 countries, with prevalence in the developing world, including almost all of Sub-Saharan Africa. It is hardly used at all in wealthier countries and self-developed or private customized alternatives can be used.

Figure G.2. Advisory Services and Analytics Support for ASYCUDA and Single Window, Entire Portfolio 2006–17



Source: Independent Evaluation Group portfolio review.

IEG's portfolio analysis revealed 190 Bank Group Advisory Services and Analytics (ASA) activities supporting ASYCUDA (figure G.2). International Finance Corporation Advisory Services (IFC AS) also frequently supported its introduction or upgrading. Among trade facilitation ASA, ASYCUDA predominated in lower-income countries, and regionally in Africa. In 37 percent of these projects, assistance on ASYCUDA was paired with support for a single window. This support was found in projects mapped to the Trade and Competitiveness, Macro-Fiscal, and Governance Global Practices, with the highest prevalence (but not the highest number) among governance interventions. IEG's sample of trade facilitation ASA projects showed that in analytic work the Bank Group often recommended simplifying and automating cross-border procedures and enhancing interoperability. However, there was much less emphasis on building capacity to implement ASYCUDA.

ASYCUDA presents several advantage and disadvantages. Experts interviewed suggested ASYCUDA, as UNCTAD's proprietary system, has both advantages and disadvantages. Advantages include: (i) it generally works to automate important parts of customs processing with gains realized in processing time and revenues; (ii) UNCTAD and its consultants are willing to work in low-capacity and conflict-affected environments where some major private vendors would have hesitated; (iii) systems are consistent with those of other countries, potentially (but rarely) facilitating regional collaboration; (iv) ASYCUDA provides analytically useful data; (v) the latest version allows web-based interface. Disadvantages include: (i) ASYCUDA generally lags behind in technology and sophistication; (ii) it is promoted as free but involves substantial hidden costs for required middleware and consultancies for

adaptation of the system to local systems and requirements (although perhaps still less costly than rival systems); (iii) bundled technical support varies substantially in quality regionally; (iv) it is administered in a nontransparent fashion, including in terms of its relationships with middleware providers and consultants, and client criticism is allegedly discouraged by withholding of technical support; and (v) like most automation, it requires substantial upgrading of skills and technology to implement and substantial bandwidth to operate, and is more difficult to implement in remote and rural locations (yet it may be technologically less demanding than competing systems).[2]

The case studies and literature review point to an overall positive assessment of ASYCUDA. Client countries visited by IEG were generally satisfied with ASYCUDA, although they faced a long-term process of implementing and upgrading it (box G.1), as well as bringing staff and organizational capacity up to speed to realize its benefits. For countries with lower capacity, stand-alone technical assistance (typical of IFC AS) was never enough, and Armenia, Lao PDR, and Benin had benefited from multiple or longer-term engagements which seemed to work better for comprehensive automation and building up skills and institutional capacity. In one country, customs officials complained that although the technical assistance they received through IFC was capable, their greatest need was assistance on "cultural change" in customs. Similarly, IEG's structured literature review found several case studies on the introduction of ASYCUDA indicating that, although costs and complexity of automation were generally higher than expected, the benefits usually exceeded the costs (WTO 2015). These benefits included time savings in border procedures and improved customs revenue collection. For example, a Cameroon case study (Cantens et al. 2010) found a 15 percent increase in customs revenues after the introduction in 2007 of ASYCUDA, with similar benefits observed in other studies of Bangladesh (Draper 2000) and the Philippines (OECD 2009).

Box G.1. ASYCUDA in Lao PDR

The World Bank supported Lao PDR's adoption of ASYCUDA under the 2008 Customs and Trade Facilitation Project (P101750) and its 2013 Supplemental Financing (P144992) through which the World Bank Group supported ASYCUDA installation, modification, training, and capacity building over an extended period. In December 2011, a prototype for the ASCYUDA system was introduced that represented a major shift from a manual process to an automated customs system. The prototype was tested at a pilot site and validated in April 2012. It was subsequently rolled out to 24 border checkpoints by 2017 that accounted for 98 percent of formal trade in Lao PDR. As of 2017, the system had served up to 300,000 import and export customs transactions a year. Sustainability of the system was supported by establishing a system user-fee and placement of the income from the fee into a dedicated escrow account supporting the maintenance and further development of the system.

However, the introduction of automation was far from smooth in the literature case studies, with substantial learning and capacity building required and resistance encountered. Further, benefits could be short-lived in countries like Cameroon where traders and officials learned system loopholes (Cantens et al. 2010). A recurrent limitation of the literature is that country case studies do not isolate ASYCUDA as a reform, but rather document benefits and challenges of the introduction of multiple reforms, often including a single window, tariff simplification, and more.

Box G.2. Emergency Customs Project

In Afghanistan the World Bank's Emergency Customs Project financed a component of the Afghan Customs Department's five-year development plan—a plan that was prepared in cooperation with the donor community and thus was not a standalone project (as too many other information and communications technology projects have been). The ASYCUDA rollout was gradual, aiming initially at covering the major transit routes and then at covering the declaration process in Kabul. Modules have been introduced slowly. Implementation is strongly supported by top customs management, yet staff mobility and the reluctance of customs directors to abandon manual processing have slowed it down. The fragile security situation may also hamper full, timely implementation by restricting the capacity of central leadership to ensure staff adherence.

Source: McLinden et al. (2011).

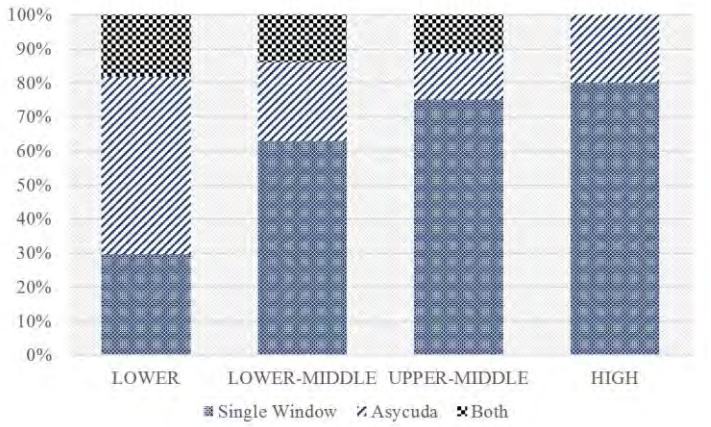
A national single window (NSW) is another means to accelerate trade, reduce transaction costs, minimize trader interactions with officials, and reduce discretion and corruption.[3] It goes beyond customs automation, referring to a coordinated electronic information exchange that dramatically simplifies user interface with all government agencies concerned with trade. Clearly, all the benefits of automation should be magnified if well-implemented—the time and cost savings for compliance, enhanced revenue, reduced discretion and

corruption (with substantially reduced user-government interaction), and enhanced attainment of security and other regulatory goals. The ideal is that, with a single electronically submitted set of documents, all required customs clearances, government agency approvals, and border management functions are handled through a coordinated system of electronic information interchange. Ideally, all required fees and charges are also submitted electronically through the single window where possible. IEG's portfolio review and deep dive sample find that World Bank ASA often support single windows (figure G.3), especially in middle-income and high-income countries. IEG found 313 projects supporting the introduction or enhancement of trade single windows during the evaluation period, of which 70 (22 percent) also supported the introduction or strengthening of ASYCUDA.

Success factors to achieve maximum impact with an NSW include substantial legislative, procedural, technological, and bureaucratic reforms, not only in customs, but in all agencies involved in border management. All trade procedures require a degree of streamlining and harmonization for the single window to work. Electronic payment and e-submission of documents come with their own sets of legal and technological requirements. In the World Bank's description:

> A broadly conceived single window will cover the activities of all trade processing organizations and agencies. This starts with customs and with government licensing, inspection, and approval agencies, such as the ministries of trade, industry, economics, agriculture, health, defense, and finance—and with the subsidiary permit issuing agencies—such as those for animals, plants, and drugs. In some countries the number of separate agencies exercising inspection and approval responsibilities may exceed 20. These agencies may be considered the front office, or formalities process for trade. The organizations involved in the physical movement of goods may then be considered the back office. These include airports, maritime ports, container terminals, road and rail terminals, and transport, logistics, and storage for goods moved by air, road, rail, and shipping (maritime, river, and waterway). Also in the back office are trade professionals, such as freight forwarders, customs brokers and shipping agents, together with the amorphous category of messengers. (McLinden et al. 2011)

Figure G.3. World Bank Advisory Services and Analytics Support for ASYCUDA and Single Windows, by Country Income



Source: IEG Advisory Services and Analytics Deep Dive.

The World Bank identifies eight "critical areas" for introduction of an NSW, any of which may appear as a hurdle for its successful implementation: (i) the legal and regulatory framework for trade; (ii) the e-governance model for the NSW; (iii) the e-operational model for the NSW; (iv) the e-fee structure for the NSW; (v) service-level agreements for the NSW; (vi) business process reengineering and continuous change management; (vii) organizational and human resource ICT management in border management agencies; and (viii) functional and technical architecture for the NSW (McLinden et al. 2011).

The most commonly cited success factors identified in the literature for single windows include having a well-functioning coordinating body or steering committee, establishing adequate technical parameters and infrastructure, and adequately addressing risk-management. IEG's structured literature review finds a paucity of rigorous impact literature. De la Porta (2005) finds a substantial increase in imports in countries with single windows, and a case study of Rwanda finds the introduction of the electronic single window reduced release times by 50 percent from more than two days to one day over a span of two years (Nizeyimana and De Wulf 2016). It finds these gains depended critically on extensive prior consultations with public and private stakeholders. The involvement of the private sector was critical in ensuring that commercial instruments, such as electronic payment arrangements with commercial banks, were in place in time for the roll out of the single window (Nizeyimana and De Wulf 2016). Another study finds gains in Senegal with the introduction of its Orbus single window, with a significant cut in the time associated with formalities and clearance, from more than four days to as little as half a day, and also increased total revenue collection. Less rigorous articles claim benefits include the reduction of corruption in Georgia and Qatar (Ndonga 2013), and increased savings in time and resources in Macedonia (Tosevska-Trpcevska 2014). World Bank research shows that single windows have a positive impact on trade flows (De Sa Porto, Canuto, and Morini 2015).

IEG's own case studies found implementation of a single window to be an ongoing challenge in Armenia, not yet implemented despite policy and technical support from the World Bank Group and later, the United Nations and the European Union (EU). In Benin, with the active shepherding of the president, a "customs" single window (with both policy and technical support of Bank Group) was introduced under a concession scheme followed by a second single window for preshipment procedures. Although the single windows were only partially successful in "dematerializing documents" (e-submission), shippers and many officials expressed satisfaction with the schemes, in terms of simplifying and strengthening compliance and accelerating imports. However, by 2017, a new president was planning to scrap the existing single windows for a new, consolidated scheme from another vendor. In Lao PDR, despite World Bank technical support and a "blueprint" for a single window, the government pursued an alternative path that has not yet yielded a working single window. In each country, there were signs that the agency coordination required for a single window and resultant reduction in agency "sovereignty" and prerogatives posed sticking points that could be overcome only with strong political leadership and pressure. Where this did not exist, the single window languished.

Finally, efforts to create regional single windows have not yet borne much fruit. There have been initiatives within the EU and Association of Southeast Asian Nations (ASEAN) countries (see box G.3), but so far, the considerable hurdles to cross-country harmonization have not been surmounted.

Box G.3. Global Experience with Single Windows

A synthesis of single window experience by the United Nations Economic Commission for Europe (Koh Tat Tsen 2011[please add to references]) found that as of 2011, 49 countries had introduced a trade single window, of which only 20 had linked all relevant agencies. The study derived lessons of experience, including:

i. **Different forms of Single Windows.** Depending on their readiness and priorities, countries have implemented very different forms of single windows with various levels of interagency collaboration and automation.

ii. **Evolutionary and staged development.** Owing to the complex change management necessary, single window development typically follows a gradual evolutionary and staged pathway.

iii. **Impact of Single Window in different forms.** National single windows were a success story in developing and transition economies, bringing simplified and automated business procedures, introducing change and bringing about collaboration between government agencies and the private sector. In many advanced trading economies, such as China, the European Union, and the United States, other forms were used.

iv. **Cross-border information exchange.** Regional single windows remain a challenge, requiring cross-country data harmonization, a common legal framework, and a sustainable business model. Further international collaboration to develop common interconnectivity strategies, policies, data harmonization, and standards will be required for them to progress.

Deep Dive on Standards: Major Findings

IEG's deep dive on standards found a project portfolio dominated by development policy operations (17 of 23) and concentrated in Europe and Central Asia (12 of 23). This was explained by the strong push in the region toward alignment with EU standards. A separate literature review of 16 articles using a structured methodology for identification found both similarities and differences between factors emphasized in the literature and those emphasized in Bank Group project documents (figure G.4).

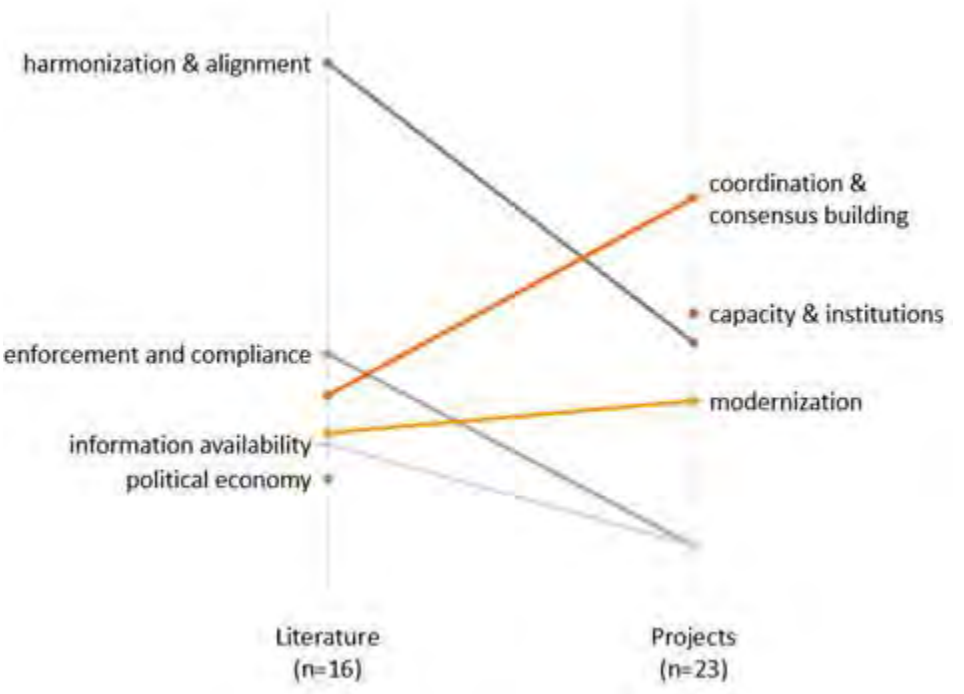
The literature heavily emphasizes the importance of cross-country harmonization of standards to facilitate trade. For example, Wilson (2008) finds that "bilateral exports subject to harmonized food regulations are 253 percent greater than bilateral exports not covered by harmonized food regulations for 1998" and that "a tariff equivalent of trade costs that arises from non-harmonized food regulations … ranges between 73 percent and 97 percent." Differing national standards are found to cause diseconomies of scale for firms and affect decisions about whether to enter export markets. Shepherd (2008) conducts simulations showing that "harmonization is beneficial at the extensive margin if any increases in compliance costs are not too large."

Nonetheless, some World Bank Group projects do focus on harmonization with international standards. In Ukraine, an IFC AS evaluation identifies an important challenge in the

"alignment of national regulations with EU rules to secure access for domestic producers which was not completed." A World Bank ICR observes Moldova's move "towards full harmonization of national product standards with EU standards," including removal of the requirement for Moldovan exporters to the EU to comply with both national and EU standards. As of 2013, Ministry of Economy data showed about 8,000 international and EU standards were adopted as national standards.

Bank Group projects focus more on national issues such as cross-agency coordination and building consensus (across government agencies but also with the private sector). This can be partly explained by the World Bank's country engagement model. This focus also helps explain the projects' relatively greater emphasis on national capacity challenges and modernization. In two country case studies, IEG found a leading constraint to trade lay in a neighboring country, yet these issues did not seem to have been transferred to the neighboring countries' policy dialogue, because of the focus on individual country priorities.

Figure G.4. Factors Relating to Trade Facilitation Standards Identified in the Literature and in World Bank Group Projects



Sources: IEG Deep Dive Literature Review and IEG Portfolio Review and Analysis.

At the national level, coordination was often described in Bank Group project documents, consistent with the Bank Group's within-country "convening role" across institutions, donors, and the private sector. For example, in Armenia, an IFC AS evaluation document finds the team coordinated across public and private sectors, incorporating private sector feedback

into IFC policy advice and helping to align government reforms with the needs of the business. In Mozambique, an ICR finds that the National Institute of Standardization and Quality (INNOQ) followed project principles for standard setting "in a market-led way" by studying and incorporating domestic demand for its services rather than simply attempting to import international standards.

Desk Study of Three of the Leading Trade Facilitation Indicators

Trade Facilitation Indicators: Battle Royale

Trade facilitation indicators can make important contributions to country and global knowledge, research, and reform design, as well as the monitoring and evaluation of reform outcomes. Globally, there are multiple, rival indicators of national trade facilitation conditions, each with its own merits and limitations. The literature finds a general correlation between such indicators and trade facilitation reforms. A World Trade Organization (WTO) review (WTO 2015) found that trade facilitation metrics of the World Economic Forum's Enabling Trade Index (ETI), World Bank Group's Logistics Performance Index (LPI), Organisation for Economic Co-operation and Development's (OECD's) Trade Facilitation Indicators (TFI), and "trading across borders" of the World Bank Group's Doing Business Indicators, exhibit statistically significant correlations with each other. A study by Korinek and Sourdin (2011) find that using ETI, LPI, and components of the Doing Business Indicators leads to consistent conclusions on the importance of trade facilitation in increasing trade flows.

This note considers three leading indicator sets—Doing Business Trading Across Borders, LPI, and TFI. IEG notes there are debates among proponents of different indices about the reliability of their sources. The rivalry between LPI and Doing Business is in part based on rival claims as to the virtue of their sources—domestic in the case of Doing Business and International in the case of LPI.

The World Bank Group's Doing Business Trading Across Borders indicators have been published, with some evolution, annually since 2005. The indicators record eight dimensions of the time and cost associated with the regulatory and logistical process of exporting and importing goods, based on data gathered through a questionnaire administered to local freight forwarders, customs brokers, port authorities, and traders. It has expanded over time to cover 190 economies. In its current formulation, the data is based on a hypothetical case currently assuming that a shipment is in a warehouse in the largest business city of the exporting economy and travels to a warehouse in the largest business city of the importing economy. It is assumed that each economy imports a standardized shipment of 15 metric tons of containerized auto parts (HS 8708) from its natural import partner—the economy from which it imports the largest value (price times quantity) of auto parts. It is assumed that each economy exports the product of its comparative advantage (defined by the largest export value) to its natural export partner—the economy that is the largest purchaser of this product. For example, for Armenia, the hypothetical export case is based on the export of

"beverages, spirits and vinegar" to the Russian Federation, and the hypothetic import of auto parts is also from Russia.

Based on IEG's interviews and case studies, Doing Business has some strong advantages as an indicator:

- It is by far the most famous of the indicators related to trade facilitation.
- It is motivating. In three of four case study countries visited by IEG (Armenia, Benin, Lao PDR) government officials had targeted improvements in the Doing Business Indicators as a trade facilitation reform goal. World Bank Group staff rely heavily on Doing Business Indicators as reform benchmarks or targets.
- It is concrete—for example, a prominent official told IEG that he could understood what each subindicator related to and could break that down into tangible reform measures.

However, Doing Business has some disadvantages:

- It only sometimes catches reforms and thus is a weak metric for reform activity. For example, it reflects only two of Lao PDR's reforms [Doing Business 2008 and Doing Business 2013]. IEG's econometric analysis shows a poor "fit" between World Bank Group–supported reform activity and several Doing Business Trading Across Borders indicators (chapter 3).
- It is focused primarily on simplification of rules and procedures, leaving out many other aspects of trade facilitation reforms and logistics.
- Its changes in methodology have created substantial discontinuities in apparent country performance in some cases (this was a complaint of Armenian officials and became headline news regarding Chile during the evaluation).
- It does not always measure the extent of implementation. Frequently, reforms implemented in the main port of the main city of a country take far longer to implement elsewhere. Sometimes, Doing Business picks up reforms when enacted rather than when implemented.
- The hypothetical case structure can miss a lot and cover only a small percentage of total trade. Conversely, it is hugely sensitive to changes affecting the hypothetical case. For example, after Armenia joined a customs union with Russia, its Doing Business Trading Across Borders ranking jumped from 110 to 29 in a single year based on the focus of the hypothetical case.

- It measures only compliance costs, ignoring whether trade regulations are achieving their objectives (for example, detection rates, revenue collection, etc.).

Logistics Performance Index (LPI). Since 2007, the World Bank has been conducting the surveys behind the LPI every two years, covering 160 countries by 2014. In theory, the LPI has two components, an international LPI based on a survey of international professionals, and a domestic LPI based on domestic sources. Of these, the domestic LPI is more specific and concrete, mixing both qualitative and quantitative measures. However, it has far less country coverage, with many missing values. The International LPI is purely qualitative and available for 160 countries as of LPI 2016. The International LPI is grouped into six components: customs, infrastructure, ease of arranging shipments, and outcomes, that is, international shipments, timeliness, and tracking and tracing.[4] The LPI surveys professionals in multinational freight forwarding companies and express carriers who score subcomponents of LPI from 1 to 5 along the six dimensions.

The International LPI has some advantages as an indicator:

- It covers a broader range of issues, including trade logistics services and infrastructure, and a broader range of trade facilitation areas.
- According to IEG's econometric analysis and some experts, some of its components track more closely to reforms supported by the World Bank and, as such, may provide a more useful reform metric.
- It has gained some traction as a reform benchmark and motivator, although it is far less known and used than Doing Business.

LPI's disadvantages include:

- Fewer potential users understand the basis of its ratings.
- As a categorical and qualitative rating, it does not map directly to concrete reform steps or measures.
- Some regard its qualitative ratings as highly subjective or even biased.
- It is less frequently updated.

Some experts and clients questioned why the World Bank Group should maintain two separate sets of indicators of trade facilitation, rather than integrating the best features of each. Others suggested that each had its applications and advantages.

OECD Trade Facilitation Indicators (TFI). The OECD developed its TFI to more explicitly reflect the measures supported by the WTO Trade Facilitation Agreement (TFA) and to help

governments with trade facilitation reforms. Comprised of 130 variables grouped into 11 indicators, they are quantitative, and values are drawn from publicly available data that are subsequently fact-checked with concerned governments. Unlike both Doing Business and LPI, they are less outcome-based and more focused on what policy measures are in place. They do not seek to measure infrastructure aspects of trade logistics.

Among the advantages of the OECD TFI are:

- They are more detailed and granular than the Doing Business Indicators and LPI.
- They map directly to TFA reforms, helping policymakers in monitoring and assessing.
- They are fact-based, not reliant on perception.

OECD TFI's disadvantages include:

- A lack of comparable outcome measures.
- A lack of coverage of trade logistics and infrastructure.
- They are relatively new, so lacking a time series.
- They are less known, and the format discourages country ranking, which can be motivating.
- They depend on government self-reporting.

Table G.1. IEG Typology and Trade Facilitation Indicators

IEG Typology/Trade Facilitation Indicators	Doing Business Trading across Borders 2017	Logistics Performance Index (International LPI) 2016	Trade Facilitation Indicators (OECD 2016)
	Survey of freight forwards and customs and ports authorities.	Survey of professionals in multinational freight forwarding companies and express carriers that score subcomponents of LPI from 1 to 5.	Survey of government and private sector stakeholders mapped to a multiple scoring system (0, 1, and 2).
Simplification of rules, procedures, and documentation	Border compliance (costs and hours) Documentary requirements (costs and hours)	Customs Ease of arranging shipments Timeliness Tracking and tracing	Information availability Appeal procedures Fees and charges Formalities (documentation and procedures) Governance and impartiality Transit fees and charges Transit formalities Transit guarantees
Cross-agency dialogue, coordination, integration		Tracking and tracing	Advance rulings Involvement of the trade community Cooperation (internal and external) Consularization Transit agreements and cooperation
Strengthening border agencies			
Modernization of border operations		Timeliness	Formalities (automation)
Border-related infrastructure and logistics		Infrastructure Quality of logistics services	

Source: Independent Evaluation Group structured literature review.

References

Aman, A., T. Al-Shbail, Z. Mohamed, and S. Auzai. 2016. "E-Single Window Implementation: A Case of Jordan Customs Department." *Journal of West Asian Studies* 8 (1): 44–63.

Brooks, D. H., and D. Hummels. 2009. *Infrastructure's Role in Lowering Asia's Trade Costs: Building for Trade.* Cheltenham, UK and Northampton, MA: Asian Development Bank Institute and Edward Elgar Publishing.

Cantens, Thomas, Gaël Raballand, and Samson Bilangna. 2010. "Reforming Customs by Measuring Performance: A Cameroon Case Study." *World Customs Journal* 4 (2): 55–74.

Cubas, D., C. Briceño-Garmendia, and H. C. Bofinger. 2015. "OECS Ports: An Efficiency and Performance Assessment." Policy Research Working Paper. World Bank, Washington, DC.

Draper, Charles. 2000. "Reforming Customs Administration: The Unlikely Case of Bangladesh." World Bank, Washington, DC. http://siteresources.worldbank.org/INTRANETTRADE/Resources/Draper_customs.pdf.

Gonzalez, J. A., J. L. Guasch, and T. Serebrisky. 2008. "Improving Logistics Costs for Transportation and Trade Facilitation." Policy Research Working Paper. World Bank, Washington, DC.

Korinek, J., and P. Sourdin. 2011. "To What Extent Are High-Quality Logistics Services Trade Facilitating?" OECD Trade Policy Papers, No. 108. OECD Publishing, Paris. https://doi.org/10.1787/5kggdthrj1zn-en.

McLinden, G., E. Fanta, D. Widdowson, and T. Doyle (ed). 2011. Border Management Modernization. Washington, DC: World Bank.

Nizeyimana, Christian, and Luc De Wulf. 2016. "Rwanda Electronic Single Window Supports Trade Facilitation." *World Customs Journal* 9 (2): 73–84.

Ndonga, Dennis. 2013. "Managing the Risk of Corruption in Customs Through Single Window Systems." *World Customs Journal* 7 (2) 23–37.

Porto, Sá, Otaviano Canuto, and Cristiano Morini. 2015. "The Impacts of Trade Facilitation Measures on International Trade Flows." Devlin, J., and P. Yee. 2005. Trade Logistics in Developing Countries: The Case of the Middle East and North Africa. *The World Economy 28*(3): 435–56.

Ranganathan, R., and V. Foster. 2011. "East Africa's Infrastructure: A Continental Perspective." Policy Research Working Paper. World Bank, Washington, DC.

Shepherd. 2008.

Torres, C., C. M. Briceño-Garmendia, and C. Dominguez. 2011. "Senegal's Infrastructure: A Continental Perspective. " Policy Research Working Paper. World Bank, Washington, DC.

Tosevska-Trpcevska, 2014.

Tsen, Jonathan Koh Tat. 2011. *Ten Years of Single Window Implementation: Lessons Learned for the Future.* Discussion paper presented at the Global Trade Facilitation Conference 2011, Geneva, December 12 and 13. https://www.unece.org/fileadmin/DAM/trade/Trade_Facilitation_Forum/BkgrdDocs/TenYearsSingleWindow. pdf.

World Bank. 2009. "Bangladesh –Transitional Support Credit (P110167)." Independent Evaluation Group, Implementation Completion and Results Report ICR1115, World Bank, Washington, DC.

———. 2014. "Africa – West and Central Africa Air Transport Safety and Security Project (P100785)." Independent Evaluation Group, Implementation Completion and Results Report ICR2031, World Bank, Washington, DC.

———. 2015. “Indonesia – First and Second Connectivity Development Policy Loans Projects (P144774).” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR14703, World Bank, Washington, DC.

———. 2017a. “Croatia – Trade and Transport Integration Project (P093767).”, Independent Evaluation Group, Implementation Completion and Results Report Review ICRR0020565, World Bank, Washington, DC.

———. 2017b. “Mexico – First Programmatic Competitiveness Development Policy Loan (P098299).” Independent Evaluation Group, Implementation Completion and Results Report ICR1060, World Bank, Washington, DC.

———. 2017c. “Africa – East Africa Trade and Transport Facilitation Project (P079734).”, Independent Evaluation Group, Implementation Completion and Results Report Review ICRR0020493, World Bank, Washington, DC.

———. 2017d. “Vietnam – Mekong Delta Transport Infrastructure Development (P083588).” Independent Evaluation Group, Implementation Completion and Results Report Review ICRR0020646, World Bank, Washington, DC.

WTO (World Trade Organization). 2015. *World Trade Report 2015 - Speeding up Trade: Benefits and Challenges of Implementing the WTO Trade Facilitation Agreement.* World Trade Organization, Geneva.

[1] IEG reviewed 20 publications and 21 World Bank Group projects related to ports. EconLit, World Bank Group Policy Research Working Papers, and Google Scholar were used to review the literature on ports. Keyword searches were used with inclusion/exclusion criteria resulting in 88 unique publications, of which 20 were finally selected based on the relevance ranking. This section provides a summary of the findings.

[2] In this regard, see, for example, Aman et al. 2016.

[3] Of course, single windows can be and have been established for other purposes, such as business registration and licensing, taxation, investment facilitation and more.

[4] In greater detail: the (i) efficiency of customs and border management clearance (“Customs”); (ii) quality of trade and transport infrastructure (Infrastructure”); (iii) ease of arranging competitively priced shipments (Ease of arranging shipments”); (iv) competence and quality of logistics services—trucking, forwarding, and customs brokerage (“Quality of logistics services”); (v) ability to track and trace consignments (“Tracking and tracing”); and (vi) frequency with which shipments reach consignees within scheduled or expected delivery times (“Timeliness”).

Appendix H. Summaries of IEG Trade Facilitation Evaluation Country Case Studies

Trade Facilitation Case Study Summary

1. At the country level, the case studies used a set of questions on World Bank Group engagement:

    a. What are the trade facilitation priorities for trade?

    b. Are Bank Group strategies and interventions aligned with these priorities?

    c. Have interventions been part of a programmatic or one-off approach?

    d. Who are the other major players; have efforts been well coordinated?

2. At the intervention level, the following topics were addressed by the case study template:

    a. Relevance of the intervention to achieve the trade facilitation goals

    b. Results of Bank Group–supported interventions

    c. Factors that facilitated or constrained the implementation of the interventions

Table H.1. Summary of World Bank Group engagement

Summary of Case Findings by Country	Armenia	Benin	Lao PDR	Peru
Trade facilitation overall is an important constraint to trade...	✓	✓	✓	✓
… but, in some countries, trade logistics and other concerns were described as a greater constraint to trade	✓		✓	✓
Bank Group interventions were generally aligned with country priorities and evolved over time to meet such priorities	✓	✓	✓	✓
… data and diagnostics helped identify priorities and inspired the design of interventions	✓	✓	✓	✓
Interventions generally followed a programmatic approach	✓		✓	✓
… such programmatic (or synergistic) engagement contributed to steadier progress	✓			✓
… in this regard, the use of programmatic development policy operations was wide-spread	✓		✓	✓
… yet, policy lending by itself may be a weak instrument to ensure specific trade facilitation reforms get implemented		✓		✓

Summary of Case Findings by Country	Armenia	Benin	Lao PDR	Peru
… but can prove a useful anchor when accompanied by technical assistance or advisory support	?		?	
Donor coordination was in general rare but powerful when it occurred	?	?	?	?

3. The case studies found that trade facilitation is an important constraint to trade, but, in some countries, trade logistics was described as a greater constraint to trade.

   a. In all countries, trade facilitation was described as an important constraint to trade in data, analytical work, and interviews. Yet, in Armenia, Lao PDR, and Peru, data and interviews also suggest that logistics may be a greater constraint to trade. In Peru, extra-port infrastructure, logistics service providers, and road network connectivity were described by many as their leading constraint to trade.

   b. In Armenia, constraints such as private sector capacity, domestic infrastructure quality and costs, and broader policies may be binding, especially if trade facilitation is reformed enough to not impose substantial unpredictability and delays. A transport organization suggested that the core trade constraint lay not in Armenia, but in Georgia, where the key roadway to Russia was often blocked in the winter and lacked basic amenities for truck drivers, and where the conflict over South Ossetia blocked a viable alternative. A common view was that processing of goods at the borders was “good enough” that a marginal improvement was less important than more pressing constraints.

   c. Yet, while logistics remains an important bottleneck, support for it was described as more difficult and lengthier to implement, whereas trade facilitation measures were perceived as quick wins, suggesting that prioritizing trade facilitation measures could help develop or sustain reform momentum.

   d. In all four cases, corruption was also mentioned as an important bottleneck. In Armenia, it directly affected customs reforms, while in Benin it had a political origin.

4. Bank Group interventions were generally well aligned with country priorities, which were identified through diagnostics (such as the Diagnostic Trade Integration Studies, DTIS) and evolved over time to meet changing priorities.

   - This was seen in all case studies and is related to the point below on programmatic engagement. In Benin and Lao PDR, trade facilitation challenges were identified in their respective DTIS and were subsequently followed by

interventions that aimed to address these concerns. In Peru, with their focus on border infrastructure and broader logistics, strategy documents were well in line with the country's priorities. Yet, the coverage of efficiency of customs administration in strategy documents does not reflect the urgency of what is found in the data (Logistics Performance Index [LPI]) and Advisory Services and Analytics (ASA).

5. Bank Group interventions generally followed a programmatic approach underpinned by analytical work and programmatic policy operations. Such programmatic engagement contributed to steadier progress and continued attention to trade facilitation when other forces mitigated against it.

    a. This was seen in Armenia, Peru (initial period), and Benin during the Abidjan/Lagos corridor period. In all cases the World Bank Group engagement model delivered a complementary set of World Bank ASA, World Bank lending, and IFC Advisory Services.

    b. In all four countries, programmatic policy lending was used to deliver trade facilitation interventions. Yet, by itself, policy lending may be a weak instrument to deliver such interventions. In Benin, the development policy operations (DPO) series missed its trade facilitation targets. In Peru, although DPOs met their targets, stakeholders on the ground had no knowledge of them and reforms eventually lost momentum (e.g. cross-agency coordination and single window implementation). The World Bank's support, in this case, was perceived as "hands-off." In Armenia and Lao PDR, by contrast, DPOs were complemented with technical assistance that was described as useful and "visible" to stakeholders on the ground tasked with implementing the reforms.

6. Donor coordination was in general rare but occasionally powerful.

    a. In general, explicit donor coordination was rare in all case studies. Instead, donors "coordinated" by not replicating their work programs rather than by attempting to optimize their support based on an institution's comparative advantage.

    b. In some cases, however, donor coordination proved powerful and helped deliver results, including, for example, the Abidjan-Lagos corridor, the World Bank and Millenium Challenge Corporation (Benin port), the World Bank and Swiss State Secretariat for Economic Affairs(Peru single window), and World Bank-International Monetary Fund influence in Armenia and Lao PDR). But these were opportunistic rather than programmatic.

Table H.2. Summary of Intervention-Level Findings

Summary of Case Findings by Country	Armenia	Benin	Lao PDR	Peru
Relevance of Interventions to Trade Facilitation Goals				
Doing Business Indicators were described as a great trigger for change but they may not be the most relevant measure of reforms.	✓		✓	
Diagnostic Advisory Services and Analytics were very influential and well received given their specific findings and recommendations.	✓	✓	✓	✓
… relying solely on diagnostics can lead to "diagnostic fatigue."				✓
Social objectives are important to and consistent with government objectives, but evidence is limited on their integration.	✓	✓		✓
Results of Bank Group–Supported Interventions				
Across all cases, substantial progress was made on many indicators, but this progress was uneven within and across cases.	✓	✓	✓	✓
Factors that Facilitated or Constrained Implementation				
External motivating factors (e.g. trade agreements or regional integration) play a key role in generating reform momentum.	✓	✓	✓	✓
Political will and trade reform champions in the government were instrumental in achieving results…			✓	✓
… yet, policy shifts may undermine and in some cases even reverse progress.	✓	✓	✓	
When implementing a single window or trade portal, agency coordination and collaboration is key but difficult to achieve.	✓	✓	✓	✓
Where capacity was limited, bite-sized or step-by-step advice seemed to work best.	✓	✓		✓
… having well-staffed implementation units were also described as key to project and program success.	✓	✓		✓

7. Doing Business Indicators are a great trigger for change but they may not always be the most relevant measure of reforms on the ground.

    a. In Armenia and Lao PDR, Doing Business Indicators were a great tool for obtaining commitments to reform from high-level government officials. But these indicators were a weak tool to measure changes from project implementation and generally from short-term changes. In Armenia, this

limitation was reflected in reforms not resulting in Doing Business improvements (Food Safety Armenia) and progress on implementation as the country got credit for these reforms at the enactment stage.

b. These cases suggest having a mix of Doing Business and project-specific indicators and to manage client expectations in terms of the Doing Business changes in the short term.

8. Diagnostic ASA were very influential and well received given their specific findings and recommendations but relying solely on diagnostics as the instrument for engagement in trade facilitation can lead to "diagnostic fatigue."

- In general, World Bank ASA was well received by country stakeholders and donors alike based on their quality and relevance (all cases). The World Bank's DTIS were particularly influential in Benin, Armenia, and Lao PDR. Although the studies were not solely focused on trade facilitation, they gave specific findings and recommendations and were well received overall. In Peru, a series of targeted Reimbursable Advisory Services (RAS) ASA delivered in FY16 was well received, given their actionable recommendations. Such studies helped reduce stakeholder uncertainty and build consensus on proposed reforms. But, without subsequent lending or support to implement recommendations, stakeholders (in Peru) experienced "diagnostic fatigue."

9. Social objectives are important to stakeholders and consistent with government objectives but there is limited evidence on how well this is integrated in reform packages.

a. Social objectives are important to stakeholders (and consistent with government objectives) but evidence beyond such statements from interviews is limited (Armenia, Lao PDR, Peru). In Armenia, risk-based inspection and automated systems were described as helping advance social objectives on food safety, revenue, and smuggling. In Peru, efforts were made to decrease crime and corruption in and around the Lima port, with relatively positive results.

b. In many cases, international standards were the driving force behind a country's adoption of better. In Peru, the driving force behind the country's efforts to reduce drug smuggling was to improve access to foreign markets and reduce exporter costs and time spent at the importer country gate. Because of drug smuggling, Peru's exports were perceived as risky and therefore required additional screenings at the importer country gate. The country therefore embarked on an intense campaign to improve the security situation in its ports, with some success. In Armenia, until its accession to the Russian-led Eurasian Economic Union, a driving reform force was accession to the European Union (EU).

10. Across all cases, timely progress was made on many indicators but this progress was uneven within and across cases.

    a. In Armenia, Bank Group support has contributed significantly to trade facilitation reforms. Yet implementation has been constrained at times by weak political commitment (and some overt resistance), limited counterpart capacity and skills, and shifting trade orientation.

    b. In Benin, there was greater progress in imports than exports, with continued complexity in export preclearance regulations and documentation. Achievements supported by the World Bank Group were the award of the port's container terminal concession, streamlining and automation of customs and related procedures, introduction of single windows for customs and regulatory clearance and for customs preclearance procedures, introduction of risk-based inspections, and improvement of regional coastal road transit and related regulatory activities.

    c. In Lao PDR, border clearances times have substantially improved. However, several obstacles persist that add to the time and costs of trading. The burden of processing documents such as import licenses, certificates, permits, and quality approvals remains very high. There continued to be a cumbersome import licensing regime as well as non-customs import taxes and fees and restrictions on licenses and quotes. As of 2017, the Sanitary and Phytosanitary (SPS) Measures and TBT (technical barriers to trade) frameworks still had substantial weaknesses. Overall trade facilitation indicators have shown uneven progress over the decade. Trade indicators have shown some improvement but lag other countries in the region. Most of the trade facilitation reforms undertaken in Lao PDR in 2007–16 involved reduction of legacy controls from the socialist command economy. Reduction of these measures tended to reduce over-control of trade rather than undermine standards, safety, and other needs in the public interest. There were no clear negative costs to the reforms, although social effects were not monitored.

    d. In Peru, all World Bank investments and policy operations were rated as satisfactory by IEG. Each project either met or surpassed most of its outcome indicators and the country's performance in exports and competitiveness improved during that time. Yet, despite these achievements, the mission team found that the trade facilitation agenda did not move forward as envisioned. For example, although a program of technical assistance loans/development policy financing (TAL/DPFs) aimed to increase nontraditional exports and achieved some results in this area, data shows that this remains a challenge for Peru. Similarly, the World Bank's early support to the liberalization of the

country's ports and the International Finance Corporation's (IFC's) subsequent investment in their management significantly increased their efficiency, but the country still lags its peers in logistics. In addition, although nontraditional exports increased, the share of nontraditional exports to total exports was below target (22 percent rather than the 30 percent expected). In terms of quality standards, the ICR notes that "180 technical standards were issued and 1,243 firms or producers were served by CITES." In addition, INDECOPI, the country's institute charged with protecting competition and intellectual property, developed norms and standards supported by a larger number of technical committees, prioritizing sectors with higher export potential. SENASA, the country's agro-sanitary agency, initiated a plan to certify its laboratories and to update the sanitary norms, simplifying procedures.

11. External motivating factors and shared goals play a key role in generating reform momentum, but countries face difficulties in sustaining commitment once the goal is reached.

    a. External motivating factors and shared goals include reaching a trade agreement, becoming a member of a regional market (such as the EU or Eurasian Economic Union), or improving a country's standing in a global indicator (e.g. Doing Business) were described as important motivators in all four case study countries.

    b. In Lao PDR and Peru, accession to the World Trade Organization (WTO) was described as important to foster reforms. In Armenia, Benin, and Lao PDR, regional and global trade agreements were described as an incentive for trade facilitation reforms. In Peru, free trade agreements were used as motivators to increase quality of agriculture exports and improve procedures for export.

    c. Yet, across all countries, concerns were raised about the sustainability of reforms once these external goals were reached. In Lao PDR and Peru, the case studies noted concerns around weakening cross-agency cooperation and reform momentum in general once their shared goals were reached.

12. Political will and trade reform champions in the government were instrumental in achieving results; yet, policy shifts may have undermined and in some cases even reversed progress.

    - In Armenia, weak political commitment (and some overt resistance) constrained implementation, while in Benin, changes in government leadership led to discontinuation in some ongoing reforms. In Lao PDR, trade reform champions in the government were instrumental in achieving the degree of progress to date but policy shifts during 2012–14 undermined such progress.

A change in leadership in key ministries during that period resulted in a change in policy focus and interrupted the World Bank–supported trade facilitation reform program. In Peru, trade liberalization was an important priority for government strategy throughout the period—in this regard, trade facilitation received strong attention and commitment from government.

13. When a single window or trade portal is being implemented, agency coordination and collaboration are key but difficult.

    - Agency coordination was key to the success of the Single window and trade portal but it was harder to achieve than other trade facilitation interventions because it requires strong championship to overcome resistance to obstacles. The single window was never achieved in Armenia and only partly achieved in Peru owing to lack of agency coordination. In Benin, the single window was completed through strong championship from the highest level (the president and his son) to obtain the needed collaboration from participating agencies.

14. Where capacity was limited, bite-sized or step-by-step advice seemed to work best, whereas higher-level advice often lacked traction. The Bank Group supported countries with capacity building in all cases.

    a. In such cases, World Bank Group support tackled a small part of the reform problem at a time, for example, IFC support to food security in Armenia, World Bank support to ports in Benin, World Bank support to PPP law, and IFC support to a port operator in Peru. All cases had several interventions that addressed agency capacity— seven in Armenia, nine in Benin, , six in Lao PDR, and three in Peru.

    b. Having well-staffed implementation units were also described as key to project and program success in Armenia (SCI), Lao PDR (Project Implementation Unit), and Peru (PCM).

Armenia Case Summary

Background

Armenia is a small, landlocked country located in the mountainous South Caucasus region between Europe and Asia, with only two open borders. Armenia had the highest number of identified trade facilitation interventions in the Europe and Central Asia region, including multiple areas of intervention and both World Bank and IFC instruments. Armenia's trade posture pivoted somewhat from West to East and now aims to act as a "bridge" between East and West with strong links to both. Trade with Russia reportedly responded positively to its accession to the Eurasian Economic Union in 2015.

Strategy and Portfolio

Within the evaluation period, there were three strategy documents prepared for Armenia; namely, Country Assistance Strategy (CAS) FY2005–08, Country Partnership Strategy (CPS) FY2009–12, and Country Partnership Strategy (CPS) FY2014–17. From an initial focus on customs governance and revenue collection, over time World Bank Group strategy focused more explicitly on trade facilitation, and on reducing business compliance costs with trade-related regulations. The portfolio for the World Bank Group support to facilitating trade in Armenia (FY06-17) includes seven World Bank lending, two World Bank ASA, and three IFC advisory projects. Trade facilitation interventions have been anchored in a series of three Poverty Reduction Support Credit programs and four development policy operations (DPOs) during FY06-17. IEG observed significant alignment between the actions laid out in DPOs and the advisory work conducted by IFC, enhanced during the recent Trade and Competitiveness Global Practice period by using common staff as World Bank team members and IFC advisory leaders.

#	Project ID	Project Name	Institution	General Logistics	Trade Logistics	Trade Policy	Trade Finance	Gen. Bus. Env.	Agency Support	Border Infrastructure	Cross-agency Dialogue	Modernization of Customs	Rules, Procedures & Documentation
1	564407	Armenia Regulatory Simplification - Doing Business Reform	IFC-AS					√					√
2	588147	Armenia Investment Climate Reform Project	IFC-AS					√	√		√		√
3	600244	Armenia Investment Climate II	IFC-AS					√	√		√	√	√
4	P093459	PRSC 2	WB-Lend	√					√			√	
5	P093460	PRSC 3	WB-Lend						√				
6	P101486	PRSC 4	WB-Lend				√		√				
7	P122195	AM-DPO 3	WB-Lend					√	√				
8	P127754	DPO 1 New Series	WB-Lend	√					√				
9	P143040	Armenia DPO2	WB-Lend	√								√	√
10	P153234	Armenia DPO3	WB-Lend										√
11	P084109	Rural Sector Strategy and Action Plan	WB-AAA			√							
12	P131912	Armenia Policy Notes	WB-AAA	√		√		√					

Outcomes

World Bank Group support has contributed significantly to trade facilitation reforms. Yet implementation has been constrained at times by weak political commitment (and some overt resistance), limited counterpart capacity and skills, and by shifting trade orientation.

Factors under World Bank Group Control

The World Bank Group appears to offer the government of Armenia (and other stakeholders) a unique value proposition in its combination of financing, policy dialogue, analysis, and technical assistance/advisory services, enhanced during the recent Trade and Competitiveness Global Practice period using common staff as World Bank team members and IFC advisory leaders. Yet, in the earlier part of the period, any alignment of World Bank and IFC appeared more opportunistic than systematic. Although the combination of services and resources was valued by the counterparts, much of the analytic and advisory work is atomized, and clients and stakeholders were generally unable to identify most World Bank Group analytic and advisory products beyond its Doing Business Indicators.

Factors Outside of Direct Control

Current fiscal constraints have put a halt to new lending and disbursements of ongoing projects, yet World Bank Group counterparts would still appreciate continuous support. However, trade facilitation (as defined in this evaluation) may not be the binding constraint to trade in the current context. Among the donor community, IEG found donors only modestly coordinated, mostly to the extent of not replicating each other's efforts rather than proactively seeking synergy.

Indicators

Experience suggests that Bank Group–generated indicators are highly influential—but are more effective where they are evidently actionable—and have some deficiencies in coverage. The heavy reliance on Doing Business Indicators to capture reforms enabled by individual projects is questionable, because they sometimes do not capture reforms or react to formal reforms in advance of implementation. Officials also expressed some frustration with the International Logistics Performance Index.

Benin Case Summary

Background

Benin is a West African coastal nation whose port has provided a key economic engine. It is a base for transshipments to Nigeria and neighboring landlocked countries. It grows and exports cotton and has strong agricultural potential. At the same time, it is a "contraband economy" where most traded goods move informally, outside the regulatory ambit of government. There is also relatively low institutional capacity and human capital, as well as relatively weak infrastructure.

Strategy and Portfolio

Trade facilitation has become more relevant with heightened competition for Cotonou Port from other regional ports. There is widespread agreement that modernization and reform should continue with the addition of improvements in domestic logistics as well.

Benin's World Bank Group portfolio includes World Bank ASA and policy and investment lending, IFC advisory work, and a guarantee from the Multilateral Investment Guarantee Agency (MIGA). In policy dialogue, the World Bank emphasized Benin's need to reduce reliance on informal re-export to Nigeria, which is vulnerable to changes in policy and enforcement, and to build more robust and diversified agro-industrial exports. Trade facilitation reforms emphasized strengthening key institutions and their governance, including the port and customs; simplifying and streamlining laws and regulations; strengthening infrastructure; and regional integration of the West African market.

The importance of trade facilitation has evolved over the period, beginning with the catalytic 2005 DTIS (updated in 2015), whose data and recommendations guided several interventions and informed government and donors. Other ASA work on competitiveness and business environment reforms were also key. The Abidjan-Lagos Corridor Project had a more programmatic character. Doing Business Trading Across Borders indicators motivated reform, providing benchmarks.

Nonetheless, most World Bank Group interventions were described by staff as having been designed and implemented individually, without a strategic framework or a clear plan to build on each other. In some cases, initial achievements were not followed by actions enhancing the sustainability of reforms, and government buy-in was dependent on specific champions.

Within trade facilitation, there was greater progress in imports than exports, with continued complexity in export preclearance regulations and documentation.

Outcomes

Key World Bank Group–supported achievements were the award of the port's container terminal concession, streamlining and automation of customs and related procedures, introduction of single windows for customs/regulatory clearance and for customs preclearance procedures, introduction of risk-based inspections, and improvement of regional coastal road transit and related regulatory activities.

Although the World Bank has pursued a regional approach through its corridor projects, the major regional coordinating institution—ECOWAS—is regarded as having low capacity and sometimes the actions of neighboring countries limit Benin's trade facilitation. However, the Abidjan-Lagos Corridor Organization (ALCO), oriented toward monitoring, evaluation, and public education, was especially cited as an effective and influential World Bank–financed body.

Several government actions since 2016 have discouraged foreign private investment, creating perceptions of an unlevel playing field. Stable concessions for single windows and a container port were reportedly harmed, with a MIGA guarantee at risk.

Many stakeholders could not differentiate World Bank Group products and institutions, misattributing interventions and even direct beneficiaries sometimes failed to distinguish between the IFC, World Bank, and International Monetary Fund. Donor coordination is limited, although some donors engage in complementary ways. Although a coordination committee exists, there was limited recent discussion of trade facilitation.

Sustainability of reforms is a challenge. First, most interventions are of a standalone nature. Second, donor finance is often not subsequently followed by other finance or

institutionalization. Third, the most recent change in presidential administrations led to discontinuation of or course changes in some ongoing reforms.

Lao PDR Case Summary

Background

Lao PDR is a small, landlocked country in Southeast Asia with a rich natural resource base. Lao PDR has seen steady economic growth over the past decade. The nature of Lao PDR's growth has led to lower rates of poverty reduction than might be expected. A range of challenges exist to further improve the business environment and diversify the economy.

Government Trade Facilitation Initiatives Since 2006

Prior to 2006, reforms had largely opened the trade regime, although an extensive range of obstacles to trade persisted. The 2006 DTIS, prepared by the World Bank with inputs from the government, found that notwithstanding the recent liberalization and simplification efforts, "management of trade is still restrictive, with burdensome, nontransparent, and inconsistent rules acting to increase costs and reduce competition." In 2006, the DTIS set out a broad agenda to promote export competitiveness, including improving trade facilitation. A 2011 trade facilitation strategy further identified trade facilitation challenges and priorities. In 2012, a DTIS Update set out the trade facilitation agenda for 2012–17.

World Bank Group Instruments Supporting Trade Facilitation, 2006–17

The World Bank provided continuous support for trade facilitation in 2007–17 through a combination of several instruments. These included 4 investment and technical assistance operations, 7 relevant DPOs, and 22 relevant nonlending analytic work projects financed either by the World Bank or multidonor trust funds. Other donors, including the Asian Development Bank, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Australian Aid, EU, and USAID, were also active in this area.

World Bank Group Objectives and Interventions to Support Trade Facilitation in Lao PDR, 2006–17

The Bank Group sought to help Lao PDR improve both customs and non-customs border-related processes as well as trade facilitation policy and government capacity. Bank Group objectives to support trade facilitation in Lao PDR in 2006–17 fell into three broad categories:

i. Improve the efficiency and effectiveness of customs administration, including implementation of the Automated System for Customs Data (ASYCUDA), modernization of customs procedures, and building customs capacity.

ii. Simplify, modernize, and standardize non-customs border operations, including rationalizing and simplifying trade-related documents and procedures and

introducing the Lao PDR trade portal, streamlining SPS standards, and streamlining nontariff measures.

iii. Improve trade facilitation policy, interagency coordination, and government capacity, including support to develop and implement a trade facilitation master plan, establish a trade facilitation secretariat, improve government capacity for trade facilitation, and establish a national single window (dropped).

Achievement of Objectives

Objective 1: Improve the efficiency and effectiveness of customs administration. The ASYCUDA system was successfully installed and rolled out to all major border points. Progress was also made on customs modernization, although at a slower pace than expected. Several World Bank–supported measures helped strengthen capacity in the Customs Department over the period.

Objective 2: Simplify, modernize, and standardize non-customs border operations. Uneven progress was made in simplifying non-customs border processes and documentation. The Lao PDR trade portal was launched in June 2012 and has had demonstration effects and been replicated in countries across the world. With World Bank support, several SPS legal reforms helped Lao PDR meet WTO accession requirements, although comprehensive SPS legislation was not enacted until 2017.

Objective 3: Improve trade facilitation policy, agency coordination, and government capacity. A national trade facilitation strategy was adopted in 2011. A permanent trade secretariat was established in 2010, although after WTO accession, its effectiveness declined. Lao PDR became a member of the WTO in 2013, the culmination of a 15-year accession process. The government's capacity to manage trade-related reforms was substantially improved. Strengthened capacity in trade-related areas was demonstrated by the government's lead role in preparing the 2012 DTIS Update. There was less success in sustaining interagency cooperation and mainstreaming the trade facilitation agenda across line ministries. The Doing Business Report is being used as a performance indicator for the government's new trade facilitation reform agenda. The government pursued its own strategy on the national single window in 2013, which has not yet been rolled out. A promising government initiative is the combined checkpoint that is being piloted on the Lao PDR/Vietnam border.

Overall Progress toward Trade Facilitation Outcomes in Lao PDR

Border clearance times have improved substantially. However, several obstacles persist that add to the time and costs of trading. The burden of processing documents such as import licenses, certificates, permits, and quality approvals remains very high. There continued to be a cumbersome import licensing regime, as well as non-customs import taxes and fees and licenses and quote restrictions. As of 2017, the SPS and TBT frameworks still had

substantial weaknesses. Overall trade facilitation indicators have shown uneven progress over the decade. Trade indicators have shown some improvement but lag behind other countries in the region. Most of the trade facilitation reforms undertaken in Lao PDR in 2007–16 involved reduction of legacy controls from the socialist command economy. Reduction of these measures tended to reduce over-control of trade rather than undermine standards, safety, and other needs in the public interest There were no clear negative costs to the reforms, although social effects were not monitored.

Factors Underlying Achievement of Objectives

Factors in the control of the World Bank Group: The Bank Group supported a relevant and broad set of measures to support trade facilitation in 2006–07. Bank Group advice and assistance on trade facilitation were grounded in extensive analytical work throughout the period. The World Bank task team's location in the country office supported analysis and implementation progress on the trade facilitation agenda.

Factors in the control of the government: The government's pursuit of regional and global trade agreements provided important incentives for reform. Trade reform champions in the government were instrumental in achieving the progress to date. However, progress on trade facilitation reforms was undermined by government policy shifts during 2012–14. A change in leadership in key ministries in 2012–14 resulted in a change in policy focus and interrupted the World Bank–supported trade facilitation reform program. Progress on the trade facilitation agenda was also undermined by an initial loss of momentum after WTO accession. Agency pursuit of their own revenue sources constrained progress on some measures. The 2017 trade facilitation reform strategy promises renewed emphasis on trade facilitation reforms.

External factors: Rapid growth in the region and increasing integration provided strong incentives for trade facilitation reforms. The performance of UNCTAD as the proprietor of the ASYCUDA may also have slowed implementation of the customs automation efforts. A key problem was apparently that UNCTAD did not accept the World Bank's standard clauses on fraud and corruption in the contract template. In addition, its technical support to deliver the installation, adaptation, and service and maintenance was inadequately responsive. Logistics deficiencies in Lao PDR continue to add to the time and costs of moving goods across borders.

Lessons from Experience

i. World Bank trade facilitation support, in synergy with the requirements of external trade agreements, can provide very effective support for reforms.

viii. Complementarity between policy, institutional, and technical dialogue through policy lending as well as investment and technical assistance and analytical and advisory activities can be effective means of support.

ix. Entrenched interests, including agencies desirous of protecting their direct sources of revenue, can undermine reforms.

x. Some reforms, such as automation, may be more easily achieved than reforms requiring underlying attitude changes.

xi. An option for the World Bank is to help realize single-stop, cross-border clearance facilities between countries. The World Bank may have a potential role to play in facilitating such single-border crossing points in other countries by leveraging its technical capacity and its relationship with each country.

Peru Case Summary

Background

Over the past decade, Peru has been one of the fastest-growing economies in Latin America and the Caribbean, and its poverty rates have been sharply reduced. Peru has a liberalized trade regime but trades very little and exports are increasingly concentrated.

Priorities

Data and ASA show that logistics and border infrastructure are the country's leading constraint to trade, closely followed by "soft infrastructure," for example, institutional issues such as customs capacity. Cumbersome customs procedures are a barrier to trade facilitation. In recent documents, the role of firm productivity and export diversification have become increasingly more prominent.

Strategy

With their focus on border infrastructure and broader trade logistics, strategy documents are well in line with the country's priorities. By contrast, their coverage of efficiency of customs administration does not reflect the urgency of what is found in the data and ASA.

Relevance

Of all donors, the World Bank Group appears to be the only institution consistently engaged in border infrastructure through policy operations that supported an increase in private sector participation (ports law), ASA that analyzed costs, and targeted IFC investments to improve port efficiency. Yet, the choice of policy operations as the main instrument left stakeholders feeling as though the World Bank was not active in this area. At first sight, the initial period under review appears to consider trade facilitation as a comprehensive and programmatic agenda, and includes relevant interventions delivered in a logical and incremental fashion.

Yet, by switching from technical assistance loans to policy operations, the World Bank appears to lose visibility in its support to this agenda. In addition to the World Bank Group, the Inter-American Development Bank, State Secretariat for Economic Affairs (SECO), and USAID were active in the trade facilitation space.

Outcomes

The World Bank played a key role in building the needed "soft infrastructure" for trade facilitation (supportive policies and institutional capacity) early on. These operations were all rated as satisfactory by IEG and each project either met or surpassed its outcome indicators. Yet, a five-year gap (in support) and the choice of policy operations as the main instrument meant the World Bank was perceived as being "hands off" in this space.

Factors of Success and Failure

i. Country ownership and champions: The trade facilitation agenda has had support over time but it is not as widely embraced or owned as were trade agreements and tariffs.

ii. Capacity and budget: There was enough capacity and available technology in the ministries of finance, trade, and in customs to improve processes (for example, through a single window) but other ministries and agencies like agriculture and phytosanitary lagged.

iii. A turf war between the Ministry of Trade (MINCETUR) and the Customs Administration (SUNAT) over the single window was ultimately resolved and it was eventually developed under MINCETUR, with most of the needed ministries participating in the single window. SUNAT has developed its own single window which, while not competing with the SUNAT window, is an additional step increasing time and paperwork.

iv. Staff turnover: In government, there was a lot of turnover and that may have affected progress of interventions and institutional memory.

v. Country office staff: Local knowledge and constant follow-up and engagement were helping to keep the agenda alive.

vi. Donor funding: Progress lagged until SECO funds were made available to the MINCETUR. The World Bank Group Trade and Competitiveness team could react quickly and deliver high quality reimbursable advisory services in 2016 that were well received by government and private stakeholders alike. Formation of a Trade and Competitiveness team may have bridged a gap between IFC AS and World Bank activities.

vii. Policy operations: Although these operations could create a continuous engagement with the Ministry of Finance on the trade facilitation agenda, they also appear to be so "hands-off" that most interviewees did not recall this type of World Bank support. Yet the DPOs provided impetus for the single window and created the quality agency, INACAL, which is now operational.

viii. Technical assistance (some reimbursable): These smaller operations helped the World Bank connect with government officials workon on these issues, creating buy-in and helping solve technical problems.

IEG
Independent Evaluation Group

WORLD BANK GROUP
World Bank • IFC • MIGA

The World Bank
1818 H Street NW
Washington, DC 20433