



Assessing the Benefits of Full ITA Participation for Indonesia, Laos, Sri Lanka, and Vietnam

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By reducing costs, the ITA leads to increased use of ICT goods, which spurs productivity and economic growth in signatory nations, while deepening their enterprises' participation in global value chains.

The Information Technology Agreement (ITA), a trade agreement that eliminates tariffs on hundreds of information and communications technology (ICT) products, has been one of the most successful trade agreements in the World Trade Organization's (WTO) history. As ITA accession commits countries to tariff elimination, it decreases the cost of these innovation- and productivity-enhancing ICT capital goods, which spurs their adoption and consumption among businesses and consumers alike. As ICTs have become the modern global economy's most powerful drivers of economic growth, ITA accession can play an important role in fostering economic growth across developing nations, in part by integrating them into global value chains for the production of ICT goods and services. This report assesses the anticipated economic impact of Indonesia and Vietnam joining the recently completed expansion of the Information Technology Agreement and of Laos and Sri Lanka joining the ITA in full.

EXECUTIVE SUMMARY

In December 1996, 29 WTO member nations launched the ITA, a novel trade agreement in which participating nations completely removed tariffs on eight categories of information and communications technology products (such as semiconductors, semiconductor manufacturing equipment, computers, and telecommunications equipment). In 2012, owing to the tremendous success of the ITA, member nations started

negotiations toward expanding the ITA to add innovative ICT products commercialized since 1996 as well as some categories of ICTs not included in the original agreement. ITA expansion negotiations concluded in December 2015, with parties agreeing to bring an additional 201 high-tech products, such as new-generation multi-component integrated circuits, touchscreens, GPS navigation equipment, and medical equipment such as pacemakers and ultrasonic scanners under ITA coverage.¹ The expansion, which the WTO estimates will eliminate tariffs on an additional \$1.3 trillion in annual global trade of ICT parts and products, an amount equivalent to approximately 10 percent of world trade in goods, represented the first major tariff-cutting deal completed at the WTO in 19 years.² With product expansion of the ITA completed, attention has turned to broadening country membership in the ITA, including both encouraging existing ITA members to join the recent ITA expansion as well as attracting countries that are not yet ITA members to accede to both the original ITA and the expansion.

Table 1: Summary Economic Growth and Tax Revenue Impact of Countries' ITA Accession³

| | Indonesia | Vietnam | Laos | Sri Lanka |
|--|-----------|---------|-------|-----------|
| ITA-Attributable GDP Growth (Year One) | 0.04% | 0.03% | 0.19% | 0.10% |
| ITA-Attributable GDP Growth (In Year 10) | 0.35% | 0.29% | 1.88% | 0.96% |
| ITA-Attributable Increase in GDP Output (In Year 10, US\$ Millions) | \$5,368 | \$947 | \$476 | \$1,436 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Year One) | 31% | 17% | 15% | 19% |
| Tariff Revenue Forgone (Year One, US\$ Millions) | \$105 | \$95 | \$30 | \$42 |
| Tariff Revenue Forgone (Over 10 Years, Cumulative US\$ Millions) | \$1,186 | \$1,978 | \$878 | \$706 |
| Tax Revenue Gained (Over 10 Years, Cumulative US\$ Millions) | \$1,631 | \$388 | \$82 | \$158 |
| Tax Revenue Gained (Cumulative Over Ten Years) | 151% | 33% | 22% | 38% |
| Tax Revenue Gained as % Tariff Revenue Forgone (In Year 10 Post-Accession) | 264% | 38% | 24% | 47% |

Developing economies have benefitted tremendously from the ITA. In fact, developing economies' share of world exports of ITA products more than doubled over the past 20 years, increasing from 26 percent in 1996 to 63 percent in 2015. This is higher than their

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share of world total exports, which grew from 27 percent to 43 percent over the same period.⁴ As Table 1 shows, ITIF finds that Indonesia and Vietnam would benefit significantly from joining the ITA expansion (both countries are members of the original ITA) while Laos and Sri Lanka would benefit from full ITA accession.

Highlights of this report’s findings include the following:

- All four countries’ economies would grow as a result of full ITA participation, with estimated growth forecasted higher for Laos and Sri Lanka because they would be joining the ITA in full while Indonesia and Vietnam would only be joining the ITA expansion.
- After ten years, the Laotian economy would grow nearly 2 percent larger, and Sri Lanka’s 1 percent larger, than would otherwise be the case as a result of ITA accession.
- In the tenth year post-ITA accession, Indonesia would more than fully recover tariff losses resulting from ITA accession. Sri Lanka would recover 47 percent of tariffs forgone, Vietnam 38 percent, and Laos 24 percent. Laos recovers the lowest percentage as its effective realized average tariff rates on ITA imports currently exceed 8 percent.
- However, governments should recognize that the short-term costs in terms of tariff revenue forgone are much exceeded by the longer-term economic growth ITA accession can engender by bolstering a country’s ICT capital stock, thus unleashing greater levels of productivity and innovation across all sectors of their economies. Countries should view tariff revenue forgone as an investment in their ICT economy just as much as broadband deployment would be, and further recognize that tariff revenues “forgone” really aren’t; in fact, those “revenues” flow through directly to a country’s citizens and businesses, who can now purchase ICT goods at lower cost.

This report proceeds by briefly summarizing how ICTs drive developing country economic growth, describing how ITA accession can benefit developing countries, and explaining the methodology behind the report’s economic analysis. It then provides an overview of the ICT economy and an analysis of full ITA accession for each of the four study countries. This report builds on a prior report, “How Joining the Information Technology Agreement Spurs Growth in Developing Nations” issued in May 2017, which assessed the impact of ITA accession on six other developing countries: Argentina, Cambodia, Chile, Kenya, Pakistan, and South Africa.⁵

HOW ICTS DRIVE DEVELOPING COUNTRY ECONOMIC GROWTH

ICTs are the modern global economy’s most significant drivers of economic growth, for developed and developing countries alike. For instance, the World Bank writes that “the accumulation of ICT capital accounted for almost 20 percent of global growth between 1995 and 2014.”⁶ Similarly, Richard Heeks, professor of development informatics at the University of Manchester, estimates that “ICTs will have contributed something like one-quarter of GDP growth in many developing countries during the first decade of the 21st century.”⁷ Consider Kenya, where ICTs were responsible for roughly one-quarter of the country’s GDP growth during the 2000s.⁸ Elsewhere, ICTs accounted for 38 percent of

Chinese total factor productivity (TFP) growth and as much as 21 percent of Chinese gross domestic product (GDP) growth from 1980 to 2001.⁹ Similarly, Ahmed and Ridzuan find in their report (“The Impact of ICT on East Asian Economic Growth”) “a positive contribution of ICT to economic growth” across eight East Asian countries: China, Japan, Korea, Indonesia, Malaysia, Philippines, Singapore, and Thailand.¹⁰

ICTs generate such powerful economic impact because they represent “super capital” that has a much larger impact on productivity than other forms of capital.¹¹ In fact, ICT capital has a three to seven times greater impact on firm productivity than non-ICT capital. Similarly, ICT workers contribute three to five times more productivity than non-ICT workers.¹² These effects explain why the World Bank finds that firms in developing countries such as Mexico, Turkey, and Vietnam are more productive if they have more computers per worker, conduct e-commerce, and have a higher share of workers using the Internet.¹³ It explains why, in Vietnam, firms using e-commerce enjoy total factor productivity growth 3.6 percentage points higher on average than firms that do not use it.¹⁴ The World Bank identifies even greater effects in Africa, finding that African firms using the Internet enjoy 3.7 times higher labor productivity and 35 percent higher TFP than firms that do not.¹⁵ Moreover, as the World Bank notes, there’s still much more scope for impact, observing that “Firms in developing countries have considerable room to adopt digital solutions that have led to growth in high-income countries, such as using the internet for e-commerce or inventory management.”¹⁶

These findings highlight an essential point: ICT consumption and application is far more important than ICT production. Indeed, the central way ICTs drive a country’s economic growth is not through the production of ICT goods (e.g., manufacturing computers or mobile phones). Rather, the vast majority of the economic benefits from ICTs in developing countries—more than 90 percent—stem from greater adoption of ICTs across an economy, while less than 10 percent of the benefits stem from ICT production.¹⁷ So while many countries have focused almost exclusively on attracting ICT goods production, the far greater impact of ICTs on countries’ economic growth stems from encouraging their adoption and use across all sectors of an economy, from agriculture and manufacturing to services sectors like finance, education, government, and tourism. That’s why the McKinsey Global Institute estimates that about 75 percent of the value added by data flows on the Internet accrues to “traditional” industries, especially via increases in global growth, productivity, and employment.¹⁸ This has been true for the United States as well, with studies showing that the bulk of U.S. productivity growth over the past 15 years originated in ICT-using, not-producing sectors.¹⁹ This is why developing country ICT policy should focus foremost on infrastructure deployment and ICT adoption as opposed to ICT production.

The ITA has played an instrumental role in furthering consumption and adoption of ICT goods and services by lowering their prices through tariff elimination and thus facilitating diffusion. It’s critical to note that these effects amplify, because ICT goods are highly price elastic, meaning that a one percentage point decrease in price leads to a more than one

percentage point increase in ICT adoption. In fact, economists estimate that a 1 percent decrease in the price of ICT products can lead to a 1.3 percent increase in demand for those products.²⁰ Moreover, as a country's capital stock of ICT goods grows, this larger base of capital goods engenders downstream economic growth, explaining why a review of econometric literature by Cardona, Kretschmer, and Strobel finds that, on average, an increase in ICT capital stock of 1 percent leads to a 0.06 percent increase in a country's GDP.²¹ As subsequently explained, ITIF's report leverages these mechanics to estimate the economic growth impact of the four study countries joining the ITA in full.

HOW ITA PARTICIPATION BENEFITS DEVELOPING COUNTRIES

ITA participation benefits developing countries in at least five principal ways, by 1) spurring ICT adoption and diffusion, thus boosting economy-wide productivity and innovation; 2) supporting ICT services and exports; 3) facilitating countries' participation in ICT global value chains; 4) enhancing the competitiveness of countries' domestic manufacturers; and 5) supporting social, health, and sustainability goals.

Facilitating ICT Adoption and Boosting Productivity and Innovation

First, and most fundamentally, ITA accession lowers prices by eliminating tariffs on a range of foundational ICT goods—such as mobile phones, personal computers, and mobile devices—which facilitates their adoption, consumption, and diffusion across developing economies. The myriad applications of ICTs in sectors as diverse as mobile banking, smart cities, healthcare, education, and beyond have tremendous impacts on quality of life, as ITIF extensively documents in its “Digital Quality of Life” report.²²

This has proven especially true for developing countries, where digital infrastructure is stepping in to fill gaps in countries' healthcare, education, and mobile banking systems. For instance, in southeast Asia, Indonesia's government has launched an electronic money program as part of an effort to extend financial services to the unbanked—roughly 60 percent of Indonesia's 250 million citizens.²³ Of course, nowhere is this trend more pronounced than in Africa, where in countries such as Kenya mobile banking services such as M-PESA now essentially constitute the core banking infrastructure of the nation. M-PESA boasts 30 million subscribers, 18 million of them in Kenya, where mobile banking penetration exceeds 75 percent. More than 40 percent of Kenya's GDP flows through M-PESA annually and 2 percent of Kenyan households have been lifted out of poverty thanks to access to mobile money services.²⁴

The rapid growth of many Southeast Asian nations has made sufficient energy production and distribution a significant challenge. For instance, Vietnam is experiencing more than 8 percent annual energy demand growth and parts of the country have experienced blackouts as a result. To help address this, Ho Chi Minh City in Vietnam has become the country's first to install a smart city communications platform that will facilitate more energy-efficient management of buildings and public infrastructure. And, in July 2017, Vietnam's government announced a multi-billion project to build smart cities across Vietnam.²⁵ Likewise, turning Sri Lanka's capital, Colombo, into a leading smart city is a key

Countries that don't participate in open, cross-border flows of ICT products (whether by imposing high tariffs on ICTs or other restrictive measures such as localization barriers to trade) only end up excising themselves from global value chains for ICT products—and services.

component of the Megapolis project, a \$40 billion project to modernize Sri Lanka's capital and surrounding districts over the next 15 years.²⁶

And mobile technologies are increasingly being leveraged to improve health outcomes throughout the developing world, from applications such as remote diagnosis of glaucoma and other ophthalmological conditions via the mobile phone to SMS text alerts that help patients adhere to their prescriptions. For instance, 285 million people worldwide are visually impaired (39 million are blind and 246 million have low vision), with 90 percent of these individuals living in low-income countries.²⁷ Eighty percent of these visual disorders could be treated or even prevented if diagnosed at the outset, but all-too-often remote screening is unavailable. Enter the PEEK, or Portable Eye Examination Kit, an “eye clinic in a pocket” which combines a traditional ophthalmoscope and a retinal camera in a smartphone, enabling affordable, fast, and easy eye examinations in the remotest of communities.²⁸ Healthcare workers are using PEEK to scan over 1,000 people per week, just one example of the power of mobile technologies to boost health outcomes across the developing world. These are just a few of the many examples of how ICTs have been unleashed throughout the developing world to meet local health, educational, energy, and financial challenges.

Supporting Countries' ICT Services Sectors

In order for countries to field globally competitive ICT services sectors, their ICT services enterprises need access to best-of-breed ICT hardware at the best possible prices. That's especially true because the ITA supports the ICT hardware on which the global digital economy now runs. ITA accession can thus bolster the competitiveness of countries' ICT services sectors and enterprises therein by eliminating tariffs and thus reducing costs on the ICT goods on which ICT services firms fundamentally rely.

This dynamic is especially important for the countries in this study. For instance, the ICT services/business-process outsourcing (BPO) sector represents one of Sri Lanka's most important and fastest-growing economic sectors, with growth rates exceeding 120 percent over the past five years. Indeed, Sri Lanka's government has identified business-process outsourcing and ICT as “two vital sectors to future growth” and has endeavored to make Sri Lanka a more compelling location for business-process outsourcing than India.²⁹ ICT services exports now account for 13 percent of Sri Lanka's services exports.³⁰ Similarly, ICT services have become increasingly important to Indonesia, accounting for almost 5 percent of the country's GDP and 26 percent of its total services exports.³¹ Though Vietnam's ICT production sector has long been larger than its ICT service sector, the latter is growing rapidly as well.

Deepening Developing Countries' Participation in Global Value Chains

Keeping ICT prices low is paramount if countries wish to participate in global value chains for the production of ICT parts, components, and final products. In contrast, maintaining high ICT tariffs (in part by not joining the ITA) harms both developing countries' ICT-producing and ICT-consuming sectors.³² In particular, failure to join the ITA has caused nations to be left out of global production networks for ICT products, causing them to miss out on tremendous growth opportunities.

Countries imposing high tariffs on ICT parts and products only make themselves unattractive to multinational enterprises wishing to seamlessly integrate into global supply chains. This explains why the Organization for Economic Cooperation and Development (OECD) has found that countries not participating in the ITA saw their participation in global ICT value chains decline by more than 60 percent from 1995 (two years before the ITA went into effect) to 2009, as figure 1 shows.³³ Brazil provides a good example: Brazilian innovation in ICTs has lagged that of the rest of the world primarily because the country hasn't been involved in global value chains and has enjoyed limited market-based technology and skills transfer in the ICT sector. Put simply, if countries wish to participate in global value chains for ICT products, they have to remove the barriers. As the OECD's "Measuring Trade in Value Added" research finds:

The growing fragmentation of production across borders has important policy implications. It highlights the need for countries wanting to reap the gains from value chain participation to have open, predictable and transparent trade and investment regimes as tariffs and other unnecessarily restrictive non-tariff measures impact foreign suppliers, international investors, and domestic producers.³⁴

It's also important to note that it's not just about producing final goods; countries can derive significant value-added from the production of intermediate inputs. A "zero-in; zero-out" tariff environment can help countries attract production for a wide range of goods, and over time, as countries' enterprises and their employees develop knowledge, skills, and relationships with international partners, they can move up the value chain to the production of higher-value-added goods.

But the message is clear: Countries that don't participate in open, cross-border flows of ICT products (whether by imposing high tariffs on ICTs or other restrictive measures such as localization barriers to trade) only end up excising themselves from global value chains and production networks for ICT products—and services.³⁵

Figure 1: ITA Membership and Participation in IT GVCs (Participation Index in % of Gross Exports)³⁶

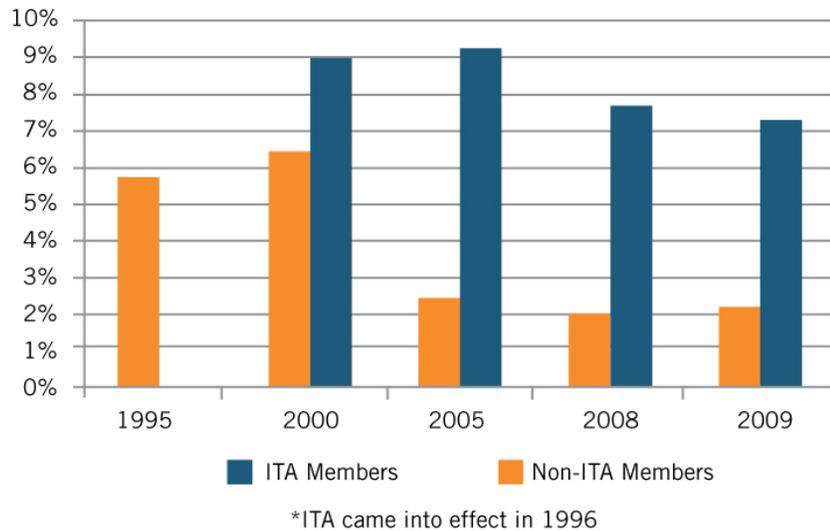
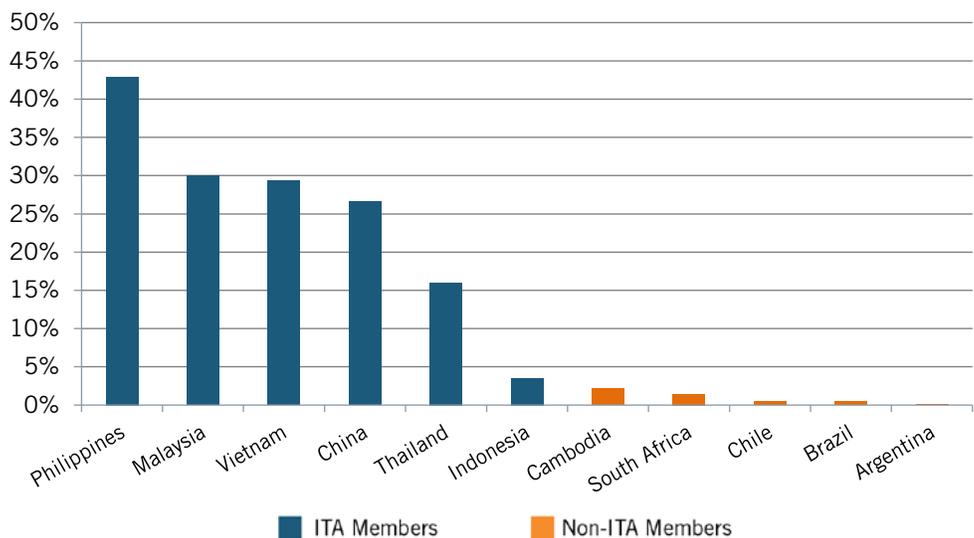


Figure 2, which shows developing country ICT goods exports as a share of total goods exports for 2015, brings this phenomenon home in stark relief. Countries that are ITA members enjoy a far-higher share of ICT goods exports as a share of total goods exports than non-ITA members. For instance, ICT goods exports as a share of total goods exports are a robust 43 percent in the Philippines, 30 percent in Malaysia, 29 percent in Vietnam, and 27 percent in China. In contrast, they are an anemic 2.2 percent in Cambodia, 1.4 percent in South Africa, and less than a half percentage point in Chile, Brazil, and Argentina. In the latter two South American countries, a history of import substitution policies and correspondingly high tariffs on ICT products—ostensibly intended to seed the development of an indigenous ICT production sector—has actually accomplished the opposite effect: underdeveloped ICT production sectors that represent a fraction of their potential.

Figure 2: Developing Country ICT Goods Exports as Share of Total Goods Exports, 2015³⁷



Indonesia is an outlier here, with its ICT goods exports as a share of total goods exports at just 3.5 percent. Indeed, Indonesia appears a laggard compared with other ITA-member ICT goods exporters shown in figure 2. Thus, it should be noted that membership in the ITA is not a panacea; it must be complemented with other tech-sector trade liberalization policies as well as a welcoming environment for domestic and foreign investment. Membership is necessary but not sufficient for ICT industry success. For instance, since 2012, Indonesia's Ministry of Communication and Information Technology (MCIT) has operated Regulation 82/2012, which includes requirements for source-code surrender as a condition of market access and a requirement for the local storage of data.³⁸ These types of forced localization policies counteract the positive benefits of ITA accession, and in part explain why Indonesia isn't enjoying a higher share of ICT goods exports.

Another important point, as Christian Henn and Arevik Gnutzmann-Mkrtchyan write in their paper, "The Layers of the IT Agreement's Trade Impact" is that "reducing tariffs to zero may have an additional impact on imports beyond tariff reduction."³⁹ This means that fully eliminating tariffs has a tremendously powerful effect, much more than marginal tariff reductions. Eliminating tariffs creates a "commitment effect" that sends a signal to firms across all industries that a country provides a robust environment for both imports and exports. Without tariffs, firms can also be more confident in their production targets for long-run production, since they no longer have to factor in possible tariff cuts or hikes on ITA intermediate goods.

Finally here, it should be emphasized once again that cutting tariffs on ICT capital goods is indeed in countries' own self-interest. For instance, in April 2017, Argentina's Ministry of Production announced that the import tariff on personal computers, notebooks, and tablets will be eliminated, with officials expecting that the prices of these products could drop up by as much as 50 percent. Argentinean officials estimated that the tariff elimination will help to create more than 15,000 new jobs in three years related to commercial and repair activities and in other industries benefited by the access to cheaper ICTs.⁴⁰ Countries such as Argentina are increasingly recognizing that high tariffs have failed to achieve their goal of spurring development of indigenous ICT production sectors but are actually impediments to them and inhibitors of productivity growth across all other sectors of an economy.

Boosting the Competitiveness and Productivity of Downstream Manufacturers

Information and communications technologies are increasingly vital inputs not just to finished ICT goods but also to a range of manufactured products from automobiles and airplanes to home appliances and medical devices. ITA accession can thus bolster the competitiveness of a country's downstream manufacturers by, through tariff elimination, reducing the cost of ICT parts and components such as circuit boards and integrated circuits that go into finished manufactured products. For instance, in China, over 50 percent of semiconductors imported into the country serve as inputs to re-exported products.⁴¹ A similar dynamic will become increasingly important for Indonesia's and

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Vietnam’s manufacturing sectors. The reality is that countries not in the ITA often maintain higher tariffs on ICT parts and components, which only serves to diminish the competitiveness of their own manufacturing industries.

It should also be noted that cheaper ICT imports also drive productivity and economic growth through heightened competition, which benefits firms in all sectors. As Newman, Rand, and Tarp find in their paper, “Imports, Supply Chains, and Firm Productivity,” which considers firm-level data on over 20,000 manufacturing firms in Vietnam, “foreign competition-induced gains from trade spill-over to downstream sectors through the domestic supply chain. We find that all downstream firms experience productivity gains through this channel, not just those that import intermediates.”⁴² Their findings suggest that “ignoring the gains from trade through the supply chain may significantly underestimate the impact of trade on the productivity of domestic firms ... and that ... the gains from trade may in fact be much larger than previous empirical studies have estimated.”⁴³ In other words, increased imports enhance competitive pressures that compel enterprises throughout a supply chain to become more productive.

Finally, it should be noted that ICT accession tends to cause both a country’s ICT goods exports *and* imports to grow, a result of countries becoming more deeply integrated in global supply chains. For instance, Henn and Gnutzmann-Mkrtychyan document the importance of the ITA in integrating developing countries into global supply chains, finding that, on average, ITA exports increase by 37 percent post-ITA implementation.⁴⁴ At the same time, they estimate that joining the ITA increases a country’s ICT imports by 21 to 30 percent.⁴⁵ Yet this finding is not surprising; it’s a fundamental characteristic of global production chains for ICT products, as imported ICT parts and components are regularly reassembled as part of value-added or final ICT exports. This is why four of the five largest importers of ICT products in the world—China, the United States, Hong Kong, and Singapore—actually account for four of the top five ICT exporters in the world.

Supporting Sustainable Development Goals

By eliminating tariffs on hundreds of high-tech goods and components, from semiconductors to smartphones, the ITA has made technology more affordable and accessible to consumers, businesses, innovators, and entrepreneurs. This in turn has promoted growth and prosperity through expanded e-commerce, access to the Internet, and availability and affordability of innovative technologies used in a variety of traditional sectors, from agriculture to healthcare, construction, and energy. This means ITA accession can make important contributions toward achieving the United Nations’ Sustainable Development Goals (SDGs), which seek to end poverty, protect the planet, and ensure prosperity for all. SDGs are part of a sustainable development agenda that has articulated 17 “Sustainable Development Goals” with 169 associated targets to be achieved over the next 15 years.⁴⁶ ITA accession can contribute to realization of virtually all of the stated objectives, from promoting access to quality education and healthcare services to fostering sustainable cities and communities, protecting the environment, combatting hunger and poverty, providing decent work, and fostering economic growth.⁴⁷

The ITA supports the ICT hardware on which the global digital economy now runs.

A specific SDG which ITA expansion participation is poised to particularly address is lowering the cost of healthcare. Indeed, public health sectors stand to benefit from the reduction and elimination of tariffs through ITA expansion on a number of medical products and equipment, such as magnetic resonance imaging (MRI), ultrasound, and computed tomography units.⁴⁸ The ITA expansion includes medical devices from 17 six-digit-level HS codes, which could lead to meaningful tariff reductions in the four study countries. For instance, both Indonesia and Laos apply 5 percent tariffs to X-ray tubes (HS 902230).⁴⁹ That's a five percent cost to those countries' healthcare systems that could be eliminated. As the WTO's "20 Years of the Information Technology Agreement" report notes, "No economy is entirely self-reliant in terms of the products and equipment it needs for its public health system, with most economies relying in varying degrees on imports. As a result, the factors affecting imports will influence the availability, as well as the prices, of health-related products and technologies, and thus have immediate consequences for access to and affordability of healthcare."⁵⁰

Consider Vietnam. Officials estimate that only 600 of the over 20,000 pieces of medical equipment found in Vietnamese hospitals and health clinics are manufactured locally.⁵¹ Recognizing that high tariffs on both finished medical devices and their components were both raising healthcare costs and making domestic manufacturers of medical devices less competitive, Vietnam's government in December 2014 announced a decision to eliminate import taxes on many medical equipment components.⁵² While it does seem this action was taken more to encourage local production than to reduce healthcare costs, the point stands in both cases: tariffs represent a transfer from businesses and consumers to government, and lowering them makes domestic producers more competitive and, in this instance, can also lower healthcare costs and thus improve access.

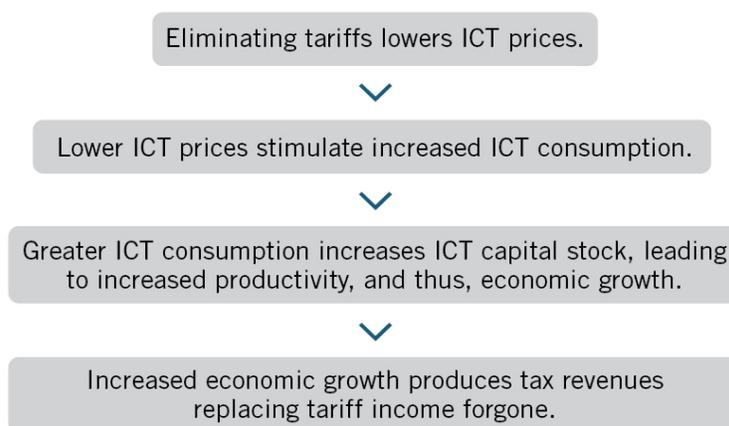
ANALYTICAL METHODOLOGY

To assess the economic impact of full ITA participation, this report starts by identifying the effective tariff rates the four study countries currently apply (i.e., once their current free trade agreement [FTA] commitments are considered) to ITA-covered ICT products and by determining the current value of each countries' ITA imports on a trade-weighted basis (across all ICT products in the original and expanded ITA). This allows us to calculate the dollar value of tariff revenues countries would forgo by eliminating ICT tariffs. Further, as just noted, tariffs on ICT products effectively represent a transfer payment from ICT consumers (both businesses and citizens) to governments, and in the absence of those tariffs, the prices of ICT products could be expected to fall in the importing countries by a corresponding amount. Such a decrease in ICT prices should lead to an increase in ICT consumption, especially since demand for ICT products is price elastic—meaning that a 1 percent decrease in ICT prices leads to a 1.3 percent increase in consumption.

Combining these concepts allows us to estimate the increase in ICT consumption in an economy that would result from tariff elimination as part of ITA accession. Over time, this increased ICT consumption leads to an increasing ICT capital stock in a country—and, as noted, that ICT capital stock would exert powerful effects, enabling domestic enterprises

(private and public) to become more productive and innovative—thus raising a country’s productivity and economic growth levels. This is why economists estimate that a 1 percent increase in ICT capital stock increases a country’s GDP by approximately 0.06 percent per year. The study leverages this dynamic—while distinguishing and accounting for the fact that a certain percentage of the increased imports of ICT products would be for intermediate goods and thus be re-exported, while others represent final goods that would remain in the domestic economy and boost its capital stock (and while also applying appropriate depreciation rates)—to calculate how increased ICT capital stocks engendered by ITA adoption would bolster countries’ economic growth rates over 1- and 10-year periods. The study concludes by assessing the increased tax income (from a variety of sources) this increased economic growth could be expected to produce and comparing that to the amount of tariff revenue forgone. Figure 3 graphically depicts the report’s core analytical framework.

Figure 3: Graphical Depiction of Study’s Conceptual Analytic Framework⁵³



Data for calculating trade in ITA goods comes from the United Nations’ Comtrade Database.⁵⁴ ITIF developed a list of commodity codes based on WTO documentation; a detailed listing of all 269 commodities can be found in Appendix B. Trade flows per country for the year 2014 were then estimated by identifying the relevant commodities covered under the ITA, and summing the value of those imports.⁵⁵ Data for estimating the value of tariffs comes from the WTO’s Tariff Analysis Online (TAO) database.

COUNTRY CASE STUDIES

The final section of this report describes the ICT economies of the four study countries and analyzes the economic and tariff impact of their potential ITA accession in full.

Indonesia

Both ICT goods and services have grown increasingly important to Indonesia’s economy. But while Indonesian policymakers have tended to focus policymaking on growing the country’s ICT production sector, the reality is that Indonesia’s ICT services sector makes a

ITA accession signals to the global ICT industry that Indonesia remains open for business, signaling that foreign direct investment in the ICT sector in Indonesia can be conducted on a zero-in/zero-out tariff basis.

three times greater contribution to the Indonesian economy, with the ICT services sector contributing 4.94 percent of Indonesia's GDP, while ICT goods production contributes just 1.5 percent to GDP.⁵⁶ Indonesia's \$1.3 billion ICT services marketplace now accounts for 26 percent of the country's total services exports. Much of the explosive growth in Indonesia's ICT services sector has been generated by e-commerce, a marketplace worth just \$230 million in 2010 that grew to \$25 billion by 2016. Indonesia's e-commerce sector is alive with startups, such as Mataharimall.com, Tokopedia, and Blibli.com.

Indonesia was the first lower-middle income country to join the original ITA, in 1996.⁵⁷ Yet Indonesian accession to the recent ITA expansion can benefit the country in several ways. As noted, the ITA supports the ICT hardware on which the global digital economy now runs. ITA expansion accession can make both Indonesia's ICT goods and services sectors more globally competitive: the ICT services sector by reducing the cost of best-of-breed ICT hardware atop which ICT services fundamentally operate, and the ICT goods sector by reducing the cost of critical parts and components that form fully finished ICT goods such as computers and mobile phones.

Yet some have argued that Indonesia's 1996 ITA accession harmed the country's ICT production sector by making imports more competitive, thus harming domestic producers. And it is true that domestic ICT production has sputtered, particularly compared to peer nations in the region. In fact, Indonesia's share of global exports of ITA-covered products remained unchanged at 0.3 percent from 1996 to 2015, although the value of such exports did increase five-fold to \$10.7 billion over this period.⁵⁸

But it's really been since 2010 that the sector has faltered, with Indonesian exports of ICT goods falling from \$7.8 billion in 2011 to \$5.3 billion in 2015, a decline of 32 percent.⁵⁹ Further, ICT goods exports as a percentage of all Indonesian goods exports has fallen from 6 percent in 2010 to 3 percent today, a decline of 50 percent.⁶⁰ Meanwhile, 33 electronic component manufacturers left Indonesia between 2009 and 2013.⁶¹ Polytron (one of the first international companies to shift manufacturing to Indonesia) recently reported that it costs 50 percent more to manufacture in Indonesia as compared to China. These dynamics are not the result of the ITA, but rather, as noted previously, of a policy environment in recent years that has emphasized a "compulsion" rather than an "attraction" strategy with regard to enticing foreign direct investment to come to Indonesia.⁶²

For instance, in 2015, Indonesia's Ministry of Communication and Information Technology issued Regulation 27/2015, which required all 4G LTE-enabled devices to contain 30 percent local content, and all 4G LTE base stations to contain 40 percent local content, by January 2017.⁶³ Additional regulations required that equipment used in certain wireless broadband services contain local content of at least 30 percent for subscriber stations and 40 percent for base stations, and that all wireless equipment contain 50 percent local content within five years. In addition to the restrictive nature of these regulations, implementation of the requirements has been opaque and inconsistent.⁶⁴ Moreover, Indonesia has introduced a range of data localization laws that cover a broad

range of sectors and technologies.⁶⁵ In 2012, Indonesia enacted a rule—Regulation No. 82—regarding the Provision of Electronic Systems and Transactions, which requires “electronic systems operators for public service” to store data locally.⁶⁶ Most recently, MCIT issued regulation 20/2016 on personal data protection requiring electronic system providers to process protected private data only in data centers and disaster recovery centers located in Indonesia.⁶⁷ Far from making Indonesia’s ICT production sector more competitive, these types of forced localization policies only balkanize the sector, cutting it off from global supply chains, and depriving it from low-cost, best-of-breed inputs. Eliminating these policies and joining the ITA expansion would be the best way to rally the sector.

The Information Technology and Innovation Foundation (ITIF) finds that if Indonesia joins the expanded Information Technology Agreement (ITA2), after ten years its economy would grow by 0.35 percent solely as a result of ITA 2 accession, as Table 2 shows. The ITA-attributable increase in Indonesian GDP output in the tenth year post-ITA accession would reach \$5.37 billion. Moreover, over the ten years ensuing post-ITA2-accession, Indonesia would be able to reclaim (in the form of increased tax revenues generated through increased economic growth) 151 percent of the tariff income it would have received from imports of ICT goods now coming under ITA-2 coverage.

Table 2: Summary Economic Growth and Tax Revenue Impact of Indonesian ITA Expansion Accession

| Category | Indonesia |
|--|-----------|
| ITA-Attributable GDP Growth (Year One) | 0.04% |
| ITA-Attributable GDP Growth (In Year 10) | 0.35% |
| ITA-Attributable Increase in GDP Output (In Year 10, US\$ Millions) | \$5,368 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Year One) | 31% |
| Total Tariff Revenue Forgone (Cumulatively Over 10 Years, US\$ Millions) | \$1,186 |
| Total Tax Revenue Gained (Cumulatively Over 10 Years, US\$ Millions) | \$1,631 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Over 10 Years) | 151% |

ITIF further estimates that, in 2014, Indonesia imported approximately \$5 billion of ITA-2-covered ICT goods, which represented 2.8 percent of all goods imports into the country. ITIF finds that Indonesia’s average tariff rate on ITA2 imports is 5.1 percent, but that its effective applied rate is 2.1 percent (however, this is largely a result of the FTAs Indonesia

Joining the ITA can mean losing some government revenue in the short run, but this is a small price to pay as part of the broader effort to grow a country's GDP and standard of living.

has in place with China and various other Southeast Asian nations). In the first year of ITA2 accession, ITIF finds Indonesia would forgo \$105 million in tariff revenues. Over ten years on a cumulative basis, Indonesia would forgo \$1.19 billion in tariff income; however, Indonesia's total income tax revenue gained over this period would be \$1.63 billion, making ITA2 accession a clear win for Indonesian government coffers over the period of a decade. Moreover, as soon as year five, the expanded economic growth ITA2 accession would engender starts to produce tax revenues in excess of tariffs forgone in that year.

Of course, beyond all these benefits, ITA2 participation builds upon Indonesia's participation in the original Information Technology Agreement and signals to the global ICT industry that Indonesia remains open for business and that foreign direct investment in the ICT sector in Indonesia can be conducted on a zero-in/zero-out tariff basis. Indonesia is the world's 16th largest exporter of ITA goods and the 22nd largest importer. ITA2 participation is key if Indonesia wishes to remain deeply and richly embedded in global value chains for the production of ICT goods. As noted, the best way for countries to participate in global value chains for ICTs is to pursue an "attraction" not a "compulsion strategy" and Indonesian accession to the ITA2 agreement represents just the kind of constructive, proactive policy that helps to make and keep Indonesia an attractive environment for manufacturing ICT products.

Laos

Information and communications technologies are making an ever-growing, though still nascent, impact on the Laotian economy. In recent years, the Laotian government has taken a leading role in developing proactive strategies to facilitate the diffusion and adoption of ICTs across the Laotian economy. Efforts have included developing a National ICT Policy 2015-2025, adopting a National Broadband Plan 2012-2020, and drafting an eGovernment Master Plan 2013-2020. These policies have been supported by new laws to facilitate Laos's ICT economy, including a 2011 Telecommunication Law, 2012 E-Transaction Law, and 2016 Law on Prevention and Combatting Cyber Crime.⁶⁸ Yet Laos has just 3.7 million mobile phones and 2.6 million Internet subscribers out of a population of 6.7 million. A key objective of Laos's ICT strategy thus is to increase coverage, with Laos's Ministry of Post and Telecommunications (MPT) seeking to bolster broadband Internet coverage to 90 percent of Laotian villages by 2020. The Ministry observes that "broadband has a very important role to play in transforming Laos from a land-locked to a land-linked country through ICT."⁶⁹ This is much needed, as Laos ranks 144th in the International Telecommunications Union's *ICT Development Index 2016*, which is actually a slight decrease from its 135th rank in 2010.⁷⁰

A major barrier to ICT adoption in Laos is affordability. It's one thing that broadband deployment has been made difficult and more expensive by the country's mountainous terrain. It's another entirely that the Laotian government has applied a 30 percent tax on integrated circuit equipment, in addition to effective applied tariff rates of 8.1 percent on ITA-covered ICT products. High taxes and tariffs on ICT equipment translate into higher costs for consumers, explaining why average broadband Internet access costs are equal to 27

percent of an average household's income. Clearly, many Laotians are simply unable to enjoy Internet access due to the high costs. This in part explains why fixed-line broadband Internet penetration reached only 13.8 percent of Laotians in 2016.⁷¹ Of course, beyond the consumer impact, the high costs of ICT equipment significantly stifle the potential for development of an ICT services/business process-outsourcing sector in Laos.

Laos's MPT has commendably launched a Telecommunication Development Fund toward the goal of ensuring that broadband services are accessible nationwide. Building up Laos's ICT infrastructure and ICT capital stock, and at the same time promoting broader digital literacy and adoption, are certainly the right first steps toward catalyzing the Laotian ICT economy. Moreover, as Laos has a minimal ICT production sector, imports of the ICT hardware that will underpin the country's ICT economy are a necessity, and here ITA accession could play an important role in decreasing the price of these critical ICT capital goods.

ITIF estimates that if Laos were to join the ITA, its GDP in the tenth year post ITA accession would be \$476 million larger than if it were not to join, an increase of 1.88 percent, as Table 3 shows. From a tax perspective, ITIF finds that revenue gained as a percentage of revenue forgone would be 24 percent in the tenth year post-accession. This figure is lower than for its peer study countries due substantially to the fact that Laos applies the highest tariffs on ITA-covered products than any of the other countries in the study. Again, it's imperative that policymakers take a longer-term view, and recognize that the high tariffs are adding considerably to the costs of ICT goods and impeding much greater rates of ICT adoption that are likely to have a much more significant role in driving Laotian economic growth.

Table 3: Summary Economic Growth and Tax Revenue Impact of Laotian ITA Accession

| Category | Laos |
|---|-------|
| ITA-Attributable GDP Growth (Year One) | 0.19% |
| ITA-Attributable GDP Growth (In Year 10) | 1.88% |
| ITA-Attributable Increase in GDP Output (In Year 10, US\$ Millions) | \$476 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Year One) | 15% |
| Total Tariff Revenue Forgone (Cumulatively Over 10 Years, US\$ Millions) | \$878 |
| Total Tax Revenue Gained (Cumulatively Over 10 Years, US\$ Millions) | \$114 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Cumulatively Over 10 Years) | 22% |
| Tax Revenue Gained as % Tariff Revenue Forgone (In the Tenth Year Post-ITA Accession) | 24% |

Sri Lanka

Sri Lanka's government has made a commitment to transform Sri Lanka into a creative, knowledge-based society by digitally empowering its citizens and economy, recognizing that ICTs make a vital contribution to Sri Lanka's economy, both directly and in terms of powering productivity and innovation across all other sectors of the economy.⁷² Sri Lanka's ICT/business-process outsourcing sector represents one of the country's most important and fastest-growing economic sectors. The sector has grown by more than 120 percent over the past five years, reaching \$900 million in exports in 2016 while supporting over 85,000 jobs, and accounting for 3.4 percent of the country's current account receipts.⁷³ The sector reports impressive economic margins and estimates 95 percent value addition. By 2022, SLASSCOM, the Sri Lanka Association of Software and Services, estimates the country's ICT/business-process outsourcing sector will grow to \$5 billion in revenues, support 200,000 direct jobs, and seed over 1,000 start-up enterprises.⁷⁴ Sri Lanka's ICT/BPO sector has been internationally recognized, named by the United Kingdom's National Outsourcing Association as the "Offshoring Destination of the Year" in 2014 and ranking 16th according to the AT Kearney Global Services Location Index.⁷⁵

As Sri Lanka has an extremely limited ICT production sector, its ICT services/BPO sector needs to import low-cost, best-of-breed ICT equipment such as computers, servers, and mobile devices to maintain a globally competitive sector. ITIF estimates Sri Lanka's imports of ITA-covered ICT products were just under \$20 billion for 2014, with a realized average tariff rate of 4 percent. This essentially means Sri Lanka's ICT/BPO sector pays 4 percent more than necessary for critical ICT inputs, and Sri Lanka's ICT/BPO enterprises have to factor this cost into the prices they charge their clients. This means they have to raise their prices as much as 4 percent, a considerable amount given the razor-thin margins in the fiercely competitive global ICT/BPO sector.

ITA accession for Sri Lanka could play a powerful role in decreasing prices for these vital ICT inputs. ITIF estimates that ITA accession would contribute to Sri Lanka's GDP by 0.96 percent, larger than would otherwise be the case ten years post-accession, with the ITA-attributable increase in GDP output reaching \$1.4 billion. In terms of tax impact, ITIF estimates that, in the tenth year post accession, Sri Lanka would recover 47 percent of tariff revenue forgone as a result of ITA accession, with \$87 million in tariff income forgone offset by \$27 million in newly generated income tax revenue and \$14 million from new goods and services (GSA) tax receipts. But a difference of just over \$40 million in tariff receipts is a small price to pay for the expanded economic and employment growth ITA accession would be poised to engender over that ten-year period.

Table 4: Summary Economic Growth and Tax Revenue Impact of Sri Lankan ITA Accession

| Category | Sri Lanka |
|---|-----------|
| ITA-Attributable GDP Growth (Year One) | 0.10% |
| ITA-Attributable GDP Growth (In Year 10) | 0.96% |
| ITA-Attributable Increase in GDP Output (In Year 10, US\$ Millions) | \$1,436 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Year One) | 19% |
| Total Tariff Revenue Forgone (Cumulatively Over 10 Years, US\$ Millions) | \$706 |
| Total Tax Revenue Gained (Cumulatively Over 10 Years, US\$ Millions) | \$158 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Over 10 Years) | 38% |
| Tax Revenue Gained as % Tariff Revenue Forgone (In the Tenth Year Post-ITA Accession) | 47% |

Vietnam

ICTs have become one of the most significant drivers of economic growth in Vietnam. As the report “Vietnam: Embracing ICT for Economic Catch-Up” explains, “One of the prominent features of Vietnam’s economic reforms has been its vigorous embrace of Information and Communications Technologies (ICT), which has enabled the country to leapfrog from a dilapidated telecommunications system in the 1990s to a modern digital network, surpassing many peer countries in the region.”⁷⁶ This “remarkable transformation” has made “Vietnam one of the developing countries with [the] highest rates of ICT adoption and lowest cost of ICT use.”⁷⁷

Indeed, Vietnam’s ICT sectors have been growing rapidly, with Vietnam’s total ICT revenues growing at a 60 percent compound annual growth (CAGR) rate from 2009 to 2012, with the hardware sector growing at a 71 percent CAGR over that time.⁷⁸ In 2016, Vietnam’s ICT sectors produced \$55 billion in revenues, a 35 percent increase over 2015 levels.⁷⁹ Going forward, according to the “Vietnam: Embracing ICT for Economic Catch-up” report, the annual value-added by Vietnam’s ICT industry is expected to remain at least two to three times greater than the country’s GDP growth rate, such that by 2020 the contribution of Vietnam’s ICT industry will account for 8 to 10 percent of the country’s GDP.⁸⁰ By 2020, analysts expect Vietnam’s ICT sector to support over one million employees. No doubt ICT production and consumption have been key pillars in Vietnam’s stellar economic performance, with Vietnamese GDP growing, on average, more than six percent annually over the past 15 years.

These trends match findings from the WTO's "20 Years of the Information Technology Agreement" report. It found that Vietnam has experienced one of the most dynamic increases in ICT goods exports of any ITA member, with an average annual increase of 50 percent between 1996 and 2015, as the country's ITA-goods exports rose from just \$30 million in 1996 to \$6 billion in 2015, making it the world's eighth-largest ITA exporter (accounting for 4 percent of global ITA exports) that year.⁸¹ The share of ITA products in Vietnam's total trade increased 16 percentage points between 1996 and 2015.⁸² In fact, ICT is now Vietnam's largest export sector, accounting for 29.3 percent of its goods exports, as Figure 2 shows. Meanwhile, the percentage of ICT goods exports as a share of Vietnam's total goods exports increased ten-fold, from 2.7 percent to 29 percent, making ICT goods the country's largest export sector in the process. After Mexico, Vietnam has the second-highest share of global exports of ITA products (2.2 percent) of any current non-ITA expansion member country.⁸³ Vietnam has also become increasingly competitive in ICT services, ranking 11th in the 2016 A.T. Kearney Global Services Location Index.

Foreign direct investment (FDI) has been a significant contributor to the growth of Vietnam's ICT industry.⁸⁴ Foreign enterprises including Intel, LG, Microsoft, and Samsung have each made massive investments, such as Intel's \$1 billion investment in a semiconductor and testing facility near Ho Chi Minh and Samsung's \$3 billion smartphone assembly center in Bac Ninh province.⁸⁵ The FDI sector contributed 70 percent of Vietnam's total exports in 2015 (an increase from 47 percent in 2000) and foreign invested enterprises' contribution to GDP increased to 18 percent from 13 percent over the same period.⁸⁶ Vietnam's FDI has averaged approximately \$18.5 billion per year over the past five years, reaching \$22 billion in 2015. This has contributed to Vietnam becoming well integrated into global value chains for the export of ICT products. As the WTO's "20 Years of the Information Technology Agreement" report explains, "Other developing economies like Viet Nam or Costa Rica are well integrated into GVCs, importing foreign inputs and, to a lesser extent, acting as upstream suppliers. Their development within GVCs is largely due to the presence of global technology corporations resulting from incentive policies to attract foreign direct investment."⁸⁷

To be sure, pro-market reforms, openness to investment, trade liberalization, and strong government support have been important factors in the growth of Vietnam's ICT sector, but Vietnam's decision to join the ITA in 2006 (with commitments entering force in 2007) has also been a vital factor. For instance, Vietnam's largest export, mobile phones, depends on semiconductors, and ITA participation has played a critical role in lowering the price of imported integrated circuits, meaning Vietnam can field a globally competitive mobile phone production sector. Further, there's little doubt that the country's ITA participation was instrumental to attracting FDI from foreign enterprises including Intel for packaging and assembly activities in the semiconductor sector. If semiconductors can't flow in a zero-in/zero-out environment, the likelihood of countries attracting FDI activity in the sector is quite low.

Table 5: Summary Economic Growth and Tax Revenue Impact of Vietnamese ITA Accession

| Category | Vietnam |
|---|---------|
| ITA-Attributable GDP Growth (Year One) | 0.03% |
| ITA-Attributable GDP Growth (In Year 10) | 0.29% |
| ITA-Attributable Increase in GDP Output (In Year 10, US\$ Millions) | \$947 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Year One) | 17% |
| Total Tariff Revenue Forgone (Cumulatively Over 10 Years, US\$ Millions) | \$1,978 |
| Total Tax Revenue Gained (Cumulatively Over 10 Years, US\$ Millions) | \$388 |
| Tax Revenue Gained as % Tariff Revenue Forgone (Over 10 Years) | 33% |
| Tax Revenue Gained as % Tariff Revenue Forgone (In the Tenth Year Post-ITA Accession) | 38% |

As Table 5 shows, ITIF finds that if Vietnam were to join the expanded ITA, its GDP would become 0.29 percent, or \$947 million, larger in the tenth year post-ITA accession that would otherwise be the case. ITIF finds that in the tenth-year post ITA accession, Vietnam would recover 38 percent of tariffs forgone, while on a cumulative basis over a ten-year period post-ITA 2 accession, the country would recover 33 percent of tariff income forgone. Still again, while joining the ITA can mean losing some government revenue in the short run, this is a small price to pay as part of the broader effort to grow a country's GDP and standards of living. As ITIF has noted, for developing countries, the decision to join the ITA requires governments to choose between prioritizing short-term tariff income or taking a proactive step toward enacting policies that would lead to greater levels of sustainable, long-term, ICT-powered economic growth.

CONCLUSION

ICT is a key driver of growth in both developed and developing nations. As such, government policies that add to the cost of ICT goods and services limit the ICT intensity of an economy. In contrast, ITA participation and attendant tariff elimination leads to greater consumption and investment in ICT goods, thereby unleashing productivity and innovation as critical drivers of today's digital economy. ITIF estimates Laos's economy could grow by nearly 2 percent, and Sri Lanka's by nearly 1 percent, as a result of ITA accession. ITA expansion participation can also grow Indonesia and Vietnam's economies palpably over the coming decades while also bolstering the competitiveness of those countries' ICT and other manufacturing sectors. In conclusion, joining the ITA can have a significantly positive impact on innovation, investment, exports, job creation, economic modernization, prosperity, and standards of living, and ITIF encourages policymakers in study countries to join the ITA in full.

APPENDIX A: SUMMARY STATISTICS TABLE OF ITA ECONOMIC IMPACT

| Trade Impact | Indonesia* | Vietnam* | Laos | Sri Lanka |
|--|------------|-----------|---------|-----------|
| Imports (2014, US\$ Millions) | \$178,179 | \$147,839 | \$2,748 | \$19,244 |
| Real Import Growth (2010-2014) | 0.50% | 10.73% | 15.57% | 7.59% |
| Gross Tariff Revenue (2014, US\$ Millions) | \$3,627 | \$3,738 | \$227 | \$1,520 |
| ITA Imports (2014, US\$ Millions) | \$5,020 | \$6,789 | \$377 | \$1,039 |
| ITA Imports as a Share of Total Imports (2014) | 2.80% | 4.60% | 13.70% | 5.40% |
| ITA Tariff Revenue (2014, US\$ Millions) | \$105 | \$95 | \$30 | \$42 |
| Average Tariff Rate on ITA Imports (2014) | 5.10% | 4.40% | 7.40% | 2.90% |
| Effective Realized Average Tariff Rate on ITA Imports (2014) | 2.10% | 1.40% | 8.10% | 4.00% |
| Change in ITA Quantity Imported From Tariff Elimination (From 2014 Baseline) | 2.70% | 1.80% | 10.50% | 5.20% |
| Increase in ITA Imports After Joining ITA (US\$ Millions, From 2014 Baseline) | \$137 | \$124 | \$40 | \$54 |
| Increase in Total Imports After Joining ITA (From 2014 Baseline) | 0.08% | 0.08% | 1.44% | 0.28% |
| Growth Impact | Indonesia | Vietnam | Laos | Sri Lanka |
| Current Stock of ICT Capital (2014, US\$ Millions) | \$10,807 | \$17,859 | \$285 | \$2,224 |
| ITA Capital and Consumption Imports as a Share of Total ITA Imports (2014) | 54.40% | 68.30% | 22.80% | 70.80% |
| ITA-Attributable Contribution to ICT Capital Stock (US\$ Millions, From 2014 Baseline) | \$74 | \$85 | \$9 | \$38 |
| GDP (2014, US\$ Billions) | \$890 | \$186 | \$12 | \$80 |
| Real GDP Growth (Annual Average, 2010–2014) | 5.69% | 5.72% | 7.87% | 6.43% |
| ITA-Attributable GDP Growth (Year One) | 0.04% | 0.03% | 0.19% | 0.10% |
| GDP With ITA Accession (2024, US\$ Billions) | \$1,555 | \$326 | \$26 | \$151 |
| ITA-Attributable GDP Growth (In Year 10) | 0.35% | 0.29% | 1.88% | 0.96% |
| ITA-Attributable Increase in GDP Output (In Year 10, US\$ Millions) | \$5,368 | \$947 | \$476 | \$1,436 |
| Tax Impact | Indonesia | Vietnam | Laos | Sri Lanka |
| ITA Tariff Rate (2014) | 2.10% | 1.40% | 8.10% | 4.00% |
| Goods and Services Tax Rate (2014) | 10% | 10% | 10% | 12% |

| | | | | |
|---|---------|---------|-------|-------|
| Income Tax Rate (2014) | 5.20% | 7.10% | 3.00% | 1.90% |
| Tariff Revenue Forgone (Year One, US\$ Millions) | \$105 | \$95 | \$30 | \$42 |
| Goods and Services Tax Revenue Gained (Year One, US\$ Millions) | \$14 | \$12 | \$4 | \$7 |
| Income Tax Revenue Gained (Year One, US\$ Millions) | \$19 | \$4 | \$1 | \$2 |
| Tax Revenue Gained as % of Tariff Revenue Forgone (Year One) | 31% | 17% | 15% | 19% |
| Total Tariff Revenue Forgone (Over 10 Years, Cumulative US\$ Millions) | \$1,186 | \$1,978 | \$878 | \$706 |
| Total Goods and Services Tax Revenue Gained (Over 10 Years, Cumulative US\$ Millions) | \$154 | \$257 | \$114 | \$110 |
| Total Income Tax Revenue Gained (Over 10 Years, Cumulative US\$ Millions) | \$1,631 | \$388 | \$82 | \$158 |
| Total Revenue Gained as % of Total Revenue Forgone (Over 10 Years) | 151% | 33% | 22% | 38% |
| Tariff Revenue Forgone (In Year 10, US\$ Millions) | \$110 | \$264 | \$129 | \$87 |
| Goods and Services Tax Revenue Gained (In Year 10, US\$ Millions) | \$14 | \$34 | \$17 | \$14 |
| Income Tax Revenue Gained (In Year 10, US\$ Millions) | \$278 | \$67 | \$14 | \$27 |
| Revenue Gained as % of Revenue Forgone (In Year 10) | 264% | 38% | 24% | 47% |

* Data for Indonesia and Vietnam pertains only to ITA2 accession.

APPENDIX B: LIST OF ITA-COVERED PRODUCTS (BY HS2002 CLASSIFICATION)

| Information Technology Agreement | | | Information Technology Agreement Expansion | | | |
|----------------------------------|--------|--------|--|--------|--------|--------|
| 381800 | 852910 | 902730 | 350691 | 850590 | 853190 | 901820 |
| 844331 | 852990 | 902750 | 370130 | 851430 | 853630 | 901850 |
| 844332 | 853120 | 902780 | 370199 | 851490 | 853650 | 901890 |
| 844339 | 853190 | 902790 | 370590 | 851519 | 853690 | 902150 |
| 844399 | 853210 | 903040 | 370790 | 851590 | 853810 | 902190 |
| 846900 | 853221 | 702000 | 390799 | 851761 | 853939 | 902212 |
| 847010 | 853222 | 848620 | 841459 | 851762 | 854231 | 902213 |
| 847021 | 853223 | 848690 | 841950 | 851769 | 854232 | 902214 |
| 847029 | 853224 | 848610 | 842010 | 851770 | 854233 | 902219 |
| 847030 | 853225 | 848640 | 842129 | 851810 | 854239 | 902221 |
| 847050 | 853229 | 848630 | 842139 | 851821 | 854290 | 902229 |
| 847090 | 853230 | 903082 | 842199 | 851822 | 854320 | 902230 |
| 847130 | 853290 | 903090 | 842320 | 851829 | 854330 | 902290 |
| 847141 | 853310 | 903141 | 842330 | 851830 | 854370 | 902300 |
| 847149 | 853321 | 903149 | 842381 | 851840 | 854390 | 902410 |
| 847150 | 853329 | 903190 | 842382 | 851850 | 880260 | 902480 |
| 847160 | 853331 | 851840 | 842389 | 851890 | 880390 | 902490 |
| 847170 | 853339 | 851890 | 842390 | 851981 | 880521 | 902519 |
| 847180 | 853340 | 901390 | 842489 | 851989 | 880529 | 902590 |
| 847190 | 853390 | 901380 | 842490 | 852110 | 900120 | 902710 |
| 847290 | 853400 | 853180 | 844230 | 852190 | 900190 | 902780 |
| 847321 | 853650 | 901720 | 844240 | 852290 | 900219 | 902790 |
| 847329 | 853669 | 901710 | 844250 | 852321 | 900220 | 902830 |
| 847330 | 853690 | 851590 | 844331 | 852329 | 900290 | 902890 |
| 847350 | 854110 | 901190 | 844332 | 852340 | 901050 | 903010 |
| 850440 | 854121 | 851490 | 844339 | 852351 | 901060 | 903020 |
| 850450 | 854129 | 850870 | 844391 | 852352 | 901090 | 903031 |
| 851711 | 854130 | 852871 | 844399 | 852359 | 901110 | 903032 |
| 851712 | 854140 | 852872 | 845610 | 852380 | 901180 | 903033 |
| 851718 | 854150 | 901090 | 846693 | 852550 | 901190 | 903039 |
| 851761 | 854160 | 901790 | 847210 | 852560 | 901210 | 903084 |
| 851762 | 854190 | 901290 | 847290 | 852580 | 901290 | 903089 |
| 851769 | 854231 | 847310 | 847310 | 852610 | 901310 | 903090 |
| 851770 | 854232 | 850490 | 847340 | 852691 | 901320 | 903110 |
| 851810 | 854233 | 851440 | 847521 | 852692 | 901390 | 903149 |
| 851829 | 854239 | 852290 | 847590 | 852712 | 901410 | 903180 |
| 851830 | 854290 | 841990 | 847689 | 852713 | 901420 | 903190 |
| 851950 | 854370 | 847790 | 847690 | 852719 | 901480 | 903220 |
| 852329 | 854390 | 853890 | 847989 | 852721 | 901490 | 903281 |
| 852340 | 854442 | 847990 | 847990 | 852729 | 901510 | 950410 |
| 852351 | 854449 | 842191 | 848610 | 852791 | 901520 | 950430 |
| 852352 | 854470 | 847340 | 848620 | 852792 | 901540 | 950490 |
| 852359 | 854890 | 846694 | 848630 | 852799 | 901580 | |
| 852380 | 902610 | 846693 | 848640 | 852849 | 901590 | |
| 852580 | 902620 | 846691 | 848690 | 852871 | 901811 | |
| 852841 | 902680 | 843139 | 850440 | 852910 | 901812 | |
| 852851 | 902690 | 842490 | 850450 | 852990 | 901813 | |
| 852861 | 902720 | 852869 | 850490 | 853180 | 901819 | |

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