Study on the Economic Impact of "TRIPS-Plus" Free Trade Agreements

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Abstract

In this report we examine the "TRIPS-Plus" provisions of the 14 free trade agreements (FTAs) signed and implemented by the United States since the start of the WTO in 1995. We assess the effects of these provisions on the U.S. trading partner through econometric analysis and on-site interviews. The econometric analysis measures the effect of increased IPR protection and enforcement over time, finding a positive association between greater IPR protection and trade. The on-site interviews explore what impacts, if any, TRIPS-Plus provisions have on economic development in the FTA partner country. They suggest some novel results that reveal consistent stories across the countries where we conducted interviews. We summarize key econometric results and provide case study recommendations to assist those negotiating IPR provisions of future trade agreements.

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About the Report

This is a joint project between the International Intellectual Property Institute (IIPI) and the United States Patent and Trademark Office (USPTO).

Sponsors

IIPI - http://www.iipi.org/. The IIPI is a not-for-profit 501(c)(3) corporation organized under the laws of the United States located in Washington, DC. As an international development organization and think tank, IIPI is dedicated to increasing awareness and understanding of the use of intellectual property as a tool for economic growth, particularly in developing countries.
USPTO - http://www.uspto.gov/. The USPTO is the U.S. Federal agency for granting U.S. patents and registering trademarks. The USPTO advises the President of the United States, the Secretary of Commerce, and U.S. Government agencies on intellectual property (IP) policy, protection, and enforcement; and promotes the stronger and more effective IP protection around the world.

Project Overview

The World Trade Organization's (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), negotiated during the end of the Uruguay Round in 1994, introduced intellectual property rights (IP) protections to the international trading system. TRIPS set minimum standards for the creation of IP laws and enforcement procedures that applied to all WTO members, and it remains the most comprehensive international IP agreement to date.

Over the past decade the United States has entered into a number of Free Trade Agreements (FTAs) with its trading partners. Many of these FTAs contain IP protection and enforcement provisions that go beyond the minimum protections required under TRIPS. These TRIPS-plus FTAs attempt to strengthen IP protection and enforcement in partner countries by bringing their laws and practices more in line with U.S. standards. But there are questions whether TRIPS-plus FTAs benefit or hinder economic growth and well-being. In order to clarify the situation, the USPTO funded this independent study to assess the impact the implementation of these TRIPS-plus provisions has had on the U.S. trading partners.

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TABLE OF ABBREVIATIONS

ASEAN	Association of South East Asian Nations
BRTA	Bilateral or Regional Trade Agreements
DR-CAFTA	Dominican Republic-Central America Free Trade Agreement
EIU	Economist Intelligence Unit
EU	European Union
FTA	Free Trade Agreement
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GSK	GlaxoSmithKline
IIPI	International Intellectual Property Institute
IMF	International Monetary Fund
INDECOPI	National Institute for the Defense of Competition and Intellectual Property (Peru)
IP	Intellectual Property
IPOS	Intellectual Property Office of Singapore
IPR	Intellectual Property Rights
ISP	Internet Service Provider
ITC	U.S. International Trade Commission
JAPM	Jordanian Association of Pharmaceutical Manufacturers
MDA	Media Development Authority (Singapore)
NAICS	North American Industry Classification System
PBS	Pharmaceutical Benefits Scheme (Australia)
R&D	Research and Development
SIAC	Singapore International Arbitration Center
TRIPS	World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights
TRIPS-Plus	IPR protection and enforcement provisions contained in free trade agreements with the United States that go beyond those required under TRIPS
UNCTAD	United Nations Conference on Trade and Development
UPOV	International Convention for the Protection of New Varieties of Plants
USPTO	United States Patent and Trademark Organization
USTR	U.S. Trade Representative
WEF	World Economic Forum
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Study on the Economic Impact of "TRIPS-Plus" Free Trade Agreements

1. Introduction

In this report we examine the "TRIPS-Plus"[1] provisions of the 14 free trade agreements (FTAs) signed and implemented by the United States since the start of the WTO in 1995. We assess the effects of these provisions on the U.S. trading partner through econometric analysis and on-site interviews. As we believe that it is not possible to isolate the specific trade impact of the TRIPS-Plus provisions on an FTA partner, our analysis measured the impacts of increased IPR protection and enforcement over time. We used on-site interviews to explore the effects of TRIPS-Plus provisions on economic development in the FTA partner country.

The results of the econometric analysis suggest a positive association between greater IPR protection and trade. Specifically, it examines the impact of the TRIPS-Plus provisions on goods and services trade with the United States, royalties and license fee transactions with the United States, and sales by U.S. multinational companies abroad through their foreign affiliates ("investment"). But there is insufficient data to conduct a meaningful evaluation of the impact the TRIPS-Plus provisions have on trade and other economic activity.

Of the 14 FTAs examined in this study, ten have been in effect for less than six years.[2] *See* Table 1. Any associated effects on trade and investment from these FTAs are unlikely to be seen in the data at this early stage, and certain TRIPS-Plus provisions have been in effect even less time given implementation grace periods. Three FTAs[3] were implemented a year or two earlier, but these FTAs were signed with developed countries who we suspected had relatively strong IPR protections

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[1] Our reference here to "TRIPS-Plus" refers to IPR provisions of the relevant U.S. free trade agreements examined in our study. Typically TRIPS-Plus refers to IPR provisions believed to contain additional requirements than those contained in the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS"), which is administered by the World Trade Organization (WTO).

[2] Bahrain, DR-CAFTA, Morocco, Oman, and Peru. DR-CAFTA includes six countries: the Dominican Republic, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.

[3] Australia, Chile, and Singapore.

already. Although the remaining FTA, with Jordan, was implemented roughly 10 years ago,[4] we were concerned about potential criticism that Jordan's market is not sufficiently large to draw meaningful conclusions about the impact of TRIPS-Plus provisions on the economic development of other FTA partner countries. Plus each FTA contains varying TRIPS-Plus provisions and requirements, which further complicates an econometric analysis.[5]

Table 1
Implementation Date of TRIPS-Plus FTAs

COUNTRY	DATE FTA IMPLEMENTED
Jordan	December 17, 2001
Chile	January 1, 2004
Singapore	January 1, 2004
Australia	January 1, 2005
Morocco	January 1, 2006
El Salvador	March 1, 2006
Honduras	April 1, 2006
Nicaragua	April 1, 2006
Guatemala	July 1, 2006
Bahrain	August 1, 2006
Dominican Republic	March 1, 2007
Costa Rica	January 1, 2009
Oman	January 1, 2009
Peru	February 1, 2009

Source: Office of the U.S. Trade Representative

We conducted on-site interviews in half of the 14 FTA-partner countries to explore the economic effects of the TRIPS-Plus provisions on the FTA partner country. We sought to understand whether, and to what extent, the stronger IPR provisions of these agreements affect trade and other measures of economic performance in these economies. We selected the countries to serve as our representative sample based on a number of factors, including relative state of

[4] The Jordan FTA was not implemented fully until January 1, 2010. *See*, *e.g.*, Jordan Free Trade Agreement, Office of the U.S. Trade Representative website, http://www.ustr.gov/trade-agreements/free-trade-agreements/jordan-fta.

[5] *See*, *e.g.,* Carsten Fink and Patrick Reichenmiller, *Tightening TRIPS: The Intellectual Property Provisions of Recent US Free Trade Agreements*, Trade Note 20, The World Bank Group, International Trade Department, (February 7, 2005) (providing summary of IPR provisions, including protection of patents and pharmaceutical test data, copyright protection, and enforcement of IPR), http://siteresources.worldbank.org/INTRANETTRADE/Resources/Pubs/TradeNote20.pdf.

development, economic size, geographic location, and the relative length of time since the FTA entered into force. The on-site interviews suggest some novel results.

The bulk of experiences recounted in each country were consistent with our econometric modeling results as well as internally consistent with each other. We found no glaring outliers. Where there were discrepancies, typically such variations were minor and could be explained by readily identifiable factors, such as the political history and development in a particular country or the industries driving development in that country.

We conclude by summarizing key econometric results and providing case study recommendations to assist those negotiating IPR provisions of future trade agreements.

2. Review of Existing Econometric Research

Given the limited run time of current agreements, empirical research on the effect of TRIPS-Plus FTAs is sparse. There is, rather, an emerging literature focused more broadly on intellectual property protection and trade that provides insight on the impact of IP regimes on trade. Most of this literature, however, is focused on a particular country, or a particular sector that is IP intensive. Further, much of the literature is motivated by concerns, first raised with the creation of the WTO and enhanced IP enforcement, that developing countries would be adversely affected because of higher pharmaceutical prices and seed varieties. There is limited evidence, however, that this has actually happened.

Among the country-specific studies, Awokuse and Yin (2010) focus on China's imports. Using a gravity model (explained below), they find that China's imports of knowledge intensive products have grown with increased IPR protection. Mirroring the Yang and Huang (2009) results on imports, Yew *et al* (2011) find that increased IPR protection reduces China's exports to ASEAN-5.[6]

[6] This finding is not inconsistent with our econometric results, which suggest that when a country increases its IPR protection, it tends to increase trade in higher technology items. The Yew *et. al*. study does not detail whether China exported low technology items, which presumably would have been replaced with higher technology exports from other locations. Other studies indicate that, "In the wake of the 21st century, Low-tech industry is still the footstone of China economic development." Yuqing Liu and Cha Wang, *Research on China Low-tech Industry Competitiveness Based*

Applying an IPR index developed by the World Economic Forum (WEF), and using the generalized method of moments (GMM) dynamic panel data modeling technique, Yang and Huang find that, on the export side, Taiwan's exports of IP intensive products benefit from improved IP protection in destination markets.

Preliminary research from Montobbio, Primi, and Sterzi (2010), using a modified gravity model to focus on the impacts of the TRIPs Agreement on R&D collaboration, finds that TRIPS has had a positive impact on such collaboration. They also conclude that collaboration is related to intensity of trade in knowledge intensive products. The researchers covered 11 developing countries and seven developed countries (including the United States).

Most recently, the U.S. International Trade Commission (2011) estimated that an improvement in China's IPR protection to levels comparable to those of the United States increases U.S. exports of goods and services to China, and sales to U.S. majority-owned affiliates in China. The ITC used a "gravity model" to estimate the impacts on trade with China if China were to improve its IPR protection to U.S. levels. Their model used an index of comparative IPR protection in different countries provided by the Economist Intelligence Unit.

While the evidence on IP regime impacts on trade for specific sectors identifies significant effects for high technology products, there is less evidence for pharmaceuticals and seed varieties. For example, Boring (2010), using a gravity model with data from 1993 to 2007, finds no impact on IP protection on U.S. pharmaceutical exports. Eaton (2009) looked at the effects of the introduction of plant breeder rights in almost 70 importing countries on the value of exports of agricultural seeds and planting material from 10 exporting EU countries and the United States. Working with panel data covering 19 years (1989-2007) of trade, he found that IP protection has no identifiable impact on trade in patented seed varieties.

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on Dongguan T&G Sector, 187 (2010). ASEAN-5 refers to Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

3. Design and Logic of the Econometric Study, Sources of Evidence

The quantitative analysis reported here is based on a gravity model. Our dataset is more comprehensive than the recent literature, in terms of country and sector coverage. In addition to trade, we consider other important channels of market access for IP holders, such as royalty fees, licensing fees, and sales by foreign affiliates of U.S. multinational companies.

Our primary focus is on the effects on U.S. and partner trade of enhanced IPR protection and enforcement, and in particular of IPR reform that resulted from the TRIPS-Plus provisions of U.S. FTAs. A direct examination, however, of TRIPS-Plus provisions of U.S. FTAs on U.S. goods and services trade, royalties and license fees, and U.S. investment with FTA partners is not yet possible with available data, as explained above. Therefore, we use proxy variables that measure improvements in IPR protection and enforcement over time for more than 200 countries, including FTA countries, covering the periods of the TRIPS-Plus FTAs. We test for whether changes in U.S. trading partners' exports to the United States (*i.e.*, U.S. imports from those trading partners) as well as whether U.S. exports to those partners over time and by industry are a function of each country's level of IPR protection and enforcement, controlling for country characteristics such as the size of the economy and population, level of income, and openness to trade. This includes whether, and to what extent, IPR protection and enforcement abroad is associated with trade, royalty and licensing transactions, and sales of U.S. affiliates abroad. The details of our dataset are described below. Importantly, we supplement the econometric analysis with country-specific examples and case studies drawn from in-country interviews with experts, of ways in which TRIPS-Plus protection has impacted – or failed to impact – the FTA partner's trade, and other economic activity with the United States.

a. Our Modeling Approach

In recent years, the gravity model has become a workhorse for empirical studies of trade and investment policy. The gravity model of trade explains bilateral trade flows on the basis of relative economic sizes of "economic distance" between

two countries. Stated simply, trade between a pair of countries depends positively on the size of the countries involved, and negatively on costs linked to distance and policy, like shipping and tariffs. The gravity model has been used in empirical trade analysis for over 30 years and is the foundation for literally hundreds of applied studies dating back to Tinbergen (1962). Recent application of the gravity model includes other explanatory variables including economic policy variables in order to assess the effects of certain variables on trade and investment. A wide range of economic policy issues has been evaluated using a gravity-based benchmark. These include the effects of protection (Harrigan 1993), openness (Lawrence 1987, Saxonhouse 1989, Harrigan 1996), the effects of free trade agreements (Frankel, Stein and Wei 1997; Rose 2004), and the effects of national borders (McCallum 1995, Evans 2000, Anderson and van Wincoop 2001, Balistreri and Hillberry 2006, 2007, 2008). Given this vast literature the gravity model is well-suited to examine the effects of IPR on bilateral trade flows between the United States and partner countries.

Our estimating equation incorporates variables for the level of income (per capital GDP), size (population), openness to trade, distance, and IPR protection and enforcement. We also include a dummy variable to indicate whether a country has an FTA with the United States. Researchers have found the presence of an FTA between two countries to be statistically and economically important in explaining bilateral trade flows. In addition to the traditional trade effects from tariff cuts, FTAs have nontariff provisions that can boost bilateral economic activity from closer ties.[7] The United States has an FTA with 17 countries: the 14 countries detailed here, plus Israel, Mexico and Canada.[8]

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[7] Harrigan 2006, Ferrantino (2006).

[8] The FTAs with Israel, Mexico and Canada were signed prior to the entry into force of the WTO and are beyond the scope of this study. As of the drafting of this study, the United States has signed FTAs with Colombia, Korea, and Panama, but the U.S. Congress must enact legislation to approve and implement each individual agreement in order for them to go into effect. The United States is also in negotiations for a regional, Asia-Pacific trade agreement known as the Trans-Pacific Partnership (TPP) Agreement, although such negotiations are currently underway.

b. Data

Our panel dataset covers 233 countries over eight years (2002 to 2009) and 32 industries at the three-digit North American Industry Classification System (NAICS) level, plus 15 sectors for goods and services sales through foreign affiliates: primary and fabricated metals, mining, chemicals, computers and electronic products, electrical equipment and appliances/components, food manufacturing, machinery, transportation equipment, other manufacturing, finance, professional, scientific and other services; information services, utilities, wholesale trade, and "other industries."

In compiling the dataset, we chose the three-digit NAICS level (as opposed to the more highly disaggregated four-digit) as some four-digit NAICS categories changed definitions over the period. Using the three-digit NAICS level ensures consistency over time while still keeping rich industry detail needed for this study. Our dataset is thus composed of 32 industries at the three-digit NAICS category level.

We obtained import and export data from the Census Bureau, and data for country size and population from the International Monetary Fund's World Economic Outlook Database. All data (unless noted) were expressed in current U.S. dollars.

Our measure of openness to trade comes from the Heritage Foundation's index of economic freedom, which includes a measure of openness to trade for all countries called the "trade freedom index." This index is a composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services. The trade freedom score is based on a country's trade weighted average tariff rate and nontariff barriers. The index ranges from 0 to 100 (100 represents maximum freedom). Our distance measure is the Great Circle distance between capital cities, which we obtained from Jon Haveman's international trade database.

Our first measure of IPR protection comes from the Economist Intelligence Unit, which publishes an annual country specific index of intellectual property protection. The EIU rates countries with an index between 1 and 5 on protection of intellectual property, with 1 being "very poor" and 5 being "very good." The index is

based on an annual survey produced by EIU's network of regional experts and the opinions of those country experts. This index covers IPR broadly and reflects actual protection of IPR and implementation of existing laws in place at the time of the survey, and is a *de facto* measure reflecting actual enforcement of IPR laws.

An alternative measure of IPR protection that is also used often in this area of work is an index constructed by Walter Park (Park, 2008). The Park index also scores countries between 1 and 5 and is based on degree of coverage, duration, and enforcement mechanisms. It is primarily a *de jure* measure. This means it does not reflect actual enforcement *per se* but rather the laws, rules, and regulations that are on the books. It is updated every five years and thus requires an interpolation for the intervening years in order to be used in our dataset.

In summary, our dataset covers 233 countries over 2002-2009, 32 industries for trade in goods, and 15 industries for affiliate sales of goods and services by U.S. multinational firms. Using a gravity model approach with ordinary least squares estimation technique, we examined the effects of IPR protection and enforcement in foreign countries on U.S. trade, royalty and licensing transactions, and sales of goods and services by U.S. multinationals through their foreign affiliates.

4. Econometric Study Analysis and Interpretation

We examined the impacts of enhanced IPR protection and enforcement over time on (1) exports of goods from trading partners to the United States (*i.e.*, U.S. goods imports from trading partners) and royalty and licensing payments to U.S. trading partners, (2) U.S. exports to trading partners and royalty and licensing receipts from trading partners, (3) U.S. services trade, and (4) investment activity measured by sales by U.S. multinational companies abroad through their foreign affiliates. All reported results are from linear regressions and all standard errors are robust.[9]

[9] While we report OLS-based estimates here, we also performed robustness checks for heterogeneity. This included use of lagged variables and correction for potential autocorrelation. The results are robust to these potential problems and corrections, and so we focus here on the OLS results.

As expected, the inclusion of the FTA dummy variable improved the fit of the model in nearly every regression, as measured by adjusted R-squared, and the coefficient estimates remained the same for each regression in terms of sign, significance and magnitude.

a. U.S. Trading Partners: Goods Trade

Our results suggest that stronger IPR protection abroad is generally associated with a higher level of U.S. goods imports from those countries, and higher royalty and licensing payments to those countries (Table 2a). Overall, a one unit increase in the Park IPR index for a foreign country is associated with a 136 percent increase in U.S. imports from that country. Similarly, a one unit increase in the EIU index is associated with a 137 percent increase in U.S. imports from that country (Table 2a). Improvements in IPR also boost royalty and licensing payments to that country from the United States. A one unit increase in the Park and EIU indices for a foreign country is associated with a 119 and 73 percent increase, respectively, in royalty and licensing payments to those countries from the United States.

Consistent with standard predictions in the gravity literature, country characteristics such as income levels (GDP per capita), size (population), and openness to trade each have a positive and statistically significant effect on the volume of trade between the United States and other countries, while distance has a negative effect on bilateral trade flows. The presence of an FTA with the United States is important for bilateral trade flows, but not necessarily for royalty and licensing payments. We report the results accordingly. We note that the results were robust to the inclusion of the FTA dummy variable in these regressions, *i.e.*, the sign, significance, and magnitude of the coefficient results did not change whether the FTA variable was included.

Table 2a
Econometric Results: Effects on U.S. Goods Imports and U.S. Royalty and Licensing Payments

Dependent Variable	IPR Protection (Park Index) on Total U.S. Imports	IPR Protection (EIU Index) on Total U.S. Imports	IPR Protection (Park Index) on Total U.S. Royalty & Licensing Payments	IPR Protection (EIU Index) on Total U.S. Royalty & Licensing Payments
lnGDP per capita	1.5958	0.2197	1.561	1.284
	(0.0353)***	(0.0679)***	(0.0220)***	(0.0237)***
lnPopulation	1.581	1.420	1.064	1.137
	(0.0252)***	(0.0381)***	(0.0142)***	(0.0131)***
Trade Openness	0.0004	0.0535	0.0133	0.0214
	(0.003)	(0.0053)***	(0.0017)***	(0.0017)***
Park Index	1.062		1.142	
	(0.0705)***		(0.0336)***	
EIU Index		1.246		0.8453
		(0.0568)***		(0.0201)***
FTA	1.739	1.395		
	(0.1044)***	(0.0647)***		
Distance	-0.7235	-0.493	-0.1448	-0.2431
	(0.0714)***	(0.0804)	(0.0241)***	(0.0228)***
Constant	-24.05	-14.44	-33.36	-30.27
	(0.745)***	(1.276)***	(0.4699)***	(0.459)***
R-squared	0.3764	0.1922	0.7673	0.7839

Standard errors are in parentheses. Statistical significance is denoted as follows: *** p<0.01, ** p<0.05, * p<0.10. All reported standard errors are robust.
Source: Authors' estimates

We are also interested in industry level variation. Table 2b reports results at the three-digit NAICS industry level. U.S. manufactured goods imports are particularly responsive to IPR protection. A one unit increase in the IPR indices is associated with strong positive increases in U.S. imports from IPR-protecting countries of machinery, components, and transportation equipment in particular.

Table 2b
Econometric Results: Effects on U.S. Goods Imports by Sector

		U.S. Imports (w/Park Index)		U.S. Imports (w/EIU Index)	
NAICS Code	**Description**	**Coefficient Result**	**Signifi-cance**	**Coefficient Result**	**Signifi-cance**
TOTAL	**Pooled total results**	**1.062**	***	**1.246**	***
111	Crop production	1.411	***	1.321	***
112	Animal production	0.774	**	1.679	***
113	Forestry and logging	0.983	***	1.954	***
114	Fishing, hunting and trapping	-1.545		0.792	
211	Oil and gas extraction	-2.800	***	-2.571	***
212	Mining	0.287		0.202	
311	Food manufacturing	0.831	***	1.347	***
312	Beverage and tobacco product manufacturing	0.610	*	1.273	***
313	Textile mills	0.624	**	1.669	***
314	Textile product mills	0.766	***	1.323	***
315	Apparel manufacturing	0.825	***	1.367	***
316	Leather and allied product manufacturing	1.050	***	1.534	***
321	Wood product manufacturing	1.903	***	2.163	***
322	Paper manufacturing	1.636	***	2.695	***
323	Printing and related support activities	0.944	***	1.217	***
324	Petroleum and coal products manufacturing	1.677	***	-1.297	***
325	Chemical manufacturing	1.733	***	1.404	***
326	Plastics and rubber products manufacturing	1.816	***	1.648	***
327	Nonmetallic mineral product manufacturing	1.535	***	1.289	***
331	Primary metal manufacturing	1.809	***	0.523	***
332	Fabricated metal product manufacturing	1.670	***	1.529	***
333	Machinery manufacturing	2.156	***	1.521	***
334	Computer and electronic product manufacturing	1.723	***	1.329	***
335	Electrical equipment, appliance and component manufacturing	2.062	***	1.516	***
336	Transportation equipment manufacturing	2.106	***	2.011	***
337	Furniture and related product manufacturing	1.905	***	2.006	***
339	Miscellaneous manufacturing	1.436	***	2.146	***
511	Publishing industries (except internet)	2.122	***	2.389	***

NOTE: The OLS coefficients are reported with statistical significance denoted as follows: *** p<0.01, ** p<0.05, * p<0.10. Standard errors are robust. Source: Authors' estimates

b. U.S. Exporters: Goods Trade

Our analysis shows further that when countries strengthen their IPR laws and enforcement regimes, U.S. exports to and royalty and licensing receipts from those countries tend to increase (Table 3a). Overall, a one unit increase in the Park and EIU IPR indices each results in approximately a 28 percent increase in U.S. goods exports to the country improving its IPR. Similarly, a one unit increase in the Park and EIU indices is associated with a 44 and 21 percent increase in U.S. royalty and licensing payments, respectively.

The coefficients on other country characteristics were as expected. GDP per capita, population, and trade openness had positive and significant coefficients, and distance had a negative coefficient. The presence of an FTA was positively associated with U.S. exports. As with our import results, it is important to keep the IPR index results in perspective, and we note that per capita income and population of the trading partner's economy had a larger effect on trade than the degree of IPR protection.

Table 3a
Econometric Results: U.S. Goods Exports and U.S. Royalty and Licensing Receipts

Dependent Variable	IPR Protection (Park Index) on Total U.S. Exports	IPR Protection (EIU Index) on Total U.S. Exports	IPR Protection (Park Index) on Total U.S. Royalty and Licensing Receipts	IPR Protection (EIU Index) on Total U.S. Royalty and Licensing Receipts
lnGDP per capita	0.979	0.783	1.009	0.988
	(0.0287)***	(0.0621)***	(0.0136)***	(0.0161)***
lnPopulation	0.959	1.077	0.727	0.760
	(0.0205)***	(0.0349)***	(0.0089)***	(0.0088)***
Trade Openness	0.019	0.0203	0.0102	0.0132
	(0.002)***	(0.0049)***	(0.0011)***	(0.0011)***
Park Index	0.2766		0.435	
	(0.0574)***		(0.0199)***	
EIU Index		0.2785		0.2093
		(0.0519)***		(0.0132)***
FTA	1,397	1.514	0.452	0.3823
	(0.084)***	(0.1163)***	(0.0248)***	(0.026)***
Distance	-1.211	-0.4731	0.0115	-0.049
	(0.0581)***	(0.0735)***	(0.0158)	(0.015)***
Constant	-1.372	-8.120	-18.291	-17.36
	(0.607)***	(1.167)***	(0.302)***	(0.318)***
R-squared	0.2621	0.1263	0.7421	0.7338

NOTE: The OLS coefficients are reported with statistical significance denoted as follows: *** p<0.01, **p<0.05, * p<0.10. All standard errors are robust.
Source: Authors' estimates.

As with imports, there is a good deal of variation across industries (Table 3b). While the results are roughly similar between Park and EIU, there are a few more industries with positive and significant coefficients with the EIU index than the Park index, which is consistent with the notion that actual enforcement of IPRs is more important than the laws on the books in explaining U.S. exports.[10] U.S. exports of printing and related products, chemicals, and plastics and rubber are, on average, more responsive to stronger IPR regimes abroad.[11]

[10] We caution against interpreting these results to suggest that laws on the books are not important. We suspect that there is a more complex relationship between *de jure* and *de facto* protection, with *de jure* protection being necessary but not sufficient for a strong IPR regime, particularly in countries lacking strong and transparent institutions and regulatory practices.

[11] Some of the coefficients are negative. The negative coefficients are not statistically significant, meaning the results are not significantly different from zero. Oil and gas is the only sector

Table 3b
Econometric Results:
U.S. Goods Exports by Sector

		U.S. Exports (w/Park Index)		U.S. Exports (w/EIU Index)	
NAICS Code	**Description**	**Coefficient Result**	**Sig.**	**Coefficient Result**	**Sig.**
TOTAL	**Pooled total results**	**0.276**	*******	**0.278**	*******
111	Crop production	0.166		0.360	***
112	Animal production	0.248		-0.395	***
113	Forestry and logging	-0.441	*	0.398	***
114	Fishing, hunting and trapping	0.529		0.353	
211	Oil and gas extraction	-0.242		0.527	*
212	Mining	0.515	***	0.615	***
311	Food manufacturing	0.358	***	0.305	***
312	Beverage and tobacco product manuf.	1.008	***	0.567	***
313	Textile mills	-0.348	**	0.398	***
314	Textile product mills	0.589	***	0.596	***
315	Apparel manufacturing	0.117		0.035	
316	Leather and allied product manufacturing	0.308		0.261	**
321	Wood product manufacturing	0.524	***	0.154	
322	Paper manufacturing	0.277	**	0.395	***
323	Printing and related support activities	0.380	***	0.768	***
324	Petroleum and coal products manufacturing	0.507	**	0.059	
325	Chemical manufacturing	0.238	***	0.472	***
326	Plastics and rubber products manufacturing	0.425	***	0.388	***
327	Nonmetallic mineral product manufacturing	0.128		-0.010	
331	Primary metal manufacturing	-0.260	**	0.208	***
332	Fabricated metal product manufacturing	0.146		0.165	***
333	Machinery manufacturing	0.193	**	0.166	***
334	Computer and electronic product manuf.	0.365	***	0.297	***
335	Electrical equipment, appliance and component manufacturing	0.117		0.190	***
336	Transportation equipment manufacturing	0.147	*	0.101	**
337	Furniture and related product manuf.	0.127		-0.241	**
339	Miscellaneous manufacturing	0.370	***	0.541	***
511	Publishing industries (except internet)	0.279		0.047	

NOTE: The OLS coefficients are reported with statistical significance denoted as follows: *** p<0.01, ** p<0.05, * p<0.10. Standard errors are robust.
Source: Authors' estimates

where both IPR indices result in negative estimates. This might reflect that we tend to import oil and gas from countries that have low IPR indices, but we cannot draw any causal link from this.

c. Services Trade

We also examined the relationship between improvements in IPR and services trade. Nearly 80 percent of U.S. employment (and GDP) is in service sectors, and their importance in international trade has grown as well. The World Trade Organization reports the value of world cross-border exports of commercial services more than doubled from 2000 to 2009.[12]

At the aggregate level, we find little or no evidence to suggest changes in IPR protection are related to cross-border trade in services. As Tables 4a and 4b show, the coefficients of the IPR variables are not statistically significant. We do note that there is a positive and, in most cases, statistically significant effect of FTAs on U.S. services imports and exports, which is what we would expect given the services provisions in the FTAs and the findings of existing research. For both services exports and imports, the results show that GDP per capita and population are both positively and statistically significant determinants of trade. The coefficient on trade openness is positive, and while that may be economically important, it is not statistically significant.

[12] World Trade Organization, *Measuring Trade in Services*, (November 2010).

Table 4a
Econometric Results: U.S. Services Imports

Dependent Variable	IPR Protection (Park Index) on Imports	IPR Protection (EIU Index) on Imports
lnGDP per capita	1.183	1.292
	(0.1989)***	(0.2204)***
lnPopulation	1.160	1.157
	(0.1352)***	(0.1307)***
Trade Openness	0.027	0.026
	(0.0169)	(0.0171)
Park Index	-0.273	
	(0.2754)	
EIU Index		-0.263
		(0.1894)
FTA	0.949	0.995
	(0.3504)***	(0.3464)***
Constant	-27.817	-28.830
	(3.3624)***	(3.5252)***
R-squared	0.2727	0.2755

Standard errors are in parentheses. Statistical significance is denoted as follows: *** p<0.01, ** p<0.05, * p<0.10. All reported standard errors are robust.
Source: Authors' estimates

Table 4b
Econometric Results: U.S. Services Exports

Dependent Variable	IPR Protection (Park Index) on Exports	IPR Protection (EIU Index) on Exports
lnGDP per capita	1.285	1.550
	(0.1908)***	(0.2119)***
lnPopulation	1.101	1.227
	(0.1272)***	(0.1208)***
Trade Openness	0.007	0.005
	(0.0148)	(0.0148)
Park Index	-0.375	
	(0.2620)	
EIU Index		-0.502
		(0.1696)
FTA	0.874	0.984
	(0.3456)**	(0.3362)***
Constant	-25.204	-27.481
	(3.1987)***	(3.3371)***
R-squared	0.2916	0.3084

Standard errors are in parentheses. Statistical significance is denoted as follows: *** p<0.01, ** p<0.05, * p<0.10. All reported standard errors are robust.
Source: Authors' estimates

Two features of services trade may be obscuring the view of how IPR is related to services trade. First, the term "services" captures a wide range of products and activities, including transportation, telecommunication, computer and financial services, construction, wholesale and retail distribution, hotel and catering, insurance, real estate, health and education, as well as professional and business services. Among these sub-sectors, there is a high degree of heterogeneity in terms of a role in the economy. Some services facilitate the exchange of products (financial), some services are the end consuming unit (haircuts), while others are used in the production of other goods and services (telecommunications). This variation suggests the more appropriate level for analysis is at the sub-sector level.

Second, the need for proximity to customers has led many services providers to supply their products through their foreign affiliates. Data from the Bureau of Economic Statistics show that in 2007 the value of U.S. services supplied to foreign markets was $478 billion through cross-border trade compared to $1.026 trillion through affiliate sales. (In 2006, those figures were $411 billion and $890 billion, respectively.)[13] Affiliate sales is an important channel of delivery for services by U.S. firms. Therefore, we focus next on sales by U.S. multinational firms from their foreign affiliates.

d. Sales by U.S. Companies through Foreign Affiliates

We next examined the impacts of IPR protection and enforcement on U.S. company sales through their foreign affiliates. The coefficient estimates are as expected (Table 5a). GDP per capita, population, and general openness to trade are all positive and statistically significant. Pooling the data, both the Park and EIU measure of IPR are also positive and significant, and roughly similar (0.765 and 0.753, respectively). Thus, the results are much stronger for sales through foreign affiliates than they are for cross-border sales.

[13] *Services Supplied to Foreign and U.S. Markets, 2006-2008*, Bureau of Economic Analysis, U.S. Department of Commerce.

Table 5a

Econometric Results: Effects on Affiliate Sales

Dependent Variable	IPR Protection (Park Index) on Affiliate Sales	IPR Protection (EIU Index) on Affiliate Sales
lnGDP per capita	0.8556	0.5455
	(0.0491)***	(0.0621)***
lnPopulation	1.0173	0.9199
	(0.0266)***	(0.0290)***
Trade Openness	0.0196	0.0202
	(0.0042)***	(0.0042)***
Park Index	0.8570	
	(0.0839)***	
EIU Index		0.7004
		(0.0509)***
FTA	0.7684	0.7297
	(0.0774)***	(0.0806)***
Constant	-24.304	-18.74
	(0.6472)***	(0.8105)***
R-squared	0.2888	0.2358

Standard errors are in parentheses. Statistical significance is denoted as follows: *** p<0.01, ** p<0.05, * p<0.10
Source: Authors' estimates

Next, we examine affiliate sales at the industry level (Table 5b) and can see goods and services broken out. The impacts of IPR protection and enforcement are positive and significant for each industry except mining; and, notably, for each of the services sectors: finance, information, professional, utilities, and wholesale trade.

Table 5b
Econometric Results: Effects on Affiliate Sales by Sector

	Affiliate Sales (w/Park Index)		Affiliate Sales (w/EIU Index)	
Description	**Coefficient Result**	**Signifi-cance**	**Coefficient Result**	**Signifi-cance**
Pooled total results	**0.768**	***	**.7004**	***
Primary industries	0.725	**	0.947	***
Mining	-1.399	***	0.477	**
Food manufacturing	1.493	***	0.653	***
Chemicals	0.724	***	0.574	***
Computers	1.213	***	0.680	***
Electrical equipment	0.742	***	1.317	***
Machinery	0.513	**	0.923	***
Transportation equipment	2.769	***	1.495	***
Other manufacturing	0.489	***	0.492	***
Finance	0.623	**	0.385	***
Information	1.412	***	0.580	***
Professional services	0.730	***	0.615	***
Utilities	1.074	***	0.724	***
Wholesale trade	0.393	***	0.618	***
Other industries	0.716	***	0.724	***

NOTE: The OLS coefficients are reported with statistical significance denoted as follows: *** p<0.01, ** p<0.05, * p<0.10
Source: Authors' estimates

5. Industry Level Variation and Robustness Checks

To further explain industry level variation, we examined whether trade volumes are more responsive to IPR in industries that are relatively IP-intensive. Our results suggest that there is variation across industries in trade effects to IPR protection and that R&D intensity can explain some of the industry level variation.

We first examined the R&D intensity of our industries. Using data from the National Science Foundation, we constructed ratios of R&D to sales, by three-digit NAICS, which concord with our existing data.[14] Appendix 1 reports the raw data and the measures. There is a reasonable amount of variation across industries: R&D represents 17.1 percent of sales in the publishing industries, 9.5 percent in computer and electronic product manufacturing, and less than 1 percent for

[14] The latest available data are for 2005, and in some industries where no data were reported in 2005 due to disclosure issues, we used data from 2004 if reported for that industry. These data tend to be fairly consistent over time and so using 2004 data to fill in a blank for 2005 in order to save an observation seemed reasonable. At the economy-wide level, in 2005, R&D expenditures represented approximately 3.695 percent of sales, compared to 3.718 in 2004.

furniture manufacturing. There is likely to be more variation at more narrowly defined industry levels, but public data were only sufficiently available at the three-digit NAICS level.

The regression results with the IPR interaction variables are reported in Table 6 and show that industries that are more R&D intensive are also more sensitive to IPR protection abroad, in terms of trade and royalty and licensing transactions. The interaction terms are consistently statistically significant and robust for both the Park IPR measure of protection and the EIU measure of enforcement,[15] which is also consistent with the conclusion that the results are robust to the IP index used.

The magnitudes of the coefficients are larger than the sole IPR variable alone. The R&D intensity, therefore, can explain some of the industry level variation, and the IPR effect is stronger for industries that are relatively R&D intensive for trade and royalty and licensing transactions.

[15] We constructed two other measures of IP-intensity: the ratio of the number of scientists and engineers to sales, and the share of scientists and engineers of total employment. The industry-level results were fairly consistent across measures, which reflect the robustness of the IP index used and possibly the fairly high correlation between the measures. The correlation coefficients were 0.73 between (R&D/sales) and (the number of scientists and engineers/sales); 0.91 between (R&D/sales) and (the number of scientists and engineers/total employment); and 0.80 between (the number of scientists and engineers/sales) and (the number of scientists and engineers/total employment).

Table 6
Econometric Results for Interaction Terms

Dependent Variable	IPR Protection (Park Index) on Total U.S. Imports	IPR Protection (R&D/Sales) on Total U.S. Imports	IPR Protection (Sci. & Engineers/Sales) on Total U.S. Imports	IPR Protection (Sci. & Engineers/Emp) on Total U.S. Imports
lnGDP per capita	1.600	2.409	2.340	2.373
	(0.0223)***	(0.0167)***	(0.0166)***	(0.0167)***
lnPopulation	1.696	2.044	2.022	2.031
	(0.0143)***	(0.0138)***	(0.0137)***	(0.138)***
Trade Openness	0.127	0.028	0.028	0.029
	(0.0020)***	(.0022)***	(.0022)***	(0.0022)***
Park Index	1.365			
	(0.0460)***			
Park x R&D/Sales		1.586		
		(0.1891)***		
Park x Scientists, Engineers/Sales			1.384	
			(0.0339)***	
Park x Scientists, Engineers/Emp.				1.559
				(0.0945)***
FTA	2.008	1.924	1.954	1.937
	(0.0534)***	(0.0571)***	(0.0571)***	(0.0574)***
Constant	-36.380	-45.219	-44.985	-45.050
	(0.2828)***	(0.2751)***	(0.2737)***	(0.2755)***
lnGDP per capita	0.698	1.931	1.791	1.891
	(0.0426)***	(0.0311)***	(0.0304)***	(0.0311)***
lnPopulation	1.752	2.039	2.031	2.043
	(0.0217)***	(0.0212)***	(0.0209)***	(0.0212)***
Trade Openness	0.045	0.054	0.0574	0.0573
	(0.0033)***	(0.0037)***	(0.0036)***	(0.0037)***
EIU Index	1.379			
	(0.3686)***			
EIU x R&D/Sales		3.908		
		(0.2219)***		
EIU x Scientists, Engineers/Sales			1.778	
			(0.0385)***	
EIU x Scientists, Engineers/Emp.				2.284
				(0.1068)***
FTA	1.396	1.351	1.296	1.333
	(0.0647)***	(0.0639)***	(0.0637)***	(0.0642)***
Constant	-30.557	-42.724	-42.16	-42.84
	(0.5686)***	(0.5443)	(0.5366)***	(0.5435)***
R-squared	0.3665	0.4537	0.4644	0.4566

Standard errors are in parentheses. Statistical significance is denoted as follows: *** p<0.01, ** p<0.05m * p<0.10. All reported standard errors are robust.
Source: Authors' estimates

Finally, to ensure the key regression coefficient estimates behave consistently under alternative specifications and are not affected by outliers, we also estimated the model with a weighted least squares specification, an iteratively reweighted least squares procedure to obtain robust regression estimates, bootstrapping, and an L-estimation technique that fits quantiles of the left-hand side variable rather than its expectation or mean. These methods achieve nearly the efficiency of ordinary least squares with ideal data. It turns out that the coefficient estimates hold across these alternative specifications.

6. Case study amplification

The results from the econometric analysis suggest that improvements in IPR protection and enforcement are associated with increased goods trade, royalty and licensing transactions and, at least indirectly through affiliates, services trade. More specifically, our numerous interviews in TRIPS-Plus partner countries with government officials, members of the business community, and legal experts suggest that, in general, the reforms related to the provisions in TRIPS-Plus are improving the IPR environment in terms of laws, rules, and regulations and enforcement mechanisms. This improvement is perceived to be having a positive impact on FTA partner economies – or is expected to have such an impact in future. While there is almost uniform support for increased trademark protections,[16] the support for increased patent protection wavered most strongly on issues related to pharmaceuticals.

To assist us in exploring what impact, if any, the TRIPS-Plus provisions of each FTA had on the economic development of the U.S. FTA partners, we conducted on-site interviews in half of the 14 FTA-partner countries. We selected the countries to serve as our representative sample based on a number of factors, including relative state of development, economic size, and geographic location. We weighted heavily one key factor in our selection: the relative length of time since the

[16] Only one commentator argued that TRIPS-Plus is harmful but noted that TRIPS may be helpful for trademarks (H. Sboul Interview).

FTA entered into force. A full listing of those interviewed in each country is included in Appendix 2.

We conducted interviews in Australia, Chile, the Dominican Republic, Guatemala, Jordan, Peru, and Singapore. This list includes the first four countries to sign an FTA with the United States, meaning these are the countries with the longest experiences implementing TRIPS-Plus provisions. The remaining countries include those with FTAs that entered into force in 2006, 2007, and the last country of the 14 to have an FTA enter into force, 2009. These countries also represent a balancing of developed and developing countries and one-third of the DR-CAFTA countries. Table 1 lists the FTAs and when each entered into force.

As we believe that it is not possible to isolate the specific trade impact of the TRIPS-Plus provisions on an FTA partner, our analysis measured the impacts of increased IPR protection and enforcement over time. We used on-site interviews to explore what impacts, if any, TRIPS-Plus provisions have on economic development in the FTA partner country. Initially, we were skeptical about the type and quality of information we could gather through the interviews. We had two main sets of expectations before conducting the interviews. First, we thought TRIPS-Plus provisions would have little impact on economic development in developed countries (Australia, Chile, and Singapore)[17] and that even if we did collect such information, we would be unable to segregate the impacts of the TRIPS-Plus provisions from the impacts of other, unrelated factors. Second, we thought there would be few verifiable and consistent examples across our sample data set because in all but one developing country (Jordan), FTAs have been in force for six years or less (and certain TRIPS-Plus provisions have been in effect even less time given implementation grace periods), suggesting that the relevant countries may not be able to report yet on the impact of TRIPS-Plus provisions on economic

[17] Australia and Chile are members of the OECD. *See* http://www.oecd.org. Although not a member, Singapore is compliant with many of the OECD rules and regulations. *See* http://www.oecd.org/document/31/0,3746,en_2649_34381_44433503_1_1_1_1,00.html (confirming Singapore's compliance with many OECD rules); *see also* CIA World Factbook at https://www.cia.gov/library/publications/the-world-factbook/geos/sn.html (Singapore enjoys per capita GDP higher than that of most developed countries).

development.[18] In Jordan, the only remaining FTA country market, we were aware of claims that attribute a significant rise in pharmaceutical prices to TRIPS-Plus provisions (Oxfam 2007),[19] and we were eager to explore this issue. But we were concerned about potential criticism that Jordan (or the pharmaceutical sector in Jordan) is not sufficiently large to draw meaningful conclusions about the impact of TRIPS-Plus provisions on the economic development of other FTA partner countries.

We discovered that although there are many issues that merit further examination, our interviews suggest some novel results that reveal consistent stories across the countries where we conducted interviews. The interview results and stories should be reviewed with caution for a number of reasons, including the fact that the examples presented here are not easily replicated and relate subjective views of the participants.[20] We conducted numerous interviews over the course of the study, and we attempt here to summarize the general conclusions synthesized from those discussions.

The project undertaken is of considerable size and scope, and the topics discussed are not susceptible to concise and neat conclusions. There were many strong points raised during those discussions that we have been unable to relate here given space constraints, and the few issues we have distilled here each warrant significant amplification, study and examination. A detailed analysis of the TRIPS-Plus provisions of each FTA, what is required for implementation, and what impact

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[18] We were also concerned about being able to distinguish between stories attributable to implementation of TRIPS requirements and those related to the TRIP-Plus requirements themselves.

[19] *See* Rohit Malpani, *All Costs, No Benefits: How TRIPS-plus Intellectual Property Rules in the US-Jordan FTA Affect Access to Medication*, Oxfam Briefing Paper 102 (2007), available at http://www.oxfam.org/sites/www.oxfam.org/files/all%20costs,%20no%20benefits.pdf.

[20] As one interviewee opined, and we acknowledge readily, the strength of any illustrative study based on interviews necessarily depends on the experience and knowledge of those interviewed (Lieberman Interview). When scheduling our interviews, we made great efforts to obtain a representative cross-section of all views, such as representatives of both generic and innovator pharmaceutical companies. We would have liked to interview more people, including Peter Treyde in the Attorney General's Department in Australia, Juan Pablo Egana or Jose Luis Cardenas in Chile, Yahaira Sosa in the Dominican Republic who is the director of the foreign trade office (DICOEX) in the Commerce Ministry, officials at EDB or IPOS in Singapore, Said Darwazah who is CEO of Hikma (a leading specialty pharmaceutical group in Jordan), and Mamoun Talhoni who is Director of the National Library in Jordan. But given time and budget constraints, we were unable to do so.

that had on the overall economic development of each country is beyond the scope of this study. Rather this study is an attempt to highlight the impact of the U.S. FTA TRIPS-Plus provisions, distill that knowledge into discrete recommendations, and provide a springboard for additional research and examination. In conducting the studies, we were careful to compare what we learned in the interviews to the data analyzed for the econometric study. Where stories differed, we were prepared to explore the reasons for such divergence. We compared also what we were learning in each country with the information learned in other countries. Again, where stories differed, we were prepared to explore why.

As it turned out, the bulk of the experiences recounted in each country were consistent with our econometric modeling results as well as internally consistent with each other. We found no glaring outliers. Where there were discrepancies, typically such variations were minor and could be explained by readily identifiable factors, such as the political history and development in a particular country, the industries driving development in that country, and so forth.

In many of the developing country interviews, copyrights and the impacts of the FTA provisions on developing country copyright holders were addressed less frequently than the impacts of the TRIPS-Plus provisions on trademarks and patents.[21] This lack of data made it difficult to find commonalties across our representative sample countries and is why we do not focus more extensively on copyright issues here.[22]

We do recommend, however, that further studies be done to focus specifically on the increasingly important role copyrights are playing in society,

[21] The general perception from the interviews is that increased copyright protection terms required by TRIPS-Plus provisions (such as an extension from 50 to 70 years) benefits primarily U.S. copyright holders, such as those in the software, music, and entertainment industries. In general, economists we interviewed believe that there is little economic justification for such an extension (B. Webster, P. Gretton, A. Sheppard, and J. Thorpe Interviews). *See also* Jeremy Thorpe, *Some Challenges for Copyright-Related Quantification*, 1 Review of Economic Research on Copyright Issues 41-50 (2004) (outlining a number of methodological challenges that exist when trying to provide some quantification of the economic impacts and contributions related to copyright law and policy).

[22] We do elaborate on an illustrative example involving copyrights in Australia and incorporate the lessons learned from that example into our recommendations.

however.[23] For instance, as one Australian Government official noted, TRIPS does not deal with copyright in the digital environment and much has changed since 1995, such as the distribution of content over the Internet (J. Taylor Interview). Exploring the impact of TRIPS-Plus to determine whether products in the music and movie industries would have come to market absent the correct regulatory environment, although important, is beyond the scope of this study.[24] Instead we focus here primarily on two distinct IPR topics raised consistently during our interviews: (1) trademarks; and (2) patents in the pharmaceutical sector. For those specific components of IPR protection, we summarize interviews that we believe are representative of what we heard in most, if not all, of the countries where we conducted interviews. Based on these examples, we provide discrete recommendations for consideration by those who are in the process of negotiating international IPR agreements.

a. Separate the Examination of Patents and Trademarks

As a threshold matter, changes in the trademark field are viewed as insignificant when compared to the significant changes required to implement the IPR provisions of the FTAs in the patent sector (A. García Interview, among others).

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[23] Copyrights are playing an increasingly important role, and at least one interview suggested that copyrights are the most important IP right (S. Ricketson and B. Webster Interview). *See also* Jason Koch *et. al.*, *Camcording And Film Piracy In Asia-Pacific Economic Cooperation Countries,* International Intellectual Property Institute Study Report in conjunction with and based on funding provided by the United States Patent Trademark Office (detailing U.S. economic technical assistance concerning intellectual property rights) (tentative title, forthcoming Fall 2011). There are also various technical assistance efforts that highlight for developing country citizens how to harness copyright protections for their own economic benefit. For instance, reportedly Panama introduced a system of copyright-like rights tailored to address some of the problems indigenous artists face most often, including collective ownership registration. Law 20, introduced in 2000, allows an indigenous group to own a copyright in a creative work, as opposed to reserving those rights to an individual or a business entity. *See* Molly Torsen, *Intellectual Property Options for Protecting and Marketing Traditional Textiles*, IIPI publication (2007) (highlighting the ways in which different countries create IP laws to best suit the needs of its people).

[24] We are conscious that construed broadly IPR includes creations of the mind, including literary and artistic works, which are protected by copyrights; symbols, names, images and designs used in commerce, which are protected by trademarks; industrial property and inventions, which are protected by patents, and confidential business information developed by firms, which are covered by trade secrets. *See*, *e.g.,* World Intellectual Property Organization, *What is Intellectual Property?,* http://www.wipo.int/about-ip/en/; *see also* U.S. Int'l Trade Comm'n, Inv. No. 332-514, USITC Pub. No. 4199, (November 2010), p. 1-1. The scope, budget and timing of this study, however, preclude an exhaustive investigation of each of these issues.

A necessary first step in examining the impact of the IPR provisions of the FTAs is dividing any examination into one that explores separately the impact of trademark changes and the impact of patent changes (M. Troncoso Interview).[25]

The general consensus of those interviewed is that the impacts of the TRIPS-Plus changes to trademark protection are perceived differently than the impacts to patent protection. For instance, among those in the IPR policy community, the perception is that typically stronger patent protection in the pharmaceutical context is seen as benefiting primarily large companies of foreign rights holders – that is, the innovator drug companies.[26] By contrast, a scholar in Australia sums up the perception that, "trademarks are good for small and big business as well as foreigners and indigenous people" (P. Drahos Interview).[27] Plus, as discussed in greater detail below, there were comparatively minor changes required to implement TRIPS-Plus provisions into domestic law for trademarks, and comparatively less social dislocation or price changes than is perceived in the patent pharmaceutical context.

b. Trademarks

Overall, there is consensus among those interviewed that additional trademark protections are associated with increased trade flows and economic activity. This view is consistent with the econometric results of this study, which show an association between increased trademark protection and increased trade flows, royalty and licensing transactions, and affiliate sales in sectors for which trademark protection is important. Although the specific changes required by each FTA vary, the changes required by the TRIPS-Plus provisions provide generally for

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[25] This theme was echoed in each of the countries where we conducted interviews. The experiences concerning patents and data exclusivity in the pharmaceutical sector of the Dominican Republic, addressed in the section on patents, help illustrate the importance of concentrating separately on these issues.

[26] *See, e.g.*, The World Bank Group, *IPR Rights in Preferential Trade Agreement Policies for Development: A Handbook*, 397 (Jean Claude Maur, Carsten Fink eds., 2010) ("the adoption of TRIPS+ standards in U.S. PTAs [preferential trade agreements] has received much criticism from NGOs, particularly in the area of pharmaceuticals.").

[27] *See* Peter Drahos, *Intellectual Property and Pharmaceutical Markets: A Nodal Governance Approach*, 77 Temp. L. Rev. 401 (2004) (three-year fair trade label study concerning indigenous people).

greater enforcement authority and, in developing countries, typically are accompanied by increased levels of technical assistance. IPR technical assistance ranges from training courses to funding for computer system upgrades.[28] As the TRIPS-Plus trademark changes are perceived to improve the environment for local as well as foreign businesses, the expectation is that they will have a small but positive overall impact on economic growth and trade, even if the short-term costs of doing business may increase slightly in some FTA partners.[29]

In general, the view by officials in Guatemala that TRIPS-Plus "is very good" (F. Vásquez Interview) sums up what we heard in most countries. For instance, in Guatemala, officials point to the fact that increased enforcement measures help to strengthen the enforcement of domestic law. The changes are expected also to capture greater tax revenue from those now operating in the "informal economy" (C. Castañeda Interview).[30] The Guatemalan government recognizes that, in the short term, TRIPS-Plus implementation will pose difficulties for average Guatemalan citizens who operate in the informal economy because they will lose revenue and have to pay taxes otherwise avoided. Nevertheless the government's expectation is that, in the long term, TRIPS-Plus will make the economy stronger by helping to bring those in the informal economy into greater compliance with existing legal rules (C. Castañeda Interview). Measures that increase compliance with existing domestic rules benefit the government and foster also an environment conducive to increased foreign investment and trade.

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[28] *See also* Charles Schwartz *et. al.*, *Technical Assistance for Intellectual Property Right Protection: Effects on U.S. Exports,* International Intellectual Property Institute Study Report in conjunction with and based on funding provided by the United States Patent Trademark Office (detailing U.S. economic technical assistance concerning intellectual property rights) (tentative title, forthcoming Fall 2011).

[29] In Australia, for instance, we were told that the FTA is responsible for significant changes and improvements concerning how geographical indications are determined (J. Power, J. Staver, N. Daines, and D. Hogg Interviews). Reportedly, before the FTA, trademark owners were not consulted for objections to proposed GI registrations. Post-FTA, we were told that now anyone with a trademark in Australia, including common law trademarks, are permitted to object to a proposed GI, regardless of whether the respondent is a domestic or foreign entity. *See* Wine Austl. Act § 40RB(1) (1980), as amended.

[30] The informal economy refers to those without a formal job who sell items on the street and do not pay taxes.

Judges in Jordan explained that TRIPS-Plus is helpful because it raises awareness of and respect for IPR among the domestic population and provides foreign investors with greater comfort in doing business in the country (Judge H. Al-Smadi and Judge N. Al-Husban Interviews). The enforcement provisions of the FTA also provided additional flexibility that judges could use when meting out penalties and sentences, and there were many technical assistance training sessions and workshops that reportedly would not have happened without the FTA (Judge H. Al-Smadi and Judge N. Al-Husban Interviews).

Businesses and trade associations report a reduction in legal expenses that they attribute to the FTA, namely due to an increased confidence in how the judicial system interprets intellectual property issues (I. Bukhari Interview). In the Dominican Republic, we heard that there is also a willingness of both foreign and domestic[31] IP owners to protect trademarks because of an increased understanding of IP value and a growing recognition of the important benefits attributable to the rule of law (R. Campillo and M. Fiallo Paradas Interviews).

We found that three general themes emerged from our discussions concerning trademarks. First, many of the most significant trademark changes were implemented when countries adopted TRIPS, not the TRIPS-Plus provisions of the FTAs. Second, the TRIPS-Plus provisions were not essential to securing trademark protection for foreign IP rights holders, although they are helpful. Finally, TRIPS-Plus changes are expected ultimately to attract business to developing countries but technical assistance plays a critical role in helping these countries implement TRIPS-Plus commitments.

1. Whether TRIPS or TRIPS-Plus, Trademark Changes Welcomed

In some of the countries where we conducted interviews, we learned that the greatest changes in IP protection came with the implementation of TRIPS, not TRIPS-Plus. In the Dominican Republic, for example, TRIPS implementation in 2000

[31] In the field of copyright, for instance, reportedly the areas of greatest enforcement include songs and authorship, where reportedly there is a strong domestic constituency of IP rights holders who would like their own works protected (J. Weyer, M. Schildgen, and I. Frías Interviews).

marked the first substantive amendments to the 1911 patent law and the 1937 trademarks law.[32] TRIPS-Plus trademark ratification came in 2006 and legislative changes include a new administrative seizure authority for Customs, changes to license registration requirements, and the acceptance of non-traditional trademarks, such as auditory and olfactory marks as well as those susceptible of graphic representation (L. Acevedo Gómez and M. Figueroa Interviews).

The Customs changes are helpful. They permit Customs in the Dominican Republic to monitor trademarks more closely and order administrative seizures on their own initiative. Before TRIPS-Plus, Customs required a judicial order (S. Hodos Interview). It was difficult and expensive to obtain a judicial order, and often judges were unfamiliar with IPR concepts. Between 2006 and 2010, reportedly Customs seizures were done on an informal basis only for famous marks like Nike, Adidas, Tiffany, and Cartier. In October 2010, however, Customs finalized its regulations based on the TRIPS-Plus implementing legislation (M. Troncoso and A. Cáceres Interviews). It is widely expected that this new administrative rule will benefit all trademark owners in the Dominican Republic, not just those with famous marks.

It is less clear whether the changes required by TRIPS-Plus in the Dominican Republic have increased trade flows, however. Although ultimately a counterfeiter may be less inclined to import fakes because of an increased chance that the counterfeit goods would be seized by the Customs authorities, there are insufficient data available now to confirm this widely-held view. Those interviewed report that it is too early to make a definitive statement on whether the trademark changes of TRIPS-Plus alone are positive, negative, or neutral (M. Troncoso, A. Cáceres, and W. Pons Cardi Interviews, for example). But even if it will take time to quantify the impacts of the changes, there is widespread consensus that the Customs changes are important, the Dominican Republic is on the right track, and eventually there will be

[32] Law No. 20-00 (May 8, 2000); Copyright legislation is included in Law No. 65-00.

a positive impact on trade flows (J. Roca, S. Pablo de Roca, D. Guzmán, and L. Acevedo Gómez Interviews, for example).[33]

2. TRIPS-Plus Is Important But Not Essential

Jordan was the first country to sign an FTA with the United States. Similar to the Dominican Republic, interviewees in Jordan found it difficult to assess the impact of trademark changes required by TRIPS-Plus as opposed to TRIPS (D. Jaafari Interview). Jordan amended its trademark law on December 1, 1999, joined the WTO on April 1, 2000, and signed the Jordan-U.S. FTA on October 24, 2000 – a timeframe of less than a year.

The FTA was implemented ultimately on December 17, 2001, although full implementation was not completed until January 1, 2010. The main changes in the 1999 law include the introduction of service marks, a recognition of famous marks, an increase of penalties for trademark infringement, an extension of the protection period from seven to 10 years, and a reduction of the renewal period from 14 to 10 years (G. Ala' Eddein Interview). TRIPS-Plus provided additional tweaks, all within a short period.

With the trademark law changes, WTO admission, and TRIPS-Plus implementation all occurring within about two years, it is not surprising that most of those interviewed over a decade later had difficulty identifying whether only those trademark changes specifically required by the FTA were positive, negative or neutral for Jordan.[34] Rather the changes required by TRIPS and TRIPS-Plus represent improvements to what appears to have been a substantive, functioning trademark system (G. Ala' Eddein Interview).

Take the case of Burger King, which was argued around this time-frame.[35] Reportedly "Burger King" had no problem registering its marks in Jordan. The case arose when Burger King began its advertising campaign in Jordan. At that time, the

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[33] It would be helpful to track whether in future years the number of counterfeit goods decreases and whether such decrease is attributable to the administrative seizure provisions of Customs.

[34] Only one commentator argued that TRIPS-Plus is harmful but noted that TRIPS may be helpful for trademarks (H. Sboul Interview).

[35] The High Court of Justice Decisions cases Nos. 83-95/2001 dated November 18, 2001.

owner of the trading name "King of Hamburgers," a Jordanian citizen, initiated 13 cancellation actions against the trademarks owned by Burger King, a U.S. company. The King of Hamburgers had registered its own name in Jordan prior to Burger King's registration. The action alleged that the Burger King mark would cause confusion to Jordanian consumers. Jordan's High Court of Justice rejected all of the cases brought by the Jordanian plaintiff on the grounds that Burger King's trademarks are famous, are used extensively, have been registered for a long time, and that the similarity with the trading name of the plaintiff would not lead to confusion or unfair competition (G. Ala' Eddein Interview). The foreigner not only received a fair hearing - it won. And it did so a full month before the FTA was even implemented. A positive IPR environment that fosters an association between IPR protection and trade existed in Jordan well before the FTA was signed.

There is a growing body of case law in Jordan that has developed over the last 15 years, cases which began well before the TRIPS or even TRIPS-Plus changes. For instance, in a case concerning the famous mark SUBWAY, Jordan decided to recognize the mark as famous even though it was not registered in Jordan.[36] The Registrar did so in 1997, well before Jordan joined the WTO or signed the U.S. FTA.

Appendix 3 lists 14 representative examples of trademark cases from 1995 to 2006.[37] Reportedly these trademark cases were decided based on established rule of law principles. As the time period for the cases spans before, during, and after the FTA, any changes imposed by TRIPS-Plus were not the linchpin guaranteeing rule of law and enforcement for foreign trademark rights. Rather Jordan issued strong decisions before TRIPS-Plus. But the strong consensus in Jordan is that the situation is even better now because of TRIPS-Plus. (I. Bukhari, Judge H. Al Smadi, M. Mustafa, A. Khleif, S. Al-Masri, G. Ala' Eddein, and Judge N. Al-Husban Interviews).

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[36] Doctors Ass'n Inc. v. Al Nasser and Mosely Company, Registrar's decision dated July 28, 1997.

[37] Ghaida' Ala' Eddein helped prepare this representative list of cases and a summary for our review when preparing this report. Reportedly her office "is known to work for more than 40-50% of the [trademark] cases in Jordan" and she was involved in the cases cited (G. Ala' Eddein Interview).

Those interviewed link improvements to the FTA. They cite an increased awareness and respect post-FTA for IPR. Such respect, they claim, sends a strong message to would-be infringers not to waste money pursuing frivolous cases. For instance, one Jordanian business owner reports that before TRIPS and TRIPS-Plus, routinely foreign-rights holders of famous marks, or their Jordanian licensees, were forced to litigate expensive cases against domestic firms that registered confusingly similar names in Jordan. Now, he claims, those cases are settled quickly and economically with a warning letter from counsel (I. Bukhari Interview).

The TRIPS-Plus provisions did not establish Jordan's intellectual property system, which was functioning and issuing strong decisions prior to the FTA. So in that sense they are not "essential" to building Jordan's reputation for intellectual property protection. But the TRIPS-Plus changes are important. For instance, they provide additional enforcement tools (Judge H. Al Smadi, Judge N. Al-Husban and G. Ala' Eddein Interviews). They foster an increased awareness of IPR in the country. Plus, indirectly, FTA-passage brought technical assistance training for judges, practitioners, and government officials (Judge H. Al Smadi, M. Dmour, and T. Hunnicutt Interviews), and there is a keen interest in receiving increased judicial training (Judge A. Al.-Husseini and Judge Hadidi Interviews).

Combining these factors with a steady, growing volume of case decisions helps to create predictability and transparency in an otherwise novel area of the law. In the words of one businessman, "the laws [were] already here – the FTA just helped to kick-start enforcement" (I. Bukhari Interview). So although the FTA was not essential to the basic functioning of Jordan's intellectual property system, the TRIPS-Plus provisions proved important in changing the perception of the intellectual property landscape in the country. It is understood also to be a contributing factor in boosting trade with and investment in Jordan. This perception that TRIPS-Plus is an important tool in strengthening IP appears as a uniform theme throughout the interviews conducted in Jordan as well as elsewhere, as does the importance of technical assistance to developing countries.

3. Technical Assistance Is Critical To Helping Developing Countries Benefit from TRIPS-Plus Changes

In the first FTA signed with the United States, Jordan implemented trademark changes believed to be important in helping enhance the country's intellectual property system. The consensus among Jordanians interviewed is that the changes are for the better. Peru was the last FTA to be signed and implemented.[38] Reportedly Peru agreed to implement TRIPS-Plus changes for the same reason – to enhance the country's intellectual property system and ultimately to attract foreign business. As one trade association official explained, "the Peruvian Government negotiated not for market access but for credibility – to show the business community" (M. Quindimil Interview).

Even before the FTA, Peru had credibility. It possessed internationally known industries and home-grown success stories: pisco, coffee, and chirimoya, to name a few, or the internationally known trademark success stories of Inca Kola or Kola Real. Increased trademark protection will assist these industries and domestically grown brands to flourish. Like other countries, Peru is betting also that it will help to send a message to the investor community and attract foreign business to the country.

For instance, TRIPS-Plus commitments require that Peru accept live trademark registrations and accept registrations in multiple classes.[39] When the FTA entered into force, however, Peru had no capacity to do either of these things. For instance, one could register a trademark in one class and the internal software at Peru's INDECOPI was designed to handle such registrations. But because the government agency's software system did not permit multiple class registrations, this new FTA requirement created additional burdens on the staff, who were forced to do such registrations manually post-FTA. These additional burdens increased dramatically the staff's workload overnight (P. Gamboa Vilela and Z. Panduro Interviews).

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[38] At the time of writing, there are FTAs pending with Korea, Colombia, and Panama.

[39] United States Trade Promotion Agreement, U.S. - Peru, Dec. 16, 2007 at Article 16.2, http://www.ustr.gov/trade-agreements/free-trade-agreements/peru-tpa/final-text.

U.S. funding for technical assistance is mitigating these burdens. Reportedly the technical assistance includes not only seminars and short training courses but also a group on the ground in Peru to assist with intellectual property efforts (N. Tenny, C. Escobedo, and B. Possin Interviews). Facilitando Comercio was established in September 2010 and is helping to evaluate next steps and frame an appropriate action plan for TRIPS-Plus implementation. By March 2011, there was an action plan for digitizing trademarks from the grant of the certificate forward. There is now a joint-effort underway to digitize and put certain records on-line, although there is an understanding that in the immediate term all records related to a trademark application will not be digitized given existing budget constraints (P. Gamboa Vilela and Z. Panduro Interviews).

From a trademark-user perspective, reportedly the impact today of the TRIPS-Plus provisions is neutral on both domestic and foreigner users of the system in Peru. From the perspective of those in government, however, there are high fixed costs associated with implementing the TRIPS-Plus provisions. But the clear expectation is that there will be significant savings in the long term to government because of the anticipated variable cost savings achieved from the digitization and computerization required by TRIPS-Plus commitments (P. Gamboa Vilela and Z. Panduro Interviews).[40] Users will similarly benefit from increased transparency and functionality of the system. Technical assistance, however, plays a critical role in Peru's ability to implement and ultimately benefit from the TRIPS-Plus trademark provisions.

The importance of increased technical assistance is a theme that ran through many of the interviews conducted in developing countries.[41] For example,

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[40] Peru expects considerable cost savings, increased transparency, and additional user-features not available today once new systems are in place. This is an area for future work and study. Areas for future examination include evaluating both whether Peru's trademark system in the future is, in fact, more efficient as well as whether users in Peru take advantage of all of the new TRIPS-Plus trademark provisions required by the FTA, such as on-line digitized registrations in more than one class.

[41] This theme was raised in discussions focused on trademarks as well as patents. In Jordan, for instance, it was suggested that linking technical assistance funding to specific commitments at the time of negotiation would help developing countries properly implement FTA commitments appropriately and expeditiously (H. Sboul Interview).

Dominican Republic government officials believe that TRIPS-Plus changes are positive because they resulted in increased technical assistance training (A. García Interview). Similarly, as discussed above, judges in Jordan explained that many technical assistance training sessions and workshops would not have happened without the FTA (Judge H. Al-Smadi and Judge N. Al-Husban Interviews). Government officials in Guatemala cited technical assistance needs as well and would like to see more capacity building offered by the United States (F. Vásquez and C. Castañeda Interviews).

c. Patents

Whereas the strong consensus among interviewees in developing countries is that the FTA trademark changes are TRIPS-"Plus," there are some who believe that the FTA patent requirements are TRIPS-"Minus," typically because of the changes required concerning patents in the pharmaceutical sector.[42] In Peru, one lawyer dubbed "Mr. IP" by his peers because he helped to negotiate the FTA, explained that "[it is] hard to tell if TRIPS-Plus is better because of the fundamental problems with indigenous rights" (L. García Interview). Officials in Guatemala reported that the IP chapter in the DR-CAFTA was the most difficult to negotiate and implement in part because it required changes to domestic legislation during implementation and a commitment to subscribe to other multilateral agreements, such as the *Patent Cooperation Treaty*, the *Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure,* and the *International Convention for the Protection of New Varieties of Plants* (1991) (UPOV '91)[43] (F. Vásquez and C. Castañeda Interviews). Some of the most outspoken critics, however, are in Jordan where reportedly access to medicine decreased

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[42] *See, e.g*, The World Bank Group, *IPR Rights in Preferential Trade Agreement Policies for Development: A Handbook*, 397 (Jean Claude Maur, Carsten Fink eds., 2010) ("the adoption of TRIPS+ standards in U.S. PTAs [preferential trade agreements] has received much criticism from NGOs, particularly in the area of pharmaceuticals.").

[43] Dominican Republic - Central America Free Trade Agreement, D.R. - U.S, May 28, 2004 at Art. 15.1, http://www.ustr.gov/trade-agreements/free-trade-agreements/cafta-dr-dominican-republic-central-america-fta/final-text.

because of price increases reportedly caused by TRIPS-Plus commitments (Oxfam Study 2007). The unspoken assumption when negotiating TRIPS-Plus commitments, however, seems to be that strong rules in the pharmaceutical sector help spur innovation. Based on the interviews we conducted, that view is too simplistic.

1. Strong Rules Alone Do Not Stimulate Innovation

We encountered a recurring theme throughout our interviews that we thought important to relate at the beginning of our discussion on patents and the pharmaceutical sector. As a threshold matter, not all countries view the FTA requirements the same way. Whether those interviewed believed the TRIPS-Plus changes were beneficial, harmful or neutral depended largely on specific factors that help encourage trade flow and stimulate innovation.

a. Singapore Model

In the words of the Australian Government's Chief Economist at the Australian Trade Commission, "Singapore works."[44] Things are efficient, business is booming, foreign investors are conducting serious research and development within its borders, and Singapore is beginning to boast innovative industries of its own. Why? Is it because of the TRIPS-Plus provisions of the U.S. FTA?

There is no direct causal relationship that we could find between TRIPS-Plus provisions and Singapore's rise to intellectual property preeminence. But there is an association between strong rules and an attraction to do business in Singapore by intellectual property-dependent companies (T. Avery, A. Hines, C. Swee Hoon, and S. Lin Interviews). The econometric study shows an association between higher IPR protection and increased trade flows, which is consistent with existing research that shows weak patent rights may be a barrier to U.S. trade (Smith 1999). But more is required than rules alone. Those interviewed report that Singapore's success requires strong intellectual property rules but note that other non-IPR

[44] Tim Harcourt, *The Airport Economist* (2008) at 3.

factors are at least as important in attracting innovative industries and stimulating innovation. (W. Yew, P. Overmyer, and J. Ng Interviews).

Understanding what Singapore did to spur innovative industries and increase trade flow requires understanding something about Singapore itself. A former British trade colony, it joined the Malaysian Federation in 1963 but separated two years later to become an independent city-state.[45] So its rules are reflective of European laws, not necessarily U.S. laws (W. Yew Interview). It has little to no natural resources other than its citizens, yet it is now one of the world's most prosperous countries. It focused 45 years ago on the garment and toy industries, which required little skill but required massive employment, and moved steadily into electronics, assembly, and upward toward greater innovation (P. Overmyer and J. Ng Interviews). Certainly Singapore's busy port and strong international trading links play an important role in its strong economic development and trade flow success. But how did Singapore attract major foreign investments in pharmaceuticals and medical technology production while also stimulating innovative industries of its own?

Those interviewed pointed to the success of Singapore in attracting companies like GlaxoSmithKline (GSK) and Lucasfilm. GSK decided to build a vaccine manufacturing facility in Singapore's Tuas Biomedical Park in 2004, which was GSK's first bulk vaccine production plant in Asia.[46] Likely strong IPR protection played an important role as the decision to build the plant came around the same time Singapore was negotiating the FTA. But reportedly Singapore took other steps to attract the investment, such as (a) offering pharmaceutical and biopharmaceutical companies certain advantages with lower rates of corporate tax and (b) training over 1,000 researchers and 100 PhD graduates in biologics to

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[45] CIA World Factbook at https://www.cia.gov/library/publications/the-world-factbook/geos/sn.html.

[46] *See, e.g.,* http://www.pharmaceutical-technology.com/projects/gsksingapore/ (online trade periodical).

provide more personnel for the expanding market.[47] These steps were not isolated incentives but part of a coordinated effort designed to make Singapore the place to be for IPR intensive industries in Asia (W. Yew Interview). Singapore has been labeled the region's financial and high-tech hub by UNCTAD, with IPR-intensive, high-technology goods accounting for 54 percent of Singapore's exports, compared to just 27 percent for developed economies (UNCTAD).[48] Singapore's strong holistic approach has helped also to attract investment by other large pharmaceutical companies[49] as well as IPR dependent powerhouses like Lucasfilm, producer of the famed Star Wars series.[50] Reportedly the FTA was "a big reason for [Lucasfilm] coming to Singapore" (M. Oo and R. Foxton Interviews).[51]

Tax incentives, grants, research centers, a strong IPOS,[52] and a ready flow of financing to fund riskier investments are all strong factors that, when combined with strong IPR rules like those contained in the FTA, appear to help attract IPR-rich industries and stimulate domestic innovation (W. Yew, P. Overmyer, and J. Ng Interviews). A sampling of the programs and organizations designed to stimulate innovation, investment, and trade flow involving Singapore include the Export

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47 *Id.* ("In 2003 the Singaporean Government set up A-Bio, a biologics contract manufacturer funded with Bio*One money to provide small-scale manufacturing. The expertise developed has been a big factor in attracting larger pharma companies to invest in biologics in Singapore").

48 Although Pharmaceutical pricing and market share can be volatile, we were told that at one point GSK accounted for roughly 1.6 percent of Singapore's GDP (P. Overmyer, J. Ng, and T. Avery Interviews).

49 *See* http://www.singaporemedicine.com/leadingmedhub/biomed_mfg.asp (detailing efforts by Novartis, Abbott, Schering Plough, Pfizer and others in Singapore); *see also* http://spinport.com/large-pharmaceutical-companies-outsorcing-rd-to-singapore/312416/ (Singapore government has openly sought investment from foreign pharmaceutical companies and in 2008 biomedical exports accounted for 4% of GDP or around US$7billion).

50 *See*, *e.g.,* Lucasfilm extends empire to Singapore, The Guardian (October 27, 2005) at http://www.guardian.co.uk/film/2005/oct/27/news.

51 We address the similarities of Singapore and Chile, below, but note that other jurisdictions also enforced IPR rights for Lucasfilm. For instance, in what was deemed an important case against the brother of the Chilean president involving the use of the Darth Vader character, we were told that Lucasfilm won in Chilean courts (A. Mirinovik and L. Olmedo Interviews).

52 IPOS is the Intellectual Property Office of Singapore. *See* http://www.ipos.gov.sg/topNav/abo/. A strong office includes experienced patent and other examiners as well as transparent processes.

Development Board,[53] the IP Academy,[54] A* Star,[55] IE Singapore,[56] and the MDA.[57] There are numerous tax and other incentives as well,[58] and the government has created the Biopolis[59] and Fusionopolis, which are research and development hubs targeted at the (a) biomedical and (b) electronics and technology sectors, respectively.[60] Both are situated in close proximity to the National University of Singapore, the Institute of Technical Education, the Singapore Polytechnic, the National University Hospital, the Singapore Science Park, and the Ministry of Education.

Locating complementary faculties close to each other is an initiative that Singapore copied when relocating the Singapore International Arbitration Center (SIAC) and related arbitral organizations, attorneys, and judges to an area clustered around 32 Maxwell Road. While the total number of new cases handled by the SIAC has increased 241 percent from 2000 to 2010,[61] reportedly much of that increase

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53 *See* http://www.edb.gov.sg/edb/sg/en_uk/index/about_edb/what_we_do.html (Lead government agency to help develop and build up Singapore's Economic stability).

54 *See* http://www.ipacademy.com.sg/section/home.html (Part of the National University of Singapore, serves as a think tank for IP professionals for training and idea nurturing).

55 *See* http://www.research.a-star.edu.sg/static/about (Online publication created by A* Star featuring discoveries in Singapore. A* Star is the Agency for Science Technology and Research, which works to bring cutting-edge research to Singapore as well as to organize collaborations outside the country).

56 *See* http://www.iesingapore.gov.sg (International Enterprise Singapore, a government agency intended to help foster international business relationships as well to help expand and protect Singapore enterprises located in other countries).

57 Reportedly the MDA was helpful in bringing Lucasfilm to Singapore (M. Oo Interview). *See* http://www.mda.gov.sg/AboutUs/Pages/AboutUs.aspx (the Media Development Authority, or MDA, was created in 2003 to develop Singapore into a vibrant global media city as well as foster a creative economy and a connected society).

58 Not all incentives are IPR related, although they range from regional headquarter incentives to research center incentives to grants for qualifying companies provided they have a certain percentage of Singaporean interests (W. Yew). *See also* http://www.guidemesingapore.com/taxation/reports/singapore-tax-amendments (private company highlighting recent tax amendments in Singapore).

59 *See* http://www.gskcareers.com.sg/ (GSK's Centre for Research in Cognitive and Neurodegenerative Disorders is located at the Biopolis).

60 Singapore is also constructing the Mediapolis, which is designed to be Singapore's first digital media hub *See* http://www.mda.gov.sg/AboutUs/Overview/Pages/MediapolisOne.aspx (slated to be completed by 2020).

61 *See* http://www.siac.org.sg/cms/index.php?option=com_content&view=article&id=287&Itemid=73

has little to do with IPR (M. Oo and R. Foxton Interviews). That may change, however, as Singapore's IPR prominence grows.

But clearly the idea of clustering resources is another method Singapore uses to encourage investment and trade. For instance, the goal of Singapore's IP Academy is to be "a leading centre of excellence for executive IP education & thought leadership development, and to be a world-class resource for the development of knowledge and capabilities in the protection, exploitation and management of IP."[62] The IP Academy's mission fits neatly with what we heard Singapore works hard to do: maintain a ready, knowledgeable workforce and encourage a revolving door of experts between government programs and Singaporean-based companies (W. Yew, P. Overmyer, and J. Ng Interviews).

The goal is locating employees in-country so that companies no longer need to search for talented employees. Everything needed to attract business and stimulate innovation is in one place – strong tax incentives and grant programs, an educated pool of talented labor, financing to fund innovation, and an experienced cadre of knowledgeable government officials. Woven into this strong support structure is a strong set of IPR rules that are enforced. For instance, U.S. officials credit the FTA with the virtual overnight disappearance of pirated goods in the country (A. Hines, T. Avery, and J. Ng Interviews).

Not surprisingly, there are "massive numbers of small start-ups in Singapore" (P. Overmyer Interview). One such success story is the company Trek, which is widely credited with inventing the first thumb drive (known also as a USB flash drive or stick).[63] Although invented in 2000, well before the FTA, one attorney had estimated that Singapore was already as much as 80 percent compliant with TRIPS-Plus commitments by the time it signed the FTA (C. Chua Interview). Trek initiated

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(detailing number of new cases handled by the SIAC and indicating number of international cases administered by SAIC during same period increased 278%).

62 http://www.ipacademy.com.sg/section/home.html.

63 *See, e.g.*, http://www.thumbdrive.com/trek2/index.php or http://www.trekstorusa.com/thumbdrive.htm (product descriptions); *see also* http://www.amstore-memory.co.uk/about/usb-flash-drives.html (providing history of USB flash drives).

a legal case in the United States recently to enforce its IPR rights.[64] Singapore's model seems one of strong rules combined with other factors designed to attract investment and stimulate innovation in IPR-intensive industries.[65]

b. Other Developed Countries

Chile's model is slightly different. The historical trajectories of Chile and Singapore's respective GDPs are quite similar, perhaps giving the impression that their respective developments followed the same path.[66] That apparent similarity aside, the stories of each country and the factors propelling their respective development as explained to us are quite different.

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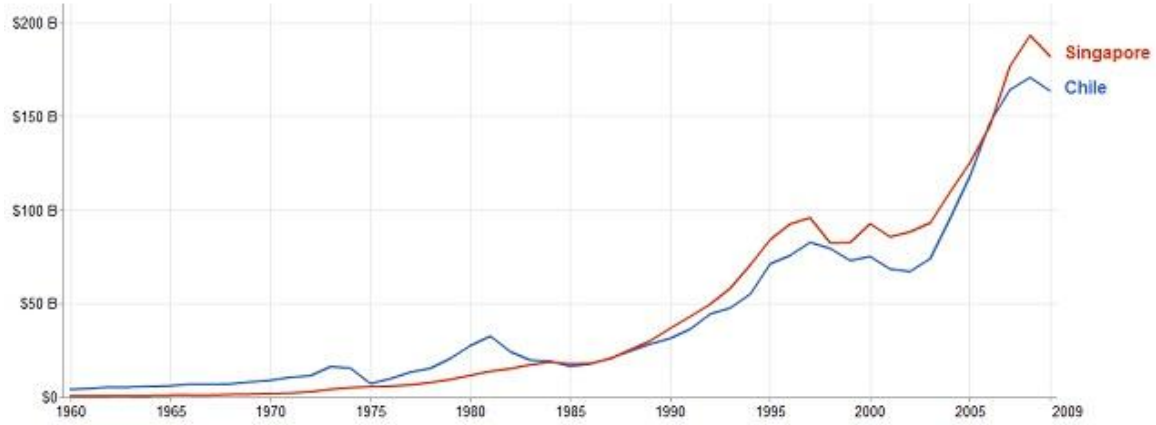
[64] Trek 2000 International Ltd., Trek Technology (Singapore) Pte. Ltd., and S-Com System (S) Pte. Ltd. filed a "Section 337 case" at the U.S. International Trade Commission in Washington, D.C. (pursuant to 19 U.S.C. § 1337). *See* U.S. Int'l Trade Comm'n, *In the Matter of Certain Universal Serial Bus ("USB") Portable Storage Devices, Including USB Flash Drives and Components Thereof*, 76 Fed. Reg. 42730 (July 19, 2011) (USTIC investigation number 337-TA-788 claiming infringement of Trek's patents by: Imation Corporation, Oakdale, MN; IronKey, Inc., Sunnyvale, CA; Kingston Technology Company, Inc., Fountain Valley, CA; Patriot Memory, LLC, Fremont, CA; RITEK Corporation, Taiwan; Advanced Media, Inc./RITEK USA, Diamond Bar, CA; Verbatim Corporation, Inc., Charlotte, NC; and Verbatim Americas, LLC, Charlotte, NC). *See also* U.S. Int'l Trade Comm'n, *Section 337 Investigations*, USITC Pub. No. 4105 (March 2009) (providing answers to frequently asked questions), http://www.usitc.gov/intellectual_property/documents/337_faqs.pdf.

[65] Reportedly Brazil is following a similar model and theory that patent incentives and technology markets can operate in a developing country, building on the notion that a "deliberate policy toward a technology development strategy" will help stimulate innovation where strong science alone has failed. Michael P. Ryan, *Patent Incentives, Technology Markets, and Public-Private Bio-Medical Innovation Networks in Brazil*, 38 World Development 1082, 1092 (2010).

[66] *See* http://data.worldbank.org/data-catalog/world-development-indicators?cid=GPD_WDI (World Bank, World Development Indicators data).

Table 7
Graph of Chile and Singapore GDP from 1960 to 2009



Source: World Bank, World Development Indicators.

Like Singapore, Chile's economy is characterized by a high level of foreign trade, a reputation for strong financial institutions, and a strong reliance on exports.[67] Both countries have negotiated many bilateral or regional trade agreements, Chile in particular such that the Chief Economist of the Australian Trade Commission quips that it is known as "the 'free trade tart' of the Pacific."[68] And reportedly there was a competitive rivalry between the two countries so that Singapore's signing of the FTA one month earlier angered some in Chile (P. Overmyer Interview).

In attempting to explain Chile's history, reliance on export markets, and devotion to free trade principles, one attorney in Santiago drew further parallels to Singapore when characterizing Chile as "an island" (R. Cooper Interview), noting that it is hemmed in by a desert to the north, mountains to the east, and oceans to the west and south. Taking the analogy further, he said that Chile is just "a good country in a very bad neighborhood." (R. Cooper Interview). In his view, Chile looked to the United States and Europe as a model for development and trade rather

[67] CIA World Factbook at https://www.cia.gov/library/publications/the-world-factbook/geos/ci.html.

[68] Tim Harcourt, *Now I Know My F-T-As*, Beyond Our Shores: Essays on Australia and the Global Economist (June 21, 2004).

than following the examples of its regional neighbors (Peru, Bolivia, Ecuador and Venezuela).

Like Singapore, Chile sought to be a comparatively stable and secure environment in the region for foreign investment. These approaches may help explain Chile and Singapore's success overall. But it does not focus on the IPR provisions of the FTAs. In this area, the emphases by Singapore and Chile seem to diverge.

Unlike Singapore, Chile is rich in mineral resources and has a strong cadre of agricultural exports, notably fruits and wine. Reportedly commodities make up some three-quarters of total exports, with copper alone providing one-third of government revenue.[69] With the strong rise of copper prices, Chile's economy received a significant bump that helped sustain GDP levels through the global economic turndown.

Such a strong reliance on mining suggests less of a reliance on IPR rights, however.[70] Our econometric modeling, for instance, shows that the impacts of IPR protection and enforcement are positive and significant for each industry except mining. And that makes sense – the determination of whether to open a copper mine should be less dependent on whether a country has strong IPR rules or enforcement and more dependent on global copper demand and location of copper deposits (B. Clark and J. Richards Interviews).

Like Chile, mining and agriculture represent relatively large shares of the Australian economy. Certainly a strong mining industry does not mean that IPR rules or enforcement are less important in Chile or Australia than Singapore. But the strong orientation of the economy towards mining and agriculture adds a layer of complexity and makes it harder to show an association between the impact of TRIPS-Plus IPR provisions and trade.

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[69] CIA World Factbook at https://www.cia.gov/library/publications/the-world-factbook/geos/ci.html.

[70] This is not to say that IPR rights are not important to nor enforced by commercial mining enterprises, including mining services companies. One law professor interviewed in Australia, for instance, was involved quite recently with an IPR issue related to mining (S. Ricketson Interview).

One former IPR attorney who is now a law professor laments that Australia does not talk about IPR in terms of the economic or social environment and argues that Australia needs a national IPR strategy (A. Liberman Interview). He notes that Australians do not hold relatively high shares of world patents and claim that they have no aspiration to increase those holdings. According to WIPO statistics, Australians hold less than 1 percent of the world's patents and just 26 percent of patents granted in their own country over the past five years, compared to 22 percent and 56 percent, respectively, for the United States.[71] Another practitioner also cited a lack of enthusiasm among Australians in embracing global IPR strategies (J. Richards Interview). Likely these types of differences impact the ultimate perception of whether an FTA is viewed in a country as TRIPS-"Plus," TRIPS-"Neutral," or TRIPS-"Minus."

c. Is the FTA TRIPS-"Plus", TRIPS-"Neutral", or TRIPS-"Minus"

For Singapore, IPR rights are associated closely with a concerted, national strategy intended to drive trade and stimulate innovation, likely because Singapore lacks natural resources whose export would otherwise drive its economy. So it is not surprising that the strong consensus of those interviewed in Singapore is that the FTA is TRIPS-"Plus," meaning it is a decided "plus" for the economy.

For Chile, there exist many of the same factors that made Singapore a success story in attracting IPR trade and stimulating innovation. The country possesses knowledgeable professionals, ready financing, and other factors critical to IPR innovation and foreign direct investment. But there appear to be less IPR-specific tax or other incentives offered than in Singapore, and other industries seem to focus the national consciousness and account for GDP growth more readily than those dependent on IPR rights do. While there is no official quantification of the importance of IPR to Singapore's economy, IPR appears to have been an important factor in Singapore's economic growth. In an assessment of the U.S.-Singapore FTA,

[71] WIPO Statistics Database, *Patent grants by country of origin and patent office (1995-2009)*, (January 2011) and WIPO Statistics Database, *Patent applications by field of technology and country of origin: 2003-2007 total*, (Sept. 2010).

the U.S. International Trade Commission reported that Singapore is one of the world's most successful countries in attracting FDI, and that a robust IPR regime helps to create a business climate that is attractive to foreign investors.[72] The sense in Chile is that if a foreign industry is exploring whether to establish a commercial presence in the country, it will examine other factors first and any IPR analysis, if such analysis even occurs, will be "very much at the end" of the decision (M. Porzio Interview). So it should not be surprising that the FTA is viewed overall in Chile as TRIPS-"Neutral." (M. Santa Cruz and A. Etcheverry Interviews).

For Australia, we received the same luke-warm responses from businesspersons and other professionals that we did in Chile concerning the impact of the IPR provisions of the FTA. There is strong support for IPR rules and enforcement but, overall, the FTA required few changes to existing Australian law and its reported effect was not dramatic (M. Swinn, S. Ricketson, B. Webster, J. Richards, B. Clark, and I. Sanford Interviews among others).[73] The representative from the Australian Chamber of Commerce and Industry, whose historic membership base is manufacturing, stated bluntly, "No one is banging on my door about [the] FTA" (B. Clark Interview). So it should not be surprising that the consensus from our interviews is that the FTA is viewed overall in Australia as TRIPS-"Neutral" (M. Swinn, S. Ricketson, B. Webster, J. Richards, B. Clark, I. Sanford, and A. Liberman Interviews).

But there are two illustrative stories that we heard in Australia that require further elaboration here. The first is from the Productivity Commission, an independent, transparent governmental body that conducts studies and inquiries and, ultimately, issues recommendations.[74] Their goal is to thoroughly research a

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72 U.S. Int'l Trade Comm'n, *U.S.-Singapore Free Trade Agreement: Potential Economywide and Selected Sectoral Effects*, Inv. No. TA-2104-6, USITC Pub. No. 3603 (2003) at 31, http://www.usitc.gov/publications/332/pub3603.pdf.

73 We address the issues raised by economists and copyright changes required by the FTA in greater detail, below.

74 *See* http://www.pc.gov.au/ (the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians whose role is to help governments make better policies in the long term interest of the Australian community).

topic and provide an analytical report from a community-wide perspective, meaning they argue policy objectives and look to maximize community well-being for those in Australia as a whole.[75] Their approach is as an economist from an economy-wide perspective with a particular focus on the consumer.

The Productivity Commission argues that IPR rights should be negotiated not in bilateral or regional trade agreements (BRTAs) but rather in a multilateral setting (P. Gretton and A. Sheppard Interviews).[76] As it concludes in a recent research report, "Australia should not generally seek to include IP provisions in further BRTAs [bilateral regional trade agreements], and that any IP provisions that are proposed for a particular agreement should only be included after an economic assessment of the impacts, including on consumers, in Australia and partner countries. To safeguard against the prospect that acceptance of 'negative sum game' proposals, the assessment would need to find that implementing the provisions would likely generate overall net benefits for members of the agreement."[77] They weigh such issues as whether there is any net loss to Australians by extending the copyright term of protection and the precedential implications the FTA may have on future policy.

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[75] Econometrics provides useful empirical information that helps assess whether the FTA is associated with increased bilateral trade flows, and in particular industries. Unfortunately, the budget associated with our study did not enable computable general equilibrium (CG) modeling or for us to include an economic welfare measure, which is an area for future research and inquiry. This is the type of analysis typically conducted by the Productivity Commission – to answer whether the policy of negotiating FTAs is good policy.

[76] *See also* Philippa Dee, *The Australia-US Free Trade Agreement: An Assessment*, Pacific Economic Papers No. 345, (2005) at 40 ("Given the slow progress in the WTO, people may feel that relying on multilateral negotiation is equivalent to doing nothing. But doing nothing would be preferable to the outcome likely to result from AUSFTA-type agreements.") (focusing on issues broader than just the IPR section of the FTA); *see also* GRAIN Report (in cooperation with SANFEC), *'TRIPS-plus' through the back door: How bilateral treaties impose much stronger rules for IPRs on life than the WTO*, (July 2001) (arguing against bilateral negotiations and TRIPS-Plus provisions, particularly concerning IPR protection on life forms).

[77] Productivity Commission Research Report, *Bilateral and Regional Trade Agreements* (November 2010) at 264. *See also* Philippa Dee, *The Australia-US Free Trade Agreement* at 40 ("any gains that are likely to accrue [from the AUSFTA] would flow just as easily from a multilateral agreement.").

The Commission laments the lack of economic analysis undertaken prior to signing the FTA,[78] and they recommend that Australia avoid using a template formula for FTA negotiations.[79] Although reportedly Australia does not use a template when negotiating IPR chapters in order to permit greater flexibility to negotiations (N. Forrester and C. Ostrowski Interviews), the importance of undertaking a sober, independent assessment of whether the FTA will achieve its intended goals is an important theme that we heard echoed in other countries, and particularly in Jordan.

The second illustrative story relates also to a theme that we heard elsewhere that has particular application in Jordan, as well. In Australia the extension of copyright protections from 50 to 70 years was one aspect of the FTA that reportedly impacts Australians negatively because, as a net copyright importer, there is an extended outflow of royalties to overseas third parties.[80] More importantly concerning copyrights, however, is the TRIPS-Plus requirement that Australia encapsulate a safe harbor provision for internet service providers (ISPs) in its domestic legislation.[81] Reportedly this requirement fits oddly when implemented into Australian law, because Australia's legal system and rules concerning freedom of expression are not identical to those in the United States (F. Phillips Interview),[82] and litigation has been filed concerning the authorization of copyright infringement

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78 Productivity Commission, *BRTA Report* at 263 ("there does not appear to have been any economic analysis of the specific provisions in AUSFTA undertaken prior to the finalisation of negotiations, nor incorporated in the government's supporting documentation to the parliament.")

79 *Id.* at 262.

80 *Id.* at 260 ("while copyright holders in Australia who export would benefit, Australia as a whole would be unlikely to get value for the 'bargaining coin' it would need to expend to compensate the partner country for incurring those costs. Rather, the main beneficiaries would be rights holders in the other countries, particularly the United States."). *See also* Productivity Commission Research Report, *Restrictions on the Parallel Importation of Books*, (June 2009) (examining the effects of parallel importation of books restrictions in Australia).

81 Australia - United States Free Trade Agreement, U.S. - Austl., May 18, 2004 at Article 17.4, http://www.ustr.gov/trade-agreements/free-trade-agreements/australian-fta.

82 *See also* Intellectual Property Law Amendment Bill 2011 referred to colloquially as "Raising the Bar" (to bring Australia's trademark enforcement regime more in line with the copyright regime), http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22legislation/billhome/s837%22.

and the issue of ISP liability.[83] The lesson is that difficulties arise by trying to graft a concept from one system blindly onto another without a clear understanding of the other model (F. Phillips Interview).[84] This is a theme repeated in other countries, and one we address in greater detail below concerning the illustrative story heard in Jordan. Reportedly overlaying U.S.-style rules over Jordan's pharmaceutical sector negatively affects the ability of generic industries to operate, which is why many from Jordan's generic pharmaceutical industry view the FTA as TRIPS-"Minus" (D. Jaafari and H. Sboul Interviews).

2. Countries Learned from the Experience of Predecessors

Any examination of Jordan's pharmaceutical industry should include discussion of a well-known report prepared by Oxfam in 2007. The report argues that the FTA's TRIPS-Plus rules are responsible for reducing access to medicine and increasing drug prices in Jordan.[85] It attributes a negative impact on access to medicines to, among other things, data exclusivity,[86] a lack of FDI by foreign drug companies into Jordan, and stricter IPR rules that have not encouraged research and development.[87]

The last two items – the reported lack of FDI into Jordan by foreign drug companies and the failure of the FTA to stimulate innovation by domestic drug companies – echo much of what we heard in Singapore and our prior discussion

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83 *See Roadshow Films Pty Ltd v. iiNet Ltd* [2011] FCAFC 23, (24 February 2011) (application for special leave to appeal to Australia's High Court is due to be heard in 2011).

84 *See also* Philippa Dee, *The Australia-US Free Trade Agreement* at 40 ("The intellectual property provisions are especially concerning because the agreement requires Australia to adopt US standards in a way that sometimes overrides its domestic copyright and digital law reform processes."). We heard this theme in Chile, too (A. Montaner, J. Reyes, and R. Lavados Interviews).

85 Oxfam Report at 21 ("TRIPS-Plus rules in the US-Jordan FTA, and in subsequent FTAs between the USA and developing countries, threaten to undermine poor people's rights to medicines.").

86 Data exclusivity refers to the protection of clinical test data showing the safety and efficacy of a particular drug. Such test data is prepared by innovator drug companies and submitted with applications for regulatory approval. Because typically the data is expensive to produce, innovators argue that permitting other companies, such as generics, to rely on that data for free creates an unfair advantage. Generics and others argue, however, that restricting test data prevents price reductions because it delays the introduction of generic competition to the market, which typically reduces pharmaceutical costs. *See also* Oxfam Report at 8, Box 2 ("What is data exclusivity?").

87 *Id.* at 20.

about what is needed to attract investment and stimulate innovation.[88] For instance, the Secretary General of the Jordanian Association of Pharmaceutical Manufacturers (JAPM), the official trade association for the pharmaceutical industry in Jordan,[89] noted in her interview some of the identical points we heard in Singapore and Australia – namely that (a) imposing a system that works well in the United States on another country can be problematic, (b) creating an innovation society requires many other inputs, such as financing, tax incentives, and an educated workforce, and (c) focusing on strong laws only does not create a society ready to innovate (H. Sboul Interview).

Those interviewed in Jordan from the generic industry explained that while longer periods for data exclusivity and patent protection may help lay the foundation for innovation in future, strong rules alone do not guarantee success (D. Jaafari and H. Sboul Interviews). Without a concerted national policy and other incentives, tighter intellectual property rules alone are insufficient. The Secretary General of JAPM argues that the net effect is to damage an industry that accounts for approximately 3 percent of GDP[90] and was working quite well in Jordan[91] without any guaranty that an innovator industry will develop (H. Sboul Interview).

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88 At least one prior study noted that the public administration system for patents and trademarks was inadequate and that the R&D system seems largely disengaged from the bio-medical industry, recommending changes, including granting patent rights as incentives, to remedy such deficiencies. *See* Michael P. Ryan and Jillian Shanebrook, *Establishing Globally Competitive Pharmaceutical and Bio-Medical Technology Industries in Jordan: Assessment of Business Strategies and the Enabling Environment*, report commissioned and financially supported by the U.S. Agency for International Development in Amman with additional financial support from the Pharmaceutical Research and Manufacturers of America, (2003). Dr. Ryan was a professor at the Georgetown University McDonough School of Business and consultant to the International Intellectual Property Institute (IIPI) and to USAID/AMIR. Ms. Shanebrook was a consultant to IIPI.

89 *See* http://www.japm.com/ ("As the official trade association for the pharmaceutical industry, JAPM is regularly involved in the development of pharmaceutical legislation and guidelines and maintain constant dialogue with governmental and non-governmental institutions as well as similar International associations.").

90 *See* the Jordan National Competitiveness Observatory, *Competitive Position of Key Industries in Jordan*, http://www.jnco.gov.jo/static/pdf/chapter3.pdf, which reports that pharmaceutical production in 2006 was $450 million; the International Monetary Fund's World Economic Outlook Database reports that GDP was $15.6 billion in 2006. Jordan's branded generics industry is a significant driver for Jordan's economy and accounts for roughly 8 to 9 percent of total Jordanian exports each year (H. Sboul Interview).

91 Product offerings includes different dosage forms, ranging from oral solid dosage forms to injectable products, and different therapeutic groups, including antibiotic products, antihypertensive

Those from the generic industry argue also that the TRIPS-Plus provisions are harmful because, among other things, they impose additional requirements that are not required by TRIPS alone (D. Jaafari and H. Sboul Interviews). One such requirement concerns "[a]n additional three years of data exclusivity (beyond five years) for new uses of already known chemical entities."[92] Reportedly if no data exclusivity restrictions exist, a generic competitor could make less expensive copies of innovator drugs shortly after the medicine's launch on the domestic market. Because of data exclusivity, however, innovator companies can delay generic competition. Among other things, the Oxfam Report argues that the introduction of new medicines with no generic equivalent led to an overall price increase for medicines in Jordan.[93]

We did not hear stories about similar consumer price dislocations in places other than Jordan, however. Singapore and Chile were the next to implement FTAs with the United States. In Chile, for instance, which has a strong generic market, we heard no glaring concerns about a significant decrease in access to medicine and increase in prices because of the FTA.

Data exclusivity was discussed in a few interviews in Chile, and the issue was certainly characterized as a main problem and battleground (M. Porzio, A. Agosin, G. Zaliasnik, and G. Carey Interviews). Some lawyers representing the generic industry even confirmed that data exclusivity issues raise costs for their clients, creating for them a negative perception of such TRIPS-Plus requirements (A. Agosin and

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products, oral hypoglycemic products, and oncology products. Jordanian pharmaceutical companies export to roughly 60 markets, including the United States and the European Union, although main markets are Saudi Arabia, Algeria, Iraq, Lebanon and the Gulf. In total, exports for 2010 were valued at around $US600 million (H. Sboul Interview). Reportedly Hikma, a Jordanian pharmaceutical company, ranked 5th in 2009 unit sales among the largest pharmaceutical companies in the Middle East North Africa market (behind Novartis and ahead of Merck), accounting for roughly $US294 million, and it had almost a 13% market share in Jordan. *See* http://www.hikma.com/about/our-market-share (detailing Hikma's market share in 2009).

92 Oxfam Report at 8, Box 2 ("Health-related TRIPS-plus rules and regulations in Jordan's IP code"); *see also id.* at 9 ("Jordanian manufacturers interviewed by Oxfam expressed frustration at the data exclusivity law because multinational pharmaceutical companies can rely upon data exclusivity to preclude generic competition."); *see also* The Hashemite Kingdom of Jordan Free Trade Agreement, U.S.-Jordan, Oct. 24, 2000 at Article 4.22, http://www.ustr.gov/webfm_send/1041.

93 *Id.* at 12 *et. seq.* ("Why medicine prices have increased").

G. Zaliasnik Interviews). But many seemed more focused on patent linkage issues, which they credit for Chile's inclusion on USTR's Priority Watch List.[94]

Being included on the Priority Watch List seemed like an affront to national pride in Chile. Quoting her teenage son's favorite lament, one lawyer said Chile's inclusion is "absolutely unfair" (A. Agosin Interview). This view was seconded by both top government officials (M. Santa Cruz and A. Etcheverry Interviews) and practitioners alike (R. Velasco Alessandri, L. Bresky, and J. Silva Interviews). Data exclusivity remains a hot topic but, from what we heard, is not perceived to be negatively affecting consumers on a daily basis in Chile.

Likewise in Australia, the next to implement an FTA with the United States, we heard no stories of dramatic pharmaceutical price increases to consumers. The Director of Innovation and Industry Policy at Medicines Australia, an industry association of research based companies, reported that "no one can say with certainty that prices have gone up as a result of Australia's signing the FTA with the United States" (D. Monk and O. Khan Interviews). Unlike Jordan and Chile, however, in Australia there are both innovator and generic drug companies, which may be part of the reason why we heard of no one resounding economically important change due to the TRIPS-Plus provisions of the FTA.

But more likely the reason we were unable to confirm any price changes in pharmaceuticals is because the country uses a pharmaceutical drug pricing scheme, called the Pharmaceutical Benefits Scheme (PBS).[95] Through the PBS, the Australian Government subsidizes the cost of prescription medicine, aiming to increase affordability of prescription drugs for all Australian residents. The government

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[94] Office of the United States Trade Representative, 2011 Special 301 Report at 28, http://www.ustr.gov/webfm_send/2841 (Chile listing on the Priority Watch List).

[95] The PBS reimburses pharmacies for the costs of dispensing medicines prescribed in accordance with the PBS schedule, a comprehensive but closed formulary. The scheme is known to be very effective at keeping drug prices low and increasing access to pharmaceuticals for all Australian residents, but it has been criticized by pharmaceutical corporations in both the U.S. and Australia which argue that higher drug prices are necessary to fund continued research and development efforts. For additional information on the PBS, *see* http://www.pbs.gov.au/pbs/home (PBS homepage).

determines reference prices according to a comprehensive process that involves assessing proven therapeutic benefits and costs, among other factors.[96]

The PBS regime was largely unaffected by Australia's TRIPS-Plus commitments,[97] and PBS reform occurred independent of the FTA. The reform process, coupled with the reference pricing scheme, has made it difficult to isolate the pricing impact of TRIPS-Plus commitments, if any. For instance, we were told that if the FTA "has any impact at all, it may have been dwarfed by major PBS reform initiatives that have driven major cost savings to the PBS" (S. Fischer Interview).[98] This comment is consistent with other interviews, which suggest strongly that the price dislocations the Oxfam Report notes were experienced post-FTA in Jordan were not experienced in Australia (M. Swinn, P. Drahos, D. Monk, O. Khan, and S. Mitchell Interviews).[99]

Although Chile has a strong generic market (like Jordan) and Australia has both generic and innovator companies, both Chile and Australia are developed countries. It is possible that pharmaceutical pricing and access to medicine issues

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[96] In general, a company decides based on many market based and regulatory factors whether to supply a particular drug in Australia and to seek listing on the PBS formulary. If so, the Pharmaceutical Benefits Advisory Committee (PBAC) undertakes an extensive evaluation concerning the drug, including its anticipated benefits and costs. If the drug passes PBAC review, it is referred to the Pharmaceutical Benefits Pricing Authority (PBPA) for a price recommendation. The objective of the PBPA is to secure a reliable supply of pharmaceutical products at the most reasonable cost to Australian taxpayers and consumers while also maintaining a sustainable pharmaceutical industry in Australia. (S. Fischer Interview). *See also* Pharmaceutical Benefits Pricing Authority of Australia, *Policies, Procedures and Methods Used in the Recommendations for Pricing of Pharmaceutical Products*, (2009) (outlining the processes employed by the PBPA in recommending prices for pharmaceuticals), http://www.health.gov.au/internet/publications/publishing.nsf/Content/health-pbs-pbpa-pricing-policiesdoc.

[97] *See, e.g.,* Productivity Commission, *BRTA Report* at 168-169 (FTA changes do not undermine Australia's control over the PBS).

[98] We understand that there are many factors besides TRIPS-Plus commitments that affect drug prices in Australia. *See, e.g.*, Pricewaterhouse Coopers, *The Impacts of Pharmaceutical Benefits Scheme Reform*, written for the Department of Health and Ageing, Government of Australia (2010), http://www.health.gov.au/internet/main/publishing.nsf/Content/95DCCB478B78DBD9CA2576C500130B0A/$File/PwC%20The%20Impacts%20of%20PBS%20Reform.pdf (estimating that the impact of PBS reform over ten years from 2008 to 2018 will result in savings between $A3.6 billion and $A5.8 billion for the government and between $A0.6 billion and $A0.8 billion for patients); *see also* "National Health Amendment (Pharmaceutical Benefits Scheme) Bill 2010," Community Affairs Legislation Committee, Australian Senate (November 2010) at 26-27 (Additional Comments by Coalition Senators) at §§ 1.10 to 1.16 (addresses rising costs of the PBS).

[99] We have not, however, been able to confirm any changes in drug prices with official data and urge additional research on this topic.

are distinctly different for a developing country FTA partner than for a developed country FTA partner. We took this into consideration when we conducted our interviews in the Dominican Republic. What we heard surprised us.[100]

Like Jordan, the Dominican Republic is a developing country with a strong generic industry. Data exclusivity and patent linkage were the major patent pharmaceutical issues addressed during the DR-CAFTA negotiations (M. Troncoso Interview). And we heard concerns in both Jordan and the Dominican Republic about the technical expertise of government officials. In the Dominican Republic, for instance, government patent officials may lack specific technical chemical expertise to determine whether particular applications should be granted, which frustrates the ability of foreign firms to obtain patent protection (J. Weyer, M. Schildgen, D. Greene, and I. Frías Interviews).

But like in Chile and Australia, we did not hear stories of a large increase in pharmaceutical prices.[101] Rather we heard from several sources that the generic prices of pharmaceutical products are roughly the same as that of innovator products (A. García, A. Castro, and M. Fernández Interviews). As one lawyer who typically represents innovator companies noted, "[the Dominican Republic] doesn't have a true, true generic market" and "price never decreases with the generics because there is such a strong monopoly among the generics" (M. Fernández Interview). Likely the ability of a concerted generic coalition to exert monopoly or

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100 Our study examines only the Dominican Republic, although we recommend exploring in greater detail as more data become available the impact of the TRIPS-Plus provisions on pharmaceutical prices in other FTA partner countries, such as Peru.

101 *See* Mary Fernandez & Miguelina Figueroa, Capítulo 10: República Dominicana, in La Vigencia del Tratado OMC/ADPIC: Sus Contribuciones a la Investigación y la Salud (Feliz Rozanski & Daniel Zuccherino eds., 2011) (arguing no price effect on pharmaceuticals resulted from TRIPS-Plus commitments in the Dominican Republic). *But see* Georgetown Human Rights Institute, *Prescription for Failure: Health & Intellectual Property in the Dominican Republic*, 2 (2010) ("Strong intellectual property laws limit competition in the pharmaceutical market, and, in so doing, can keep the price of medicines considerably higher than they would otherwise be. ... [DR-CAFTA] resulted in increased prices for life-saving medicines, with devastating effects on public health."), http://scholarship.law.georgetown.edu/hri_papers/5 *referencing* Magdalena Rathe, *et al., Medicamentos Y Propiedad Intelectual: Evaluacion Del Impacto De Los Nuevos Estandares De Derechos De Propiedad Intelectual En El Precio De Los Medicamentos: El Caso De La Republica Dominicana*, at v, 62-63 (2009), http://www.ictsd.org/downloads/ip/Medicamentos_y_Propiedad%20Intelectual-re_co_columns.pdf (predicting price increases in the Dominican Republic due to TRIPS-Plus, specifically a 9%-15% increase above what pharmaceutical pricing would have been without an FTA by 2027, which could reach 17% by 2040).

oligopoly pricing power affects what impact the TRIPS-Plus provisions have on pharmaceutical prices in the country, if any.[102] This story appears similar to the neutralizing price impact of the PBS given its monopsony-like power in Australia and, if true, likely plays a role in explaining why there is the perception that post-FTA drug prices have neither increased nor decreased in the Dominican Republic.

But there are other factors distinct to the Dominican Republic that we found interesting. First, the Dominican Republic took steps during the negotiation and subsequent implementation of the FTA that Jordan did not do. These differences should mitigate any adverse impact of the data protection commitments on the domestic pharmaceutical industry in the Dominican Republic.

First, when implementing the FTA, criminal penalties for patent infringement were removed (J. Ángeles and M. Troncoso Interviews). Such penalties had been incorporated in domestic law since 1911 and were purportedly removed because the United States has no mirrored criminal provisions for patent infringement in its own domestic law. The removal was not required by TRIPS-Plus, although its effect is characterized as TRIPS-"Minus" by some legal practitioners, who advise that the removal of this enforcement authority hinders the ability of innovators to prevent infringement (J. Ángeles and M. Troncoso Interviews).[103] For example, criminal proceedings are faster and, we were told, in practice judges grant seizure orders to district attorneys, not civil litigants (J. Ángeles Interview). Similarly, we were advised that the amount of civil penalties assessed do not serve as an effective deterrent (M. Troncoso Interview).

Second, and perhaps more importantly, when amending Article 181 of its law on Industrial Property to implement TRIPS-Plus commitments concerning data exclusivity, the Dominican Republic made some discrete yet reportedly effective changes. The new amendment says that, "When a competent national authority, as a condition for authorization to market a pharmaceutical or agricultural chemical

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102 We have not explored this issue and recommend this as an area for further research.

103 We inquired whether the removal of criminal penalties could be viewed to as an innovation stimulus by permitting or even encouraging activity in areas previously deemed too risky. Those we interviewed dismissed this issue.

product, requires or allows for the submission of information concerning the safety or efficacy of the product, *and this information is undisclosed*, the competent national authority shall not allow third parties that do not have the consent of the person providing the information to market a product on the basis of …"[104] We were told by a lawyer for innovator companies that the addition of the five words "and this information is undisclosed" is intended to circumscribe the scope of what is considered protected test data in the Dominican Republic (M. Troncoso Interview).[105]

We were told also by lawyers for the generic industry in Chile that they had conversations with those negotiating the DR-CAFTA – reportedly those in the Dominican Republic and Costa Rica sought advice about what problems the Chilean generic industry encountered when negotiating their FTA (A. Agosin Interview).[106] In Chile, what constitutes protected test data and when sanitary authorization approval may be granted is a major battleground, and it is one that is expected to move next to biological products (G. Zaliasnik and G. Carey Interviews). If the generic industry in the Dominican Republic was able to skirt a portion of that fight, it would constitute a major win.

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104 Law No. 20-00 on Industrial Property as Amended (repealing and substituting Article 181 by Article 32 of Law 424-06 dated November 20, 2006) (emphasis added).

105 We understand that this issue has not been interpreted as yet by the domestic courts in the Dominican Republic, and we take no position on this purported change. Rather we note here only the illustrative story reported to us and the impact such change is expected to have in the Dominican Republic.

106 There were also formal training sessions in the Dominican Republic that addressed the U.S.-Chile FTA negotiations. For example, the United States Agency for International Development (USAID) funded a project in the Dominican Republic which was managed by Chemonics International, Inc. Chemonics contracted the Florida International University (FIU), Summit of the Americas Center (SOAC), to provide a workshop analyzing the impact of trade agreements. FIU/SOAC "tailored the workshop design and delivery to the needs expressed by the Dominican Foreign Relations Ministry (SEREX) and Chemonics," and, among other things, "[t]he morning sessions were aimed at informing and updating the group in some detail on current political and economic factors … [including] the current U.S.-Chile and U.S. Central America Free Trade negotiations"). Chemonics International, Inc., *Policies To Improve Competitiveness In The Dominican Republic Project*, Workshop on Impact Analysis of Trade Agreements for the Dominican Republic held December 1-8, 2002 (August 2003) (workshop held December 1-8, 2002) (at "Executive Summary" and "E5a. The Real Context – Review of Current Dominican Trade Negotiation Contexts- Focus on the FTAA").

Learning from the experiences of predecessors is helpful,[107] but each country must assess for itself the goals and intended results of any agreement. When doing so, the approach of Australia's Productivity Commission may be helpful, such as considering whether negotiations are desirable from a community perspective. Or countries may wish to favor particular industries because of domestic political pressures or national policy goals.

Although we take no position on whether the FTA with Jordan should be viewed as TRIPS-"Plus", -"Neutral", or –"Minus", the response from Jordan's generic pharmaceutical sector, a sector of key economic importance to Jordan's economy, was largely negative (D. Jaafari and H. Sboul interviews). We note that U.S. imports of pharmaceuticals and medicines from Jordan have increased significantly since the FTA was signed – from $US235,000 in 2000 to $US20.5 million in 2010. This represents an over 8500 percent increase and compares to a 200 percent increase during the same period in U.S. pharmaceutical and medicines imports from the world.[108]

Although the concerns raised in the Oxfam Report are serious, and appear directed at the impact of the FTA on the Jordanian market, the FTA did increase trade flow between the countries in the pharmaceutical sector. As U.S. firms had no manufacturing capacity in Jordan, it appears that the increase in imports relate to sales by Jordanian domestic companies or foreign firms in Jordan, if any. We have

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107 *See, e.g.*, Luis Alonso García, *Intellectual Property in the US-Peru Trade Promotion Agreement*, 2, 14 (2008) ("the experience of Peru may suggest some important lessons for any such future negotiations in other regions") and ("future negotiators should consider that there may be significant domestic interest groups in the United States who may share their goals and who can play a critical part, before the negotiation or signing of an agreement, in putting forward their case"), respectively (written by the former Head of the Intellectual Property and Competition Tribunal of the National Institute for the Defense of Competition and Intellectual Property (INDECOPI) in Peru); *see also* U.S. Gen. Acct. Office, *Intellectual Property: U.S. Trade Policy Guidance On WTO Declaration On Access To Medicines May Need Clarification*, at 58 (Sept. 2007) (recommending that "If Congress disagrees with USTR's [the U.S. Trade Representative's] interpretation and implementation of TPA [trade promotion assistance] guidance with regard to IP rights and public health, it should specify more clearly its intentions for U.S. trade policy and public health policy input related to balancing public health concerns and the negotiation of IP rights in trade agreements."), http://www.gao.gov/new.items/d071198.pdf.

108 NAIC – 32541: Pharmaceuticals and Medicines, U.S. Imports for Consumption (compiled from tariff and trade data from the U.S. Department of Commerce and the U.S. International Trade Commission).

no data, however, to determine whether such trade flow is associated with increased IPR protection in Jordan or because of tariff reductions or other factors associated with the FTA.

Our interviews and research do suggest, however, that it is too simplistic to claim that strong IPR rules alone will stimulate innovation. Countries negotiating FTAs should examine their own factual circumstances and assess, on a sector-by-sector and overall community-welfare basis, whether the proposed agreements will add to their specific commonweal.[109] If not, as some economists argue in Australia, then perhaps the IP sections of an FTA should be removed from the bilateral agreement and negotiated instead in a multilateral context. What should be avoided is adherence to formalistic notions that FTAs or particular provisions of them are always harmful or beneficial. Rather a country should investigate soberly and thoroughly whether the particular FTA provision being negotiated is, in the words of Australia's Productivity Commission, worth the "bargaining coin" that is expended.[110]

3. Engaging Key Stakeholders May Avoid Political Deadlock

A final theme raised in some of our interviews is that engaging key stakeholders is critical in order to avoid political deadlock on contentious issues, including effective implementation of FTA commitments – here stakeholders include business leaders as well as government officials. Some interviews mentioned the close connection between industry elites and political leaders, suggesting that strong domestic business interests are a useful barometer to predict domestic negotiation priorities.[111] We found these types of observations to be

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109 Although the Korea-U.S. FTA (KORUS) is beyond the scope of this paper, reportedly there are those in Korea who believe the IPR provisions of the KORUS will provide strong incentives to domestic Korean companies to enter the innovator drug market (S. Kim Interview). *See also* Sang-Hyun Song & Seong-Ki Kim, *Korea: The Impact of Multilateral Trade Negotiations on Intellectual Property Laws in Korea*, 13 UCLA Pac. Basin L.J. 118 (1994) (arguing that the 1987 legal changes in Korea to grant patent authorization for chemical compounds stimulated innovation and expansion into new business ventures for Korean companies).

110 Productivity Commission, *BRTA Report* at 260.

111 Some suggest that strong domestic business interests are also a barometer of predicting domestic enforcement priorities, too. This is beyond the scope of our study but is an area for future research. For example, recently the Indomina Group entered into a long term agreement with the

neither novel nor surprising. Indeed a government negotiating an FTA should argue zealously for its own interests, not those of its negotiating partner. Whether in such negotiations the interests of the whole community are represented effectively rather than the interests of a minority that control a disproportionately large share of the wealth is a matter ultimately for that FTA partner. Issues such as distributional effects and how economic effects of the FTA are realized across the community and different income groups are outside the scope of this report.[112]

Rather we explore one illustrative story that suggests earlier engagement by key stakeholders may help to alleviate misunderstanding and avoid unintended trade tensions. For example, the FTA with Chile required that both parties ratify or accede to certain international treaties by certain dates and, in some cases, undertake reasonable efforts to do so in a manner consistent with each party's domestic law.[113] One treaty mentioned in the FTA is the *International Convention for the Protection of New Varieties of Plants* (1991) (UPOV '91).[114]

The Convention was adopted in Paris in 1961 and was revised in 1972, 1978 and 1991. The objective of the Convention is the protection of new varieties of

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Pinewood Group of the United Kingdom to operate a new film and television studios. The studios will be built in the Dominican Republic. *See* http://www.pinewoodgroup.com/2011/02/pinewood-indomina-studios-dominican-republic/ (February 23, 2011) (press release of agreement). That announcement was followed quickly by a multi-year distribution deal with Vivendi Entertainment. *See Indomina, Vivendi Entertainment Ink Multi-Year Distribution Deal*, The Hollywood Reporter (March 16, 2011) (trade publication), http://www.hollywoodreporter.com/news/indomina-vivendi-entertainment-ink-multi-168513. The Indomina Group is an investment managed by the Vicini Group, which reportedly is quite influential in the Dominican Republic. An area for further research is whether film and related copyright protection improves in the Dominican Republic now that there is a domestic industry associated with that IPR right.

112 Income inequality varies across countries. A statistical measure often used to assess the degree of income inequality across the population of a country is the so-called Gini coefficient, with a value of 0 expressing total equality and a value of 1 maximal inequality. For instance, Gini coefficients range from 0.23 for Sweden and 0.70 for Namibia. The coefficient for the United States is 0.41 – some FTA partners examined here include Australia (0.35), Chile (0.55), Jordan (0.39), and Singapore (0.42). *See GINI Index by Country*, World Development Indicators Database (2011). Transparent and well-functioning governments and institutions can also play a role in whether the benefits and costs of the FTA are shared across the community.

113 The Chile Free Trade Agreement, U.S.-Chile, June 6, 2003, at Article 17.1, paras. 2-4, http://www.ustr.gov/sites/default/files/uploads/agreements/fta/chile/asset_upload_file912_4011.pdf.

114 *See* International Union for the Protection of New Varieties of Plants (UPOV), which is an intergovernmental organization with headquarters in Geneva (Switzerland), http://www.upov.int/index_en.html.

plants by an intellectual property right.[115] At the time that we conducted our interviews in June 2011, Chile was operating under UPOV '78, although it was supposed to have ratified or acceded to UPOV '91 by January 1, 2009 (J. Díaz Interview).

Agriculture is an important part of the economy in Chile, and there is a strong domestic lobby. Plus with weather similar to California, some U.S. entities use Chile as a second base for producing agricultural products, including fruit (J. Díaz Interview). Reportedly the delay concerning UPOV '91 was not due to a strong domestic opposition, however.[116] We heard consistently from those in Chile that the country enforces its commitments – the strong consensus of those we interviewed was that once signed, the FTA obligations would be implemented and honored. Plus we heard specifically that there are "more people in favor of the new law than against it" (J. Díaz Interview) and that there is "no doubt UPOV '91 is good for Chile" (S. Amenábar Interview).

So what caused the delay? Reportedly there was concern that adoption of the FTA created a constitutional conflict (S. Amenábar Interview). The FTA contained commitments to ratify or accede to various international treaties. But the Chilean constitution reserves the exclusive right to Congress to approve or reject such agreements.[117] So the concern, as we understand it, was that a requirement of the FTA could somehow trump the role of the Chilean Congress to independently review international treaties pursuant to their constitution.

To address this concern, prior to voting on the FTA, a special committee of the Chilean Senate was appointed in 2003 to review the FTA, which included respected and capable legislators. The President of the Committee reported that

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115 *Id.*

116 We understand that some groups like Chile Sin Transgénicos, which oppose the use of genetically modified organisms (GMOs), are against adoption of UPOV '91. *See, e.g.*, Iván Santandreu, a biologist and CST member at: http://www.portalfruticola.com/2011/05/23/grupos-a-favor-y-en-contra-alegan-desinformacion-tras-aprobacion-de-la-upov-91/ (arguing that IPR is protected adequately in Chile by UPOV '78). During our interviews, however, we did not hear that any delay in the adoption of UPOV '91 was due to intervention or lobbying but such groups.

117 CONSTITUCIÓN POLÍTICA DE LA REPÚBLICA DE CHILE (C.P.) art. 93.3 (reserving the right to Congress to determine which terms in a treaty are acceptable).

Congress retained the right to approve or reject international IPR treaties, provided that such treaties do conflict with the Chilean Constitution nor Chilean essential interests.[118] Based on this understanding, we were told, the Senate in Chile approved the FTA in October 2003 (S. Amenábar Interview). But reportedly this did not solve the constitutional issue regarding the IPR treaties.

Ultimately UPOV '91 was approved by the Chilean Congress but, because of these constitutional concerns, the issue was referred to the constitutional tribunal for consideration. Perhaps 50 organizations participated in public hearings on the issue, which raised the awareness of IPR. Reportedly the focus on UPOV '91 is something that would not have happened without the FTA and the disputed constitutional concern (M. Santa Cruz and A. Etcheverry Interviews). But at its core this constitutional issue was one that had to work its way through the domestic system in Chile. We understand that the constitutional court ruled recently by a vote of 6 to 4 to reject the claim of unconstitutionality – that is, it ruled that the FTA commitments are consistent with the constitution.[119]

It is unclear whether increased engagement would have brought a faster resolution to this particular issue in Chile. But the issue is similar to other examples that were shared and led us to conclude that open dialogue and discussion among the key stakeholders of each negotiating partner would be helpful. Such discussion should generate the political will necessary to support and implement an international agreement. Conversely, if such support is lacking, the country could decide to not sign and instead reject the agreement. In either situation, advanced consideration of these issues may to help avoid internal political deadlock. Likewise communicating to a negotiating partner that these issues exist may help to avoid unintended trade tensions stemming from any subsequent delay in implementing FTA commitments.

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118 *See* Diario de Sesiones del Senado, República de Chile, Publicación Oficial, Legislatura 350ª, Extraordinaria, Sesión 6ª (22 Octubre 2003) at B1 ("the Commission expressly recorded that approval of this project does not involve an impairment of its powers to approve or reject the said treaties, including among the commitments made by Chile.") (Statement of Senator Núñez) ("said treaties" references the *PCT* and *Madrid Protocol*) (English translation by S. Amenábar).

119 Tribunal Constitucional (T.C.) (Constitutional Court), 24 Junio 2011, *Alejandro Navarro Brain c. President of Chile*, Rol de la causa: 1988-11, constitucionalidad (Chile) (Bulletin Nº 6426-10).

7. Summary of Key Results and Recommendations

Our results should be interpreted with caution. As noted by other researchers, it is a complex task to quantify all of the implications of changing IPR protection (World Bank 2005, Maskus 2000, Maskus and Konan 1994). The economic effects of stronger IPR protection are vast and not all well understood. Stronger IPR laws and enforcement can produce offsetting results. A stronger IPR regime may reflect stronger institutions and political support from leading domestic firms as they move toward the technology frontier and seek to protect their R&D efforts. But stronger IPR protection can also result in greater limits on technology diffusion and competitive access to new technologies. The net economy-wide costs and benefits of IPR reform depend on a country's level of economic development and technical and institutional capacity. Ultimately the net effect of stronger IPR protection is an empirical question in principle but one that is inherently difficult to measure.

The empirical analysis of this study focuses on a relatively narrow aspect of IPR: the effects of improved IPR protection and enforcement on trade and investment with respect to the United States and its trading partners. We do not attempt to measure the broader, economy-wide effects of IPR reform in the United States or abroad, nor do we capture other important aspects of stronger IPR protection such as increased innovation incentives, effects on consumer prices and intermediate goods and services prices, and how those factors may affect firms, households, and economic welfare. Our results, therefore, are "on the surface" and should be interpreted as such.

Similarly, the case study is based on an even narrower aspect of IPR – the impact of the TRIPS-Plus provisions on the economic development of the U.S. trading partner. We acknowledge that the interviews are not easily replicated and relate subjective views of the participants. Plus the value of such interviews depends on the experience and knowledge of those interviewed. Although we take steps to verify and crosscheck the stories we heard, our data is "anecdotal" and should be interpreted as such.

Briefly, we find that stronger foreign IPR laws and enforcement tend to be associated with increased U.S. trade with those countries, and we offer some recommendations to assist those negotiating IPR provisions of future trade agreements – specifically:

a. Econometric Results

1. Stronger IPR protection abroad is generally associated with a higher level of U.S. goods imports from those countries, and higher royalty and licensing payments to those countries.

2. When countries strengthen their IPR laws and enforcement regimes, U.S. exports to, and royalty and licensing receipts from, those countries tend to increase.

3. At the aggregate level, we find no evidence to suggest that changes in IPR protection are related to cross-border trade in services. This may reflect the high degree of heterogeneity at the sub-sector level for services and the fact that many services are exchanged through the sales of foreign affiliates rather than across borders.

4. Concerning affiliate sales, IPR protection and enforcement has a positive and statistically significant effect on U.S. company sales through their foreign affiliates for goods and services.

5. The results at the sector level are consistent with the general outcomes. While there is a good deal of variation across industries, U.S. manufacturing goods imports and exports are particularly responsive to IPR protection. Sales through foreign affiliates of U.S. companies are also positively associated with IPR protection and enforcement for many sectors, including professional services and other services sectors.

b. Case Study Recommendations

1. *Treat trademark and patent negotiations differently*. In general, there is uniform support for increased trademark protections, although the support

for increased patent protection waivered most strongly on issues related to pharmaceuticals.

2. *Evaluate whether the FTA is meant to stimulate innovation*. Stronger IP rules are a critical component of a concerted strategy to attract innovative industries. But other factors must be present as well in order to stimulate innovation. Other factors important to stimulating innovation include tax incentives and rebates for IP industries, knowledgeable professionals, transparent governmental processes, experienced government personnel, and ready financing to fund riskier, innovative strategies. If you determine that the costs associated with implementing a set of IPR negotiated provisions in an FTA or regional agreement to achieve your desired goals outweigh the expected benefits to your country or a particularly sensitive industry, you may wish to reconsider whether to pursue a multilateral agreement or approach to negotiation.

3. *Learn from the experiences of others*. Learning from the experiences of preceding negotiations has helped some of the DR-CAFTA countries avoid many of the data exclusivity and access to medicine issues that are viewed to be hampering the generic industries and the community as a whole in Jordan and Chile. Countries should examine, on a sector-by-sector basis, whether the provisions of previous FTAs or other bi- or multilateral negotiations raise concerns for their own industries and, if so, what alternatives may be implemented to mitigate any anticipated dislocations.

4. *Determine whether technical assistance is needed*. Parties should assess what is required for implementation while the negotiations are underway. If technical assistance dollars, training, or other efforts are essential to implementation efforts, the parties should discuss what is required prior to signing and allocate resources appropriate to assist in this effort.

5. *Engage key stakeholders*. There should be open dialogue and discussion among the key stakeholders of each negotiating partner to generate the political will necessary to support and implement the Agreement.

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Australian Pharmaceutical Benefits Scheme (PBS): http://www.pbs.gov.au/pbs/home.

Intellectual Property Office of Singapore (IPOS): http://www.ipos.gov.sg/topNav/abo/.

Intellectual Property Academy Singapore (Part of the National University of Singapore, serves as a think tank for IP professionals for training and idea nurturing): http://www.ipacademy.com.sg/section/home.html.

International Enterprise Singapore (A government agency intended to help foster international business relationships as well to help expand and protect Singapore enterprises located in other countries) http://www.iesingapore.gov.sg.

GlaxoSmithKline Centre for Research in Cognitive and Neurodegenerative Disorders is located at the Biopolis: http://www.gskcareers.com.sg/.

Janus Corporate Solutions (private company highlighting recent tax amendments in Singapore): http://www.guidemesingapore.com/taxation/reports/singapore-tax-amendments.

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- Reportedly helpful in bringing Lucasfilm to Singapore: http://www.mda.gov.sg/AboutUs/Pages/AboutUs.aspx.
- Discussing Singapore effort to construct the Mediapolis, which is designed to be Singapore's first digital media hub*:* http://www.mda.gov.sg/AboutUs/Overview/Pages/MediapolisOne.aspx.

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Appendix 1

R&D Scientists, Engineers and Related Data

Naics	Description	All R&D (mln$) 2004	All R&D (mln$)	Domestic net sales (mln$)	R&D Scientists and engineers (thousands)	Domestic employment (thousands)	RD/Sales	SciEng/Sales (# of scieng per bln sales)	SciEng/Employment
			2005						
111	Crop production								
112	Animal production								
113	Forestry and logging								
114	Fishing, hunting and trapping								
211	Oil and gas extraction	D	D	33,665	D	97	.	.	.
212	Mining	D	D	33,665	D	97	.	.	.
311	Food manufacturing	2,254	2,716	374,342	11.7	995	0.0073	0.0313	0.0118
312	Beverage and tobacco product manufacturing	555	539	38,003	4.7	57	0.0142	0.1237	0.0825
313	Textile mills	570	816	51,639	5.8	204	0.0158	0.1123	0.0284
314	Textile product mills	570	816	51,639	5.8	204	0.0158	0.1123	0.0284
315	Apparel manufacturing	570	816	51,639	5.8	204	0.0158	0.1123	0.0284
316	Leather and allied product manufacturing	570	816	51,639	5.8	204	0.0158	0.1123	0.0284
321	Wood product manufacturing	D	D	27,002	D	108	.	.	.
322	Paper manufacturing	D	D	159,608	D	421	.	.	.
323	Printing and related support activities	D	D	159,608	D	421	.	.	.
324	Petroleum and coal products manufacturing	1,603	D	404,317	D	164	0.0039	.	.
325	Chemical manufacturing	D	42,995	624,344	118.6	1,074	0.0689	0.1900	0.1104
326	Plastics and rubber products manufacturing	D	1,760	90,176	14.1	377	0.0195	0.1564	0.0374
327	Nonmetallic mineral product manufacturing	787	894	50,344	6.5	198	0.0178	0.1291	0.0328
331	Primary metal manufacturing	727	631	110,960	4.9	262	0.0057	0.0442	0.0187
332	Fabricated metal product manufacturing	1,512	1,375	174,165	15.7	626	0.0079	0.0901	0.0251
333	Machinery manufacturing	6,579	8,531	230,941	62.6	832	0.0369	0.2711	0.0752
334	Computer and electronic product manufacturing	48,296	D	472,330	273.3	1,253	0.0954	0.5786	0.2181
335	Electrical equipment, appliance and Component manufacturing	2,664	2,424	101,398	19.4	321	0.0239	0.1913	0.0604
336	Transportation equipment manufacturing	D	D	957,051	134.1	1,972	0.0400	0.1401	0.0680
337	Furniture and related product manufacturing	408	400	48,534	2.9	235	0.0082	0.0598	0.0123
339	Miscellaneous manufacturing	4,388	5,143	83,103	21.8	338	0.0619	0.2623	0.0645
511	Publishing industries (except internet)	D	17,747	103,609	NA	381	0.1713	0.0011	0.2872
	Average						0.0340	0.1510	0.0677
	Source: NSF, National Center for Science and Engineering Statistics and authors' calculations.								
	Note: All data for 2005 except where noted. Data for Naics 511 for SciEng/Sales and SciEng/Employment is from 2003.								

Appendix 2
List of Persons Interviewed for the Study

Country	Person Interviewed	Date of Interview
Australia	Bourke, Brendan Commonwealth of Australia, IP Australia	21 July 2011
	Brodrick, Lloyd Commonwealth of Australia, Department of Foreign Affairs and Trade	21 July 2011
	Clark, Bryan Australian Chamber of Commerce and Industry	20 July 2011
	Cutbush, Greg ANU Enterprise	21 July 2011
	Daines, Nick Commonwealth of Australia, Department of Agriculture, Fisheries and Forestry	21 July 2011
	Dounis, Lisa Pricewaterhouse Coopers	22 July 2011
	Drahos, Peter The Australian National University	20 July 2011
	Duthie, Tanya Commonwealth of Australia, IP Australia	21 July 2011
	Fischer, Sarina Pricewaterhouse Coopers	9 August 2011
	Forrester, Nicole Australian Industry Group	22 July 2011
	Gretton, Paul Productivity Commission, Commonwealth of Australia	21 July 2011
	Harcourt, Tim Australian Trade Commission	22 July 2011
	Hogg, Danielle Commonwealth of Australia, Department of Agriculture, Fisheries and Forestry	21 July 2011
	Khan, Omar Ali Medicines Australia	21 July 2011
	Liberman, Adam University of New South Wales	22 July 2011
	McCredie, Andrew Australian Services Roundtable	21 July 2011
	Mina, George Commonwealth of Australia, Department of Foreign Affairs and Trade	21 July 2011

Country	Person Interviewed	Date of Interview
Australia (cont'd)	Mitchell, Simone DLA Piper Australia	22 July 2011
	Monk, Deborah Medicines Australia	21 July 2011
	Ostrowski, Caroline Australian Industry Group	22 July 2011
	Phillips, Fiona Banki Haddock Fiora	22 July 2011
	Power, John Commonwealth of Australia, Department of Agriculture, Fisheries and Forestry	21 July 2011
	Richards, Jarmal JDR Legal and State Chairman for AMCHAM Victoria	20 July 2011
	Ricketson, Sam The University of Melbourne Law School	20 July 2011
	Sandford, Iain Minter Ellison	20 July 2011
	Sheppard, Adam Productivity Commission, Commonwealth of Australia	21 July 2011
	Staver, Jeustelle Commonwealth of Australia, Department of Agriculture, Fisheries and Forestry	21 July 2011
	Swinn, Matthew Corrs Chambers Westgarth	19 July 2011
	Taylor, Joanna Commonwealth of Australia, Department of Foreign Affairs and Trade	21 July 2011
	Thorpe, Jeremy Pricewaterhouse Coopers	22 July 2011
	Webster, Beth The University of Melbourne	20 July 2011
	Young, Maria Commonwealth of Australia, Department of Foreign Affairs and Trade	21 July 2011
Chile	Agosin, Ariela Albagli Zaliasnik	22 June 2011
	Amenábar, Sergio Estudio Federico Villaseca	23 June 2011
	Bardon, Paulina Claro & Cia	22 June 2011
	Bresky, Loreto Alessandri & Compańia	22 June 2011

Country	Person Interviewed	Date of Interview
Chile (cont'd)	Carey, Guillermo HarneckerCarey	22 June 2011
	Castro, Soledad Castro & Sainz	22 June 2011
	Cooper, Rodrigo Cooper & Cia	21 June 2011
	Díaz, Juan Alberto DíazWiechers	21 June 2011
	Etcheverry, Aisen Instituto Nacional de Propiedad Industrial (INAPI)	23 June 2011
	Jeanneret, Noëlle Barrios Múnoz Jeanneret Y Cia	22 June 2011
	Krebs, Claus Claro & Cia	22 June 2011
	Lavados, Rodrigo Sargent & Krahn	22 June 2011
	Leon, Rodrigo Silva & Cia	22 June 2011
	Magliona, Claudio García Magliona y Cía	21 June 2011
	Marinovic, Antonio García Magliona y Cía	21 June 2011
	Montaner, Alfredo Sargent & Krahn	22 June 2011
	Olmedo, Luis Ignacio García Magliona y Cía	21 June 2011
	Pálacios, Sebastian HarneckerCarey	22 June 2011
	Pintó, Veronica U.S. Embassy Santiago, Chile	24 June 2011
	Porzio, Marino Porzio, Rios & Asociados	22 June 2011
	Reyes, Juan Francisco Sargent & Krahn	22 June 2011
	Sáinz , Isabel Castro & Sáinz	22 June 2011
	Cruz, Maximiliano Santa Instituto Nacional de Propiedad Industrial (INAPI)	23 June 2011
	Silva, Juan Pablo Silva & Cia	22 June 2011
	Smith, Jesse Albagli Zaliasnik	22 June 2011
	Velasco Alessandri, Rodrigo Alessandri & Compańia	22 June 2011

Country	Person Interviewed	Date of Interview
Chile (cont'd)	Zaliasnik, Gabriel Albagli Zaliasnik	22 June 2011
Dominican Republic	Acevedo Gómez, Lilly Headrick Rizik Álvarez & Fernández	14 June 2011
	Ángeles, Jaime R. Ángeles & Lugo Lovatón	17 June 2011
	Biaggi, Gustavo Biaggi & Messina Abogados	14 June 2011
	Cáceres, Ana Isabel Troncoso Y Cáceres	14 June 2011
	Campillo, Rosa Russin, Vecchi & Heredia Bonetti	13 June 2011
	Castillo, Tania M. Castillo & Castillo, Attorneys at Law	13 June 2011
	Castro, Ana Cristina ONAPI	14 June 2011
	Colón, Alexis Jesús Ministry of Foreign Affairs	14 June 2011
	Cruz Campillo, José Jiménez Cruz Peña	14 June 2011
	Fernández, Mary Headrick Rizik Álvarez & Fernández	20 June 2011
	Fiallo Paradas, Mónika Russin, Vecchi & Heredia Bonetti	13 June 2011
	Figueroa, Miguelina Ministry of Finance	14 June 2011
	Frías, Isolda Embassy of the United States of America	13 June 2011
	García, Ayaliuis International Affairs Dept., ONAPI	14 June 2011
	Greene, Duty D. USAID Dominican Republic	13 June 2011
	Guzmán, Deborah JJ Roca & Associados	14 June 2011
	Hodos, Sylvio Castillo & Castillo, Attorneys at Law	13 June 2011
	Messina, Ana Isabel Biaggi & Messina Abogados	14 June 2011
	Pablo de Roca, Sharin JJ Roca & Asociados	14 June 2011
	Pons Cardi, Wallis Biaggi & Messina Abogados	14 June 2011
	Recio, Brenda Jiménez Cruz Peña	14 June 2011

Country	Person Interviewed	Date of Interview
Dominican Republic (cont'd)	Roca, Jaime J. JJ Roca & Asociados	14 June 2011
	Schildgen, Megan A. Embassy of the United States of America	13 June 2011
	Troncoso, María del Pilar Troncoso Y Caceres	14 June 2011
	Weyer, Jonathan C. Embassy of the United States of America	13 June 2011
Guatemala	Castañeda, Carlos Antonio Intellectual Property Office, Patents Department	1 June 2011
	Vásquez, Francisco F. Ministerio de Economía	1 June 2011
Jordan	Abrahim, Rasim	28 April 2011
	Al Husban, Nehad Amman First Instance Court, The Hashemite Kingdom of Jordan	28 April 2011
	Al-Husseini, Ammar Ministry of Justice, The Hashemite Kingdom of Jordan	28 April 2011
	Al-khalaileh, Wael S. +Ginseng	28 April 2011
	Al-Masri, Soha International Business Legal Associates	28 April 2011
	Al-Smadi, Hazem Amman First Instance Court, The Hashemite Kingdom of Jordan	27 April 2011
	Al-Zou'bi, Ahmad Abu-Ghazaleh Intellectual Property	27 April 2011
	Ala' Eddein, Ghaida' Saba & Co. IP	27 June 2011
	Bukhari, Imad Jordan Centre for Trade & Investment	27 April 2011 28 April 2011
	Dmour, Mu'tasem The Arab Society for Intellectual Property	27 April 2011
	Hadidi, Mansour The Judicial Institute of Jordan, The Hashemite Kingdom of Jordan	28 April 2011
	Hunnicutt, Travis A. U.S. Department of State	27 April 2011
	Jaafari, Deema The Jordanian Pharmaceutical Manufacturing Co.	27 April 2011
	Kattan, Nihad Y. Marriott	28 April 2011

Country	Person Interviewed	Date of Interview
Jordan (cont'd)	Khleif, Adnan Moore Stephens International (Khleif & Samman)	28 April 2011
	Mustafa, Mustafa American Chamber of Commerce in Jordan (AMCHAM)	28 April 2011
	Sa'ad, Tony Union Marketing Group	28 April 2011
	Sboul, Hanan The Jordanian Association of Pharmaceutical Manufacturers	16 May 2011
Korea	Kim, Seong-Ki Lee International	27 July 2011
Peru	Alvarado, María del Carmen Rodrigo, Elías & Medrano, Abogados	3 March 2011
	Bacalla Izquierdo, Roxana Muñiz, Ramírez, Pérez-Taiman & Olaya, Abogados	2 March 2011
	Escobedo, Catherine Facilitando Comercio	1 March 2011
	Fernández Pepper, Marta Muñiz, Ramírez, Pérez-Taiman & Olaya, Abogados	2 March 2011
	Gamboa Vilela, Patricia Dirección de Signos Distintivos (Trademark Office) INDECOPI	3 March 2011
	García, Luis Alonso Estudio Echecopar, Abogados	2 March 2011
	Morris, Alex Rodrigo, Elías & Medrano, Abogados	3 March 2011
	Moscoso Villacorta, Martín Dirección de Derechos de Autor (Copyright Office) INDECOPI	3 March 2011
	Panduro, Zenia M. Technical Cooperation and International Affairs INDECOPI	3 March 2011
	Possin, Brandon C. U.S. Department of State	1 March 2011
	Quindimil, Manúel Camara de Comercio Americana del Peru (AMCHAM)	1 March 2011
	Tenny, Nathan U.S. Agency for International Development	1 March 2011
Singapore	Avery, Todd B. U.S. Embassy Singapore	14 March 2011
	Chua, Cyril ATMD Bird & Bird LLP	14 March 2011

Country	Person Interviewed	Date of Interview
Singapore (cont'd)	Foxton, Rachel Singapore International Arbitration Centre (SAIC)	14 March 2011
	Hines, Arturo U.S. Embassy Singapore	14 March 2011
	Hoon, Chia Swee U.S. Embassy Singapore	14 March 2011
	Kang, Alban ATMD Bird & Bird LLP	14 March 2011
	Lin, Shiumei United Parcel Service Singapore Pte. Ltd.	15 March 2011
	Lo, Sebastian Singapore Manufacturers' Federation	15 March 2011
	Naing, Minn Singapore International Arbitration Centre (SIAC)	14 March 2011
	Ng, Jasmine Singapore International Chamber of Commerce	15 March 2011
	Oo, Minn Naing Singapore International Arbitration Centre (SAIC)	14 March 2011
	Overmyer, Phillip Singapore International Chamber of Commerce	15 March 2011
	Theng, Kua Lay Singapore International Arbitration Centre (SAIC)	14 March 2011
	Toh, Dennis Singapore Manufacturers' Federation	15 March 2011
	Yew, Woon C. Rodyk & Davidson LLP	14 March 2011

Appendix 3[120]
Selected Sampling of IPR Cases in Jordan from 1995 to 2006

	CASE NAME	DATE	SUMMARY
1	N. V. Sumatra Company v. The Trademark Registrar	June 28, 1995	In class 34, Registrar rejected "Wilson" as a trademark because "Winston" existed as a trademark and the two names were confusingly similar. The High Court of Justice reversed claiming that the TM should be looked at as a whole and confusion would thus be unlikely.
2	Roussel Uclaf v. United Pharmaceutical Manufacturing Co., Ltd.	July 16, 1996	The Registrar ruled that "Ruxid" and "Rulid" were different enough to be valid trademarks. Because these were names of pharmaceuticals being handled by professionals in the field, confusion was not likely an issue. Decision was upheld by the High Court of Justice.
3	Doctors Association, Inc. v. Al Nasser and Mosely Company	July 28, 1997	The Registrar rejected a sandwich shop registering the name "Subway" since it was already internationally accepted as a TM. Important because this action was taken before Jordan joined the WTO or TRIPS.
4	PepsiCo. Inc. v. Sweets and Foods United Co.	July 2, 1997	The Registrar found that Sweets could use the name "Mountain Dew" since it hadn't been used in Jordan before even though Pepsi had the TM in several other parts of the world. The High Court of Justice reversed citing the Paris Convention and concerns of brand confusion.
5	United Artists Corporation v. Mohammed Amin Abdullah Al-Khader Company	July 22, 1999	Mohammed marketed a device with the image of the Pink Panther on it. The Registrar granted a cancellation action for United Artists since they created the character as well as hold TM and copyrights in many countries.
6	General Mills Inc. v. Jordan Snack Foods Industry Company	September 18, 2002	Registrar accepted a notice of opposition by General Mills against Jordan Snack for the registration of "Smart Bugles" trademark when "Bugles" was already trademarked in that class. The High Court of Justice reversed citing an insufficient belief that confusion would result.
7	Merck & Co. v. Arab Lands Chemicals Co., Ltd.	August 7, 2002	An unusual decision by the Registrar in the pharmaceutical category to not allow "Fomax" because "Fosamax" was already a TM of Merck. Usual legal procedures in the industry follow Roussel Uclaf v. United Pharmaceutical Manufacturing Co., Ltd.

[120] Source: Ghaida' Ala' Eddein.

	CASE NAME	DATE	SUMMARY
8	PepsiCo. Inc. v. Halawani Industrial Company	2001 and 2002	Jordanian Company Halawani registered TMs for "Lays," "Fritos," "Cheetoes," "Ruffles," "Tazo," "Quavers," "Doreettos," "Doritos," and "Frito-Lay." The Registrar cancelled all of these in favor of the established Pepsi brand in other countries.
9	King of Hamburgers v. Burger King	November 18, 2001 and December 8, 2003	"King of Hamburgers" sought cancellation of the TM "Burger King." Case was sent straight to the High Court of Justice which determined that Burger King is a long established TM both in Jordan and abroad. In another case, King of Hamburger sought to oppose the registration of new Burger King logos in Arabic and English. The Registrar and High Court of Justice found for Burger King on the same reasoning in the previous case.
10	PepsiCo. Inc. v. Halawani Industrial Company	July 15, 2003	Halawani registered "Chili Chips" as a TM. Pepsi opposed because the name is a descriptive term. The Registrar found for Pepsi because descriptive terms should not be granted a TM.
11	Hero v. Gulf Food Products Company	August 26, 2003	The Registrar found that "Hero" (a Swiss company in class 30) and "Hello" (a Jordanian Company in class 32) were different enough to not cause confusion.
12	Wrangler Apparel Corporation v. Gulf Est. for Cosmetics	August 5, 2004	American company "Wrangler" (class 25) won a TM case against Gulf Est. for Cosmetics for using "Wrangler" in class 3. Shows a shift after TRIPS provisions since historically this would not have been considered to cause confusion.
13	Philip Morris Production Inc. v. Frema Company for Trade and Investment	June 25, 2006	A big shift in TM protection policy. Previously, TM protection would need to be looked at as a whole and not its parts. In this case, Frema made a logo for its trade and investment company not much dissimilar from Marlboro cigarettes. These two areas are not likely to overlap, but the Registrar found that unfair competition and confusion would be likely.
14	Hero Conserven Lensburg v. National Biscuits Confectionery MFG., Ltd.	July 12, 2006	Conflict surrounding the famous TM "Hero" and the biscuit company registering "Albatal" (meaning "Hero" in Arabic.) The Registrar cites TRIPS when granting the cancellation involving translation of a famous TM.