BOLIVIA–EUROPEAN UNION TRADE AGREEMENT
Is It an Option for the Morales Administration?

Roberto Telleria
International Center for Agricultural Research in the Dry Areas (ICARDA)

Carlos Ludena
Inter-American Development Bank

Abstract: In 2008 Bolivia ceased to benefit from US trade preferences, which resulted in thousands of jobs lost thoroughout the country. Without the political will to initiate a trade agreement with the United States, the Morales administration has the opportunity to initiate a trade agreement with the European Union. This study evaluates macro- and microeconomic impacts emerging from a hypothetical trade agreement between Bolivia and the European Union. Our methodology consisted of using a computable general equilibrium model as price generator, and a micro-simulation approach as a bridge to transmit those price changes to the household level under two liberalization scenarios. We conclude that Bolivia could benefit if a trade agreement with the European Union (the second largest importer of goods in the world) is accomplished.

BOLIVIAN ECONOMY AND TRADE POLICY

In recent years the trend around the world has been engaging in the negotiation of multilateral, regional, and bilateral trade agreements. Some 546 regional trade agreements were officially communicated to the GATT or World Trade Organization (WTO) through January 2013 (WTO 2013). Bolivia has been part of this trend, signing several trade agreements, such as the Andean Community (1969), the Economic Complementation Agreement (Acuerdo de Complementación Económica, ACE No. 22) with Chile (1994), the Economic Complementation Agreement (ACE No. 31) with Mexico (1994), inclusion in the WTO (1995), inclusion in Mercosur as associated member (1996), and the Economic Complementation Agreement (ACE No. 47) with Cuba (1999). The latest was the 2006 Bolivarian Alternative for Latin America and the Caribbean (ALBA in Spanish), which was spearheaded by Venezuela.

In 2004, as part of the Andean Community (Comunidad Andina, or CAN), Bolivia tried to negotiate a trade agreement with the United States. However, negotiations failed as a result of agricultural-related disagreements within the bloc and political differences of Bolivia and Ecuador with the United States. Peru and Colombia individually signed trade agreements with the United States in 2005 and 2006, respectively. Bolivia did not participate because of the political crises that contributed to the election of Evo Morales as president in 2005. Since then, Bolivia has prioritized policies that support the domestic market, rejecting any

Latin American Research Review, Vol. 50, No. 3.

possibility of trade negotiations with the United States. Furthermore, in September 2008 the Morales administration expelled the US ambassador in La Paz; in December of the same year, the United States did not extend the Andean Trade Promotion and Drug Eradication Act (ATPDEA) to Bolivia, arguing that country failed in cooperating with antinarcotic efforts (US Trade Representative 2012). More recently, in May 2013, the Morales administration expelled the US Agency for International Development (USAID), making more unlikely any option for a trade agreement with the United States.

As a result of ATPDEA termination, thousands of jobs were lost in Bolivia (INESAD 2012; Confederación General de Trabajadores Fabriles de Bolivia 2012), with small and medium-size factories closing or migrating to Peru to maintain their benefits from the ATPDEA preferences. The loss of ATPDEA has been a source of deep concern for Bolivian exporters and political discomfort to the Morales administration, which initiated trade talks with the European Union, aiming for a bilateral trade agreement that could offer a viable alternative outlet for Bolivian products.

From 1989 to 2010 Bolivia has experienced a predominantly positive trade balance with the European Union (IBCE 2009; European Commission 2012). In 2010 the European Union accounted for 10 percent of total Bolivian exports or about US$150 million (INESAD 2012). Even though this share is not predominant, the main advantage comes from the fact that Bolivian exports to the European Union consist of labor-intensive goods such as vegetable oils, quinoa, processed coffee, nuts, wood furniture, leather products, zinc, tin, and borate, all of which generate direct employment for more than sixty Bolivian firms that exclusively export to the European Union (INE, IBCE, CANEB, and UDAPE 2006). The direct and indirect employment generated by exports to the European Union in 2010 was 62,400 jobs (INESAD 2012).

The main purpose of this research is to assess the economic effects on the Bolivian macro-economy and on household groups emerging from a prospective Bolivia-EU trade agreement. Colombia and Peru signed a trade agreement with the EU in November 2011, which was ratified in December 2012 by the European Parliament (2012b). Currently, there is no economic assessment of how the economic well-being of the domestic population and macroeconomic indicators may change as a result of a Bolivia-EU trade agreement. This study will try to fill that void and provide an assessment that can be used by policy makers in Bolivia to formulate trade policies in benefit to the country and to its main vulnerable groups.

METHODOLOGY: A MACRO-MICRO SIMULATION APPROACH

This section presents the approach that has been followed to estimate the changes in the Bolivian economy and household groups that could result from trade scenarios between Bolivia and the European Union. This approach consists of a combination of a macro-simulation model, computable general equilibrium (CGE), and a micro-simulation approach, Laspeyres price indices for income and expenditure, which are referred to as a "macro-micro simulation approach."

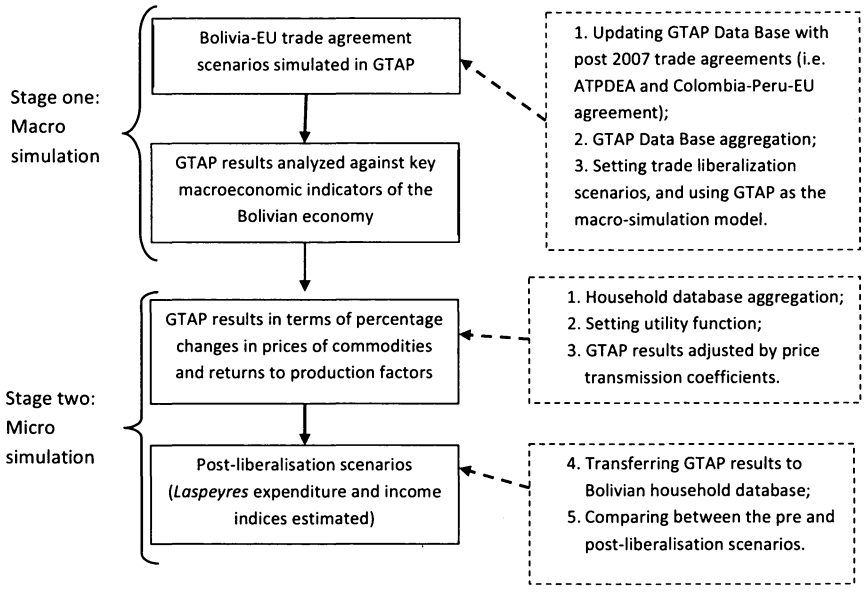

Figure 1 Macro-micro methodological approach

The macro-micro approach consists of using a CGE model to simulate trade policy shocks, the results of which are applied to a micro-simulation tool to estimate the effects of such policies at the household-group level. In general terms, the macro-micro simulation approach aims to answer the key question of how trade reforms affect the well-being of different household groups (Telleria et al. 2008). The Global Trade Analysis Project (GTAP) model (Hertel 1997), which has been widely discussed and described in many economic policy articles, has been chosen as the macro-simulation model, whereas the micro-simulation approach uses price indexes as defined by Ianchovichina, Nicita, and Soloaga (2002). In this research we use the GTAP Data Base, Version 8.0, which represents a snapshot of the world economy in the year 2007. The macro-micro approach has been applied in two stages (figure 1).

Stage 1: Macro-simulation

In this stage we undertook preparatory steps for the simulations: (1) updating the GTAP Data Base, (2) aggregating the database; and (3) setting trade simulation scenarios using GTAP as the macro-simulation model. In regard to the first step, we updated the 2007 GTAP Data Base to establish 2013 as the new baseline year, from which the Bolivia-EU trade agreement was then simulated. This updating consisted of incorporating into the database changes in tariffs that are relevant to Bolivia (e.g., expiration of ATPDEA in December 2008, the June 2012 trade agreement among Colombia, Peru, and the European Union). Then, trade flows and

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

other macro variables were modified in the database to make data ready for policy simulation.

To obtain solvable simulations, we grouped the large GTAP Data Base (129 regions or countries and 57 sectors or commodity groups) into 8 regions and 35 sectors (table 1). For region, our aggregation criterion consisted of choosing countries that had been important trade partners for Bolivia, including the United States, the European Union, and South American countries, which together accounted

Table 1 Sectoral and regional aggregation based on GTAP Data Base, Version 8.0

No.	Region	Description
1	BOL	Bolivia
2	USA	United States of America
3	EU27	European Union 27: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom
4	ARG	Argentina
5	BRA	Brazil
6	COLPER	Colombia and Peru
7	ROLAC	Rest of LAC: Mexico, Chile, Ecuador, Paraguay, Venezuela, Uruguay, Guyana, Suriname, Central America, Caribbean
8	ROW	Rest of the World: Asia, Africa, Oceania

No.	Sector	Sub-sector	Description
1		pdr	Paddy rice
2		wht	Wheat
3		gro	Other cereals
4		v_f	Fruits, tubers, vegetables, nuts
5	Agriculture	osd	Soybeans, oil palm, peanuts
6		c_b	Sugar cane
7		pfb	Cotton, jute, etc.
8		ocr	Cacao, coffee, tobacco
9		Cattle	Bovine cattle, sheep and goats, horses
10		frs_fsh	Forestry and fishing
11	Mineral and natural resources	oil_coa	Oil and coal extraction
12		gas	Gas extraction
13		omn	Extraction of silver, gold, zinc
14		cmt_omt	Bovine meat products
15		vol	Vegetable oils and fats
16		mil	Processed milk, cheese, butter
17		pcr	Processed rice
18	Light	sgr	Sugar, molasses

(continued)

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

Table 1 (continued)

No.	Sector	Sub-sector	Description
19	manufacturing	ofd	Bakery products, processed fruits and vegetables, confectionary products
20		b_t	Beverage and tobacco products
21		tex	Textiles
22		wap	Clothing
23		lea	Leather products
24		lum	Wood products
25		ppp	Paper products
26		p_c	Gasoline, diesel
27		crp	Chemical products
28		nmm	Glass, cement, etc.
29	Heavy	i_s_nfm	Ferrous and non-ferrous metals
30	manufacturing	fmp	Metal products
31		mvh_otn	Motor vehicles and transport
32		ele	Electronic equipment
33		ome	Machinery and equipment
34		omf	Other manufacturing
35	Services	Services	Utilities, construction, trade, transport, communications, financial and business services, public admin.

Source: Authors' classification based on GTAP 8.0 Data Base.

for between 77 percent and 97 percent of total Bolivian exports between 1994 and 2006 (INE et al., 2006). For sectors, our criterion consisted of choosing commodities groups relevant for trade flows (importing and exporting sectors), employment generation, and food security. For presentation purposes, the 35 sectors were further aggregated into 5 commodity sectors: agriculture, mining and natural resources, light manufacturing, heavy manufacturing, and services.

We set trade simulation scenarios between Bolivia and the EU as follows:

Scenario 1—Bolivia-EU total liberalization: All Bolivian tradable products enter duty-free into the European Union, and vice versa.
Scenario 2—Bolivia-EU excluding sensitive products: All Bolivian tradable products enter duty-free into the European Union, and vice versa, except tariff lines belonging to the so-called sensitive commodity groups (i.e., commodities that are important for job creation or food security are protected by import tariffs).

For the European Union, sugar, bakery products, processed fruits and vegetables, confectionary products, and beverages and tobacco were sensitive commodity groups (European Parliament 2012b), whereas for Bolivia we selected paddy rice, bovine and meat products, dairy products, textiles, and leather products. For Bolivia we chose these commodities by taking into account that safeguarding their production is important for employment and livelihood generation, as well as for future opportunities in trade expansion.

Thus, under the full liberalization scenario, we simulated that the European Union removed tariffs for 29 percent of Bolivian commodities (the remaining 71 percent of commodities were already duty-free, per the European Union's Generalized Scheme of Preferences, or GSP), and Bolivia removed tariffs for 71 percent of EU commodities (the remaining 29 percent were duty-free, per most-favored-nation treatment). Under the second scenario, liberalization excluding sensitive commodities, we simulated that Bolivia decided (under the sensitive-commodity provision) to keep import tariffs to 14.3 percent of its commodities, and the European Union decided to keep import tariffs to 9 percent of the commodities.

Stage 2: Micro-simulation and Estimation Procedure

The second stage to estimate the effects of the Bolivia-EU trade agreement at the household level involved the following steps: (1) we aggregated the household survey into different household categories; (2) we set the household utility function; (3) we corrected price-change results (obtained from GTAP) with price transmission coefficients; (4) we transferred GTAP results to the Bolivian household database; and (5) we compared the pre- and post-liberalization scenarios to shed light on the possible effects of the agreement on different household groups in Bolivia.

The household data come from the Bolivian National Institute of Statistics (BNIS 2002), which surveyed 5,746 households in Bolivia. The survey is the latest available from the BNIS that contains information on household income (salaries and wages) and expenditures on food. Given the large size of the sample and for presentation purposes, we grouped household data in various ways: geographical location, education status, and economic condition and activity (table 2).

A geographical dimension in the classification was critical given the disparity in income and incidence of poverty in rural and urban areas and across regions in Bolivia. For education, households were classified according to a literate or illiterate status: those household heads who were able to read and write were literate, and those who were not were illiterate. Only household heads were considered, as the survey does not provide information on education for the rest of household members. Finally, households were grouped according to the economic activity that contributed the most to the household's income.

For the household utility function, we used the GTAP's private utility approach to measure changes in economic well-being (Ianchovichina, Nicita, and Soloaga, 2002). The term *private utility* refers to an individual's difference between the Laspeyres index for income and the Laspeyres index for expenditure as follows,

$$up(r) = \frac{yp(r) - \sum_{i \in TRAD} [CONSHR(i,r) \times pp(i,r)]}{\sum_{i \in TRAD} [CONSHR(i,r) \times INCPAR(i,r)]} \quad (1)$$

where up(r) is the percentage change in private utility in region r; yp(r) is the percentage change in private household income in region r; CONSHR(i,r) is the share of i in total consumption in region r; pp(i,r) is the percentage change

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

Table 2 Bolivian household information by location, education, poverty condition, and economic activity, 2002

Household distribution by geographic location

Department	Rural	Urban	Total	Share (%)
1. La Paz	430	789	1,219	21.2
2. Oruro	239	297	536	9.3
3. Potosí	350	282	632	11.0
4. Cochabamba	373	538	911	15.9
5. Chuquisaca	262	215	477	8.3
6. Tarija	199	277	476	8.3
7. Beni	147	265	412	7.2
8. Pando	95	48	143	2.5
9. Santa Cruz	320	620	940	16.4
Total	2,415	3,331	5,746	100

Household distribution by education

Education group	No. of households	Share (%)
1. Literate	4,977	86.6
2. Illiterate	769	13.4
Total	5,746	100

Household distribution by economic condition

Condition	No. of households	Share (%)
1. Poor	3,421	59.5
2. Non-poor	2,325	40.5
Total	5,746	100

Household distribution by economic activity

Economic activity	No. of households	Share (%)
1. Agriculture	2,086	36.3
2. Capital	1,303	22.7
3. Diversified	623	10.8
4. Natural resource	764	13.3
5. Nonagriculture	614	10.7
6. No information	356	6.2
Total	5,746	100

Source: Data from the Bolivian National Institute of Statistics (2002).
Note: Households were also classified into sextiles to analyze the impact of the tariff reforms from the poorest to the wealthiest household group.

in the demand price of commodity i in region r; and INCPAR(i,r) is the income expansion parameter (elasticity) of commodity i in region r. If preferences are homothetic (i.e., a change in budget allows for proportional changes in the demand for commodities), the INCPAR(i,r) equals 1 for all commodities, and Equation 1 collapses into the difference between a Laspeyres price index for income and one for expenditure (Ianchovichina, Nicita, and Soloaga, 2002).

$$up(r) = yp(r) - \sum_{i \in TRAD} [CONSHR(i,r) \times pp(i,r) \quad (2)$$

Equation 2 is the difference between the change in household income and consumption share times the percentage change in prices summed over all commodities. Thus, up(r) measures the change in economic well-being by computing the difference between changes in income and expenditure. A Laspeyres price index provides a fixed-weight approximation in the economic private utility emerging from a change in income sources and a change in expenditure. A limitation of this approach is that the Laspeyres index overstates the increase in expenditure, as no account for substitution in consumption when prices increase (zero elasticity of substitution) is considered. Thus, as pointed out by Ianchovichina, Nicita, and Soloaga (2002), the Laspeyres index provides an upper-bound measurement of change in expenditure, setting out the worst possible scenario.

Price transmission analysis was introduced to acknowledge that international commodity prices that change as result of trade reforms may not affect domestic prices uniformly (Hertel and Winters 2005). Nicita (2005) found that in Mexico, price transmission was 66 percent for manufactured products but only 25 percent for agricultural products, which shows that households in urban areas are more sensitive to price fluctuations than are households in rural areas.

We tested price transmission by analyzing market integration. That is, two or more markets are integrated when changes in prices in one market are transmitted to one or more markets in equal or different degrees. To measure integration, we determined causality between prices in main markets (from large and well-connected cities) and prices in secondary markets (from smaller and weakly connected cities) using a vector error correction model (VECM). The VECM used price data that we collected from the Fundación Valles (2009), a research institution in Cochabamba, Bolivia. Fundación Valles provided us with daily price data for thirty-three commodities, with data collected from various markets of La Paz, Santa Cruz, Cochabamba, Chuquisaca, Tarija, and Oruro departments from 2002 to 2009. We averaged these prices into monthly prices (time series) for each commodity. Because Cochabamba, La Paz, and Santa Cruz are more populous and better connected to international markets in Bolivia (where the majority of agricultural and industrial exports come from), we considered these three the main domestic markets. Beni, Chuquisaca, Oruro, Pando, Potosí, and Tarija, with smaller populations and fewer exporting companies, were considered secondary markets, for which we estimated price transmission coefficients (table 5).

The GTAP results (emerging from the trade agreement with the European Union) related to percentage changes in returns to household income (returns from skilled labor, unskilled labor, capital, land and natural resources) and com-

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

modity prices (corrected by price transmission coefficients) were transferred to the Bolivian household database. This transfer consisted of multiplying the percentage changes by the prices and values of income contained in the original household database. This multiplication was undertaken for each of the 5,746 families included in the household database.

Having estimated the new commodity prices and returns to household income that would result from the Bolivia-EU trade agreement, we estimated changes in household spending and revenues using the private utility function, as defined previously. Then, by comparing both the pre- and the post-liberalization scenarios using the difference in Laspeyres index for income and expenditure, we estimated the impacts of trade reforms on the economic well-being of households.

While this macro-micro simulation approach provides a direct way to estimate the impact of a trade agreement on household well-being, we acknowledge that economic well-being measured this way gives a narrower picture of well-being. A more comprehensive view of well-being would include that resulting from better health, education, housing, and/or environment, which are important factors but beyond the scope of the methodology and analysis used here. While nontariff barriers (NTB) are important in international trade, the methodology we used contains neither the tools nor the data to incorporate NTB into the analysis. Thus, trade implications emerging from NTB require further research.

MACRO-SIMULATION RESULTS

A Free Trade Agreement between Bolivia and the EU: Impacts on Bolivia

As expected, the trade agreement between Bolivia with the EU would not have significant impacts for the Bolivian economy (table 3). Under the full liberalization scenario, minor increases in Bolivian global gross domestic product (GDP) (0.03 percent) and average household income (0.14 percent) would take place. Exports (0.61 percent) and imports (0.49 percent) would modestly improve for Bolivia, whereas terms of trade would deteriorate slightly (–0.09 percent). When we exclude sensitive products from trade liberalization, the estimations remain much the same. Both domestic GDP and household income would slightly increase (0.03 and 0.13 percent, respectively), exports and imports would modestly

Table 3 Impacts on Bolivia of a FTA with the EU, with and without sensitive commodities (percentage changes)

Economic variable	FTA Bol-EU	FTA Bol-EU, no sensitives
GDP	0.03	0.03
Income	0.14	0.13
Exports	0.61	0.55
Imports	0.49	0.42
Terms of trade	−0.09	−0.10

Source: Based on results from GTAP 8.0 simulations.

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

increase (0.55 and 0.42 percent, respectively), and terms of trade would slightly decrease (–0.10 percent). Overall, the results suggest that Bolivia would experience slightly favorable outcomes under both scenarios: GDP, household income, exports and imports show some improvements, while terms of trade display minor but negative results.

Changes in Exports, Imports, and Factors of Production

A trade agreement between Bolivia and the European Union, for both full liberalization and liberalization excluding sensitive commodities, would prompt increased exports in the agriculture, mining and natural resources, light and heavy manufacturing, and services sectors (table 4). The model projected increases to be more substantial for some commodities in agriculture and light manufacturing. In agriculture, rice and other cereals (corn, quinoa, and barley) would experience important increases in the production of exportable commodities, whereas in light manufacturing other processed foods (confectionary products, processed fruits and vegetables, bakery products), sugar, leather products, textiles, apparel, and paper products (in that order) would increase. These increments are due to a substitution effect in the model on the prices of Bolivian products in the EU market. That is, because the EU eliminated import tariffs on Bolivian products, consumer prices were reduced in the EU market.

GTAP projected a substantial increase in rice exports (about 100 percent in both scenarios). The methodological explanation for this result rests on two points. First, when the 58 percent ad valorem tariff rate (as set in the database) that the European Union charges to Bolivian rice was removed, the model simulated increased EU demand for Bolivian rice (given high elasticity response), which provoked higher prices and attracted internal transfer of production factors (e.g., labor, capital). In turn, production and specialization increased, which improved rice production. Second, the initial rice production level as stated in the database was low, and therefore any production increase (as result of the simulation) turned out to be a high-percentage change in relation to the low initial production level. This explanation is based on the fact that rice is an increasingly popular crop in Bolivia, and it has been the focus of governments since the 1970s. By the 1980s, the country was self-sufficient in rice production. Because the quality of Bolivia's rice has not met international standards, export markets were limited. Throughout the 1990s research institutions (e.g., Santa Cruz Tropical Center for Agricultural Research, or CIAT), released first-quality varieties (e.g., the Mac-18, a disease-tolerant seed variety with high content of iron and zinc) that were high yielding and mostly cultivated in fertile lands of Santa Cruz and Beni departments. These two departments harvested 180,000 hectares of rice and produced more than 470,000 tons in 2011 (Food and Agriculture Organization Corporate Statistical Database 2013). Bolivia has enormous potential to export high-quality rice, which the GTAP model captures through production elasticity (high supply response to increased prices). This potential is geographically located in the Santa Cruz department, where fertile lands, suitable rainfall, mechanized agriculture, and acceptable infrastructure can facilitate rice production and exports.

The model also projected important increases in exports of other cereals (corn, quinoa, and barley). Corn covers more hectares than any other crop in Bolivia. By 2011 approximately 350,000 hectares were cultivated providing more than one million tons of white and yellow corn (FAO 2013), the traditional corn varieties of Bolivia. Corn is produced all over the country, with about 60 percent grown by small farmers in the valleys and the remaining 40 percent cultivated by medium-size to large farmers in Santa Cruz. In the case of quinoa, Bolivia is the largest producer of quinoa in the world. Quinoa has been cultivated in the country for centuries. The international demand for quinoa has grown geometrically in recent years. According to the Food and Agriculture Organization (FAO 2013), Bolivia produced 27 million tons of quinoa in 2008, which increased to 38 million tons in 2011 and to 50 million tons by 2012, of which 26 million tons were exported. The increased demand for quinoa comes from the fact that quinoa is a cereal rich in protein, minerals, and vitamins and has become increasingly popular in the United States, Europe, and Asia. Even the FAO has been promoting quinoa as a "superfood" that can substantially help reduce the world's food insecurity (the United Nations even declared 2013 the international year of quinoa). In 2006 the price of quinoa averaged US$1,000 per ton, which more than tripled by 2011, averaging US$3,115 per ton (Collyns 2013). Colored varieties such as Red Royal quinoa and Black Royal quinoa sell at US$4,500 and US$8,000 per ton, respectively (Collyns 2013). The Bolivian government aims to increase the cultivation of quinoa to one million hectares to produce one million tons, which would generate US$1 billion for the country (BBC 2013). In a country that has annually been exporting about $7 billion in recent years, quinoa would become the second most important exported commodity after natural gas. Thus, the potential for increased exports of quinoa is huge, and the Bolivian government is boosting production and productivity, recognizing its particular comparative advantage in the production of this cereal (quinoa grows only at more than two thousand meters above sea level, which corresponds to the vast high plateaus of Bolivia).

The model projected modest growth in both scenarios for exports of mining and natural resources and heavy manufacturing. The underlying reason is that Bolivian commodities did not become much cheaper than the same commodities exported to the European Union from other countries. That is, because the European Union already imposes low import tariffs on Bolivian mining and natural resources and heavy manufacturing products, when tariff reductions were simulated, Bolivian prices were not significantly reduced. In addition, Bolivia already benefits from the GSP, which grants duty-free status to Bolivian commodities in mining and natural resources, as well as the heavy manufacturing sectors.

When we accounted for sensitive products, results similar to those for the full liberalization scenario were estimated, except in the case of sensitive commodities, whose import tariffs were left alone. Thus, Bolivian exports of sugar or other processed foods (confectionary products, processed fruits and vegetables, bakery products) did not increase much when excluded from tariff reductions. Increases in exports of agricultural commodities (e.g., fruits, tubers, vegetables, soybeans, oil palm, peanuts, sugarcane, cotton, jute, cacao, coffee, tobacco, cattle, raw milk,

wool production, forestry, fishing) were small; when we simulated the Bolivia-EU trade agreement, we also simulated an earlier trade agreement between the European Union with Colombia and Peru. In these simulations, the model took into account the diversion effect created by lower import tariffs on similar commodities exported from Colombia and Peru, which resulted in small increases in exports of Bolivian commodities.

In terms of imports, the first point of impact of reduced Bolivian import tariffs was increased demand for imports from the European Union into Bolivia at the expense of imports from other markets (table 4). In both scenarios, the model projected that the volume of Bolivian imports of agricultural commodities (specifically rice, cacao, coffee, tobacco, cattle, raw milk, and wool) would increase by 3 percent on average. As a landlocked country, Bolivia would also increase fish imports by 2.1 percent. Imports from the light manufacturing sector from the European Union would also increase, specifically in the case of bovine meat products, vegetable oils and fats, beverage and tobacco products, and clothing (apparel).

The model projected small increases of Bolivian imports of heavy manufacturing, except for electronic equipment and motor vehicles. In general, three factors explain the limited growth of Bolivian imports from the European Union. First, some of the commodity groups were already tax-free in the pre-reform scenario (71 percent); thus, prices of EU commodities in the Bolivian market changed only moderately (as shown in table 5). Second, the Bolivian price of aggregate imported commodities did not change significantly, as the share of EU commodities on the Bolivian market is small (about 10 percent, as mentioned already). Third, the Bolivian market is already dominated by light and heavy Chinese manufactures that exert a low-price competition policy, leaving little room for other imports to compete on the same basis. In general, import growth under the first scenario is greater than in the second scenario. This is explained by the different settings of the scenarios. That is, when comparing the scenarios 1 (Bolivia–European Union total liberalization) and 2 (Bolivia–European Union excluding sensitive products), the second scenario imposes quantitative restrictions (i.e., higher tariffs) that are not present in the first. Thus, the possibility of an increase in the exchange of commodities between the EU and Bolivia is curtailed.

Changes in Production

An analysis of the domestic production of commodity sectors helps in understanding the general equilibrium of demand response simulated in GTAP. Changes in aggregate production refer to increases or decreases in total production in Bolivia as a result of Bolivia-EU trade reforms (with and without sensitives). Table 4 shows that as some commodity group exports increase under full liberalization, so does production. In both scenarios the model projected an increase in the production of agricultural, mining, and natural resources, and light manufacturing commodities, and reduced production of heavy manufacturing commodities, with no changes in production of services (e.g., household utilities, construction, transport, communications, financial and business services, public administration).

Table 4 Bolivian exports, imports, production and factor use (percentage change)

Commodity group	*Bolivian exports to the EU*		*Bolivian imports from the EU*		*Production in Bolivian sectors*	
	FTA Bol-EU	FTA Bol-EU, no sensitives	FTA Bol-EU	FTA Bol-EU, no sensitives	FTA Bol-EU	FTA Bol-EU, no sensitives
Agriculture	11.4	11.7	1.3	0.8	0.2	0.1
Mining and natural resources	0.4	0.4	−0.1	−0.2	0.1	0.1
Light manufacturing	2.9	1.3	1.2	0.8	0.2	0.1
Heavy manufacturing	1.1	1.2	1.1	1.0	−1.2	−1.2
Services	0.6	0.7	−0.3	−0.4	0.0	0.0

Source: Based on results from GTAP 8.0 simulations.

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

Within agriculture, the production of cereals (maize, rice, wheat, quinoa, and barley) would increase in both scenarios (by 0.14 and 0.11 percent per year, respectively). To increase production, the model projected that the cereal sector would increase demand for land, unskilled labor, and capital by 14 percent, 22 percent, and 13 percent, respectively. The driving force behind reallocation of production factors toward the cereal sector was increased international demand for cereals, whose import tariffs were reduced. Production in the heavy manufacturing sector would decrease (–1.2 percent) in both scenarios. This reduction would mostly occur in the production of chemical, paper, and beverage and tobacco products (ranging from –1.4 percent to –3 percent). In general, total production increased slightly more in the scenario that simulates full liberalization than in the one that excludes sensitive commodities.

MICRO-SIMULATION RESULTS

This section presents the results from the macro-micro simulation approach that combines macro results, which emerge from the trade scenarios, across the various household classifications. The analysis has taken into account different degrees of price transmission across the country, computing changes in private utility through the difference between the Laspeyres index for income and that for expenditure, thus producing an estimate of the post-reform private utility at pre-reform quantities.

Changes in Prices

Prices of EU products imported into Bolivia would decrease as a result of the trade agreement (table 5). This result was expected, given that the two scenarios hypothesize reduced import protection tariffs, which pushes down domestic prices and promotes wider competition from abroad. However, the model projected that such reductions in tariff protection would produce moderate, not huge, reductions in domestic prices because of the relatively low rates of protection in Bolivia and the relatively low share of EU trade imports from Bolivia (about 10 percent).

Table 5 also shows our estimations of price transmission (for Bolivia no previous estimations were found). We set La Paz, Santa Cruz, and Cochabamba, main economic and better export-endowed departments, as reference points to estimate price transmission to the smaller capital cities in Tarija, Beni, and Pando (group A) and Chuquisaca, Oruro, and Potosí (group B). For the agriculture sector, we estimated that price transmission in group A is between 61 percent and 97 percent, and that of group B varies from 68 percent to 100 percent. In the case of light manufacturing, price transmission was estimated to be between 75 percent and 100 percent for group A, while that of group B was estimated to fluctuate between 80 percent and 100 percent. Thus, our findings suggest that price transmission for both agricultural and light manufacturing goods is slightly higher in group B than in group A. This result is not surprising given that infrastructure

Table 5 Changes in commodity prices, factors of production, and price transmission coefficients (percentage change)

Commodity group	Commodity	Change in prices		Price transmission coefficients	
		FTA Bol-EU	FTA Bol-EU, no sensitives	Tarija, Beni, Pando (Group A)	Chuquisaca, Oruro, Potosí (Group B)
Agriculture	1. Rice	−0.07	−0.12	0.97	0.97
	2. Wheat	−0.11	−0.15	1.00	0.93
	3. Cereals	−0.01	−0.06	0.97	0.95
	4. Vegetables and fruits	−0.05	−0.11	0.92	0.82
	5. Oil seed	−0.03	−0.07	0.68	0.96
	6. Sugarcane	−0.07	−0.17	0.93	0.96
	7. Plant-based fibers	−0.12	−0.14	0.99	1.00
	8. Other crops	−0.07	−0.12	1.00	0.89
	9. Cattle	−0.08	−0.13	1.00	0.86
	10. Forestry and fishing	−0.07	−0.10	0.61	0.68
Mining and natural resources	11. Oil & coal	−0.09	−0.10	1.00*	1.00*
	12. Gas	−0.02	−0.02	1.00*	1.00*
	13. Mineral extraction	−0.08	−0.09	1.00*	1.00*
Light manufacturing	14. Meat	−0.11	−0.15	1.00	0.84
	15. Vegetable oils and fats	−0.1	−0.13	0.75	0.80
	16. Dairy products	−0.15	−0.18	0.94	1.00
	17. Processed rice	−0.1	−0.14	0.97	0.97
	18. Sugar	−0.16	−0.19	0.93	0.96
	19. Other food	−0.14	−0.17	1.00	1.00
	20. Beverages and tobacco	−0.2	−0.23	1.00	1.00
	21. Textiles	−0.22	−0.21	1.00*	1.00*
	22. Clothing	−0.22	−0.21	1.00*	1.00*
	23. Leather products	−0.23	−0.21	1.00*	1.00*
	24. Wood products	−0.16	−0.19	1.00*	1.00*
	25. Paper products	−0.28	−0.3	1.00*	1.00*
Heavy manufacturing	26. Petroleum products	−0.09	−0.1	1.00*	1.00*
	27. Chemical products	−0.21	−0.23	1.00*	1.00*
	28. Mineral products	−0.16	−0.18	1.00*	1.00*
	29. Ferrous and nonferrous metals	−0.12	−0.14	1.00*	1.00*
	30. Metal products	−0.16	−0.18	1.00*	1.00*
	31. Motor vehicles	−0.18	−0.2	1.00*	1.00*
	32. Electronic equipment	−0.17	−0.19	1.00*	1.00*
	33. Machinery and equip.	−0.19	−0.21	1.00*	1.00*
	34. Other manufacturing	−0.16	−0.18	1.00*	1.00*

(*continued*)

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

(*continued*)

Commodity group	Commodity	Change in prices: FTA Bol-EU	Change in prices: FTA Bol-EU, no sensitives	Price transmission coefficients: Tarija, Beni, Pando (Group A)	Price transmission coefficients: Chuquisaca, Oruro, Potosí (Group B)
Production factors	1. Land	0.41	0.25	—	—
	2. Unskilled labor	−0.18	−0.20	—	—
	3. Skilled labor	−0.09	−0.13	—	—
	4. Capital	−0.06	−0.10	—	—
	5. Natural resources	0.34	0.39	—	—

Source: Based on results from GTAP 7.0 simulations and data from Fundación Valles (Bolivia).
Note: Commodities marked with an asterisk indicate that time-series data needed to estimate price transmission coefficients were not found; therefore, we assumed complete price transmission. For the rest of the commodities, we estimated their price transmission coefficients based on time-series data obtained from Fundación Valles.

facilities for domestic and international transportation of goods are more developed in Chuquisaca, Oruro, and Potosí than in Tarija, Beni, and Pando.

The effect of the simulations on the income side showed in mixed results for Bolivian production factors (see table 5). While reductions were projected in returns to mobile factors (unskilled labor, skilled labor, and capital) in both scenarios, increases were projected for sluggish factors (land and natural resources). These results are mainly explained by the way GTAP models changes in demand for endowment factors. That is, the model assumes that land and natural resources are sluggish, meaning that the amount of both of them is almost fixed in the economy. Therefore, model results indicate that demand for sluggish resources increased in the two scenarios implying, in the face of a very inelastic supply curve, an increase in the relative price of land and natural resources. With regard to the mobile factors, the model assumes that they are not fixed in the economy and thus can be increased or decreased in quantities (a more elastic supply curve). The model projected a decrease in the demand for mobile factors under the first two scenarios, leading to a reduction in their relative prices.

Impacts on Household Welfare

Overall, household private utility would increase in Bolivia under any of the two simulated trade scenarios. All criteria used in table 6 to measure impacts on private utility (e.g., sextiles, production factor, education, situation) indicate that percentage changes in income increased faster than percentage changes in expenditure, yielding positive results in terms of utility. This finding suggests that Bolivia should embark on a trade agreement with the European Union. Furthermore, private utility tends to be higher under the second scenario (which simulates trade liberalization excluding sensitive commodities) than under the first (which simulates complete liberalization). This finding suggests that if Bolivia decides to embark on a trade agreement, it does not need to go for a complete

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

Table 6 Change in household private utility by sextile, production factor, education, and situation (percentage change)

Indicator	Private utility: FTA Bol-EU	Private utility: FTA Bol-EU, no sensitives	Indicator	Private utility: FTA Bol-EU	Private utility: FTA Bol-EU, no sensitives
A) Sextile			B) Production factor		
1) ≤ 389.7	.98	1.36	Agriculture	.98	1.36
2) 389.7 – 694.9	.99	1.38	Capital	1.04	1.42
3) 694.9 – 1,032.9	1.01	1.40	Diversified	1.04	1.43
4) 1,032.9 – 1,538.4	1.02	1.40	Natural resources	1.02	1.41
5) 1,538.4 – 2,546.7	1.03	1.41	Nonagriculture	1.04	1.42
6) 2,546.68 +	1.06	1.44	No information	1.05	1.43
C) Education			D) Situation		
Illiterate	.97	1.35	Poor	1.00	1.38
Literate	1.02	1.41	Non-poor	1.04	1.43
Total	1.01	1.40	Total	1.01	1.40

Source: Based on results from micro-simulations.

liberalization but could consider providing tariff protection to a few key sensitive commodities that are important for ensuring employment and domestic production of specific commodities. According to our simulations, protection should be provided to paddy rice, bovine and meat products, dairy products, textiles, and leather products.

Poverty analysis is important to analyze the extent to which trade agreements can help reduce poverty. Bolivia is South America's poorest country, where poverty is widespread, affecting 60 percent of the Bolivian population (IFAD 2013). Poverty is a predominantly rural phenomenon ($\chi^2_{(1)}= 287$; $p < 0.001$),[1] affecting 72.4 percent of households in rural areas, though it also affects more than half of households in urban areas. Table 6 shows that household private utility would increase more for well-off households than for poorer households. Households in the third sextile (694.96–1,032.89 Bs. per month) and above would increase their utility by 1 percent or more, while the poorer households (first two sextiles) would improve their private utility by less than 1 percent in the case of total liberalization or less than 1.4 percent in the case of liberalization excluding sensitives. Thus, the agreement would benefit both poorer and richer, but it would benefit most the richest segments.

According to table 2, illiteracy in Bolivia is 13.4 percent, and those who are illiterate are mostly located in rural areas. Given that the trade agreement under either of the two scenarios would benefit households from rural areas working in the agricultural sector (table 6), we conclude that the trade agreement would

1. The null hypothesis was that poverty is a country-level phenomenon, while the alternative hypothesis was that poverty is mostly a rural issue. The estimated chi-square value (287) proved statistically significant, and thus the null hypothesis was rejected. The claim that poverty is mostly a rural phenomenon in Bolivia can be made under the alternative hypothesis.

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

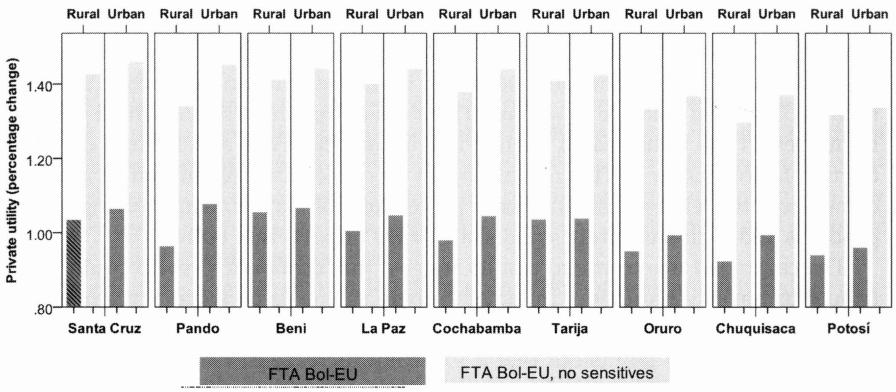

Figure 2 Change in household private utility by department in Bolivia. Based on results from micro-simulations.

benefit both illiterate and literate households. Yet more skilled and literate households would be more competitive and better endowed to benefit from changes and displacements in the manufacturing, services, and agricultural sectors. The most vulnerable households (i.e., poor households that depend mainly on agriculture for their livelihoods) would benefit less under both scenarios, while other households depending on the remaining production factor categories (capital, natural resources, nonagriculture, and diversified resources) would benefit slightly but consistently more.

The poorest departments in Bolivia have been found to be Potosí ($\chi^2_{(1)}= 39.2$; $p < 0.001$) and Oruro ($\chi^2_{(1)}= 50.3$; $p < 0.001$), both located in the highlands of Bolivia. The better-off departments are Santa Cruz ($\chi^2_{(1)}= 26.2$; $p < 0.001$) and Pando ($\chi^2_{(1)}= 4.6$; $p < 0.032$), both located in the lowlands.[2] Both findings are in line with other studies (UDAPE 2006; BNIS 2005) that also rank Potosí and Oruro as the poorest departments in the country and Santa Cruz and Pando as the richest. Our estimations of regional impacts within Bolivia suggest that urban households tend to benefit more than rural households in both scenarios (figure 2). Under the trade agreement that excludes sensitive commodities, urban households from Santa Cruz, Pando, Beni, La Paz, Cochabamba, and Tarija (in that order) would benefit more, while urban households from Oruro, Chuquisaca and Potosi would benefit less. In general, figure 2 displays modest improvements in private utility, although for the poorest segments in the country (i.e., rural households) those small improvements could mean a lot in terms of welfare amelioration.

In general, private utility results indicate that changes in returns on production factors overtook changes in commodity prices. That is, changes in the Laspeyres income index were greater than changes of the Laspeyres expenditure index, mak-

2. In all four cases, the null hypothesis was that poverty or wealth is not a phenomenon exclusive to a particular department of Bolivia. The alternative hypothesis was that poverty or wealth is a characteristic of a specific department. Statistically significant chi-square values suggest that the null hypothesis should be rejected in all four cases.

https://doi.org/10.1353/lar.2015.0042 Published online by Cambridge University Press

ing households' expenditure on their consumption basics (*la canasta básica*) less costly. For the scenario that excludes the sensitive commodities, the cost of such basics becomes slightly cheaper because of higher returns on production factors, thus leading to an increase in welfare. The moderate changes in household private utility reflect the rather small change in commodity prices and returns on production factors (table 5). This minor impact on domestic prices in Bolivia mainly comes from the relatively small rates of protection Bolivia has been applying to EU products and to the relatively small share of EU imports into Bolivia.

The combined macro-micro results suggest that economic growth could contribute to poverty reduction. In general, there seems to be some agreement on the positive effects of economic growth on poverty reduction. The World Bank (Kanbur et al. 2001) points out that a 1 percent increase in real income reduces the number of poor people by 2 percent. Cragg and Epelbaum (1996) suggest that, in the long run, returns on skilled labor have risen in Mexico as a result of trade liberalization in the late 1980s and early 1990s. In Colombia, which drastically reduced tariffs in the early 1990s, returns on production factors increased because of an increase in the demand for skilled workers (Attanasio, Goldberg, and Pavcnik, 2003). Winters (2000) also has reported that trade liberalization is associated with a marked acceleration in the creation of formal employment.

Overall, household-level results show signing a trade agreement with the European Union is a better option than the status quo. Other Andean countries (Colombia and Peru) already have agreements not only with the European Union but also with the United States. MERCOSUR countries (Argentina, Brazil, Paraguay, and Uruguay) are currently negotiating a trade agreement with the European Union (Estrades 2012). In general having a trade agreement with the European Union would be positive for Bolivian macro indicators as a whole and would be advantageous for households in Bolivia. Therefore, on the question of whether to embark on a trade agreement with the European Union, the answer leans toward an integration process, not only because an EU agreement would be convenient but also because not having an agreement implies less competitiveness with Andean and MERCOSUR neighbors (a clear case of trade deviation could take place, which frequently occurs when trade is diverted from a more efficient exporter toward a less efficient one by the formation of a free trade agreement). An implication of this analysis is that if Bolivia decides to engage in a trade agreement, then the government should consider implementing policies to ensure that both the rural and the urban poor obtain gains from the agreement. The evidence from Latin America (Estevadeordal, Freund, and Ornelas 2006) and from developing regions (Page 2008) suggests that countries should not assume that trade agreements alone will automatically generate development benefits. Complementary and/or compensatory policies might be needed, depending on the country, to ensure that the most vulnerable and poor segments also benefit from trade agreements.

CONCLUSIONS

The main conclusion of this research is that a Bolivian-EU trade agreement is a more convenient option than the status quo. The macro results suggest that a

trade agreement with the European Union, with or without sensitive commodities, would not bring significant changes to macro variables related to GDP, income, exports, imports, and trade terms. Micro-level benefits are small but consistent and beneficial to the lowest income groups of society. Benefits are slightly higher in the scenario that simulates excluding the sensitive commodities from the trade agreement, implying that if Bolivia embarks on a trade agreement, complete liberalization is not needed. However, providing tariff protection to a few and key sensitive commodities is important to ensure employment and domestic production of specific commodities.

Our findings suggest that trade reforms alone do not substantively reduce poverty. Therefore, complementary and/or compensatory policies might be needed to ensure that the most vulnerable and poor income groups also benefit from the agreement. We believe that Bolivia should not remain separate from the liberalization process that characterizes the current globalized economy. Other Andean countries (Colombia and Peru) have already achieved EU trade agreements, while MERCOSUR countries (Argentina, Brazil, Paraguay, and Uruguay) are negotiating such agreements. If Bolivia is unable to lower EU tariffs, it will become less competitive than most other South American countries. Thus, to keep its share of the market, the country needs to implement a trade policy strategy that maintains open niche outlets for Bolivian products.

Bolivia already applies low tariffs to EU goods. Therefore, the effort that the government would have to make is not large, and there seems to be more to gain in terms of market access to the European Union than to lose in terms of tariff elimination. Bolivia already excluded itself from a US agreement (the largest importer of goods in the world), but it could achieve gains if it decides to engage in a trade agreement with the European Union (the second largest importer of goods in the world).

REFERENCES

Attanasio, Orazio, Pinelopi K. Goldberg, and Nina Pavcnik
2003 "Trade Reforms and Wage Inequality in Colombia." NBER Working Paper No. 9830. Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w9830.pdf.

BBC
2013 "Bolivian Farmers Increase Quinoa Production." http://www.bbc.co.uk/news/world-latin-america-22132622.

BNIS (Bolivian National Institute of Statistics)
2002 Database: Encuesta de Mejoramiento de Condiciones de Vida 2002. Programa MECOVI. La Paz, Bolivia. http://www.ine.gov.bo/enchogares/enchogares.aspx.
2005 Anuario Estadístico 2005: Bolivia. Bolivian National Institute of Statistics. http://www.ine.gob.bo/pdf/Anuario_2005/304.pdf.

Collyns, Dan
2013 "Quinoa Brings Riches to the Andes: Bolivian and Peruvian Farmers Sell Entire Crop to Meet Rising Western Demand, Sparking Fears of Malnutrition." *Guardian*, January 14. http://www.guardian.co.uk/world/2013/jan/14/quinoa-andes-bolivia-peru-crop.

Confederación General de Trabajadores Fabriles de Bolivia
2012 Cierre del ATPDEA: Más de 10 mil fabriles quedaron sin empleo desde 2008 en Bolivia. *Los Tiempos*, July 2, 2012. http://www.lostiempos.com/diario/actualidad/

economia/20120702/fabriles-hay-10-mil-obreros-desempleados_177038_373686.html.

Cragg, Michael Ian, and Mario Epelbaum
1996 "Why Has Wage Dispersion Grown in Mexico? Is It the Incidence of Reforms or the Growing Demand for Skills?" *Journal of Development Economics* 51 (1): 99–116.

Estevadeordal, Antoni, Caroline Freund, and Emanuel Ornelas
2006 "Do Regional Trade Agreements Promote External Trade Liberalization? Evidence from Latin America." Inter-American Development Bank. https://www.princeton.edu/~ies/Spring06/FreundPaper.pdf.

Estrades, Carmen
2012 "Is MERCOSUR's External Agenda Pro-Poor? An Assessment of the EU-MERCOSUR Free-Trade Agreement on Poverty in Uruguay Applying MIRAGE." IFPRI Discussion Paper No. 1219. Washington, DC: International Food Policy Research Institute.

European Commission
2012 "European Union, Trade in Goods with Bolivia." Directorate-General for Trade. http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113350.pdf.

European Parliament
2012a *European Union: Trade Agreement with Colombia and Peru.* Directorate-General for External Policies of the Union, Policy department.
2012b "Texts Adopted, EU-Colombia/Peru Trade Agreement." Strasbourg. http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2012-0481+0+DOC+XML+V0//EN.

FAO (Food and Agriculture Organization of the United Nations)
2013 FAOSTAT (Food and Agriculture Organization Corporate Statistical Database). http://faostat.fao.org.

Fundación Valles
2009 *Price Database in Different Bolivian Markets: Integrated System of Agricultural Markets.* Cochabamba, Bolivia: Fundación Valles.

Hertel, Thomas W., ed.
1997 *Global Trade Analysis, Modeling and Applications.* Cambridge: Cambridge University Press.

Hertel, Thomas W., and L. Alan Winters
2005 "Estimating the Poverty Impacts of a Prospective Doha Development Agenda." *World Economy* 28 (8): 1057–1071.

Ianchovichina, Elena, Alessandro Nicita, and Isidro Soloaga
2002 "Trade Reform and Poverty: The Case of Mexico." *World Economy* 25 (7): 945–972.

IBCE (Instituto Boliviano de Comercio Exterior)
2009 "Análisis del comercio exterior de Bolivia y aprovechamiento de acuerdos preferenciales." *Comercio Exterior* (IBCE), no. 173 (June): 18.

IFAD (International Fund for Agricultural Development)
2013 "Enabling Poor Rural People to Overcome Poverty in Bolivia." Rome: International Fund for Agricultural Development. http://www.ifad.org/operations/projects/regions/pl/factsheet/bolivia_e.pdf.

INE, IBCE, CANEB, and UDAPE
2006 *Empleo y percepciones socioeconómicas en las empresas exportadoras bolivianas.* La Paz, March 2006. http://www.ibce.org.bo/documentos/empleo.pdf.

INESAD (Instituto de Estudios Avanzados en Desarrollo)
2012 "Exportaciones y empleo en Bolivia". Serie de Documentos de Trabajo sobre Desarrollo 08/2012. La Paz: INESAD. http://www.inesad.edu.bo/pdf/wp2012/wp08_2012.pdf.

Kanbur, Ravi, Christina Malmberg Calvo, Monica Das Gupta, Christiaan Grootaert, Victoria Kwakwa, and Nora Lustig
2001 *World Development Report 2000/2001: Attacking Poverty.* Washington, DC: World Bank.

Nicita, Alessandro
2005 "Multilateral Trade Liberalization and Mexican Households: The Effect of the Doha Development Agenda." Policy Research Working Paper No. 3707, September 2005.

Washington, DC: World Bank Development Research Group. http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2005/09/01/000016406_20050901171126/Rendered/PDF/wps3707.pdf.

Page, Sheila
2008 "What Happens after Trade Agreements?" ODI Project Briefing No. 12. London: Overseas Development Institute. http://www.odi.org.uk/resources/download/1014.pdf.

Telleria, Roberto, Carlos Ludena, Bhavani Shankar, and Richard Bennett
2008 "Would a Free Trade Agreement between Bolivia and the United States Prove Beneficial to Bolivian Households?" *Journal of International Agricultural Trade and Development* 5 (1): 133–170.

UDAPE (Unidad de Análisis de Políticas Sociales y Económicas)
2006 *Pobreza y desigualdad en municipios de Bolivia: Estimación del gasto combinado del Censo 2001 y las encuestas de hogares.* 2nd ed. La Paz: Instituto Nacional de Estadística.

US Trade Representative
2012 *Sixth Report to the Congress on the Operation of the Andean Trade Preference Act as Amended.* June 30, 2012. Washington, DC.

Winters, L. Alan
2000 *Trade Liberalisation and Poverty.* Sussex, UK: University of Sussex. http://siteresources.worldbank.org/INTPOVERTY/Resources/WDR/winters2.pdf.

WTO (World Trade Organization)
2013 *Regional Trade Agreements.* World Trade Organization. http://www.wto.org/english/tratop_e/region_e/region_e.htm.