

8. DETERMINANTS OF U. S. TRADE AND INVESTMENT IN ECUADOR

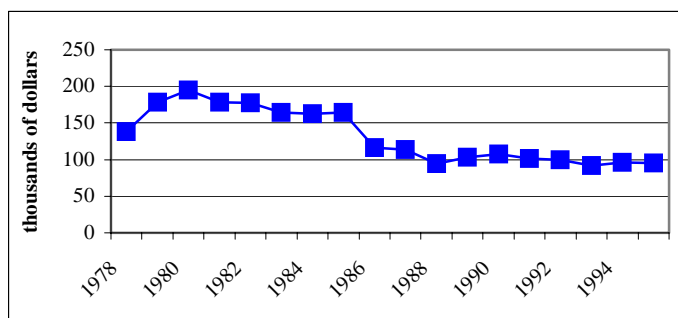
*Robin Newberger**

Ecuador is a small country of 12 million people whose 1996 exports totaled \$4.9 billion and imports total about \$4 billion. While Ecuador is not a primary trading partner for the United States -- it ranked 51st in exports from the United States in 1996 -- to Ecuador, this trade relationship is of monumental importance. Since the late 1800s the United States has been Ecuador's largest buyer of exports and supplier of imports, and over the last quarter of a century Ecuador has sold 48 percent of its exports to and purchased 35 percent of its imports from the United States. While traditional agricultural products such as shrimp, bananas, coffee and cocoa have been staples of Ecuador's exports, its trade surplus with the United States has been driven for the past fifteen years by the export of crude oil. The United States is also Ecuador's largest source of foreign investment, with the petroleum industry as focal point for U.S. investment.

This chapter examines the determinants of U.S. trade and direct investment in Ecuador between 1979 and 1995. The study is divided into five sections. The first section presents an overview of Ecuador's foreign trade policy towards the United States since the early 1980s. The second section presents the basic characteristics of trade between Ecuador and the United States. The third section analyzes the determinants of trade considering the factors that have affected Ecuador's petroleum and traditional agriculture exports, Ecuador's trade policies, and the economic impact of indicators. The fourth section analyzes the determinants of investment flows from the United States into Ecuador according to sectoral opportunities, investment policy and deterrents to foreign investment. The paper concludes with an outlook for bilateral trade and investment, presenting the factors that will influence these flows in the future.

Given the predominance of crude oil and traditional agriculture exports to the United States, the most important determinants of bilateral trade between 1979 and 1995 have been the political decisions, technological advances and climatic conditions that increased petroleum and agriculture production. In terms of trade policy, the regression equations constructed for this report (included in Annexes A to H) found that the transition from import substitution in the 1980s to policies promoting trade liberalization in the 1990s have had a measurable impact on imports, but not on exports. In terms of economic policy decisions, the regression equations found that export performance was influenced by the gradual incorporation of exchange-rate adjustment mechanisms in the early 1980s. For non-traditional exports, exchange rate volatility also had an impact on export performance. Real GDP growth, and to a lesser extent the level of international monetary reserves, also affected import performance. The outlook for trade between Ecuador and the United States is for steady but not accelerated growth. Although Ecuador's terms of trade (with all trading partners) have declined since the early 1980s,¹ prices have not been a determinant of overall exports or imports (Figure 8.1).

FIGURE 8.1. TERMS OF TRADE (in thousands of dollars)



Source: Central Bank of Ecuador, 1997.

* Robin Newberger is a consultant for research in Macroeconomics, Finance and Development at MULTIPLICA in Ecuador.

¹ Ecuador's terms of trade are calculated for all of Ecuador's trading partners, not just goods traded between Ecuador and the United States.

The outlook for U.S. investment in Ecuador shows little scope for change unless Ecuador makes headway on its privatization agenda. Until now, U.S. investment has been heavily concentrated in the petroleum sector, but recent developments, including a delay in the expansion of the existing oil pipeline, have dampened interest by transnational oil companies. The government of Ecuador recently succeeded in averting a setback in its trade and investment relationship with the United States over the ratification of a bilateral Intellectual Property Rights Agreement (IPRA). Ecuador's concession on several points of disagreement, including the immediate acceptance of WTO norms for intellectual property protection, should ensure a stable investment relationship in the longer-term, but will not necessarily spur investment growth.

FOREIGN TRADE POLICY: FROM IMPORT SUBSTITUTION TO TRADE LIBERALIZATION

Ecuadorian trade policy between 1979 and 1995 is generally divided into two paradigms. The first is a protectionist model that began in the 1950s and lasted through most of the 1980s. This was replaced by an economic liberalization program that nullified many of the regulations that interfered with free trade and included application for membership in the World Trade Organization (WTO). Ecuador was admitted to the WTO in January 1996, the first non-GATT member to gain entry.

During the first part of the 1980s, few incentives existed to encourage foreign trade. The law governing international trade (*Ley sobre Cambios Internacionales*), since the 1940s, required exporters and importers to obtain licenses and pay foreign exchange-equivalent advance-deposits for the goods being shipped, and detailed sanctions that would be imposed on exporters and importers if they did not fully comply with established rules. Restrictive regulations in the transport sector inhibited the provision of competitive services by air and ocean carriers. For most of the 1980s, the government maintained a segmented exchange rate regime in which the rate imposed for foreign trade lagged the free-market depreciation rate.

As is common in the import substitution model, legislative and regulatory incentives favored imports over exports. Tax deductions were granted for imports of raw materials and on investment for expansion and improvements of industrial facilities. Tariff and non-tariff barriers protected the domestic production of consumer goods, but relatively low tariffs applied to the import of raw materials, intermediate goods, and capital goods used for protected industry. A 1979 domestic subsidy program to promote exports known as Tax Contribution Certificates gave greater tax incentives for exports of industrial manufactures than primary goods.

By the beginning of the 1990s, the steps for exporting and importing were greatly simplified. The establishment of free trade zones in 1991 exempted taxes and tariffs on imports and exports of all goods used within these zones for 20 years. The passage of the 1992 Law of Export Facilitation and Maritime Transport was designed to guarantee free competition in maritime transport. The government closed the gap between the export exchange rate and the free market rate, reduced sanctions for noncompliance and expanded the terms for advance purchases of foreign exchange.

Tariff reform became a symbol of the paradigm shift in favor of the external sector. When President Rodrigo Borja entered office in 1988, Ecuador's tariff regime consisted of more than 30 levels ranging from 0 to 290 percent, with an average tariff of 29 percent. By 1992, after a series of modifications to the tariff structure, the tariff ceiling was set at 20 percent (with the exception of 37 percent for vehicles), and the average nominal tariff was 9 percent. The labyrinth of prohibitions, prior authorization requirements and paratariff charges that represented the *de facto* barriers to import and export activities were eliminated.

The administration of President Sixto Durán Ballen (1992-1996) extended the trade liberalization program. The government unified the exchange rate for all current and capital account transactions (maintaining another "official" exchange rate for public sector transactions), and established a "dirty float" exchange rate within a pre-announced band in 1994. Restrictive import licensing for agricultural products, inputs and machinery in January 1993, was eliminated and the import "lists" that had been part of the law governing foreign trade, were repealed as were levies on agricultural commodities. Official port charges were reduced by 25 percent in January 1994.

In addition, the administration sponsored a series of laws to promote trade and facilitate private sector investment. The Hydrocarbons Law (1993) permitted participation contracts with oil companies² and authorized

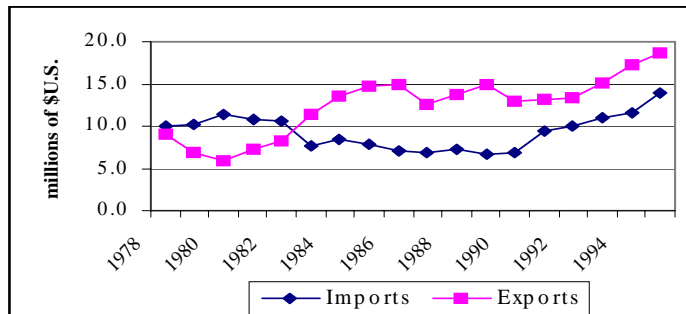
² Participation contracts were structured to provide a more attractive arrangement to international capital. The participation contract stipulates that a company negotiates the proportion of total oil production that represents revenues for the private company (based on a scale with production), and the remainder that represents revenues for the state. The contractor assumes all the costs.

private sector involvement in the expansion of the oil pipeline, the improvement of refineries, and the processing and storing of derivatives. The Customs Law (1994) reduced and simplified customs procedures from eighteen steps to three and authorized the concession of certain services to the private sector. The Agricultural Reform Law (1994) restored land ownership rights and the extension of property titles to current owners of agricultural lands, nullifying previous laws that allowed squatters the title to unoccupied and unproductive lands.

CHARACTERISTICS OF BILATERAL TRADE

Between 1979 and 1995, exports to the United States grew by an average annual rate of 5.4 percent in real terms (nominal dollars deflated by an export price index), and imports increased by 2.9 percent (nominal dollars deflated by a U.S. import price index), as seen in Figure 8.2. Exports stagnated from 1979 to 1980, when the government maintained a fixed exchange rate; after the 1987 earthquake, which interrupted petroleum sales; and between 1990 and 1991, when the government diversified its petroleum sales away from the United States and towards the Caribbean and Far East. In real terms, crude oil exports to the United States were 260 percent higher than in the 1980s, the sale of traditional agriculture products was 155 percent higher, and non-traditional exports were 290 percent higher.

FIGURE 8.2. REAL EXPORTS AND IMPORTS (in millions of dollars)



Source: U.S. Department of Commerce and Central Bank of Ecuador

In the 1990s the fastest growing exports to the United States were non-traditional exports, increasing at an average annual real rate of 23 percent between 1992 and 1995 and tripling in number from 500 products in 1989 to 1500 in 1994. The most significant of these were flowers, gold and wood. By the mid-1990s, cut flowers represented a greater share of Ecuador’s exports to the United States than cocoa beans or fish. Despite this enormous potential, Ecuador’s trade relationship with the United States has remained vulnerable to its dependence on a handful of primary exports. Traditional agricultural products and oil accounted for 93 percent of exports in 1979 and 89 percent of exports in 1995 (Table 8.1). The United States currently buys 44 percent of Ecuador’s oil exports, 60 percent of its shrimp exports, 23 percent of its banana exports, 39 percent of its coffee exports, and 50 percent of its cocoa exports.

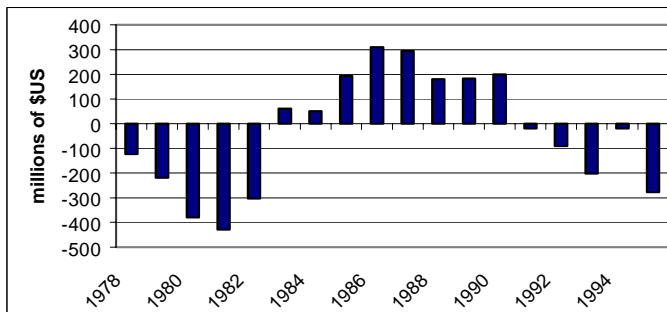
TABLE 8.1. PRINCIPAL EXPORTS TO THE UNITED STATES, 1995

1. Crude Oil	10. Cocoa Butter
2. Fresh Shellfish	11. Gold
3. Bananas	12. Cocoa Paste
4. Coffee	13. Wood Articles
5. Petroleum derivatives	14. Cane or Beet Sugar
6. Cocoa	15. Fresh Fish Fillet
7. Fresh Fish	16. Plywood
8. Cut flowers	17. Frozen Fish
9. Prepared Fish	18. Wood, sawed or chipped

Source: U.S. Department of Commerce

Although oil's dominance has declined- from 52 percent total exports in 1985 to 36 percent in 1995, it remains Ecuador's main export to the United States and has been the driving force behind the positive trade balance with the United States in every year since 1979. Ecuador's trade balance with the United States showed a deficit between 1979 and 1983 and between 1991 and 1995 (Figure 8.3). From 1983 to 1993, non-petroleum trade was in surplus, as the country, facing a severe balance of payments crises, undertook adjustment measures to reduce imports. While the expansion of Ecuador's oil pipeline is expected to boost petroleum output after 1998, the fact that petroleum is a non-renewable resource and that proven petroleum reserves have a remaining life of 25-30 years, underscore the temporality of Ecuador's positive trade balance. As domestic oil consumption grows by an average annual rate of about 6 percent, and total petroleum production rises only by about 7 percent annually, the amount of petroleum available for export is increasing by only a small percentage each year. Alternatively, if Ecuador increases its fuel imports, this too cuts into its positive trade balance.

FIGURE 8.3. NON-PETROLEUM TRADE BALANCE



Source: U.S. Department of Commerce

Another trend in Ecuador-U.S. trade is the decline in proportional terms of value-added exports to the United States. In 1990, Ecuador sent 44 percent of its \$229 million in value-added exports (not including petroleum derivatives) to the United States. These included industrial products that were fostered under the import-substitution model. By 1996, this had declined to 14 percent as an increasing proportion of value-added exports made their way to Colombia and Western Europe. Of all non-traditional exports to the United States in 1995, well under half included a value-added component, and those consisted mainly of foodstuffs such as prepared vegetables, fruits and oils.

Goods purchased from the United States have generally been high value-added machinery and equipment (Table 8.2), as well as some raw material imports and consumer goods. Raw material imports between 1979 and 1982 accounted for 39 percent of total imports between 1979 and 1982, falling to 26 percent between 1989 - 1995. Consumer, which represented 4 percent of total U.S. imports between 1983 - 1988, rose to 8 percent of total U.S. imports between 1989 and 1995.

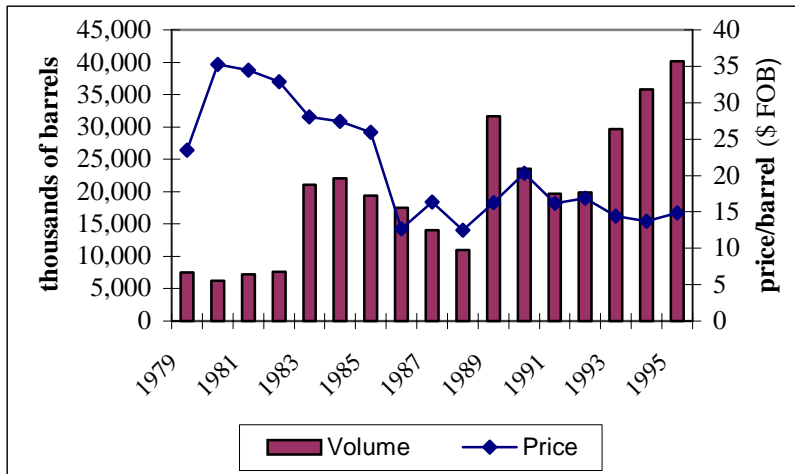
TABLE 8.2. PRINCIPAL IMPORTS FROM THE UNITED STATES

1. Machine Parts	10. Insecticides and Fungicides
2. Kraft Paper and Paperboard	11. Petroleum Gases
3. Motor Cars and Vehicles	12. Processed Foods
4. Polymers of Ethylene	13. Turbojets and Turbo-propellers
5. Wheat and Meslin	14. Pumps
6. Computers	15. Motor Vehicles for Cargo
7. Motor Vehicle Parts	16. Aircraft
8. Heavy Transport Machinery	17. Fertilizers
9. Tractors	18. Electric Generating Sets

Source: U.S. Department of Commerce

DETERMINANTS OF TRADE

The most important determinants of exports to the United States are the political decisions, technological advances and climatic and biological conditions affecting petroleum and agriculture production have been. From 1979 to 1995, each administration increased the volume of oil sales to the United States, independent of crude oil price fluctuations on the world market. This underscores the negative relationship between terms of trade and total exports as seen in Appendices A and B. Government policy in the state-managed petroleum sector has set production at capacity. Output has fluctuated according to the availability of oil transport capacity.

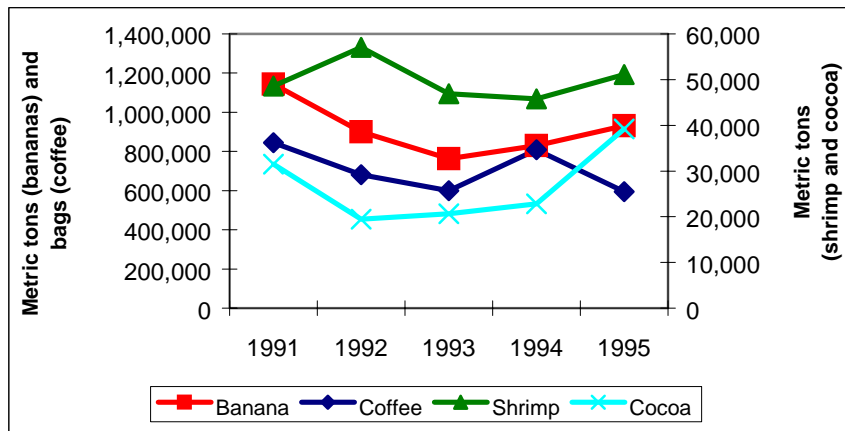
FIGURE 8.4. REAL CRUDE EXPORTS TO UNITED STATES

Source: Petroecuador

Between 1979 and 1984, under the administration of President Hurtado, the volume of petroleum sales grew by an average annual rate of 20 percent, leading exports to the United States at a rate of 9.2 percent annually. As a result of an earthquake that suspended oil transport for five months in 1987, the volume of exports dropped by 6.6 percent. The decline of petroleum exports in 1990 and 1991 was in part responsible for sluggish total export growth to the United States, averaging 1 percent per year in real terms between 1988 and 1992. An increase in oil output during the following period was one of the main factors restoring export growth to 9 percent per year.

The export of traditional agricultural products that remained rather even throughout the period under study depended largely on climatic and technological factors (Figure 8.5). Ecuador has been the largest banana exporter in the world since the 1950s. When banana exports to the United States experienced a decline, it was due to both the effect of the El Niño weather pattern in the early 1980s, and the Sigatoka Negra disease in the early 1990s. After peaking in 1990 with 1.2 million metric tons, sales of bananas to the United States held steady in the mid-1990s at around 900,000 metric tons.

Shrimp production expanded aggressively in the 1980s, with innovations in technology for growing larvae in laboratories and man-made pools. Exports to the United States averaged around 45,000 metric tons annually in the mid 1990s. In the early 1990s, shrimp sales fell slightly as a result of the Taura Syndrome that destroyed the larvae of several shrimp pools.

FIGURE 8.5. EXPORTS OF TRADITIONAL AGRICULTURE PRODUCTS

Source: Ministry of Agriculture and Chamber of Aquaculture of Ecuador

Low productivity and aging plant material stymied coffee and cocoa production throughout the period. Half of Ecuador's coffee under cultivation is still of the robust variety, even though Ecuador's competitors in Central and South America converted their coffee crop almost exclusively to the more sought-after arabic variety. Although Ecuadorian cocoa was long certified as a high-grade variety of 100 percent *pura aroma*, it was downgraded to 75 percent in 1994. Ecuador's cocoa harvest has remained at roughly the same level from the 1970s to the 1990s -- 250 kilos per hectare under cultivation -- with the aging plant material and recurrent diseases that attack the plant's foliage and fruit. A lack of funds at the national publicly run coffee and cocoa programs has also impaired quality control. Ecuador exports around 27,000 tons of cocoa and 700,000 bags of coffee yearly to the United States.

Ecuador's export growth is limited by an appreciated exchange rate that lost 23 percent of its competitiveness between 1988 and 1995, and by exporters' unfamiliarity with potential niche markets for non-traditional products in the United States.

While the United States does offer preferential access under the Andean Trade Preferences Act (ATPA), a number of Ecuador's fast-growing non-traditional sectors are not covered by this agreement. On the import side, moderate economic growth will curtail the purchase of imports from the United States and elsewhere, but imports will receive an impetus from relatively high levels of international monetary reserves and the appreciation of the exchange rate.

Trade Policy

Changes in Ecuador's trade regime had an important effect on the evolution of bilateral trade. This impact was stronger on imports than exports. Regression equations constructed for this chapter tested the effect of changes trade policy as of 1990 on imports and exports. As a consequence of tariff reduction under the Rodrigo Borja regime (1988 - 1992), imports from the United States soared. Most notable were the rises in consumer and capital imports, which grew by an average annual real rate of 32 percent and 21 percent respectively between 1990 and 1995 (see Appendix 8.C).

Exports also surged after 1993 mainly as a result of the implementation of the Andean Trade Preferences Act by the United States in 1992 (Appendix 8.D). The ATPA eliminated tariffs on high-value non-traditional agriculture products such as asparagus, broccoli, pineapples, mangoes, melons, papaya and strawberries, as well as fresh fish, prepared shrimp, fiberboard, plywood and roses.³ Ecuador was included in the ATPA in July 1993

³ Items not included in the ATPA were textiles and clothing, canned tuna, petroleum and derivatives, footwear, leather goods, sugars, syrups, rum, watches and watch parts. The ATPA is in effect until December 4, 2001.

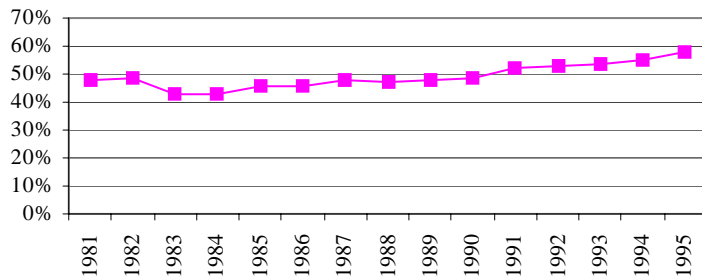
following the resolution of an expropriation dispute between a U.S. owner of the electricity company, EMELEC, and the Ecuadorian government.⁴

According to Creamer (1997), the administration of Leon Febres Cordero (1984 - 1988) prioritized external adjustment over internal stabilization. Febres Cordero institutionalized the system of mini-devaluations with the purpose of reassigning income to the agricultural export sector. The real exchange rate devalued by 65 percent between 1984 to 1988. Price ceilings on domestically sold agriculture were lifted in 1985. Prompted by the fall of oil prices in 1986, Febres Cordero also granted private sector exporters free access to foreign exchange (although this strategy was suspended in 1988 after the 1987 earthquake).

The Febres Cordero administration also increased incentives for foreign investment. In addition to modifications to the Andean foreign investment regime approved 1987, the Febres Cordero government temporarily freed interest rates and added a clause to its Letter of Intent with the IMF that welcomed foreign investment in the oil and gas, agriculture, fishing, and mining sectors. It signed an agreement of security against political risks with the Overseas Private Investment Council (OPIC). Febres Cordero's policies triggered a sustained period of "openness" in which exports and imports increasingly comprised a greater proportion of total GDP (Figure 8.6).

FIGURE 8.6. OPENNESS

Openness = Exports + Imports / Total Domestic Output



Source: Central Bank of Ecuador

A further explanation for the low impact on exports was that the government remained oriented towards regional trade, as opposed to a broader foreign trade policy, throughout the 1990s. Regionalism was viewed as the principal mechanism to generate international interdependence and economic growth. Ecuador's industrial development policy, its tariff policies, and its treatment of foreign capital were all developed in conjunction with those of the Andean region as a whole. They were set with the goals of opening regional markets to Ecuador's exports while in turn receiving special treatment for Ecuador's products based on its status as a less-developed economy.

Ecuador was a founding member of the Andean Pact in 1969 and the *Asociación Latinoamericana de Integración* (ALADI) in 1980.⁵ With each step taken towards liberalizing the economy, policymakers intensified Ecuador's focus on regional trade. Ecuador's long history of regionalism may have slowed the implementation of commitments made upon joining the WTO. Ecuador's policies dealing with industrial and intellectual property were governed by Andean Group Decisions 344, and 345.⁶ Ecuador initially requested four years to adhere to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the WTO, although the United States claims that Ecuador waved its right for a phase-in period. The government also let a deadline to eliminate a ban on used cars, tires and clothing, and to lift non-tariff barriers including a 10 percent VAT tax on imported

⁴ In 1989, the government intervened in EMELEC, then-owned by a U.S. investor to impede the remittance of profits. The intervention was not provided for in the terms of the company's valid concession contract. An arbitration panel ruled in favor of the U.S. investor, but the Borja government ignored the ruling. The issue was resolved in 1993 (from the U.S. investor's perspective), when the U.S. owner sold his shares to a group of non-U.S. investors. To date, the new owners have been unable to negotiate a new contract with the government or lift the intervention. EMELEC is the only private electricity distribution company in Ecuador.

⁵ The ALADI includes Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela.

⁶ Decision 344 extends patent protection for 20 years from the date of filing and strengthens protection for well-known trademarks. Decision 345 provides protection for the development of new plant varieties and biotechnology products.

and domestic) motor vehicles pass, that calculated after tariffs, set a higher effective rate for imports than domestic products.

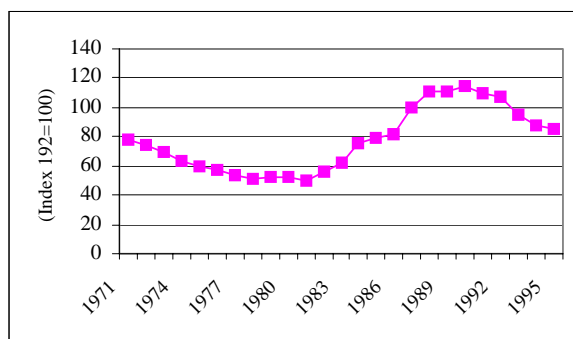
Economic Policies

Economic policies administered throughout this period clearly had a role to play in determining the performance of Ecuador's external sector with the United States. The regression equations tested the effects of the real bilateral exchange rate, real GDP growth, gross fixed capital formation, and terms of trade on real exports to the United States. A dummy variable was constructed to measure the effect of a segmented exchange market during portions of this period. The regression equations for imports examined the effects of real GDP growth, the real bilateral exchange rate, terms of trade and international monetary reserves on real imports from the United States. The findings on exports are also based on a study by the Central Bank of Ecuador that examined the impact of exchange rate competitiveness, exchange rate volatility, real GDP growth, and the net stock of fixed capital on non-traditional exports.⁷

The results of the analyses show that the competitiveness of the exchange rate was one of the most important variables to impact total exports (Appendices D and E). It was also one of the most important factors for traditional agricultural exports, and, according to Salvador et al. (1997), a key variable for non-traditional exports as well. The fixed exchange rate between 1971 and 1981 had created price disincentives to investing in the agriculture export sector. The regression equations show a negative relationship between gross fixed capital formation and exports. Non-petroleum exports also were the victim of "Dutch Disease" in the late 1970s and early 1980s given the rapid infusion of foreign exchange from the oil boom combined with the influx of international credit in the 1970s. Traditional non-petroleum exports declined by an average rate of 20 percent between 1979 and 1981, contributing to a 5 percent average annual decline in total exports.

After President Hurtado devalued the currency by 12 percent in 1982 (Figures 8.7 and 8.8), Ecuador's traditional agriculture exports to the United States grew by an average annual rate of 22 percent (between 1982 and 1984), and total exports grew by an average real rate of 23 percent. The same effect was apparent under the Febres-Cordero, Borja and Duran Ballen administrations. The depreciation of the real bilateral exchange rate contributed to an 18.5 percent average annual growth rate for traditional agricultural exports between 1984 and 1988. In contrast, traditional agricultural exports fell by an average of 0.9 percent per year between 1988 and 1992 as the currency appreciated by an average of 1 percent yearly during Borja's term. Under Duran Ballen, a 20 percent appreciation of the exchange rate limited traditional exports to a 5 percent growth rate between 1992 and 1995.

FIGURE 8.6. INDEX OF REAL BILATERAL EXCHANGE RATE



Base Year August 1992. A decline in the index denotes an appreciation of the exchange rate.
Source: Central Bank of Ecuador

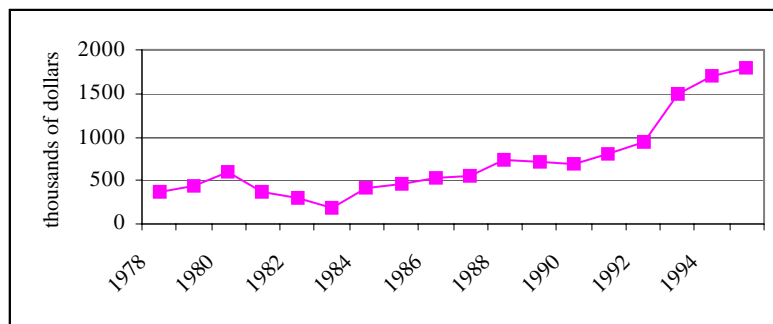
The adjustment of the exchange rate impacted imports as well (Appendices C and F). Between 1982 and 1984, imports fell by an average of 6 percent per year in real terms. Under Borja, imports rose by an average of

⁷ This study examined the determinants of non-traditional exports to all of Ecuador's trading partners, not just to the United States.

9 percent per year with the currency appreciation. Under Duran Ballen, imports rose by an average of 10 percent per year, and consumer imports rose by an average annual rate of 29 percent.

Only non-traditional exports did not respond to the devaluation. In addition to a competitive exchange rate, the growth of non-traditional exports responded to a stable exchange rate. Between 1981 and 1984, non-traditionals accounted for an average of just 5 percent of total exports to the United States. And between 1982 and August 1995, the index of the effective exchange rate showed a standard deviation of 25 percent. In contrast, between January 1993 and August 1995, after the implementation of the crawling-peg exchange regime, the volatility was only 4.2 percent. Non-traditionals accounted for 10 percent of total exports to the United States in 1995. Lower volatility allowed economic agents to better manage their investment plans. Even before the exchange band system, non-traditional exports were the most dynamic sector between 1988 and 1992. According to Salvador et al. (1997), the average increase of 12 percent per year responded to a reduction in the volatility of the exchange rate after 1990 (Figure 8.7).

FIGURE 8.7. NONTRADITIONAL EXPORTS TO THE UNITED STATES
(deflated by price index)



Source: U.S. Department of Commerce

Access to foreign exchange in the free market also impacted export performance. Febres-Cordero's short-lived policy to grant private sector exporters and importers access to the free market exchange rate, and a permanent policy unifying the intervention and the free market rates under Duran Ballen, were significant for traditional exports in particular. The official export rate had averaged 40 percent less than the "buy" rate in the free market between 1979 and 1984. One of the reasons why the sale of traditional exports declined under the Borja government was that the government returned to a pre-set export exchange rate in 1988.

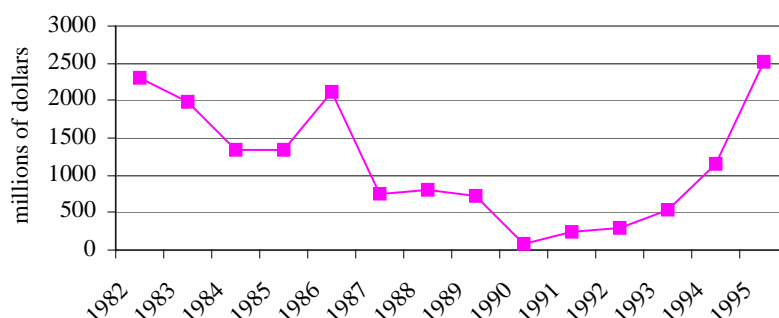
Other than exchange rate policy, the most important economic variables to impact trade performance were GDP growth, the level of international monetary reserves, and for consumer imports, Ecuador's overall terms of trade. Whereas GDP growth did not demonstrate an impact on overall exports in the regression equations (owing to the fact that exports consist mainly of petroleum and agriculture commodities), according to Salvador et al. (1997), GDP was an influential factor for non-traditional exports.

The impact of international monetary reserves on imports was visible during the Febres-Cordero, Borja, and Duran Ballen administrations. As international monetary reserves declined in 1986, 1987 and 1988, the Febres Cordero administration limited both consumer and capital good imports. Total imports dropped by an average rate of 4 percent in real terms between 1985 and 1988. As international monetary reserves climbed under the Borja administration from a negative \$176 million in 1988 to a positive \$1.25 billion in 1992 (an increase of over 600 percent), consumer imports responded strongly, growing by an average rate of 34 percent per year (Appendices G and H). The rise in total imports during Duran Ballen's presidency was also aided by a strengthening of international monetary reserves, which reached their highest level ever in 1996, covering five months of imports of goods, and 3.7 months of goods and services.

The availability of trade financing, also largely driven by the United States, likely impacted trade performances as well, although this variable was not included in the regression equations. A 15 percent drop in oil prices between 1981 and 1983, from \$32 per barrel to \$26 per barrel, coincided with a near shutdown in external credit. The Central Bank attempted to offset the lack of credit with special export programs, but, according to a study by the U.S. Agency for International Development (1991), these lines were relatively small

and exporters found them difficult to access.⁸ Worse still, the oil crisis of the mid-1980s and the resulting liquidity shortage at the Central Bank forced the government to suspend payment on its foreign debt in 1987. This prolonged the decline in export financing and capital inflows (Figure 8.8). By 1994, when the government re-negotiated its foreign bank debt and signed a Letter of Intent with the IMF, it reopened the country to international private bank financing. Had trade financing been more readily available throughout the 1980s, both exports and imports may have registered higher growth.

FIGURE 8.8. INTERNATIONAL LENDING TO ECUADOR



Source: Central Bank of Ecuador

DETERMINANTS OF INVESTMENT

Over half of total direct foreign investment to Ecuador came from the United States during the period under study. The stock of U.S. direct investment in Ecuador was \$833 million in 1995, with a net flow of \$306 million during the year.⁹ The amount of U.S. direct investment geared towards Ecuador was minimal compared to other Latin American countries. DFI to Ecuador represented less than 1% of total United States DFI to Latin America and the Caribbean between 1979 - 1994.

TABLE 8.3. U.S. DIRECT INVESTMENT FLOWS (millions of dollars.)

	1979-1982	1983-1986	1987-1990	1990-1994
Ecuador	99	177	-61	299 *
Latin America & Caribbean.	8,500	-415	8,400	33,600

Source: Foreign Direct Investment in Latin America, Inter-American Development Bank

* Central Bank of Ecuador

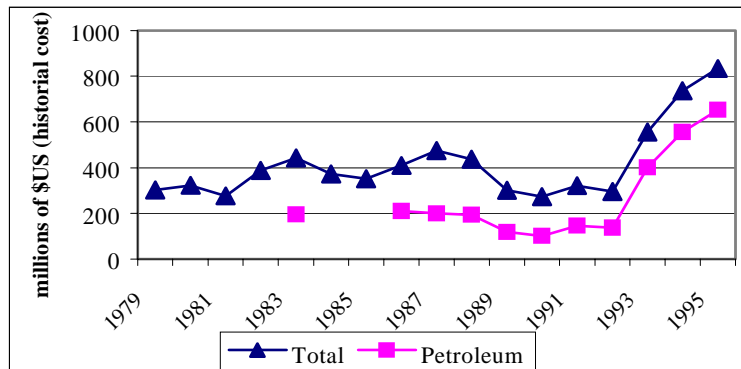
The petroleum sector has been the main attraction for U.S. investment. By 1994 and 1995 petroleum accounted for over 75 percent of total investment (Figure 8.9). In the early 1970s, a trans-Ecuador oil pipeline was financed by a consortium made up of Texaco and Gulf. In the 1980s, a series of oil finds and state-sponsored improvements in petroleum production infrastructure opened the door to foreign oil companies to operate under "association" models in which operations were jointly administered with the state petroleum company. In 1988, the government started to grant "service contracts" to stimulate additional foreign investment. U.S. companies that were awarded service contracts included Occidental Petroleum, Texaco, Oryx, Maxus, and Arco. Under participation-sharing contracts authorized in 1993, Amoco-Mobil, Oryx, Santa Fe Energy, Triton

⁸ The lines of credit included (1) Export Promotion Fund (FOPEX) for exports of nontraditional products beginning in 1982; (2) the Andean Development Corporation (CAF)'s credits through the Andean Trade Finance System to finance commerce between Andean Countries; (3) the CFN-emitted credits for pre- and post-embarkation; (4) the Central Bank's securities known as Export Bonds used to finance medium and long term operations; and (5) advances by the Central Bank on future exports.

⁹ Data on the stock of investment is provided by the U.S. Department of Commerce. Data on net investment flows is provided by the Banco Central del Ecuador

and BHP-King Ranch won five out of the eight concessions in 1994, and ARCO won a participation-sharing contract in April 1996.

FIGURE 8.9. U.S. ACCUMULATED INVESTMENT IN ECUADOR



Source: Central Bank of Ecuador

Non-petroleum investment rode on the coat tails of the petroleum boom. Responding to the growing domestic market in the mid-1970s and early 1980s, U.S. transnationals concentrated their investments in the manufacturing and wholesale sectors. A study by Carrion (1991) found that the number of foreign branches jumped from 24 between 1960 and 1966 to 110 between 1967 and 1975. National investors sought foreign partners for their potential contribution of technology and capital and to gain access to international capital markets. Foreign investors benefited by jumping over high barriers to entry. According to Sepulveda (1983), many of the sub sectors in which foreign investors partnered with local business groups functioned as monopolies or oligopolies.

The other key determinant to direct investment was the government's payment of its foreign commercial debt. U.S. investors reacted strongly to the suspension of payments on this debt in 1987. Between 1987 and 1990, U.S. investment in Ecuador fell by an average of 10 percent per year (on a historical cost basis). This rebounded after 1987, growing at an average annual rate of 31 percent between 1992 and 1995.

Foreign Investment Policy

The legal framework governing the treatment of foreign investment seems to have had little bearing on the decisions of U.S. transnational corporations to invest in Ecuador. Ecuador's first comprehensive legal framework for direct foreign investment, the Andean Group's Decision 24, was passed only a year before the start of systematic petroleum exploration in 1971. This ruling required investors to receive prior authorization, prohibited investment in sectors deemed adequately served by national companies, and prohibited investment in the banking, insurance, media and public services sectors. Profit remittances were heavily taxed, foreign owners were required to gradually transfer their investment to national owners, and foreign investors were required to convert their currency at the Central Bank rate.

Decision 220, that supplanted Decision 24 in 1987 and eliminated certain requirements on foreign investment and the remittance of profits, received a lukewarm response from U.S. investors. In part, the problem was the implementing regulations of Decision 220 issued by the Ecuadorian government. These maintained restrictions on certain areas of investment, including commercial banks and insurance companies, limited the percentage of a company's stock that could be held by foreigners, heavily taxed profit remittances, and required a fade-out agreement. More to the point, Decision 220 was approved at the height of the Ecuadorian debt crisis.

Legislation passed in the 1990s greatly improved the attractiveness of the investment climate in Ecuador. The Andean Group again revised its investment framework in 1991. Decision 291 accorded foreign investors the same rights of entry as private investors, permitted foreign investment of up to 100 percent of equity without

prior authorization, permitted remittances of 100 percent of profits and capital, and suppressed mandatory progressive nationalization of foreign enterprises.

In addition to the Andean Group ruling, the government implemented a series of market-oriented reforms. In 1989 the Borja government reduced tax penalties on foreign investors, and in 1991 opened the mining sector to foreign investment. By the mid-1990s, Ecuador's foreign exchange and tax regime was competitive with those in other Latin American countries (Table 8.4). Investment did not start to return, however, until 1993 and 1994 with the renegotiation of the foreign commercial debt and new opportunities for oil exploration under participation-sharing agreements.

TABLE 8.4. FOREIGN EXCHANGE AND TAX REGIMES

	Restrictions on Transactions in Capital Account	Additional Costs on Imports	Forced Repatriation of Export Revenues	Income Tax on Businesses	Income Tax on Individuals	VAT tax
Ecuador		x	x	Medium	Medium	Low
Colombia			x	Medium	Medium	Medium
Bolivia			x	Medium	Low	Medium
Peru		x		Medium	Medium	Medium
Venezuela	x	x	x	Medium	Medium	Medium
Mexico	x			Medium	Medium	Medium
Brazil	x		x	Medium	Medium	High
Chile	x		x	Low	High	Medium

Source: Inter-American Development Bank, 1996. Note: Low < 25%, Medium = 25%, and High > 40%

Deterrents to Foreign Investment

In the 1990s, there have been a number of disincentives to U.S. investment. One such factor is political instability. Compounding this was an unstable legal environment. According to the U.S. embassy in Ecuador, the extent to which foreign investors receive prompt and adequate compensation is largely related to the particular judicial process underway. The problem is exacerbated in sectors in which the government is a direct participant, such as the petroleum, electricity, mining and telecommunications. A change of Ministers during an administration or the arrival of a new administration often entails a renegotiation of contracts with foreign investors.

One example was the Borja government's intervention in EMELEC in 1989. Recently, the administration of President Abdala Bucaram (August 1996 - February 1997) introduced some uncertainty to foreign petroleum investors by pressuring oil companies that had previously been awarded risk service contracts to operate under a participation-sharing model (this affected Maxus and Tripetrol). In addition, a 1997 government regulation capped the profit-margin for private gasoline retailers, violating the terms under which the government opened gasoline distribution to the private sector in 1994. In addition, a Guayaquil Court's ruling in favor of the Ecuadorian Cumbaratza mining company to re-gain the rights to a concession in one of the best mining areas in Ecuador caused concern in the international mining community. The company had lost the concession in a decision by the Supreme Court after it failed to adhere to changes to the revised Mining Law in 1991. The appeals court in Guayaquil ignored the Supreme Court's decision, wrote their own ruling into law. Much to the detriment of the international mining companies that were subsequently awarded titles to this area, the Ministry of Energy failed to detect this change.

Yet another disincentive was the delay in the government's privatization agenda. The only direct government privatization as of this writing was the 50.1 percent sale of the state airline Ecuatoriana (not to U.S. investors). Returns on U.S. investment in Ecuador in the 1990s were also relatively low compared to other Latin American countries. According to CEPAL (1996), and as seen in Table 8.5, returns averaged 7.7 percent between 1991 and 1995, versus an average of 14.5 percent for all of Latin America and the Caribbean.

TABLE 8.5. ANNUAL RETURN ON U.S. INVESTMENT

(percent)	1991	1992	1993	1994	1995
<i>Ecuador</i>	10.4	3.0	4.1	7.4	13.6
Peru	-3.5	5.7	2.7	18.6	44.7
Colombia	18.2	28.1	10.3	11.1	17.0
Venezuela	25.9	34.2	27.5	16.2	21.4
Mexico	22.3	20.0	18.4	16.0	10.1
Chile	17.0	18.7	10.1	24.0	23.5
Argentina	20.5	18.7	19.8	21.1	14.3

Source: CEPAL, 1997.

Increasingly, protection of intellectual property rights has been a key consideration for foreign investors. The United States has insisted that Ecuador ratify a Bilateral Intellectual Property Rights Agreement (IPRA) or pass legislation containing equivalent standards. The IPRA stipulates a standard of protection akin to that outlined in the North American Free Trade Agreement, and more rigorous than the intellectual property rights agreement included in the WTO. Although the treaty has been signed, it has not been ratified by the Ecuadorian Congress. Insofar as no other South American country has signed the IPRA, the United States would have used Ecuador's ratification as a seal that the investment climate is of an international standard.

CONCLUSIONS

Ecuador's trade with the United States is not expected to change in the foreseeable future. Policies to open the economy have been more effective at developing trade within the region, and more recently with Western Europe, than with the United States. Exports to the United States fell from over 55 percent of total exports in the mid-1980s, to just over 35 percent in the mid-1990s.

Although Ecuador imported roughly the same percentage of total imports from the United States in the mid-1990s as in the early 1980s (32 percent – 34 percent of the total), the United States has lost ground on certain key products, while which the United States was the sole supplier of wheat between 1982 and 1991, Ecuador now also imports wheat from Germany, France, Australia, Argentina and Canada. Similarly, vehicle imports from Japan and Korea have increased these countries' participation in Ecuador's trade picture. Ecuador has bilateral investment agreements in place with Germany, Switzerland, the United Kingdom, France, Argentina, Chile, Venezuela, Uruguay, Paraguay, and El Salvador.

A more substantial increase in exports to the United States (and elsewhere) depends on aggressive public sector institutional support to the export sector. Although the Duran Ballen administration eliminated many of the barriers to trade, it made only marginal improvements to the ports and telecommunication systems, provided no tax incentives to exporters (beyond the infrequently-used *maquila* regimen)¹⁰, and continued to enforce a non-competitive system for air transport that disadvantaged the transport of perishable non-traditional exports. Regulations have yet to be drafted to implement a "drawback" system provided for in the 1994 Customs Law.

Moreover, public sector institutions need to apply policies that explicitly promote international trade. Ecuador's entrance to the WTO in 1996 provided the fulcrum for a policy shift. The passage of a Foreign Trade Law in 1997, and the resulting creation of a Ministry of Foreign Trade to succeed the Ministry of Industries, Integration and Fishing, were expected to put new emphasis on export diversification and technology transfer. The rate at which changes will happen is still in question, however, given a lack of funds for retraining personnel, and more importantly, the absence of a trade promotion strategy to accompany the new legislation. The new Law does not explicitly acknowledge Ecuador's membership in the WTO. It does not treat the processes for enforcing intellectual property rights, attracting technology, implementing anti-dumping safeguards, or applying conflict resolution mechanisms within the framework of the WTO. The fact that the Law preserves a role for the Ministry of Foreign Relations to oversee and sanction trade policy means that the institutional restructuring and retraining of workers must permeate the bureaucracy of not one, but two organizations.

¹⁰ A total of 37 companies, out of a total of 20,423 companies in Ecuador, now qualify as *maquiladores* by the Ministry of Industries. Nineteen of these companies belong to the clothing industry.

The prospect for accelerated export growth is also impeded by relatively less demand for non-trationals in the United States compared to Ecuador's other main export destinations. In the 1980s, the development of the shrimp industry, formerly classified as a non-traditional export, breathed new life into Ecuador's exports to the United States. In the mid-1990s, non-traditionals helped restore export growth to the rate of the early 1980s. However, since trade liberalization, Ecuador's greatest strides in promoting non-traditional exports have been made within the Andean region and Europe. The United States received only 18 percent of all non-traditional exports in 1996, as compared to 38 percent in 1990. Colombia's proportion jumped from 17 to 26 percent between 1990 and 1996, and that for Europe climbed from 15 percent to 26 percent. Whereas non-traditionals represented 22 percent of exports from Ecuador to all trading partners in 1996, they accounted for under 10 percent of exports to the United States. Ecuador's trade profile with the United States in the mid-1990s largely resembled that of the early 1980s.

Despite the prominence of the United States in Ecuador's trade picture, Ecuadorian exporters, in general, lack information about niche markets for non-traditionals in the United States, or products that qualify for favorable tariff treatment under the ATPA. Knowledge about the U.S. market has been confined to the handful of industries with years of experience, mostly those selling traditional agricultural exports. Many of the exporters of non-traditional products are relatively new to the export sector. These exporters have instead focused on the European and regional markets insofar as these impose less strict phyto-sanitary restrictions on agriculture imports, and in some cases, present less competition for Ecuadorian products.

The fact that the ATPA does not cover a number of key industries also limits incentives to export non-traditionals to the United States. Canned tuna, for example, does not receive preferential tariff treatment, although canned fish accounted for 14 percent of all non-traditional exports, 14 percent of all value-added exports, and 5 percent of total non-petroleum exports in 1996. Textiles and clothing, also exempted from the ATPA, accounted for 5 percent of total non-traditional exports and 5 percent of value-added exports in 1996. Without favorable tariff treatment, Ecuador faces stiff competition for many of its products from Central America. The 2001 expiration date also creates a disincentive to develop non-traditional sectors. The ATPA may be renewed, but local investors require a stronger guarantee.

The legacy of import-substitution creates an additional obstacle to exporting value-added products and reducing dependence on value-added imports (i.e. improving Ecuador's terms of trade). Tariff protection in the 1980s shielded many industries such as household appliances, metal manufacture, petrochemicals and textiles from having to make productivity or quality improvements. This ultimately led to the closure of many industries that have not been able to compete in an open economy. Further, the brusque elimination of the implicit exchange rate subsidy after 1982 made new investment in local industry for domestic consumption less attractive. According to CEPAL (1996), between 1990 - 1994, Ecuador had the lowest proportion of manufactured exports to total exports of all Latin American countries with 6.5 percent. On the other hand, primary products designed for export were constantly receiving new investment to keep them technologically competitive. These included the banana, shrimp and flower sectors.

A potential complication is the Intellectual Property Rights Agreement between Ecuador and the United States. Intellectual property protection is the U.S. government's litmus test of the 1990s for encouraging direct investment. The Ecuadorian government has delayed its ratification based on contradictions with existing Andean legislation governing intellectual property rights (although officials in the Ecuadorian government report that the Andean Community is set to revise its intellectual property rights legislation). The United States took a hard line against Ecuador insofar as Ecuador's compliance with what it viewed as agreements made upon entry to the WTO would set a precedent for other countries. The United States has also maintained that the terms of IPRA would be implemented throughout Latin America sooner or later as a condition of the Free Trade Area of the Americas.

The United States' response to the non-ratification of the treaty, and to what it viewed as non-compliances with the terms of Ecuador's accession to the WTO, was to return Ecuador to the Special 301 Watch List for violation of intellectual property rights (other Andean countries have always appeared on this list), and then to move Ecuador to the Priority Watch List. Rather than cementing economic ties, the controversy generated by IPRA actually jeopardized Ecuador's trade and investment relationship with the United States.

The Ecuadorian government defused tension by agreeing to the immediate acceptance of the intellectual property rights regime of the WTO, and repealing the 1976 Agents and Distributors Protection Law in August

1997.¹¹ Government officials in Ecuador expect the Congress to harmonize local intellectual property rights legislation with that of the WTO by early 1998, which would address many of the issues outlined in the IPRA as well. The Ecuadorian government has maintained that, with all the trade and investment reforms undertaken to date, it should not be subject to economic reprisals. The reforms to the banking sector that permit foreigners to own 100 percent of financial institutions are far more important than, for example, barriers to the free entry of used clothes, vehicles and tires. Ecuador rushed its accession to the WTO, over the protests of many business sectors on the terms of negotiations for entrance, given the EU's decision to limit banana imports from Ecuador.

With these concessions, as well as an agreement to renegotiate the deadline for phasing out other trade practices that violate the WTO, the United States is unlikely to further downgrade Ecuador's status and impose trade sanctions. The United States has nothing to gain by a deterioration of the trade relationship. U.S. exporters compete with Japan and newly-industrialized Asian countries in the type of value-added products sold to Ecuador.

For now, the reasons why U.S. investment has stagnated have more to do with the delays in the government's privatization agenda, and unclear rules for doing business, than the Intellectual Property Rights Agreement or the level of Ecuador's foreign indebtedness. Nonetheless, this stagnation reverberates in Ecuador's balance of payments, as well as in the ability of the private sector to procure new technologies to diversify Ecuador's export base and improve its international competitiveness.

¹¹ The so-called "Dealers Act" prevented U.S. and other foreign suppliers from terminating existing exclusive distributorship contracts without paying compensation, even if a valid termination clause existed in the contract.

APPENDIX 8.A

The regression equations were based on yearly data between 1978 - 1995 for a total of 18 observations. Data on imports and exports were provided by the United States Department of Commerce. Other data was provided by the Central Bank of Ecuador.

The dependent variables used were:

Real exports defined as the log of the FOB value of exports (in dollar terms) deflated by an export price index developed by the Central Bank of Ecuador (CBE) consisting of major exports to Ecuador's trading partners (**LEXPR**);

Real imports defined as the log of the FOB value of imports (in dollar terms) deflated by a price index of total imports from the United States developed by the CBE (**LIMPR**);

Real traditional non-petroleum exports defined as the log of FOB value of these exports (bananas, shrimp, fish, coffee and derivatives, and cocoa and derivatives), deflated by a weighted average price of traditional exports (**LTRADICR1**);

Consumer imports defined as the log of consumer imports deflated by a price index of total imports from the United States (**LCONSR**).

The explanatory variables tested included:

The real bilateral exchange rate with the United States defined as the log of the real bilateral exchange rate with the United States (**LTCB**);

The nominal export exchange rate defined as the log of the nominal export exchange rate;

The nominal import exchange rate defined as the log of the nominal import exchange rate;

Ecuador's terms of trade (including all of Ecuador's trading partners) defined as the log of the terms of trade index (**LINTER**);

Ecuador's real GDP defined as the log of the real GDP (**LPIBR**);

Monetary reserves defined as monetary reserves in dollars (**RMIR**);

Investment defined as the log of gross fixed capital formation (**LFBCF**);

The implementation of the Andean Trade Preferences Act defined as a dummy variable as of 1993 and thereafter (**DUMEXP**);

The reduction of import tariffs defined as a dummy variable as of 1990 and thereafter (**DUMARAN**);

Access to the free market exchange rate for exporters, defined as a dummy variable in 1986, 1987, 1992, 1993, 1994, and 1995 (**DUMTCL**).

Tests of unit roots were applied to the variables before applying the technique of minimum least squares to ensure that the data series complied with the requirement of stationarity. All of the series proved to be not stationary (integrated by an order of 1), although the residuals of the regressions were stationary, showing a stable long-term relationship between the variables. For all of the regressions, the results met the augmented Dickey Fulley test (ADF) of stationarity. In the case of imports, the residuals passed the Phillips Ouliaris test, used to prove the stationarity of the residuals.

	Constant or Trend	Lags	Degree of Integration	ADF Test Statistic	Critical Value	Level of Significance
LIMPR	C, T	2	I (1)	-4.447794	-3.7921	5
LPIBR	C	1	I (1)	-4.188665	-3.9228	1
LTCB	—	0	I (1)	-2.069874	-1.9642	5
RMIR	C,T	1	I (1)	-6.006477	-4.6712	1
LCONSR	C,T	3	I (1)	-4.286833	-3.8288	5
LEXPR	—	3	I (1)	-2.24737	-1.9699	5
LFBCF	C,T	3	I (1)	-5.133196	-4.887	1
LTRADICR1	C	1	I (1)	-3.251391	-3.0818	5
LINTER	C	1	I (1)	-3.30531	-3.0659	5

For information about the construction of regression models for non-traditional exports, see Central Bank of Ecuador, *Determinantes de las Exportaciones no Tradicionales en el Ecuador 1976 - 1995* in *Cuestiones Economicas* No. 30, by Maria Belen Freire, Monica Salvador y Katiuvshka Yanez. Quito Enero 1997.

APPENDIX 8.B**Total Exports**

Sample: 1978 1995

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	23.93065	2.218964	10.78461	0
LTINTER	-0.557995	0.163671	-3.409251	0.0042
LFBCF	-1.195636	0.245821	-4.863854	0.0003
DUMEXP	0.386317	0.116799	3.307528	0.0052

R-squared	0.858745	Mean dep. var	9.380368
Adjusted R-squared	0.828476	S.D. dep. var	0.329858
S.E. of regression	0.136612	Akaike info criterion	-3.788091
Sum squared resid	0.26128	Schwartz criterion	-3.59023
Log likelihood	12.55192	F-statistic	28.37048
Durbin-Watson stat	1.533242	Prob (F-statistic)	0.000003
ADF Test Statistic	-3.042105	1% Critical Value*	-2.7411
		5% Critical Value	-1.9658
		10% Critical Value	-1.6277

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

LS // Dependent Variable is D(RESIDUOX)

Included observations: 15 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
RESIDUOX(-1)	-1.584286	0.520786	-3.042105	0.0102
D(RESIDUOX(-1))	0.658241	0.407216	1.616441	0.132
D(RESIDUOX(-2))	0.439803	0.303796	1.447691	0.1733

R-squared	0.485639	Mean dependent var	0.024825
Adjusted R-squared	0.399913	S.D. dependent var	0.162802
S.E. of regression	0.126115	Akaike info criterion	-3.964261
Sum squared resid	0.190861	Schwartz criterion	-3.822651
Log likelihood	11.44788	F-statistic	5.664968
Durbin-Watson stat	1.982083	Prob(F-statistic)	0.018519

APPENDIX 8.C**TOTAL IMPORTS**

Sample: 1978 1995

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-2.883442	5.630074	-0.51215	0.6165
LPIBR	1.289792	0.501566	2.571529	0.0222
LTCB	-0.836288	0.147678	-5.662907	0.0001
DUMARAN	0.235774	0.115313	2.044645	0.0602

R-squared	0.78542	Mean dependent var	9.071653
Adjusted R-squared	0.739439	S.D. dependent var	0.239691
S.E. of regression	0.122351	Akaike info criterion	-4.008597
Sum squared resid	0.209576	Schwartz criterion	-3.810737
Log likelihood	14.53648	F-statistic	17.08127
Durbin-Watson stat	1.864742	Prob(F-statistic)	0.000059
ADF Test Statistic	-2.602311	1% Critical Value*	-2.7275
		5% Critical Value	-1.9642
		10% Critical Value	-1.6269

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test

Equation

LS // Dependent Variable is D(R1)

Included observations: 16 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
R1(-1)	-0.994209	0.382048	-2.602311	0.0209
D(R1(-1))	-0.013966	0.262699	-0.053165	0.9584

R-squared	0.480949	Mean dependent var	0.009605
Adjusted R-squared	0.443874	S.D. dependent var	0.153957
S.E. of regression	0.114812	Akaike info criterion	-4.212453
Sum squared resid	0.184545	Schwartz criterion	-4.11588
Log likelihood	12.99661	F-statistic	12.97232
Durbin-Watson stat	1.747943	Prob(F-statistic)	0.002889

APPENDIX 8.D

TOTAL EXPORTS

Sample: 1978 1995

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	17.75898	3.956686	4.488348	0.0005
LTCB	0.405637	0.175596	2.310055	0.0366
LFBCF	-1.027724	0.343008	-2.996207	0.0096
DUMEXP	0.471851	0.126971	3.716196	0.0023

R-squared	0.81282	Mean dependent var	9.380368
Adjusted R-squared	0.77271	S.D. dependent var	0.329858
S.E. of regression	0.157259	Akaike info criterion	-3.506588
Sum squared resid	0.346227	Schwartz criterion	-3.308727
Log likelihood	10.0184	F-statistic	20.26477

Augmented Dickey-Fuller Test Equation

LS // Dependent Variable is D(ER5)

Included observations: 16 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
ER5(-1)	-1.127077	0.400705	-2.812737	0.0138
D(ER5(-1))	0.308849	0.27503	1.122965	0.2803

R-squared	0.387662	Mean dependent var	0.02133
Adjusted R-squared	0.343923	S.D. dependent var	0.171965
S.E. of regression	0.139289	Akaike info criterion	-3.82594
Sum squared resid	0.27162	Schwartz criterion	-3.729366
Log likelihood	9.9045	F-statistic	8.863178
Durbin-Watson stat	2.047584	Prob(F-statistic)	0.009995
		F-statistic	8.863178
		Prob(F-statistic)	0.009995

APPENDIX 8.E**TRADITIONAL AGRICULTURE EXPORTS**

Sample: 1978 1995

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	3.913091	0.712512	5.491962	0.0001
LTCB	1.068694	0.165627	6.452406	0
DUMTCL	0.316189	0.104665	3.020954	0.0086
R-squared	0.836187	Mean dependent var		8.687128
Adjusted R-squared	0.814345	S.D. dependent var		0.449509
S.E. of regression	0.193683	Akaike info criterion		-3.132052
Sum squared resid	0.562697	Schwartz criterion		-2.983656
Log likelihood	5.647572	F-statistic		38.2838
Durbin-Watson stat	1.314922	Prob(F-statistic)		0.000001
ADF Test Statistic	-3.580593	1% Critical Value*		-2.7275
		5% Critical Value		-1.9642
		10% Critical Value		-1.6269

*MacKinnon critical values for rejection of hypothesis of a unit

Augmented Dickey-Fuller Test Equation

LS // Dependent Variable is D(R6)

Included observations: 16 after adjusting

Variable	Coefficient	Std. Error	T-Statistic	Prob.
R6(-1)	-1.125809	0.31442	-3.580593	0.003
D(R6(-1))	0.354975	0.202559	1.752448	0.1016
R-squared	0.479471	Mean dependent var		0.01244
Adjusted R-squared	0.44229	S.D. dependent var		0.188282
S.E. of regression	0.140609	Akaike info criterion		-3.807075
Sum squared resid	0.276793	Schwartz criterion		-3.710502
Log likelihood	9.753585	F-statistic		12.89571
Durbin-Watson stat	2.045282	Prob(F-statistic)		0.00295

APPENDIX 8.F**TOTAL IMPORTS**

Sample: 1978 1995

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-2.165349	4.5937	-0.471374	0.6446
LPIBR	1.098086	0.445421	2.465277	0.0272
RMIR	0.022833	0.007902	2.889589	0.0119
LTCB	-0.487004	0.193209	-2.520606	0.0245

R-squared	0.825448	Mean dependent var	9.071653
Adjusted R-squared	0.788044	S.D. dependent var	0.239691
S.E. of regression	0.11035	Akaike info criterion	-4.215058
Sum squared resid	0.170481	Schwartz criterion	-4.017197
Log likelihood	16.39463	F-statistic	22.06849
Durbin-Watson stat	2.161513	Prob(F-statistic)	0.000014

ADF Test Statistic	-4.174277	1% Critical Value*	-2.7275
		5% Critical Value	-1.9642
		10% Critical Value	-1.6269

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

LS // Dependent Variable is D(RESEQM)

Included observations: 16 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
RESEQM(-1)	-1.562695	0.374363	-4.174277	0.0009
D(RESEQM(-1))	0.408822	0.259097	1.577874	0.1369

R-squared	0.613343	Mean dependent var	0.011912
-----------	----------	--------------------	----------

The value according to the Phillips and Ouliaris table is -3.9895 without a constant or trend, with a 0.025 significance.

APPENDIX 8.G**CONSUMER IMPORTS**

Sample: 1978 1995

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	12.47094	2.042889	6.104558	0
LTCB	-1.466677	0.457671	-3.204652	0.0059
RMIR	0.096933	0.026124	3.71045	0.0021

R-squared	0.666896	Mean dependent var	6.670263
Adjusted R-squared	0.622482	S.D. dependent var	0.922208
S.E. of regression	0.566628	Akaike info criterion	-0.985094
Sum squared resid	4.816005	Schwartz criterion	-0.836698
Log likelihood	-13.67505	F-statistic	15.01549
Durbin-Watson stat	1.330423	Prob(F-statistic)	0.000263

The ADF test Statistic for consumer imports is -3.157964. The value according to the Phillips and Ouliaris table is -3.1105, with a significance of 0.075%.

APPENDIX 8.H**CONSUMER IMPORTS**

Sample: 1978 1995

Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-0.206488	2.810918	-0.073459	0.9424
LTINTER	1.260223	0.572591	2.200913	0.0438
RMIR	0.122642	0.029159	4.20596	0.0008
R-squared	0.575818	Mean dependent var		6.670263
Adjusted R-squared	0.519261	S.D. dependent var		0.922208
S.E. of regression	0.639417	Akaike info criterion		-0.743386
Sum squared resid	6.132803	Schwartz criterion		-0.594991
Log likelihood	-15.85041	F-statistic		10.1811
Durbin-Watson stat	1.182359	Prob(F-statistic)		0.001609
ADF Test Statistic	-3.340086	1% Critical Value*		-2.7275
		5% Critical Value		-1.9642
		10% Critical Value		-1.6269

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test

Equation

LS // Dependent Variable is D(RESIDUOM)

Included observations: 16 after adjusting endpoints

Variable	Coefficient	Std. Error	T-Statistic	Prob.
RESIDUOM(-1)	-0.89796	0.268843	-3.340086	0.0049
D(RESIDUOM(-1))	0.397847	0.234956	1.693283	0.1125
R-squared	0.442519	Mean dependent var		-0.032552
Adjusted R-squared	0.402699	S.D. dependent var		0.684509
S.E. of regression	0.529025	Akaike info criterion		-1.156972
Sum squared resid	3.918139	Schwartz criterion		-1.060398
Log likelihood	-11.44724	F-statistic		11.11297
Durbin-Watson stat	2.044066	Prob(F-statistic)		0.004922

REFERENCES

- Abril, Galo. 1985. *Política Monetaria y Desarrollo Industrial en el Ecuador 1970 – 1983*. Quito: Central Bank of Ecuador (August).
- Central Bank of Ecuador. 1997. *La Evolucion del Arancel en el Ecuador: 1990 - 1996*. Cuadernos de Trabajo (May).
- Central Bank of Ecuador. 1996. *Política Cambiaria en el Ecuador 1980 - 1995*. Cuadernos de Trabajo (September).
- Central Bank of Ecuador. 1996. Índice de los Terminos de Intercambio: Nota Metodologica y Resultados. Cuadernos de Trabajo No. 110 (June).
- Central Bank of Ecuador. 1996. *La Competitividad del Comercio Exterior y La Especializacion Productiva en el Ecuador: 1970 - 1995*. Notas Tecnicas 29 (March).
- Central Bank of Ecuador. 1995. *Desempeno del Comercio Exterior Ecuatoriano y Perspectivas de Mediano Plazo*. Notas Tecnicas No. 20 (October).
- BDO Stern Co and Romero Arteta Ponce Attorneys At Law. 1995. *Doing Business in the Oil and Gas Industries in Ecuador*, (July).
- Bitar, Sergio. 1984. *La Inversion Norteamericana en el Grupo Andino*. Trimestre Economico, pp. 313 - 326.
- Camacho, Dr. Carlos y Econ. Fernando Suarez. 1991. *La Competitividad de las Exportaciones Primarias No Petroletras Ecuador*. Quito: Instituto de Estrategias Agropecuarias (December).
- Carrion, Luis Fierro. 1991. *Los Grupos Financieros en el Ecuador*. Quito: Centro de Educacion Popular.
- Comision Economica para America Latina (CEPAL). 1997. *La Inversion Extranjera en America Latina y el Caribe. Informe 1996*. Santiago: CEPAL.
- . 1996. *Las Políticas Comerciales entre America Latina y los Estados Unidos: Una Evaluacion Analitica*. Santiago: CEPAL.
- Creamer, German Guillen, ed. 1997. *La Participacion del Ecuador dentro del Proceso de Integracion Andina: Evaluacion del Impact Macroeconomico y Sectorial. El Ecuador en el Mercado Mundial*. Quito: Corporacion Editora Nacional.
- Development Alternatives Inc. 1991. *Analyses and Recommendations for the Design of the Trade and Investment Sector Program in Ecuador*. Prepared for the U.S. Agency for International Development (June).
- Franklin, David L. 1990. *Trade Reform in Ecuador: A Strategy for Employment and Growth*. Sigma One Corporation. Prepared for U.S. Agency for International Development (December).
- Inter American Development Bank and Institute for European-Latin American Relations (IDB/IRELA). 1996. Progreso Economico y Social en America Latina. Informe. Madrid: IRELA.
- . *Inversion Extranjera Directa en America Latin en los Anos 90*. Madrid: IRELA.
- . 1993. *Foreign Direct Investment in Latin America*.
- Ministerio de Relaciones Exteriores. 1994. *Adhesion del Ecuador a GATT* TOMO I.
- Osorio, Luis Luna. 1996. *Proyeccion Del Ecuador Al Mundo*. Quito: V& O Graficas.
- Osorio, Luis Luna. 1995. *Competir en el Mundo y Exportar*. Quito: Imprenta Ortiz.
- Salvador, Monica, Maria Belen Freire and Katiuvshka Yanez. 1997. *Determinantes de las Exportaciones no Tradicionales en el Ecuador 1976 - 1995*. Cuestiones Economicas No. 30, Quito: Central Bank of Ecuador (January).
- Sepulveda, Cristian. 1983. *El Proceso de Industrializacion Ecuatoriano*. Quito: Pontificia Universidad Catolica del Ecuador.
- U.S. Agency for International Development. 1991. *Analisis del Clima de Inversion en el Ecuador* (June).
- U.S. Department of Commerce, various data bases.
- U.S. Department of Commerce, Quito-Based Commercial Service. 1997. U.S. Subsidiaries and Branches in Ecuador. (January).
- U.S. Embassy/Quito. 1996 - 1997. *Country Commercial Guide Ecuador*.
- . 1997 - 1998. *Investment Climate Statement*.