

Macro Booms, Agriculture and Rural Poverty in the 1990s:

Colombia and El Salvador Compared

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Abstract

This paper compares the experiences of El Salvador and Colombia with agricultural trade liberalization in the 1990s. We find that both have experienced relatively slow agricultural growth since 1990 due to declining farm returns associated with appreciating real exchange rates and falling international commodity prices. We encounter strong symptoms of Dutch Disease-type developments, in which large inflows of foreign exchange lead to downward pressure on the relative price of tradable sectors, including much of agriculture. Opportunities for farmers have also been negatively affected by significant reductions in national research and extension efforts. The most significant difference in post-reform developments is that rural welfare indicators improved significantly in Colombia after 1990, while the living standards of rural inhabitants stagnated in El Salvador.

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I. Introduction

Colombia and El Salvador enacted broadsweeping trade reforms in the early 1990s, abandoning import substitution policies which had been in place since the 1950s.¹ These reforms have been part of the radical shift in development strategy which swept through Latin America in the past decade (Edwards, 1995; De Janvry, Key and Sadoulet, 1997). Despite different levels of economic development and size—Colombia is 54 times larger than El Salvador in area and 6.7 times in population—both countries have traditionally exhibited a similar array of agricultural activities, stemming from broad similarities in weather and terrain. Coffee has remained the principal crop of the agricultural sector in both economies, providing the bulk of agricultural export earnings and rural employment. Other activities like sugar cane, cotton, white maize, beans, sorghum, rice and cattle production have played important roles in the rural economy of both countries.

Violence has also been a common feature of rural conditions in El Salvador and Colombia in the post-war period. In the former, rural violence escalated into a civil war in the 1980s, which ended formally with the 1992 peace accords. However, high levels of rural (and urban) violence have persisted into the late 1990s, linked to rural poverty, disintegration of families due to international migration, and the vacuum of authority as the National Police Force was replaced by the National Civilian Police. Colombia has been noteworthy for persistent levels of violence since the 1940s. The intensity of guerrilla-related violence has escalated greatly since the early 1980s, leading to a near civil war status in the late 1990s.

This paper compares the experiences of El Salvador and Colombia with agricultural trade liberalization in the 1990s, highlighting critical similarities and differences. We find that both economies have experienced relatively slow growth in agriculture during the 1990s, associated with appreciating real exchange rates and falling international commodity prices. We encounter strong symptoms of Dutch Disease-type developments: large inflows of foreign exchange exerted downward pressure on the relative price of tradable sectors, including much of agriculture. The situation was worsened by the decline in funding for research and extension efforts, which limited the provision of productive alternatives to farmers affected by low returns. The most significant difference in post-reform developments is that rural welfare indicators improved significantly in Colombia after 1990, while living standards in the Salvadoran countryside have stagnated.

The next two sections contain brief descriptions of the agricultural economy of El Salvador and Colombia, respectively, and the nature of policy reforms of the 1990s. The fourth section presents a comparison of the results of reforms during the 1990s, focusing on economic results as well as socio-economic indicators. The fifth section summarizes the main findings and offers some interpretations of the similarities and differences.

II. The Case of El Salvador

Structure of Agriculture

Salvadoran agriculture is an important portion of the national economy, although its significance has lessened in recent years. Agriculture's contribution to GDP decreased from 26 percent of the total in 1990 to 22 percent in 1996 while agricultural exports declined from 59 to 31 percent of total exports in the same period. Much of this reduction in the importance of agricultural exports is directly related to strong growth in textile and other *maquila* activities in the 1990s. However, in 1997, over 55 percent of the rural workforce was still employed in agriculture although this figure has declined from 66 percent in 1991, and over 45 percent of the population still lived in rural areas (MECON, 1998).

Salvadoran agriculture consists essentially of tradable economic activities. Low transportation costs to the coast and to neighboring countries make cross-border trade in almost every crop feasible. Exportables account for about half of Salvadoran agricultural production, with coffee (22 percent) sugar (3 percent) and poultry and egg production (6 percent) making significant contributions. Importables account for the rest, featuring basic grains (sorghum, beans and maize, 27 percent), and cattle and hog operations (11 percent). Despite an extensive agrarian reform, the civil war, and significant economic reforms, this structure of agricultural production has remained virtually unchanged during the past two decades, with the share of land dedicated to basic grains and pasture rising to 69.9 percent in the late 1990s, compared to 64 percent in 1980, that of coffee falling 10.5 percent from 11.8 percent, and that of forestry activities stable at approximately 16.5 percent. The only significant change is the disappearance of cotton, which accounted for 3.7 percent of land use in 1980, land which for the most part was shifted to sugar cane, which grew from 1.9 percent of land to 3.6 percent at the end of the decade (DGEA, 1999).

Agricultural policies and reforms of the 1990s

In the 1970s and 1980s, the Salvadoran government embraced the import substitution-industrialization model. To counteract the anti-agricultural bias of the model, subsidies were provided to producers in terms of credit, inputs, and marketing costs. High tariffs and import restrictions protected most importable activities, in particular basic grains (e.g., beans, maize and sorghum) and livestock and dairy producers. Revenues obtained from explicit and implicit taxes on exportable crops (coffee and shrimp) were used in part to finance subsidies for other sectors of the economy (Núñez and Loehr, 1991; Segovia, 1997). As a result of depressed economic incentives and the effects of war, agricultural production registered low growth in the 1970s (0.6 percent annually), and negative growth in the 1980s (-1.5 percent annually). In this period, cultivated areas declined and productivity failed to improve for most crops. Cotton production disappeared completely, due mainly to high costs incurred to fight pesticide-resistant insects.

From 1989 to 1994, the Government of El Salvador took dramatic steps to open the economy to trade and foreign investment, reducing the size and scope of government. In the agricultural sector, the changes were substantial. Price controls and input and credit

subsidies were for the most part eliminated. Tariff levels declined to relatively low levels, ranging from 5 percent to 20 percent for almost all imports. Import license requirements were suppressed except for sugar and jute bags (Núñez, et al, 1993; Vanegas, et al, 1993). In the late 1990s, the range of tariffs has gradually fallen to 0 percent to 15 percent for most products. Export taxes on coffee and shrimp were eliminated in the early 1990s, and the government monopoly on coffee exports was abolished.

Government involvement in agricultural marketing also came to a halt in this period with the dissolution of the *Instituto Reguladora de Abastecimiento (IRA)*, the parastatal with the exclusive rights to market, import and export basic grains and powdered milk and to set prices for these products. Much of the storage capacity of IRA has been sold to private users and producers organizations (Núñez, et al, 1993).

In 1992, in conjunction with Honduras, Nicaragua and Guatemala, El Salvador instituted a price band system for rice, white and yellow corn, and sorghum, based on the Chilean model. The mechanism provided greater internal price stability than the previous fixed-tariff regime (Vanegas, et al, 1993), a result which is not surprising given the high price transmission elasticity for grains estimated for El Salvador (Mundlak and Larson, 1992). However, the price bands were withdrawn in 1994 due to an administrative error and subsequent political scandal. Tariffs for grains have since suffered frequent modifications, as the government responded to pressure from industrial users and consumer interests (Norton and Angel, 1999).

In the 1990s, El Salvador has also taken great strides in opening its economy to trade with its neighbors. Trade with Central American Common Market (CACM) members has grown dramatically since its rejuvenation in the late 1990s. The current CACM includes free trade for almost all products within member countries and a common external tariff for most products. El Salvador also receives unilateral trade preferences for most product exports to the United States (the Generalized System of Preferences and the Caribbean Basin Initiative), and for most agricultural exports to the European Union (Generalized System of Preferences). Recent integration efforts include an agreement with the Dominican Republic in 1999, and continuing negotiations with Panama, Mexico, and Chile (Pleitez, 1999).

In 1991, El Salvador instituted a duty-drawback scheme to improve export competitiveness, providing a subsidy to exporters of 6 percent of the fob value. However, the measure's impact in the agricultural sector is extremely limited because 90 percent of agricultural exports are not eligible for the incentive because they are traditional products (coffee and sugar) or are sent to the rest of the CACM (Angel, 1996).

The provision of agricultural credit also went through reforms as the previously nationalized banking system was gradually privatized in the early to mid 1990s. However, a large share of agricultural credit remains in the hands of the *Banco de Fomento Agropecuario (BFA)*, which was not privatized. Although interest rates remain slightly subsidized through BFA, the level of subsidy is greatly reduced. Even so, the BFA is plagued by problems with profitability, and inward-focused attempts to improve its performance have shown abysmal results (World Bank, 1997).

In the 1980s, El Salvador began a lengthy land reform process, transferring large *haciendas* to workers organized as cooperatives in one phase, and land to sharecroppers in another. Although former land owners were compensated, land transfers were forcibly imposed. Land reform beneficiaries were also obligated to pay the government for the land in order to receive full title. However, due to production difficulties, the effects of the war, and lack of management capabilities, very few cooperatives have prospered, accumulating large debts from operating capital loans in addition to the land debt. Following the 1992 peace accords, more land was transferred to former combatants both from the military and the guerrilla movement. These lands typically were not choice areas for agricultural production, and many excombatants had no farming experience. In general, and despite much assistance from international organizations, these land reform beneficiaries also have failed to prosper.

III. The Case of Colombia

Structure of agriculture

Agriculture has traditionally been the most important sector of the Colombian economy, accounting for a quarter to a third of economic output in the post-war period. By 1996, agriculture's share of gross domestic product (GDP) had declined to about 19 percent. Until the 1990s, agriculture was the country's main source of foreign exchange earnings, with coffee accounting for the bulk of revenues. However, rapid growth of non-traditional exports and the surge in mineral exports—coal in the 1980s and oil in the 1990s—contributed to reducing the importance of agriculture as a source of foreign exchange. While agriculture accounted for two thirds of exports in 1970, its share in the 1990-95 period fell to about a third.

In the early 1990s, agriculture was still the principal source of employment for over a third of the population living in rural settings. Nonetheless, the importance of agriculture as a provider of employment in the national economy has declined gradually during the postwar period. In the 1970s, it was estimated that about a third of the labor force worked in agricultural activities; this proportion has fallen to nearly 20 percent in the 1990s.

Exportable activities account for about a third of agricultural output, importables for about a fifth and non-tradables for the remaining half (Jaramillo, 1998). Exportables include crops such as coffee, bananas, flowers, sugar and cotton. Coffee is the preeminent traditional export, accounting for the bulk of foreign exchange earnings and generating about a third of agricultural employment. Bananas, flowers, sugar and cotton are non-traditional crops that prospered by pro-diversification policies since the 1960s. Apart from these crops, Colombia has been known internationally as a key source of illegal drugs (i.e., cocaine, heroine and marijuana) since the late 1970s. Although reliable data on trade flows of illegal crops are not available, it is estimated that drug exports yielded between US\$2.0 and US\$2.7 billion annually in the mid-1990s, while legal agricultural exports averaged around US\$2.5 billion (Steiner, 1996).

Importable crops include oilseeds (i.e., soybeans and oil palm) and grains such as wheat, barley, maize, sorghum and rice. Colombia also imported about a fifth of its domestic

consumption of dairy products in the 1980s.

Non-tradable activities have accounted for about half the value of domestic production and agricultural employment since the 1980s. This group of commodities features bulky, low-value crops, such as potatoes, cassava (*yucca*), plantains, *panela* (a type of brown sugar) and most fruits and vegetables. These crops are naturally shielded from outside competition due to their high perishability and transportation costs. Most of them are produced by traditional *campesino* producers, with limited access to modern technologies, inputs and formal credit. Another important non-tradable activity is beef production, traditionally isolated from international trade because of the presence of hoof and mouth disease, which restricts entry to most outside markets.

Agricultural policies and the reforms of 1990

Prior to 1990, economic policies in Colombia followed broadly the import substitution industrialization model, which discriminated against tradable agriculture (García and Montes, 1988 and 1989; Thomas, 1985). However, policies diverged from the classic pro-industry pattern due to the special protection regime granted to importable crops. Policies were designed to stimulate and protect import-competing crops in order to save scarce foreign exchange and stabilize domestic prices. Protected crops were expected to provide a stable supply of foodstuffs to urban centers (esp., grains, beef and dairy products) or raw materials for budding agroindustrial establishments (e.g., soybeans, oil palm and cotton). Exportable crops—excluding coffee²—benefited from export subsidies as well as credit programs at low interest rates. By contrast, non-tradable—mainly smallholder—crops were mostly ignored by government policies until the mid-1970s, when integrated rural development efforts were launched.

Under the import substitution regime, Colombian agriculture registered substantial gains, growing at an average 3.5 percent per year between 1950 and 1990. However, the promotion of mechanical innovations and the relative abandon of smallholder crops resulted in slow employment generation and few benefits for the poorer segments of the rural population (World Bank, 1994).

The import-substitution regime was gradually dismantled by liberal economic reforms between 1990 and 1992 (Jaramillo, 1998). The centerpiece of the so-called *Apertura* reforms was trade liberalization for all sectors, including agriculture. *Apertura* was expected to expand markets for Colombian products, reinvigorate capital accumulation and foster technological improvements in all sectors of the economy.

Reforms in agriculture were initiated in October of 1990 with the elimination of non-tariff import barriers for all crops except for sensitive grains and oilseeds. By mid-1991, all non-tariff barriers had been eliminated for grains and oilseeds, as well as the monopoly on grain imports held by IDEMA, the parastatal in charge of agricultural marketing.

Fears about the potential impact of rapid liberalization on importable crops led to the creation of a special import regime for politically sensitive crops. Price bands were designed in 1991 to produce variable tariffs that would filter out extreme price variations

from world market signals for nine commodities, namely, wheat, barley, rice, maize, sorghum, soybeans, oil palm, milk and sugar. Floor and ceiling prices were calculated for each semester on the basis of monthly world price information for the previous five years.³ Variable tariffs were calculated twice a month, reflecting the ad-valorem rate necessary to raise world prices to the floor level. Tariff reductions were applied if world prices increased above ceiling levels.

Apertura measures included the elimination of IDEMA's monopoly on grain imports and a gradual withdrawal of direct intervention in markets. Support prices were replaced in 1991 by significantly lower "floor" prices, which were eventually phased out in 1995. IDEMA's purchasing activities were reoriented towards marginal areas, as an income-support policy for *campesinos*. However, its reduced role, coupled with mounting accusations of corruption and administrative inefficiencies, led to its liquidation in 1996.

The government placed high priority on the expansion of markets for Colombian products through the negotiation of international trade agreements. This led to the establishment in 1992 of the Andean free trade zone between Colombia, Venezuela, Ecuador and Bolivia, which included the removal of most quantitative restrictions and tariff for flows of agricultural products. Trade agreements were also agreed with Chile in 1993 and with Mexico and Venezuela in 1994. Preferential tariff agreements with the United States in 1991 and with the European Union in 1993 were also obtained as part of larger efforts to encourage alternatives to the cultivation of *coca* in South American countries.

Trade liberalization also eliminated the need for policies to compensate for the effects of excessive industrial protection. Consequently, the government implemented a gradual phasing out of export subsidies, which had been instrumental in compensating anti-export biases until 1990.

Prior to 1990, credit for agriculture benefited from the operation of rediscounting funds at the Central Bank and the presence of large state banks in rural areas. Farmers enjoyed low interest rates and a relative abundance of funds. *Apertura* measures included a phasing-out of interest rate subsidies and a reorientation of government credit programs to smallholders as well as to medium and long-term agricultural projects (Jaramillo, 1998). However, attempts to reform Caja Agraria, a large loss-ridden agricultural bank, met with repeated failure after 1990, due to the opposition of strong political sectors and labor groups.

In the early 1990s, reforms were also extended to other areas of agricultural policy. A new land reform policy was announced in 1992 to facilitate access to land for low-income *campesinos*. The new scheme allowed potential beneficiaries to negotiate freely with landowners and to select the land they wanted. Low-income beneficiaries could apply for a direct subsidy from the government to cover as much as 70 percent of the value of the property.

Reforms to agricultural policies also included a significant boost in public investment in irrigation and drainage as well as policy reforms in this area. Under new guidelines, irrigation projects would only be constructed in areas where substantial local demand from farming communities exists. In contrast to past practices, beneficiaries are now expected to

repay a pre-established portion of government outlays. Farmers are also required to participate in investment decisions, as well as in the management of irrigation districts.

IV. Similar Reforms, Different Results

Performance of agriculture

El Salvador and Colombia embarked on similar liberalization reforms starting in 1990. In both countries, heavy state intervention in marketing and pricing of harvests was replaced by a greater reliance on market forces. Import quotas were eliminated and tariffs set at relatively low levels (i.e., 20 percent or less). Price bands were introduced to diminish price fluctuations in a few sensitive markets. In both countries, reforms were initially perceived as favorable to agriculture, as they were thought to remove the historical bias of development strategies in favor of industry and urban interests.

After reforms, the economies of El Salvador and Colombia grew at historically high rates. The Salvadoran economy grew rapidly at 6 percent between 1990 and 1995 as a result of the restoration of peace and a surge in private economic investment while the Colombian economy grew at an average rate of 4.0 percent between 1990 and 1997. Despite initial optimism, agriculture as a whole performed poorly between 1990 and 1997 in both countries growing at an annual average rate of 2.2 percent and 1.8 percent for El Salvador and Colombia, respectively. In both countries, this performance was considered disappointing.

The lackluster performance of agriculture in El Salvador and Colombia masks considerable heterogeneity within farming activities. On the one hand, a portion of agricultural activities exhibited low or negative growth (Table 1). This is the case of most grains, soybeans, cotton, coffee and cassava in Colombia and of maize, rice, coffee, jute, cassava, and some fruits and vegetables for El Salvador. On the other hand, certain activities expanded rapidly, such as sugar cane, *panela* cane, flowers, oil palm, bananas, fruits and poultry in Colombia and beans, sorghum, sugar cane, cashews, and poultry in El Salvador.

The disappointing performance of agriculture in El Salvador in the 1990s continued a trend that dates back to the 1980s, when all sectors of the economy stagnated due to the disruptions to economic activity caused by the civil war (Shearer, 1988). However, in the 1990s, virtually every sector of the economy grew rapidly, with the exception of agriculture. For the case of Colombia, mediocre growth in the 1990s came after a phase of rapid growth between 1985 and 1990, when returns to tradable activities were spurred by trade protection, government supports and exchange rate devaluation (Jaramillo, 1998).

The evolution of economic incentives in the 1990s

The sluggish performance of agriculture in both countries can be linked to declining economic incentives for farmers. Table 2 displays average annual growth rates for real producer prices in both countries, deflated by rural wages. For the case of Colombia, prices declined between 1990 and 1997 with the exceptions of sugar and rice. Similarly, real producer prices exhibit a downward trend for most crops in El Salvador with the exception

of coffee (largely due to the international price increase of 1997) and plantains. The most pronounced reductions in economic incentives for Salvadoran farmers were faced by those producing watermelon, pineapple, sorghum, and sugar cane. Until 1999, sugar cane areas continued to grow, due to a lack of profitable alternatives for this type of land, as witnessed by the disappearance of cotton in the same time period.

To identify the factors underlying declining producer incentives, we use the accounting methodology of Quiroz and Valdés (1994) to decompose the sources of changes in real prices, which are defined as:

$$P = P^b RER(1 + \tau)(1 + \varepsilon),$$

where P is the real local producer price, P^b is the real border price of the commodity (deflated by the US WPI, a proxy for international inflation), RER is the real exchange rate, $(1+\tau)$ is the tariff rate and $(1+\varepsilon)$ is a residual term, capturing the effect of trade policies and other market imperfections. The border price is approximated by CIF prices for the case of importables and by FOB prices for exportables. Annual variations in producer prices can be decomposed into real world prices, the real exchange rate, tariff policies and a residual capturing other policies and/or market imperfections:

$$\hat{P} = \hat{P}^b + \hat{RER} + \hat{(1 + \tau)} + \hat{(1 + \varepsilon)}$$

where a circumflex denotes annual percentage rates of change.

Table 3 displays the decomposition of the changes in returns for seven important tradable commodities between 1990 and 1997 for both countries. The results indicate that the predominant negative influence on farm profits is the appreciation of the exchange rate. In El Salvador, this key macro price has appreciated at an annual rate of 6.4 percent while in Colombia the corresponding rate is 8.2 percent. Falling real world prices exert a further negative influence for maize, sorghum, sugar and cotton, while those of wheat and coffee exerted some upward pressure. Real world prices for rice remained unchanged during the 1990-1997 period. These results suggest that the decline in real prices was explained greatly by factors outside of agriculture: (a) appreciating exchange rates and (b) falling or stagnant world prices. Although consistently positive for El Salvador, the effect of the residual factor varies greatly across crops, probably signaling differential patterns of government response, a subject to which we return after discussing the behavior of exchange rates.

Exchange rate appreciation seems to be a key factor in understanding the reduction in agricultural incentives during the 1990s in Colombia and El Salvador. In both countries, the phenomenon has been associated with the surge in foreign exchange availability, which fueled credit-led consumption booms. In Colombia, the rapid growth of foreign exchange inflows has been linked to oil findings, increases in foreign direct investment and credit flows to the private and public sectors. External financial flows affected most of the major economies of Latin America in the same period, reflecting the changing attitudes of

international banks and foreign investors about the risks inherent in the region after the debt crisis of the 1980s. In Colombia, foreign perceptions were colored by news of liberal economic reforms as well as by large oil findings announced in 1991, which boosted export prospects and diminished future balance of payments risks. Inflows were also facilitated by changes in financial regulations which removed obstacles to the international movement of capital (see Calvo, Leiderman and Reinhart, 1992; Quiroz and Opazo, 1998).

In Colombia, increasing capital inflows in the early 1990s have been associated with a credit-led consumption boom which took place between 1992 and 1995, associated with lax monetary policies on the face of large net inflows of foreign exchange. In addition, trade liberalization in Colombia followed a rapid increase in government expenditures. Growing fiscal outlays were largely a result of higher investment in social programs by local governments, enlarged expenditures by the social security system and greater judicial and defense expenditures. Rapid growth of expenditures on all three fronts responded to new constitutional provisions which increased the share of tax revenues to be transferred to local governments for investments in education and health.

In El Salvador, exchange rate appreciation is associated with growing remittances from abroad from the over one million Salvadorans living in the United States and other countries (Harberger, 1993; Segovia, 1997). These transfers grew rapidly in the early 1990s, from US\$204 million in 1989, US\$360 million in 1990, and US\$790 million in 1991. The growth rate has remained steady at approximately 5 percent annually since that time. The importance of family remittances is reflected in the fact that they accounted for a full one-third of balance of payments inflows in 1998.

The exchange rate appreciation trend explains much of the fate of agriculture in both countries in the 1990s. The Dutch Disease impact of an exchange rate appreciation is detected more clearly for the case of Colombia, where the existence of a nontradable sector within agriculture allows for diverging tendencies within agriculture. As can be seen in Table 4, in the 1990s production and price levels of importable crops declined, those for exportables remained relatively stable while those for non-tradables grew sharply. For the case of El Salvador, prices of exportable crops declined less than those for importables, but both groups show dramatic falls in parity when compared to the service industry, and even manufactures which remained immune to the effects of the Dutch Disease until 1996 (Norton and Angel, 1999).

Another clear symptom of Dutch Disease is the phenomenal growth of agricultural imports to both countries in the 1990s. In Colombia, the foreign currency value of agricultural imports increased five fold between 1991 and 1997. Import growth reflected large increases in cereals, oilseeds, fruits and processed vegetables. In El Salvador, import values increased by almost three times between 1990 and 1997, with significant increases in cereals, oilseeds, fruits, vegetables, beef and powdered milk.

In both countries, the expansion of agricultural exports continued in the 1990s despite unfavorable trends in the exchange rate and international prices. Between 1991 and 1997, the value of agricultural exports for Colombia grew by 56 percent while those for El Salvador increased by 111 percent in the 1990-97 period. However, much of this increase

in both countries is due to the recovery in coffee prices, which were extremely low in the early part of the decade.

Returning to the results of Table 3, an analysis of the residual indicates that government policies acted to raise protection significantly for some crops after 1990: rice and sugar in Colombia and all crops analyzed in the case of El Salvador. This apparent reversal suggests that government policies for these crops partially counteracted pressures stemming from exchange rate and world price developments, preventing a more dramatic collapse of producer incentives.

In both countries, the partial rollback of liberalization reforms was a response to the political pressures generated by falling returns for many activities and stagnant overall production. In Colombia, significant changes to the original liberalization policies were made starting in 1993, including modifications of price bands, increases in some tariffs, temporary import prohibitions, establishment of minimum import prices, compulsory price and quantity agreements with agroindustrial enterprises, storage subsidies for rice and direct subsidies for soybean and cotton producers (Jaramillo, 1998). In El Salvador, the tariff schedule for grains and other products suffered frequent changes after 1994, when price bands were removed. In 1995, tariffs were raised for processed rice to 35 percent, with the tariff for paddy rice remaining at 20 percent, raising significantly the effective protection for rice processors. Tariffs for sugar were raised to 40 percent, citing distortions in the international market (Norton and Angel, 1999).

Policies in both countries seem to have deliberately sheltered some subsectors from liberalization pressures. This is the case of sugar and rice in both countries and dairy processing in El Salvador. Dairy processors were favored by relatively low tariffs (15 to 20 percent) on powdered milk, 30 percent tariffs on butter, and 40 percent on cheese and other dairy products. On the other hand, policies in El Salvador discriminated against sorghum and favored poultry interests by eliminating the tariff on yellow maize in 1998. Similar policies of low tariffs on feed grains were a boon for poultry interests. The pattern suggests that in both countries, protection was aimed at processing sectors (e.g., poultry, dairy, rice millers, sugar processors) and that crops with strong ties with agroindustry (i.e., sugar and rice) also benefited.

The collapse of national research and extension systems

A well-functioning agricultural research and extension system could have cushioned the effect of falling farm returns, as well as improving opportunities for the poor. However, neither of these objectives were well served in the 1990s in El Salvador and Colombia. In this period, the national agricultural research systems (NARS) of both countries suffered drastic declines in funding, as well as crippling reorganizations.

Reduced funding for agricultural research is a broader phenomenon, affecting most of the economies of Latin America during the last decade. The growing priority given to redressing fiscal imbalances and the availability of food imports at low prices have made this a favorite target of budget-conscious Ministries of Finance, for whom NARS are large and inefficient bureaucracies, focused on developing technologies for crops in which most

Latin American countries do not exhibit comparative advantage (i.e., grains and oilseeds). NARS have had a difficult time defending themselves from these charges. On the one hand, in countries like El Salvador and Colombia the impact of research and extension on the living standards of the majority of poor farmers has been limited, due to reduced coverage of extension networks and the difficulties in adapting new technologies to the conditions of resource-poor farmers. However, the slow-maturing process of research activities and the relatively intangible nature of its products have made the system an easy target for criticism.

Budget cuts for NARS were also justified by appealing to new worldwide privatization trends in agricultural research and extension. The development of biotechnological innovations and the legal framework to claim patents on improved germplasm have led some to believe that public funding of research is outdated. Further, several countries have developed legal arrangements that allow private producers associations to levy taxes on product sales (*fondos parafiscales* or checkoffs) which are then used for research and extension efforts. These developments have erroneously led to the conclusion that a large share of NARS responsibilities could be transferred, without the funding, to the private sector. However, it is clear that the private sector is far from being able to replace the State in performing critical basic research tasks, and has little interest in developing technologies for the poorer segments of the farm population.

In addition to budget cuts, NARS in Colombia and El Salvador underwent traumatic reorganizations in the 1990s, allegedly to improve the efficiency and productivity of the system's efforts. These reorganizations have so far yielded little tangible results and have some times served as an excuse to reduce NARS funding. In both countries, NARS have been ordered to provide technological assistance to the development of non-traditional crops, better suited to the new structure of relative prices. Scant results have been used as evidence of the systems' inefficiency, with disregard for the long maturity of research results on new crops.

The collapse of services provided by NARS in both Colombia and El Salvador in the 1990s limited greatly the potential response of farmers to sharp falls in returns. A well-functioning system could have used the opportunity to offer new farming practices to increase yields and cut costs. Unfortunately, it is difficult to know whether the NARS of both countries could have responded adequately to the challenges raised by policy reforms had they not suffered funding cuts and reorganizations. It is possible that their limited reach and rigid schemes might have failed to respond to demands for new technologies and new crops as well as to the needs of poor farmers. However, it seems clear that policy reforms in this area were not helpful in facilitating the adjustment of farmers to the new policy environment.

Other factors explaining agricultural sluggishness

Besides declining farm returns and poor support from research and extension networks, other factors explain the mediocre response of agriculture to reforms in both countries. First, government programs to aid farmers in upgrading farming technologies or switching

to more profitable crops suffered from poor design and management, in addition to structural deficiencies in research and extension systems.

Second, significantly higher interest rates for agriculture and mounting financial problems among sectoral banks reduced the flow of credit to farmers. The debt overhang left many landholdings unused because of onerous foreclosure procedures and insufficient capital bases of delinquent owners. Furthermore, given the boom in other sectors in the economy, financial institutions were reluctant to provide loans for agriculture.

Third, farmers' willingness to invest may have been diminished by the upsurge of rural violence which took place in both countries during the 1990s. In El Salvador, despite the signing of Peace Accords in 1992 and the reabsorption of guerrillas into civil society, violent crime rates increased sharply (Steiner, 1999). In Colombia, guerrilla activities registered a resurgence in the 1990s, fueled by profits from the illicit crop trade. Investment in agriculture remained at low levels also due to deficiencies in physical infrastructure, from poorly maintained or nonexistent roads and highways, inadequate access to electricity and water and the lack of physical structures in rural areas to gather production into marketable lots.

Finally, it should be mentioned that farmers' organizations in both countries spent much of their energies pressuring governments into returning to pre-reform policies and obtaining additional protection, instead of promoting technological and organizational changes that could have improved the situation of farmers, especially organizing to reduce costs for product marketing and input purchasing.

The impact on the welfare of rural inhabitants

Rural poverty levels decreased in rural Colombia steadily from 36.0 percent in 1988 to 26.2 percent in 1995 (Ocampo et al, 1998) (Table 5). Indicators of indigence also reveal continuous improvement, from 14.6 percent in 1988 to 8.4 percent in 1995. These results seem consistent with findings of increasing per capita income for lower income groups after 1991. Although data from household surveys indicates that per capita income in rural areas fell at a rapid 5.7 percent annual rate between 1991 and 1995, disaggregating by income categories indicates that the overall trend is reversed if the upper decile of the rural population is excluded from the calculation (Ocampo et al, 1998). Per capita rural income actually increased at an average rate of 1.4 percent between 1991 and 1995—2.5 percent annually for the first five deciles. This information is corroborated by agricultural wage data which show that a decline of 14 percent between the first quarter of 1990 and the third quarter of 1992 was followed by a rapid recovery, growing at an annual rate of 4 percent between 1993 and 1997, and reaching record levels towards the end of the period (Jaramillo and Nupia, 1998).

By contrast, rural poverty in El Salvador remained virtually unchanged, 66.1 percent in 1991 compared to 62.1 percent in 1997 (MECON, 1998), while poverty in urban areas in El Salvador declined from 53.8 percent in 1991 to 39.0 percent of the urban population in 1997. This comparison is reinforced when total poverty figures are separated into the moderate and extreme levels. Among the rural poor in 1997, 48.3 percent were extremely

poor, compared to 50.8 percent in 1991, while this figure declined from 43.3 percent of the urban poor in 1991 to 32.1 percent in 1997 (MECON, 1998).

What accounts for the improvement in rural welfare in Colombia? Why is the result different in El Salvador? An obvious reason is that El Salvador is behind Colombia in the development process and still has a large surplus of unqualified labor in the countryside. Rapid urban employment growth and emigration has not been sufficient to absorb this surplus. By contrast, Colombia's rural labor surplus seems to have dwindled in the mid 1970s, with basic education permeating much of the rural sector and wages exhibiting a strong upward trend (Urrutia, 1991).

However there are other reasons that may account for the different performance. In Colombia, rising per capita incomes of poorer groups and falling poverty can be explained by tight rural labor markets after 1992, developed in response to fast-growing employment opportunities in both urban and rural areas. In urban areas, job expansion stemmed from an urban building boom fueled by the effects of surging capital inflows and lax monetary policy between 1992 and 1995. In rural areas, new employment was generated by non-tradable activities, both agricultural and non-agricultural. With respect to the former, the crops that expanded after 1990 include many of the most labor intensive ones in Colombian agriculture, including vegetables, tubers and fruits. Additionally, employment opportunities expanded in illicit crop cultivation.⁴

With respect to non-agricultural sources of income, poor rural families seem to have enjoyed greater income diversification opportunities after 1990, partly fueled by the large increase in local government expenditures since 1990.⁵ Rural household data suggest that lower income groups benefited most from the expansion of employment in service sectors. The poorest 20 percent of the rural population increased its share in service jobs from 22 to 35 percent between 1991 and 1995. In addition, earnings from rural services are substantially higher than those available in agricultural activities. For example, workers in rural construction activities earned 43.4 percent greater incomes than their counterparts in agriculture. A 1993 survey found that the per capita income for rural non-farm workers was US\$740, while those for small farmers and landless workers were only US\$413 and US\$416, respectively (López and Valdes, 1998). The evidence also points to a widening of the service-agriculture earnings gap in rural areas. For instance, the premium of construction over agricultural incomes increased from 34.7 percent to 43.4 percent between 1988 and 1995 (Leibovich, Rodriguez and Nupia, 1997). The rapid growth in non-agricultural activities increased the share of aggregate rural income derived from service sector jobs from 30 to 38 percent between 1991 and 1995. In the same period, the share of the rural population deriving its primary income from service sector jobs increased from 28.2 to 32.5 percent. By contrast, incomes derived from agricultural activities fell from 66 to 55 percent in the same period.

Other reasons why Colombian low-income rural groups fared well in the 1990s include the boom in the production of labor-intensive non-tradable crops, mostly produced by campesino farmers; greater levels of violence starting in the mid-1990s, which displaced an estimated 0.5 to 1.0 million people; and, the increasing success of government programs in reaching the truly needy. With respect to the latter, several studies have shown that

government expenditures in social programs have increased their effectiveness in the 1980s and 1990s, due to improved targeting (World Bank, 1994).

The Salvadoran experience with rural welfare in the 1990s is radically different from that of Colombia. While many Salvadorans continued to abandon rural areas in large numbers (over 100,000 per year in the late 1990s), or leaving the country (40,000 per year), these rates of migration have not been sufficient to create tight labor market conditions in the countryside. As in Colombia, changes in relative prices have made non-agricultural sources of income an increasingly important component of family income, with older children abandoning agricultural activities, especially women who frequently find work in *maquila* operations (World Bank, 1996). Those rural inhabitants who have been able to raise themselves above the poverty line typically depend more on non-agricultural income sources, while those unable to tap the non-agricultural job market are usually among the poor. Non-agricultural wages contribute 17.5 percent of income among the extremely poor, yet provide 36.9 percent and 50.6 percent of incomes to relatively poor and non-poor households, respectively. Indeed, in 1995, annual per capita income for rural agricultural laborers was only 55.5 percent that of rural non-agricultural workers (FUSADES; 1997).

Rural public spending on basic education and health programs has increased greatly during the 1990's as more resources were diverted from military spending following the peace accords. However, decentralization of government spending in El Salvador is minimal compared to Colombian standards. In 1996, the Legislative Assembly approved the requirement that at least 6 percent of the government budget should be transferred directly to municipal authorities. However, the central government objected strongly and initially sought to reverse the measure.

Government programs in El Salvador to alleviate rural poverty have been insufficient and poorly targeted, compared to those applied in Colombia. Much of the current funding directed toward municipalities is channeled through the *Fondo de Inversión Social y Desarrollo Local (FISDL)*, which has been criticized for the slow pace and lack of focus of development of projects which could benefit inhabitants of smaller cities and rural areas (Gammage, 1997). More successfully, the Ministry of Education has achieved higher enrollment levels, improved infrastructure, and greater parent and community involvement in the educational process through its *Educación en la Comunidad* Program (EDUCO). Nevertheless, these developments will not bear significant fruits for another decade.

Further, Salvadoran rural inhabitants have not enjoyed the advantages of their Colombian counterparts, who have benefited from expanding sources of income and employment such as non-tradable agriculture and illicit crops. Given the high population density of the country, a strategy that fosters the development of industrial activities in rural areas is promising. However, the country will first need to address the poor state of economic infrastructure and lack of access to public utilities in rural areas (Angel et al., 1997).

V. Summary and Conclusions

El Salvador and Colombia instituted radical trade liberalization reforms starting in 1990. The experience of the agricultural sector after eight years of reforms in both economies

displays interesting similarities. Most importantly, the sector has experienced relatively slow growth in agriculture since 1990 in both countries. Coffee production declined sharply in the 1990s at a similar pace in each economy. In El Salvador, production of the most important staple crop, white maize, fell and cotton production disappeared; in Colombia drastic reductions were registered in grains, cotton and soybeans. In contrast, sugar harvests grew rapidly in both economies.

We find that much of the disappointing aggregate performance was the result of appreciating real exchange rates and falling international commodity prices. In particular, both countries exhibited strong symptoms of Dutch Disease, whereby large inflows of foreign exchange led to downward pressure on the relative price of tradable sectors, including much of agriculture. However, the reasons underlying the appreciation are substantially different. In El Salvador, appreciation is the result of mounting remittances of Salvadorans abroad, equivalent to half of the value of exports of goods in the 1990s. For Colombia, the phenomenon is associated with large oil findings and substantial inflows of foreign credit and direct investment. Stagnant agricultural output may also be influenced by growing rural violence, a phenomenon that has probably discouraged farm investment in both economies in the 1990s.

Soon after farmer incentives began declining, farmer discontent rose in both El Salvador and Colombia. Farm organizations pressured governments into making significant adjustments to liberalization policies. In both cases, governments implemented rescue programs, including loan reschedulings, debt condemnations and selective protection measures. For the most part, these programs have failed to boost agricultural activities. In both countries, rice and sugar received special protection, probably as a result of the strong political weight of farmers and processors of these groups. For the case of rice, protection from low-priced imports prevented production from declining sharply. For sugar, high tariffs permitted substantial expansion of domestic production.

Another factor which contributed to aggravating the situation of many farmers in the 1990s was the sharp decline in funding for research and extension in both countries. Due to lower budgets and traumatic reorganizations, the NARS were unable to facilitate alternatives to farmers facing depressed returns

The most significant difference in post-reform developments is that rural welfare indicators improved significantly in Colombia after 1990, while living standards of rural inhabitants stagnated in El Salvador. Poverty levels have fallen and wages have increased sharply in the Colombian countryside since 1990, a result associated with several key differences between the countries examined. First, Colombia has a large non-tradable segment of agriculture which expanded in the 1990s, generating generous employment opportunities for displaced farmers and farm workers. El Salvador does not enjoy this advantage because of its small size, tight economic integration with neighboring economies and the proximity to the coast of much of the country. Second, Dutch Disease and decentralization of government expenditures prompted the rapid growth of the service sector in rural areas in Colombia, while in El Salvador, public sector activity has remained centralized and rural infrastructure has received little attention. Third, the expansion of employment in illicit crop cultivation offered an escape valve to the farm workforce, a possibility that has not

existed in El Salvador. In the latter country, welfare indicators remained stable, a likely consequence of the surplus of unqualified labor that remains in rural areas, despite strong migration flows in the past two decades.

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Table 1
Growth of Agricultural Production, 1990-1997
(Average annual growth rates)

Crop	El Salvador ¹	Colombia
Maize	-1.8	-3.1
Beans	5.2	0.5
Rice	0.4	-2.1
Sorghum	3.6	-12.3
Wheat		-10.5
Barley		-23.8
Coffee	-3.5	-3.9
Sugar cane	7.6	4.0
Sugar (refined)	10.0	
Flowers		4.3
Palm oil		8.5
Soybeans		-13.5
Bananas		2.9
Cotton		-15.1
Sesame seed	0.6	
Jute	-5.5	
Kenaf	-5.7	
Cashews	3.2	
Orange	3.2	
Cassava	-5.5	-2.1
Panela cane	-1.9	2.2
Coconuta	-0.5	
Tomato	-20.6	
Pineapple	-7.3	
Potatoes		1.4
Plantains		1.4
Fruits		10.1
Cattle		2.3
Milk	4.2	
Pork		3.4
Eggs	9.3	
Poultry	12.7	6.5

¹ Average growth rates for 1989/90 to 1997/98 period.

Table 2
 Growth of Real Producer Prices, 1990-1997
 (Average annual growth rates)¹

Crop	El Salvador	Colombia
Maize	-1.3	-6.7
Beans	-2.7	-5.8
Rice	-1.3	2.8
Sorghum	-5.1	-4.3
Wheat		-7.8
Barley		-8.4
Coffee	3.0	-0.4
Sugar cane	-4.3	2.4
Oil Palm		-7.9
Soybeans		-8.4
Bananas	-2.6	-1.5
Cotton		-3.7
Coconut	-2.3	
Orange	-3.5	
Cassava	-3.9	-22.3
Watermelon	-10.4	
Tomato	-1.8	
Pineapple	-5.7	
Plantains	2.3	-10.5
Milk	-2.4	
Beef		-0.6

¹ Prices deflated by rural wage indexes.

Table 3
 Decomposition of Producer Price Changes, 1990-1997
 (Average annual percentage changes)

	Maize	Sorghum	Rice	Wheat	Sugar	Cotton	Coffee ¹
COLOMBIA							
Producer Price	-6.7	-4.3	2.8	-7.8	2.4	-3.0	-0.4
World Price	-0.6	-1.0	0.1	0.8	-2.9	-1.8	3.8
Real Exch. Rate	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.4
Tariffs	-0.3	-0.3	-1.0	-1.3	1.5	0.0	0.9
Other	-2.3	0.6	7.2	-3.8	7.3	2.4	-1.6
EL SALVADOR							
Producer Price	-1.3	-5.1	-1.3		-4.3		1.2
World Price	-0.6	-1.0	0.1		-2.9		3.8
Real Exch. Rate	-6.4	-6.4	-6.4		-6.4		-7.1
Tariffs	-0.7	-0.7	0.5		0.0		0.0
Other	6.3	2.9	4.5		4.9		4.5

¹ Coffee figures refer to the 1990 to 1996 period.

Table 4
 Growth of Agricultural Production and Real Producer Prices, 1990-1997
 (Average annual growth rates)

	Agricultural Production ¹	Real Prod. Prices ¹
Colombia		
Exportable Crops ²	-0.2	-2.0
Importable Crops ³	-1.6	-3.9
Non-Tradable Crops ⁴	3.4	0.2
El Salvador		
Exportable Crops ⁵	0.2	-0.3
Importable Crops ⁶	1.7	-3.1

¹ Group averages weighted using value of production shares.

² Coffee, sugar cane, flowers, bananas and cocoa.

³ Rice, maize, cotton, sorghum, soybeans, barley, wheat and oil palm.

⁴ Potatoes, beans, plantains, *panela* cane and cassava.

⁵ Coffee, sugar cane, and sesame.

⁶ Rice, sorghum, white maize, oranges, coconuts, plantains, bananas, and milk.

Table 5
Rural Poverty indexes, 1988-1996
(Percentages of rural population)

	Poverty	Misery	UBN ^a
Colombia			
1988	36.0	14.6	
1991	31.4	11.5	37.4
1992	30.8	12.3	33.8
1993	30.0	10.2	32.3
1994	28.5	9.1	31.5
1995	26.2	8.4	
El Salvador			
1991-92	66.1	33.6	-
1992-93	65.2	33.8	-
1994	64.6	34.8	-
1995	58.2	26.4	-
1996	64.8	31.4	-
1997	62.1	30.0	-

^a UBN: Unsatisfied basic needs indicator.

Source: Poverty and misery indexes for Colombia from Ocampo et al. (1998) and UBN indexes from Leibovich et al. (1998). Salvador data from Encuestas de Hogares DIGESTYC.

¹ Import-substitution policies in Latin America and their effect on agriculture are described in Krueger, Schiff and Valdés (1992).

² Coffee, Colombia's main export crop, was subject to a complex taxation system. An ad-valorem tax was applied to export revenues, at a rate fluctuating between 26 and 6.5 percent. On the other hand, since 1940, the powerful Coffee Producers Federation operated a stabilization fund—Fondo Nacional del Café—in charge of obtaining additional revenues to finance accumulation of stocks in years when export quotas were in effect. Some of the revenues obtained by the fund were also used by the Federation to finance investments in transport and social infrastructure in coffee growing regions. Since the mid-1950s, the Fund has been responsible for making effective minimum support prices to coffee farmers.

³ Floor prices were defined as the 15th lowest observation of the 60 ranked monthly price observations. Similarly, ceiling prices were assigned the level of the 15th highest observation.

⁴ This may have influenced wages in southeastern areas of the country, due to the proximity of the coca growing frontier. Wages in some coffee growing areas may have been affected by the growth of poppy cultivation for heroin production in the Andean highlands. However, the evidence available suggests that the amount of labor engaged in illicit crop production is a minor share—less than 0.7 percent—of the agricultural labor force.

⁵ Increasing transfers from the central government for social investments, dictated by the 1991 Constitution, led to a surge in public expenditures. Transfers to municipal and provincial governments grew fourfold in real terms, increasing from US\$1.1 billion to US\$4.6 billion between 1990 and 1997. Greater expenditures at the local level are likely to have created rural jobs in non-agricultural activities which may have compensated for falling employment in agriculture.