

Soybeans, Agriculture, and Policy in Argentina

Introduction

Agriculture in Argentina encompasses nearly the entire range of field crop and livestock activities found in the United States, including corn, wheat, sorghum, sunflower, barley, oats, peanuts, rice, and cotton. But most notably, Argentina is the world's leading exporter of soybean products—soybean meal and soybean oil—and ranks third behind the United States and Brazil as a producer and exporter of soybeans.

Historically, the agricultural sector in Argentina has received very little direct government support. Consequently, relative returns across competing field crops, rotational considerations, and longrun investment plans have determined the evolution of cropping patterns. However, decisionmaking in the export-oriented agricultural sector was also influenced by the often negative effects of an unstable macroeconomic environment, trade restrictions on agricultural inputs and outputs, and government policies favoring industrial development and cheap domestic food prices, particularly for wheat and beef. Prior to economic and policy reforms of the early 1990s, these policies muted price transmission from global commodity markets and discouraged investment in the sector.

In 1990, Argentina enacted important economic reforms that began to stabilize the economy and create a more liberal policy regime favorable to agricultural investment, production, and exports. The success of these reforms has unleashed Argentina's natural comparative advantage in the production of major field crops, including soybeans, corn, wheat, and sunflower.

This chapter describes the evolution of Argentina's soybean sector, with a focus on the macroeconomic and agricultural policies that conditioned behavior in Argentina's agricultural sector. Then, relevant transportation and marketing infrastructure issues are presented. Finally, developments in other field crop

and livestock sectors, all of which compete for the same pool of agricultural resources, are discussed

Argentina's Soybean Sector Starts Late, But Grows Rapidly

By the 1950s and 1960s, Argentina was already a major corn and wheat producer. In contrast, Argentina's soybean sector did not emerge until the early 1970s, lagging Brazil by more than a decade. In 1970, only 36,000 hectares of soybeans were harvested in Argentina, compared with 1.7 million hectares in Brazil and over 17 million in the United States (fig. C-1). Differences in soybean yields between South American and North American producers were equally wide. The 3-year average yield of 1.8 metric tons per hectare in the United States in 1969-71 was nearly 50 percent higher than yields in Argentina and Brazil.

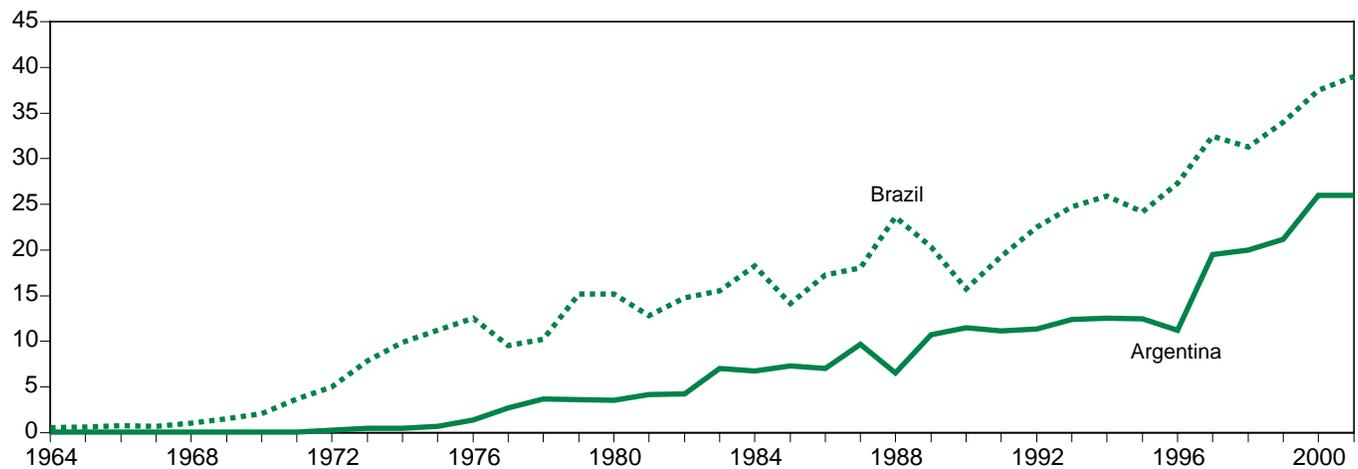
Record high international soybean prices in the early 1970s—prompted in part by a sharp drop in world fishmeal production, rapid growth in EU soybean consumption, and the U.S. oilseed export embargo of 1973—created strong incentives for Argentina's soybean producers, and their plantings grew tenfold between 1970 and 1974. Once soybean production gained a foothold, a strong natural comparative advantage over cereal production continued to boost plantings in Argentina. Throughout the 1970s, the profitability of oilseeds relative to coarse grains continued to entice area into soybeans and sunflowers and away from corn, sorghum, and barley. By 1979, soybean planted hectares surpassed 2 million, while corn plantings fell to 2.5 million hectares from a high of 4.1 million in 1970.

Cereal prices recovered somewhat in the early 1980s, temporarily slowing soybeans' rapid growth, but by the mid-1980s, soybeans were again posting year-over-year record plantings, and exceeded 5 million hectares by 1989 (fig. C-2).

Figure C-1

The emergence of soybean production in Argentina during the 1970s followed Brazil by about a decade

Mil. metric tons

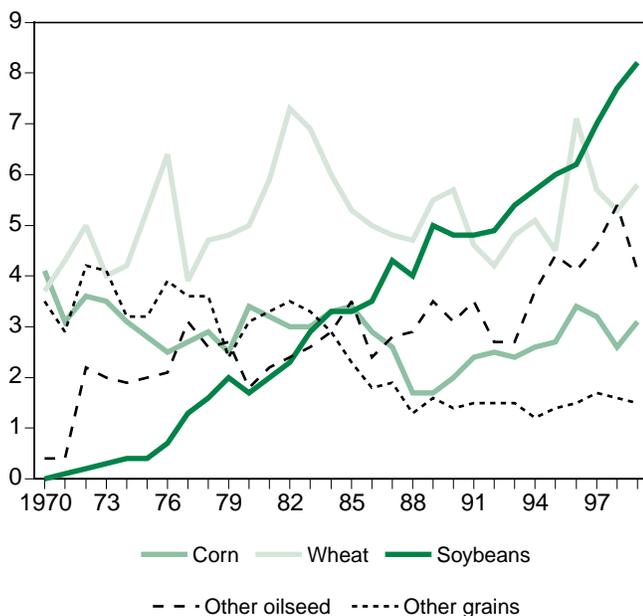


Source: USDA; August 10, 2001.

Figure C-2

Argentina's soybean planted area has grown strongly compared with that of other field crops since the mid-1970s

Mil. hectares planted



Source: SAGPyA, January 2001.

Unstable Economy, Hostile Policy Setting Prior to Reforms

Soybeans' rapid rise in Argentina is all the more remarkable because, for much of the postwar period, Argentina's agricultural sector was handicapped by an

unstable macroeconomic environment characterized by high inflation, an often overvalued exchange rate, and a heavy external debt burden. During the 1960s, 1970s, and 1980s, Argentina undertook a series of seven government programs designed to stabilize the chronic inflation but that instead undermined the nation's economy. These government programs were ineffective and resulted in extended periods of economic instability marked by chronic public sector deficits, low savings and investment, an unstable exchange rate, and highly variable inflation. During the 1960s the annual inflation rate hovered around 30 percent. However, by the mid-1980s and early 1990s, it had skyrocketed to annual rates in excess of 1,000 percent (fig. C-3).

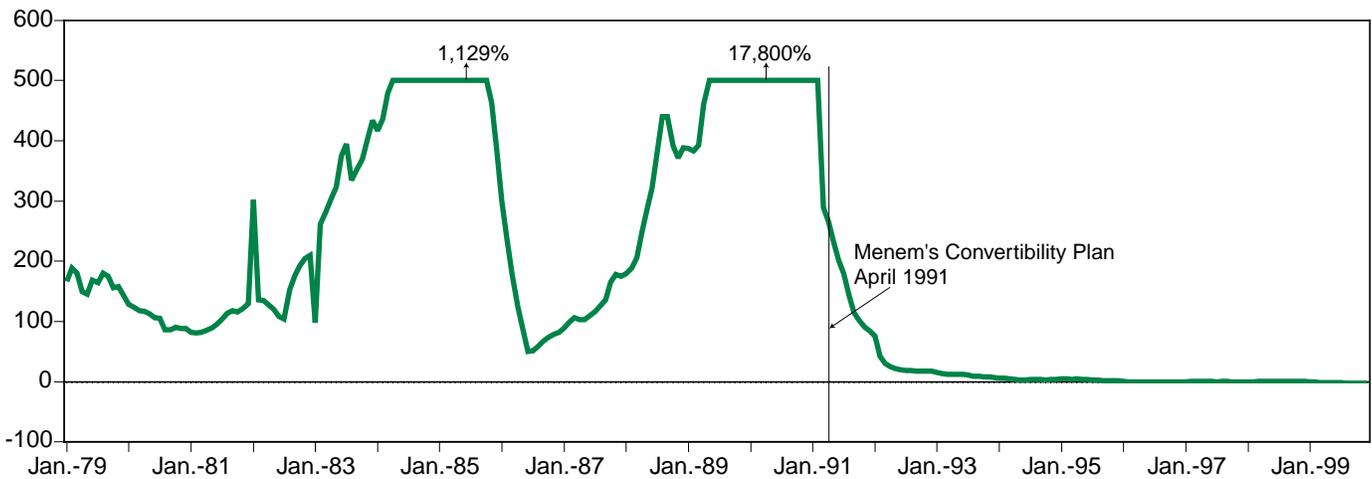
In addition to an unstable macroeconomic environment, the Government of Argentina (GOA) adopted in the early 1950s an import substitution strategy designed to promote economic growth and limit foreign debt and use of foreign exchange. Import substitution programs penalize the agricultural sector by forcing producers to rely on inefficient, overpriced domestic input industries and by limiting access to international agricultural markets.

Three principal policy instruments were used to support the import substitution strategy. First, tariffs and quantitative restrictions were applied on imported agricultural inputs to encourage the sale of domestically produced inputs. Prior to 1977, import tariffs on fertilizers and agricultural chemicals were 60 and 65 percent.

Figure C-3

Argentina has suffered from bouts of severe hyperinflation*

Rate of inflation (%)



*Monthly observed annual inflation rate based on CPI data. Scale capped at 500 percent to facilitate presentation.

Source: IFS/IMF.

Second, export taxes on grain and oilseeds were introduced in 1982 to help pay for the budget expenditures incurred during the Malvinas-Falklands War. The export taxes were initially set at 18 percent but varied annually. Eventually, the taxes were expanded to most agricultural and agro-industrial products to ensure abundant, cheap supplies for domestic industries.

Finally, the GOA frequently manipulated exchange rate regimes in the belief that a fixed exchange rate would dampen domestic inflation. However, these efforts generally failed to curb inflation and often created other distortions such as high interest rates, real exchange rate appreciation, and an overvalued currency periodically corrected with currency devaluations. Argentina's currency overvaluation, when measured in terms of its purchasing power parity vis-à-vis foreign exchange rates, exceeded 100 percent throughout most of the 1980s and into the 1990s (fig. C-4). Since domestic producers are paid in domestic currency units, an overvalued currency burdens the agricultural sector by reducing the demand for and lowering the farm value of exported products.

The transfer produced by the GOA's exchange rate regimes often varied inversely with those produced by export taxes—i.e., when the exchange rate favored the agricultural sector, export taxes were raised and vice versa (fig. C-5). Nevertheless, an examination of Argentina's producer subsidy equivalents (PSEs)—a measure of net government domestic support to the

agricultural sector of the economy—during 1985-93 reveals that the overall policy regime was a net drag on the agricultural sector (Roberts, 1994).

By the late 1980s, a growing list of economic ills was compounded by a slump in international commodity prices, global recession, and the full explosion of the world debt crisis. By the end of the decade, Argentina's economy was plagued by huge external debts and hyperinflation. Argentina's foreign debt reached \$60 billion in 1986, representing 39 percent of the national GDP. Interest on this debt was equivalent to 50 percent of total export earnings. At this time, taxes on agricultural exports were generating 20 percent of central government revenues, and by 1988, export taxes and currency controls represented over 50 percent of the value of agricultural export prices at Argentine ports.

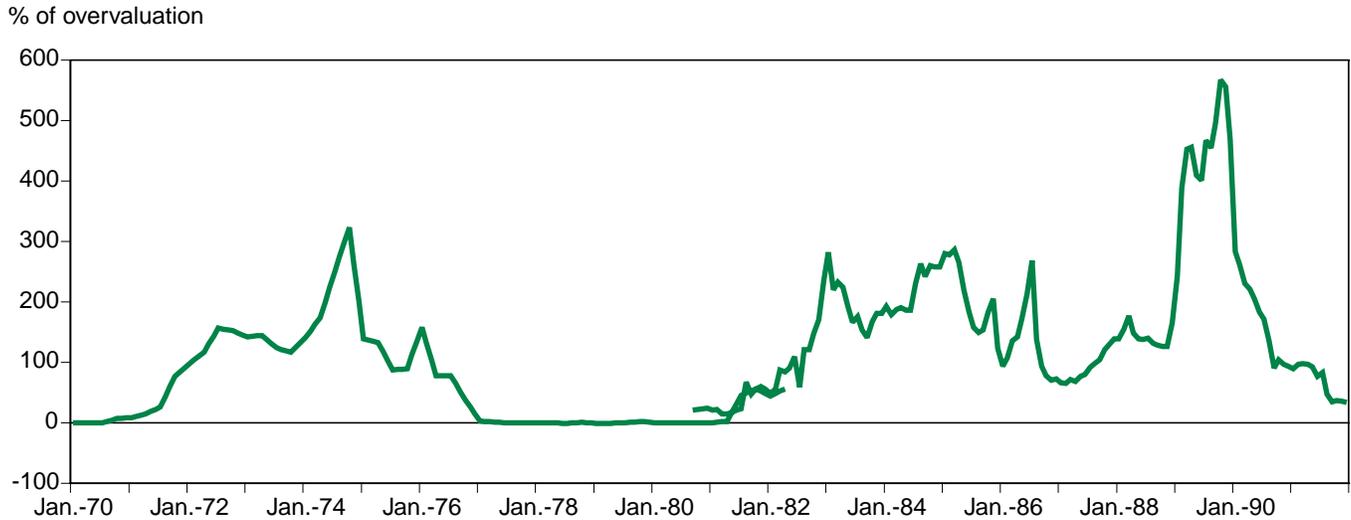
In addition, export taxes on agricultural products and import tariffs on agricultural inputs continued to distort production incentives and strangle agricultural productivity growth. Despite these obstacles, Argentina's agricultural output generally contributed to nearly half of export earnings and about 8-10 percent of GDP.

Yield and Area Growth Drive Pre-Reform Soybean Sector

Between 1970 and 1990, yield gains played a large role in Argentina's dramatic rise in soybean output. During this period, Argentina's soybean yields grew a steady 3

Figure C-4

Argentina's exchange rate was routinely overvalued during the 1970s and 1980s*

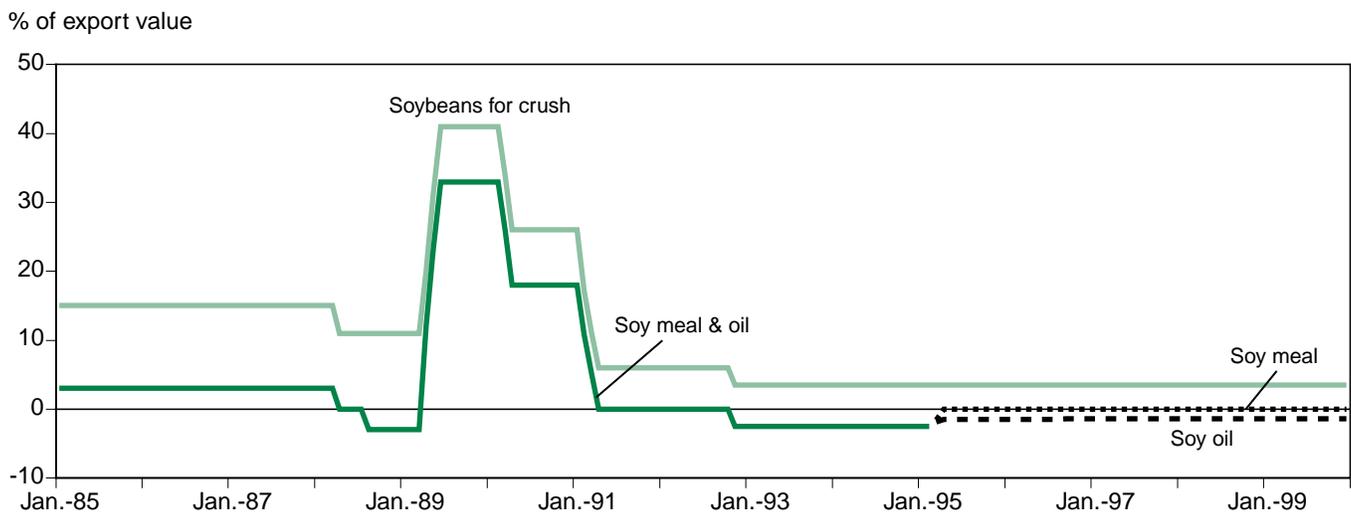


*1970-1983: Official exchange as percent of "Free Market" rate; World Bank. 1981-1991: Rate of change in official exchange rate minus rate of change in a purchase power parity index comparing Argentina and U.S.; 11-month moving average of both series used to smooth data.

Source: World Bank; IFS/IMF; authors' calculations.

Figure C-5

Prior to 1991, Argentina applied high export taxes on soybeans and products



*Negative taxes represent a rebate on export sales.

Source: Cámara de la Industria Aceitera de la Republica Argentina (CIARA).

percent annually, reflecting significant gains in productivity. As resources and know-how accumulated, Argentina's soybean yield quickly approached that of the United States and even exceeded U.S. yields a number of times during the 1970s and 1980s (fig. C-6). This yield growth, in the face of relatively low input

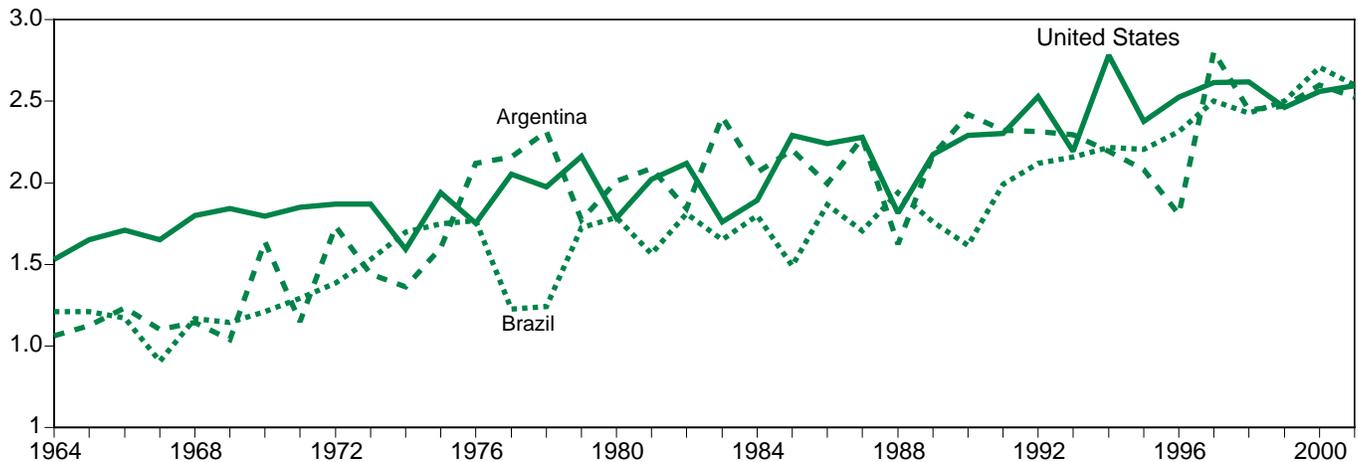
use, reflects Argentina's agro-climatic advantage in soybean production.

By 1989, 5 million hectares were planted to soybeans and production reached nearly 11 million tons. This expansion involved both new land entering soybean production as well as a shift of existing farmland from

Figure C-6

Soybean yields in Argentina, Brazil, and the U.S. have been near parity since 1999

Metric tons per hectare



Source: USDA; August 10, 2001.

coarse grains and pasture. In addition, harvested field crop area was bolstered by a declining rate of row-crop abandonment.

By the early 1990s, Argentina had become the world’s leading exporter of soyoil and a major soymeal exporter, garnering 30- and 22-percent market shares of world trade. Argentina’s soyoil exports accounted for 13.4 percent of the world market, temporarily surpassing Brazil as the second leading exporter of soybeans in 1990. Although Argentina produces less than Brazil, it has a much stronger export orientation due to limited domestic use. Argentina’s population is small and stable, the poultry and pork industries are relatively small, and the cattle industry is predominantly grass-fed. Only about 3 percent of Argentina’s soymeal and 6 percent of soyoil production were consumed domestically in the early 1990s, compared with Brazil’s 30 percent (soybean) and 75 percent (soyoil). At the same time, domestic consumption accounted for about three-quarters of U.S. soybean and nearly 90 percent of U.S. soyoil production. Consequently, increased production allowed Argentina to capture a significant share of the growing global soybean and product market.

Menem Government Initiates Substantial Reforms in 1991

In April 1991, the newly elected Menem government instituted a major currency realignment, the *Convertibility Plan*, followed by a series of dramatic market-

oriented policy changes, including privatization and deregulation measures that eliminated institutions and policies that had shifted resources from agriculture to other sectors for decades. These reforms reduced or rescinded both export taxes on agricultural commodities and tariffs on imported inputs. Some of the more salient changes for agriculture included the following:

- ◆ The elimination of all export taxes on major grain and processed oilseed products in 1991, except for the 3.5-percent tax on unprocessed oilseed exports.
- ◆ The elimination of all quantitative restrictions on imported agricultural inputs.
- ◆ The reduction of tariffs on imported agricultural inputs to a range not to exceed 15 percent of CIF (cost, insurance, and freight) value, although an additional 10-percent tax was levied on most imported agricultural inputs.
- ◆ The exemption from tariffs and taxes of agricultural inputs classified as capital goods—i.e., those whose economic life extends beyond one production cycle—such as embryos, certified seed, and trucks.
- ◆ The elimination of several government commodity agencies that held export monopolies for their respective commodities (e.g., the National Grain Board, the National Meat Board, and similar agencies for sugar and tobacco).
- ◆ The initiation of privatization in the marketing and transportation infrastructure, including state-owned grain elevators, port facilities, and railroads.

These and subsequent economic policy reforms have greatly improved the general climate for investment and growth in Argentina, and greater participation in global commodity markets has expanded access to technological innovations and agricultural inputs. Extensive privatization of the domestic marketing system combined with trade liberalization has allowed for a fuller transmission of international commodity prices and improved domestic producer incentives— incentives that were further reinforced by a period of high international market prices in the mid-1990s (see box, “High International Commodity Prices in 1996 Boosted Producer Incentives”).

Key to the *Convertibility Plan* was the establishment of a currency board and the passage by the Argentine Congress of the *Convertibility Law* designed to address the country’s currency woes. The Law of Convertibility made the peso fully convertible at a fixed nominal exchange rate of 10,000 australes to the U.S. dollar—i.e., 1 peso per U.S. \$1—and guaranteed access to dollars to anyone at any time at this rate. This law limited the GOA’s ability to finance expenditures by printing money that was not backed by dollar-denominated assets. This reform helped to arrest the hyperinflation problem immediately (Eiras and Schaefer, 2001).

By the end of 1992, the privatization of state-owned grain elevators was nearly complete. By 1993, the average import tariff had been reduced to 14 percent. The elimination of most export taxes reduced the transfers produced by the policy from 85 percent of the value of wheat, corn, sorghum, and soybean production in 1989 to 11 percent in 1992.

One of the GOA’s major short-term objectives was to encourage exports by reducing domestic costs of production. In November 1992, the GOA established an export rebate system, designed to offset the cost-increasing effects of internal value-added taxes on inputs. The export rebate for corn, wheat, sorghum, and oilseed products was set at 2.5 percent of F.O.B. price, Buenos Aires. In March 1995, the rebates on soymeal and soyoil were lowered to 1.6 and 1.9 percent. (There is no rebate for unprocessed oilseeds.) A month later, the soymeal rebate was eliminated, and the soyoil rebate was lowered to 1.5 percent. Since 1996, the soyoil rebate has been set at 1.4 percent.

The policy reforms, together with strong commodity prices in the mid-1990s, conferred more stability to

Argentina’s economy, and transformed the way the country produces and markets agricultural commodities. Argentina’s economy appeared to be on the mend. By 1993, Argentina’s external debt had dropped to \$60 billion after temporarily peaking at \$65 billion in 1992. In 1994-95, Argentina’s economy weathered a severe recession, but maintained its reform-oriented agenda.

On January 1, 1995, Argentina’s reform period was capped by the almost total elimination of trade restrictions within the MERCOSUR regional customs union encompassing Argentina, Brazil, Uruguay, and Paraguay. Although they now engage in trade with few internal duties, MERCOSUR members established a set of common external tariffs that can be very protectionist, as with U.S. corn exports to Brazil. Under the MERCOSUR agreement, Brazil has become Argentina’s largest market for many commodities, including wheat, rice, and cotton.

Agricultural Input Use Rises Under Reform

Following the opening of Argentina’s economy in the early 1990s, imports and use of agricultural inputs have increased dramatically. Farmers have invested heavily in new technologies that improve yields, accelerate planting and harvesting, and facilitate delivery to the elevator. Historically, high natural soil fertility and other factors (e.g., limited agricultural credit, low domestic production of inputs, and strict border controls on imports) limited fertilizer, pesticide, and machinery use.

In the early 1990s, Argentina’s fertilizer, pesticide, and agricultural machinery use, as well as plant genetics and seed development, lagged well behind the United States, partially explaining lower corn and wheat yields. In 1990, Argentina’s national average application rate for all fertilizers was 8 kilograms per hectare of combined field and permanent crop area, compared with 55 kg in Brazil and nearly 187 kg in the United States. By 1998, Argentina’s fertilizer use had more than tripled to 32 kg per hectare (compared with 196 kg/hectare in the United States), abetted by access to international supplies and favorable prices.

Total fertilizer imports (nitrogen, phosphate, and potash) by Argentina expanded from an average of 126,000 tons in 1989-91 to a record 945,000 tons by 1996. Total pesticide imports also rose sharply from an average value of \$69 million in 1989-91 to almost \$315 million in 1997. Imports of agricultural tractors,

High International Commodity Prices in 1996 Boosted Producer Incentives

In May 1996, international prices (U.S. Gulf ports) hit record highs for several major field crops: wheat (hard red winter) at \$262 per ton, corn at \$204, sorghum at \$191. A year later, soybeans reached \$328 per ton, their highest price in 9 years (fig. C-7).

The price runup had its genesis in the early 1990s when, in the face of sagging production, world grain stocks were drawn down for 4 consecutive years (1992 through 1995) to meet growing demand driven by global economic growth. As a result, global stocks of wheat and coarse grains carried into 1996/97 fell to their lowest levels since the mid-1970s. The ratio of global ending stocks to use for wheat and coarse grains fell to only 15 percent in 1995/96, the lowest in the USDA database (PS&D) dating back to 1960. This left the world particularly vulnerable to major crop shortfalls or demand shocks, and generated substantial short-term price volatility.

A number of factors contributed to the tight grain supplies. Global grain production between 1993 and 1995 remained lower than its 1992 peak, with some of the major grain exporters experiencing below-normal crops. In late 1994, China, previously the world's second-largest exporter, halted corn exports. This move increased the world's dependence on U.S.

corn for feeding. But the 1995 U.S. corn crop was relatively small due to implementation of a 7.5-percent area set-aside (via the Acreage Reduction Program or ARP) on plantings and adverse weather.

Underlying these developments was a longer term decline in grain stocks, particularly in the United States. The reduction of government stocks had become a U.S. farm policy objective in the mid-1980's because stocks had grown to burdensome levels, reaching as high as 70 percent of annual use. The severe drought of 1988 further hastened the stock drawdown. By 1995, the price-depressing grain export subsidies of the early 1990s had dried up, and the European Union (EU) actually imposed an export tax in mid-1995 to discourage exports of wheat and try to shield internal users from spiraling prices.

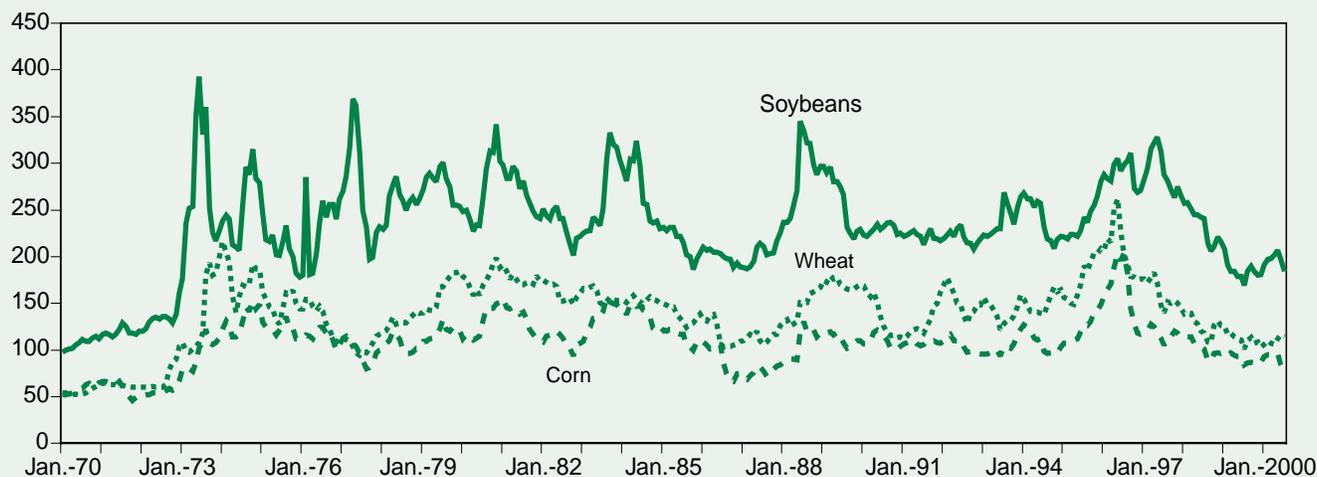
Meanwhile, world demand for grains continued to increase, reflecting robust economic growth in many countries, especially in Asia. A boom in U.S. meat exports bolstered domestic feed use and pushed prices to record heights in the spring and early summer of 1996.

Global grain producers responded to the high prices with sharply expanded plantings and record production in 1996 and 1997.

Figure C-7

Corn and wheat prices peaked in May 1996, while soybean prices hit a 9-year high in May 1997

U.S. \$ per metric ton



Source: Monthly F.O.B. Gulf port prices; AMS, USDA.

harvesters, and threshers also jumped from an annual average of \$26 million in 1989-91 to nearly \$140 million in 1998 (fig. C-8).

Even after the surge in Argentina's imports, fertilizer and pesticide use per harvested hectare remains small relative to U.S. and Brazilian use (fig. C-9). Argentina still relies on international purchases for much of its chemical inputs and therefore generally pays higher, and more variable, prices for comparable inputs than U.S. producers (fig. C-10). However, recent petrochemical investments could lower input costs and substantially increase fertilizer use. Agrium of Canada, along with the Argentine oil company YPF and the Perez Conglomerate, recently finished a large fertilizer plant at the port city of Bahia Blanca. Since 2000, Argentina has been self-sufficient in nitrogenous fertilizer production. Clearly, higher fertilizer use would allow more intensive cultivation than under the current system of crop-fallow with extensive livestock grazing.

Soybean Production Accelerates Under Reform

Under reform, soybean production continued to increase rapidly in Argentina, growing at nearly 8 percent per year since 1990, and continuing to accelerate into the late 1990s. However, unlike the substantial yield improvements of the previous two decades, soybean production growth in the 1990s was almost entirely the result of continued area expansion (6.8

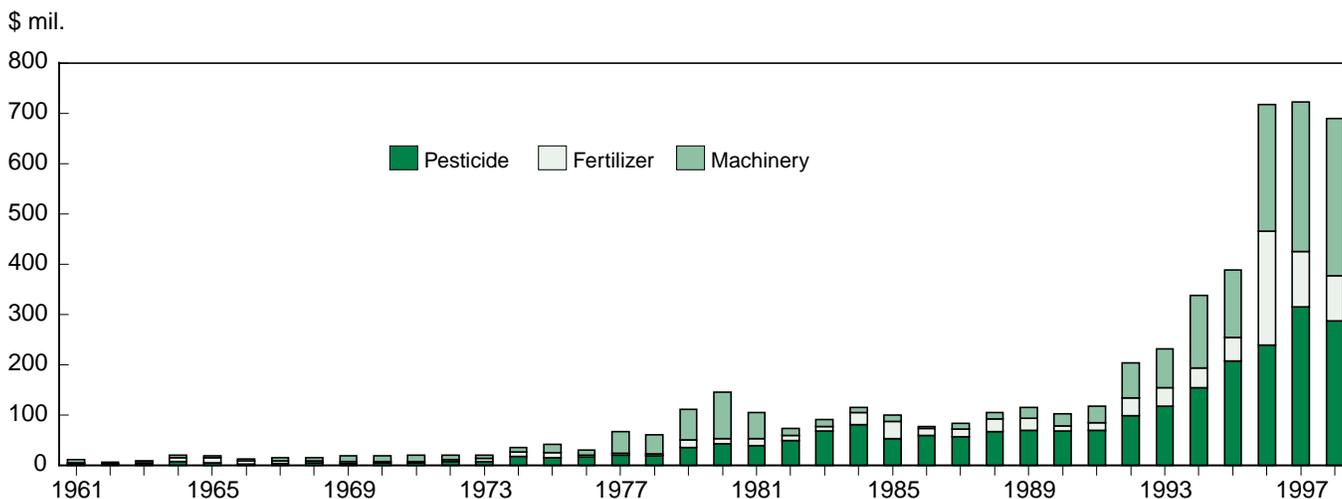
percent annually). Argentina's soybean area has been at year-over-year record levels since 1993 when 5.4 million hectares were harvested. In 2000, 10 million hectares of soybeans were harvested.

Initially, Argentina's soybean area expanded mostly in the central production zone in the heart of the *Pampas*. However, in recent years, the soybean area in the northern and northwestern States has also expanded as infrastructure improvements began to open these states to the major ocean ports of Rosario and Buenos Aires via an overland connection to the Parana-Paraguay waterway at Resistencia (see table C-1 for historical data on field crop production by region).

The rapid expansion of soybean area in Argentina has followed from the widespread adoption of Roundup Ready soybeans in the late 1990s. An estimated 90 percent of Argentina's 2001 soybean crop is planted to biotech varieties, commonly with no-till planting. This compares with an estimated 68 percent of soybean planted acres in the United States during 2001. Producers are clearly motivated by the labor and time savings afforded by Roundup Ready soybean seeds, particularly given the absence of government production subsidies. Cost savings attributable to biotech soybeans are estimated at about \$40 per metric ton, much larger than the \$8-per-ton premium received by producers for non-biotech soybeans in Argentine markets (FAS attache report, 2001).

Figure C-8

Argentina's imports of agricultural inputs accelerated after 1991 reforms

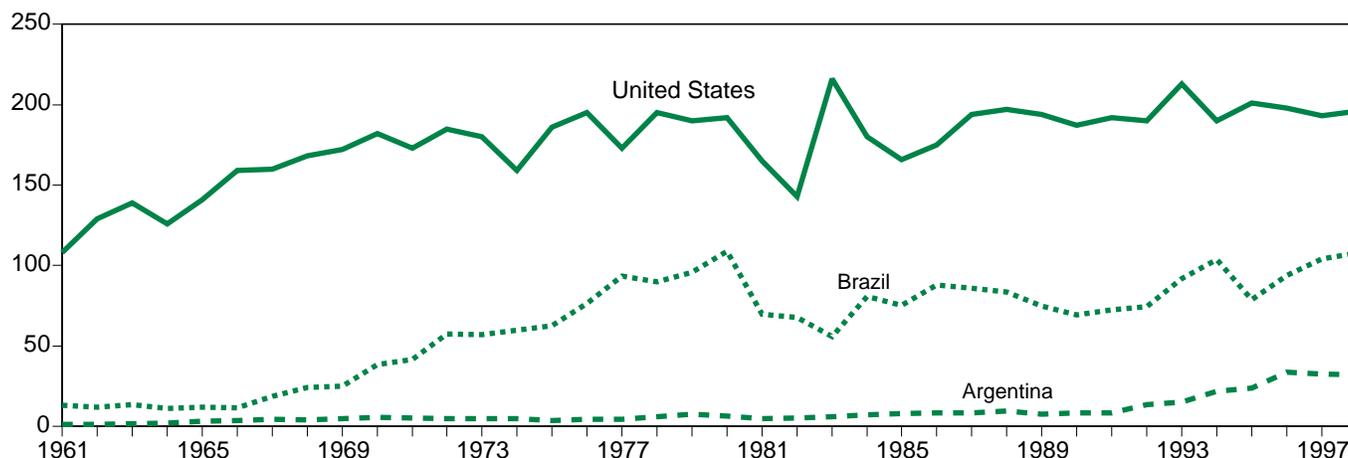


Source: FAO, FAOSTATS; 1961-98.

Figure C-9

Fertilizer use in Argentina and Brazil still lags far behind the United States*

Kilograms per hectare

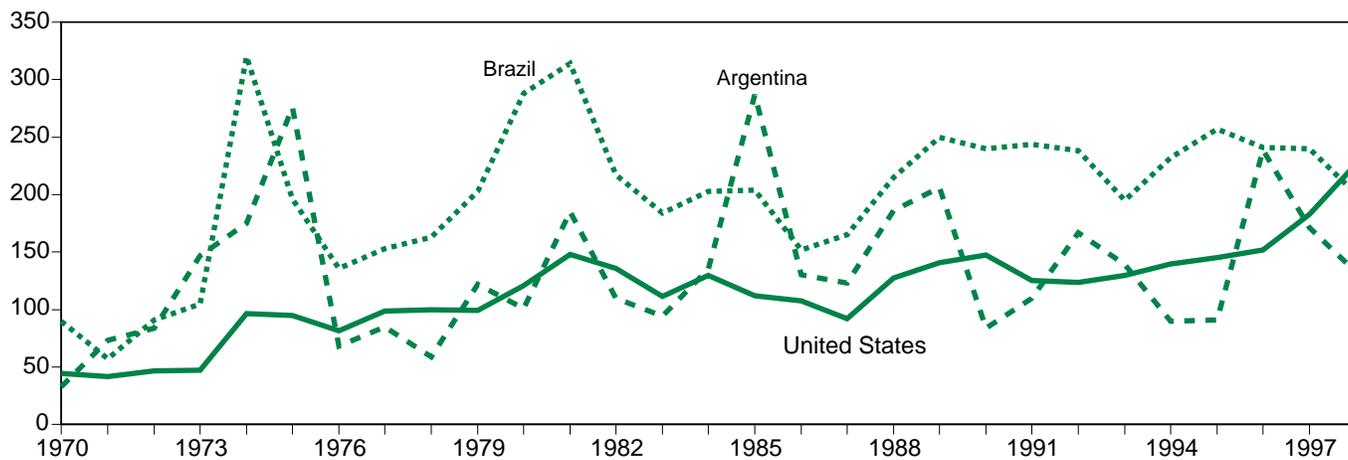


*Total fertilizer disappearance divided by permanent crop area and harvested area for all field crops.
 Source: FAO (total fertilizer consumption and permanent crop area); USDA (field crop harvested area).

Figure C-10

Fertilizer import unit values are significantly more stable in the United States than Argentina or Brazil*

\$ per metric ton



*F.o.b. average unit values (all fertilizers) based on import data.
 Source: FAOSTAT, FAO.

Since 1997, soybean yields in Argentina have been equal to U.S. yields and can be expected to follow a similar growth pattern. Argentine soybean yields have likely received a boost from the adoption of biotech soybeans—which greatly improved weed control—and from the availability of early maturing varieties that help to diminish weather risk. Improved weed control also benefited the subsequent rotational crop (usually corn or winter wheat), while early maturing varieties improved the potential for double-cropping.

The growing presence of major international agribusiness firms has facilitated the rapid acceptance of genetically modified crops by Argentine producers. Similar temperate production climates allow rapid transfer of U.S. technology to Argentina, and many of the same companies supply inputs in both countries. Roundup Ready soybeans have been patented in the United States, but not in Argentina (the patent on the Roundup herbicide expired in 2000). Patenting gives the company greater control in setting prices and restricting a

Table C-1—Evolution of Argentina's principal field crop plantings by region

Period	Total	Heart-	South-	North-	North	Other	Heart-	South-	North-	North	Other
		land	west	west			land	west	west		
		----- 1,000 hectares -----					----- Percent of total -----				
Corn											
1970-79	3,807	3,080	458	142	44	84	80.9	12.0	3.7	1.1	2.2
1980-89	3,329	2,531	547	142	49	60	76.0	16.4	4.3	1.5	1.8
1990-94	2,710	2,062	402	126	80	39	76.1	14.9	4.7	3.0	1.4
1995-97	3,773	2,959	424	212	137	42	78.4	11.2	5.6	3.6	1.1
Soybean											
1970-79	713	604	1	50	3	54	84.8	0.1	7.1	0.4	7.6
1980-89	3,377	3,123	11	175	22	46	92.5	0.3	5.2	0.6	1.4
1990-94	5,424	4,934	22	343	108	17	91.0	0.4	6.3	2.0	0.3
1995-97	6,616	6,109	7	372	109	19	92.3	0.1	5.6	1.6	0.3
Wheat											
1970-79	5,229	4,537	578	54	46	14	86.8	11.1	1.0	0.9	0.3
1980-89	5,917	5,313	530	49	17	7	89.8	9.0	0.8	0.3	0.1
1990-94	5,139	4,506	549	52	25	7	87.7	10.7	1.0	0.5	0.1
1995-98	6,124	5,441	564	82	35	3	88.8	9.2	1.3	0.6	0.0
Sorghum											
1970-79	2,678	2,146	282	54	176	21	80.1	10.5	2.0	6.6	0.8
1980-89	1,759	1,199	233	143	167	18	68.2	13.3	8.1	9.5	1.0
1990-94	735	423	181	67	56	8	57.5	24.7	9.1	7.6	1.1
1995-97	798	540	149	70	37	2	67.7	18.7	8.7	4.7	0.3
Sunflower											
1970-79	1,617	1,349	75	3	189	2	83.4	4.7	0.2	11.7	0.1
1980-89	2,182	1,788	239	12	143	0	81.9	10.9	0.6	6.6	0.0
1990-94	2,500	2,046	375	7	72	0	81.8	15.0	0.3	2.9	0.0
1995-97	3,347	2,706	571	17	53	0	80.9	17.0	0.5	1.6	0.0
Feed barley											
1970-79	483	422	26	10	0	26	87.3	5.4	2.0	0.1	5.3
1980-89	194	163	9	9	0	12	84.3	4.5	4.8	0.0	6.4
1990-94	49	41	8	1	0	0	82.0	16.9	1.1	0.0	0.0
1995-97	27	21	6	0	0	0	77.6	21.2	1.3	0.0	0.0
Malt barley											
1970-79	421	364	53	0	0	4	86.4	12.5	0.0	0.0	1.0
1980-89	116	105	9	0	0	2	90.6	7.3	0.0	0.0	2.0
1990-94	194	183	11	0	0	0	94.5	5.5	0.0	0.0	0.0
1995-97	278	243	35	0	0	0	87.5	12.5	0.0	0.0	0.0
Cotton											
1970-79	531	69	0	48	392	22	13.0	0.0	9.0	73.8	4.2
1980-89	429	55	0	27	332	16	12.8	0.0	6.3	77.4	3.6
1990-94	579	43	0	81	440	15	7.4	0.0	13.9	76.0	2.6
1995-97	1,033	55	0	274	685	20	5.3	0.0	26.5	66.3	2.0
Peanuts											
1970-79	331	328	0	1	0	2	98.9	0.1	0.4	0.1	0.5
1980-89	185	184	0	0	0	1	99.4	0.2	0.1	0.1	0.3
1990-94	153	150	0	3	0	0	97.9	0.0	2.1	0.0	0.0
1995-97	241	240	0	0	0	0	99.8	0.0	0.1	0.0	0.1
Rice											
1970-79	94	43	0	1	11	39	45.6	0.0	1.2	11.3	42.0
1980-89	111	50	0	0	7	54	45.0	0.0	0.1	6.2	48.7
1990-94	145	84	0	0	10	49	57.9	0.0	0.0	6.9	34.0
1995-97	229	138	0	0	14	77	60.5	0.0	0.0	6.0	33.6

Heartland is Buenos Aires, Cordoba, Santa Fe, and Entre Rios Provinces; Southwest is La Pampa and San Luis; Northwest is Jujuy, Salta, Santiago del Estero, and Tucuman; North is Chaco and Formosa; and Other includes all remaining Provinces.

Source: SAGPyA (Argentine Ministry of Agriculture and Fisheries.)

product's use. For example, U.S. farmers are required to pay technology fees for the use of Roundup Ready soybean seeds and are not allowed to retain and replant seeds. In contrast, Argentine producers do not pay technology fees, and farmers are allowed to save seeds from one year to the next (GAO, 2000). Consequently, seed costs for biotech soybeans are significantly lower in Argentina than in the United States.

Remarkably, growth in soybean area coincided with stable or expanding planted area for most of Argentina's other major field crops, with the exception of sorghum and barley. This is largely in response to the spike in international commodity prices of the mid-1990s.

Argentina's total harvested area for major field crops jumped from just under 20 million hectares in 1995/96 to over 23 million hectares in 1996/97—a 16-percent increase in a single year (fig. C-11). The total 2001/02 crop harvested area is projected at over 24 million hectares. The stabilization of crop abandonment rates (see box, "Declining Longrun Trend of Field Crop Abandonment in Argentina") at about 13.5 percent of planted area during the 1990s suggests that the gains in total crop area resulted from either new land being added, permanent pasture being converted to field crop production, or shifts in the traditional crop-livestock rotation patterns toward greater emphasis on crops.

Argentina's Oil Crop Processing Industry Also Benefits From Reform

Since the market and policy reforms of the early 1990s, significant private investments in new, more efficient

technology and expanded capacity have been made in Argentina's oilseed crushing and processing sector. National crushing capacity (per 24 hours) for oilseeds rose sharply from about 58,000 tons in 1994 to an estimated 94,268 metric tons in 2000 (about 63 percent of U.S. capacity). Over 75 percent of Argentina's processing capacity is in Santa Fe, and most crushing facilities are located at or near port facilities.

Because of lower processing costs and their location at the mouth of the Parana-Paraguay waterway, Argentina's processing facilities also serve southern Brazil, Bolivia, and Paraguay, and are strongly oriented toward soymeal and soyoil exports.

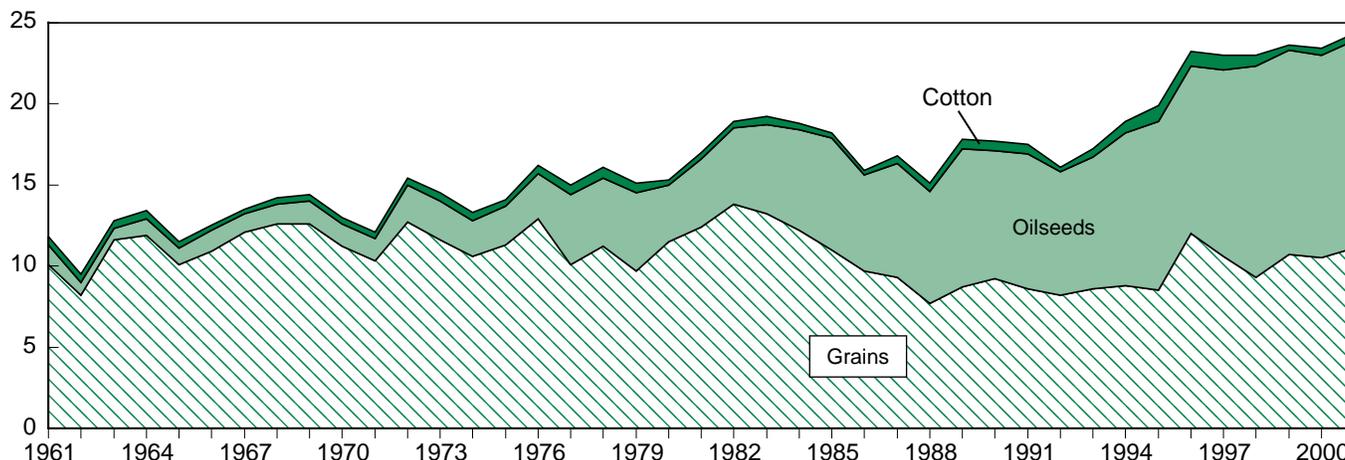
With the development of a more modern, efficient crushing sector, Argentina's soybean exports have given way to an emphasis on the export of soybean products. Accordingly, soymeal and soyoil exports grew at annual clips of about 10 percent each during the 1990s. Argentina has been the world's leading exporter of soyoil since 1995 and the leading exporter of soymeal since 1997, surpassing Brazil in both cases. Argentina's share of global soyoil and soymeal exports was estimated at 35 and 41 percent during 1999-2001, with volumes averaging 13.8 and 3.1 million tons, respectively. However, the vitality of Argentina's crush-sector and export demand for its soybean products has been seriously eroded due to recent policy changes in China.

In July 1999, China imposed a 13-percent value-added tax (VAT) on all imported soymeal to promote its

Figure C-11

Argentina's harvested field crop area jumped by 16 percent from 1995 to 1996, and has continued to grow

Mil. hectares



Source: USDA; August 10, 2001.

Declining Longrun Trend of Field Crop Abandonment in Argentina

In the past, Argentine producers routinely abandoned (i.e., did not harvest for grain or seed) a significant portion of major field-crop planted area (table C-2). Prior to 1980, abandonment rates averaged over 20 percent of total field-crop plantings. In addition to weather conditions, livestock operations have traditionally been an important determinant of field-crop abandonment rates. Oats and other small grains have often served as cover crops for pasture and winter grazing.

However, abandonment rates of major field crops have been declining over the past three decades, dropping fairly steadily from a 24.5-percent average during the early 1970s to only 13.5 percent in the 1995-97 crop-year period. Declining abandonment is likely related to Argentina's increased integration into world markets as a result of policy reforms. Improved transmission of international prices and higher yields have created incentives to harvest rather than to "graze out" or abandon field crops, and appear to be altering the previous mix of crop-live-stock activities.

Table C-2—Argentina: Planted area and abandonment by period for major field crops

Period	All crops	Soy-beans	Sun-flower	Wheat	Corn	Sorghum	Oats
----- Million hectares -----							
Planted area							
1970/71-74/75	16.6	0.2	1.5	4.9	4.3	2.9	1.1
1975/76-79/80	17.6	1.2	1.8	5.6	3.3	2.4	1.5
1980/81-84/85	20.2	2.5	1.9	6.7	3.6	2.5	1.8
1985/86-89/90	18.8	4.2	2.5	5.2	3.0	1.0	1.8
1990/91-94/95	19.5	5.4	2.5	5.1	2.7	0.7	2.0
1995/96-97/98	24.2	6.6	3.5	5.8	3.8	0.8	1.8
----- Percent of planted area -----							
Abandonment							
1970/71-74/75	24.5	6.9	16.4	13.7	20.1	31.1	69.6
1975/76-79/80	20.0	3.6	10.6	9.7	19.2	19.8	72.6
1980/81-84/85	14.6	1.8	3.8	6.4	12.8	7.2	78.3
1985/86-89/90	15.7	5.2	4.4	3.1	21.5	13.3	79.0
1990/91-94/95	13.7	2.2	3.4	4.3	13.4	11.5	81.5
1995/96-97/98	13.5	3.0	4.6	3.2	18.7	16.1	86.5

Source: Secretaria de Agricultura, Ganadería, Pesca, y Alimentación (SAGPyA), government of Argentina.

domestic vegetable oil processing sector. This policy favors the import of whole oilseeds over oilseed products, and resulted in a big shift in the composition of China's soybean imports—China's soybean imports jumped by over 30 percent to 13.2 million tons in 2000, while soyoil imports fell more than 80 percent to 80,000 tons and soymeal imports dropped from 633,000 tons to 125,000 tons.

While soybean producers and exporters in Argentina, Brazil, and the United States have all benefited from the extra soybean demand, their processing sectors saw crushing margins squeezed by the combination of greater crushing capacity and weakened export demand for meal and oil. In 2000, Argentina's soybean

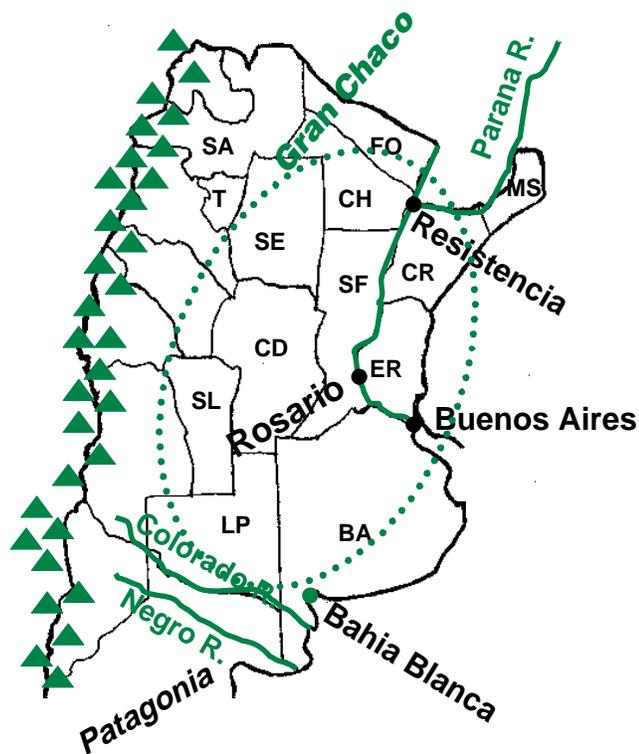
exports to China increased by 189 percent to 2.8 million tons, and Brazil's were up by 146 percent to 2.1 million tons. On the other hand, soyoil exports to China were down sharply for both countries.

Recent Infrastructure Developments Spur Competitiveness

Argentina's main agricultural producing region lies within 300 kilometers of the country's major ports: Rosario and Buenos Aires (fig. C-12). An additional port, Bahia Blanca in southern Buenos Aires Province, facilitates wheat, sunflower, and other small grain exports from more southerly growing areas. Due to their proximity to ports, Argentine agricultural

Figure C-12

Most of Argentina's main crop area lies within 300 kilometers of the Parana-Paraguay waterway or a major port*



*Refer to figure B-3 for State legend.

Source: Economic Research Service, USDA.

producers have relied almost exclusively on trucks to carry their products to port, despite the fact that trucking is normally more expensive, ton per kilometer, than railway or barge costs.

Argentina's producers also have access to an important inland waterway—the Parana-Paraguay system—which gives much of the principal agricultural production zone almost direct access to oceangoing freighters. The Parana-Paraguay serves all four MERCOSUR nations (Argentina, Brazil, Paraguay, and Uruguay), as well as parts of Bolivia through its principal artery and tributaries. Access points further upriver are served by a system of barges that transport agricultural products downriver to the major ports at Rosario and Buenos Aires.

Several major Argentine grain terminals, all relatively close to grain producers, located along the Parana River have large storage facilities and are able to handle millions of tons of grain annually. Nearly two-

thirds of Argentine exports coming down the Parana river originate in and around Rosario, about 400 kilometers from the Atlantic Ocean.

In the past decade, Argentina's government and private investors have undertaken a number of projects to improve or modernize road conditions, rail networks, waterways, and export terminals. The privatization of all 5 government railroads is beginning to reduce rail costs and improve services. Recent growth in private road development has expanded paved road service to rural areas, but high tolls have made roads costly for movement of bulk grains.

The elimination of the national grain and meat boards, combined with government initiatives to divest itself of Board-owned inland and port facilities, and other privatization initiatives, have increased the efficiency of agricultural production and its associated marketing sectors, thus reducing farmers' costs. In addition, the removal of most government border charges on exports have improved market infrastructure and have helped to narrow the gap between interior and F.O.B. port prices. For example, from 1980 through 1991, the margin between the F.O.B. price of soybeans at Argentine ports and the F.A.S. (i.e., free alongside ship) terminal cash price at Rosario averaged \$68 per metric ton, but has averaged just \$11 per ton since 1991 (fig. C-13). While farmgate-to-terminal costs remain high, the decline in terminal-to-f.o.b. prices translates into strong gains in producer prices and enhanced agricultural production incentives.

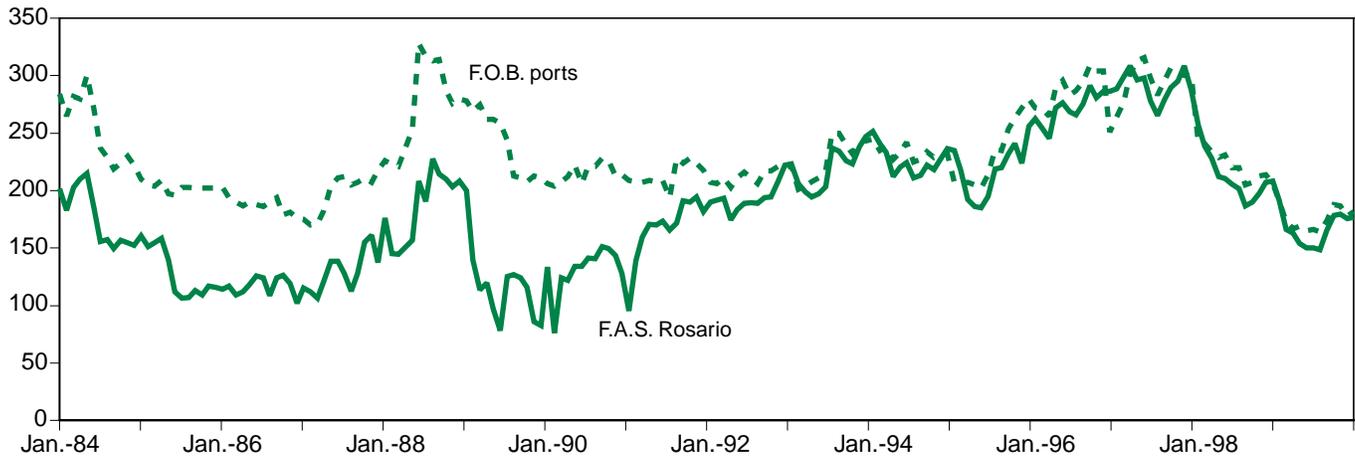
Under privatization, Argentina's port costs (excluding export taxes) have declined from an average of \$8-10 per ton in 1990 to only \$3-5 per ton by 1998, putting it on par with average port costs in the United States (Verheijden and Reca, 1998).

Since 1997, the Parana River has been dredged between Buenos Aires and Rosario, raising the average water depth from about 25 feet to 36 feet. Oceangoing cargo ships of up to 35,000 tons are now able to reach Rosario. Argentina has also started several other dredging projects to deepen the Parana River's main navigation channel, allowing vessels to take on loads up to 40,000 tons (Agriculture and Agri-Food Canada, 1999)—and extending the deepwater navigation channel through the sand bar at the mouth of the Rio de la Plata. These projects, coupled with port privatization, have lowered the cost of Argentine grain on world markets.

Figure C-13

The gap between F.A.S. and F.O.B. soybean port prices in Argentina has narrowed sharply, reflecting lower port costs and reduced export taxes

U.S. \$/metric ton



Source: SAGPyA. Free on board (f.o.b.) Argentina ports and free alongside ship (f.a.s.) Rosario terminal prices.

A recent study (Fuller et al. 2000) has identified potential cost savings from three transportation improvements in Argentina: (1) improvements in navigation for oceangoing vessels in the lower portion of the Parana River, (2) improvements in the efficiency of barge transportation on the Parana-Paraguay waterway, and (3) the introduction of privatized rail service giving northwest Argentina access to barge loading facilities at Resistencia on the upper Parana River.

Fuller et al. reported that dredging and associated navigational improvements in the lower Parana River have increased the draft and cargo size for oceangoing vessels, saving an estimated \$5 per ton in transport. The upper Parana River and the Paraguay River have also been dredged to 10 feet, with buoys and other channel markings to facilitate 24-hour, year-round barge travel, as well as to increase tow size and travel time for an estimated saving of about \$1 per ton on transport from points above Rosario. Improvements in these transportation systems are expected to increase producer prices for soybeans in Argentina by nearly \$4 per ton.

In northwestern Argentina—a region that has experienced expanding grain and oilseed production over the past years—a recently privatized rail system will soon be a viable option for transporting grain to Resistencia for barge-loading and to Santa Fe for loading aboard ocean-going vessels. According to one study, post-privatization rail rates have fallen by 40 percent from

pre-privatization rates (Banco Interamericano de Desarrollo, 1996; as cited in Fuller et al., 2000). Further transport cost savings could provide additional incentive for continued expansion of this previously isolated region's agriculture.

Other Agricultural Sectors Remain Vital to Soybean Prospects

This section presents developments in other agricultural sectors that have been integral to the evolution of Argentina's soybean sector. These include corn, wheat, rice, and cotton, as well as the livestock sector.

Corn Production Doubles During 1990s

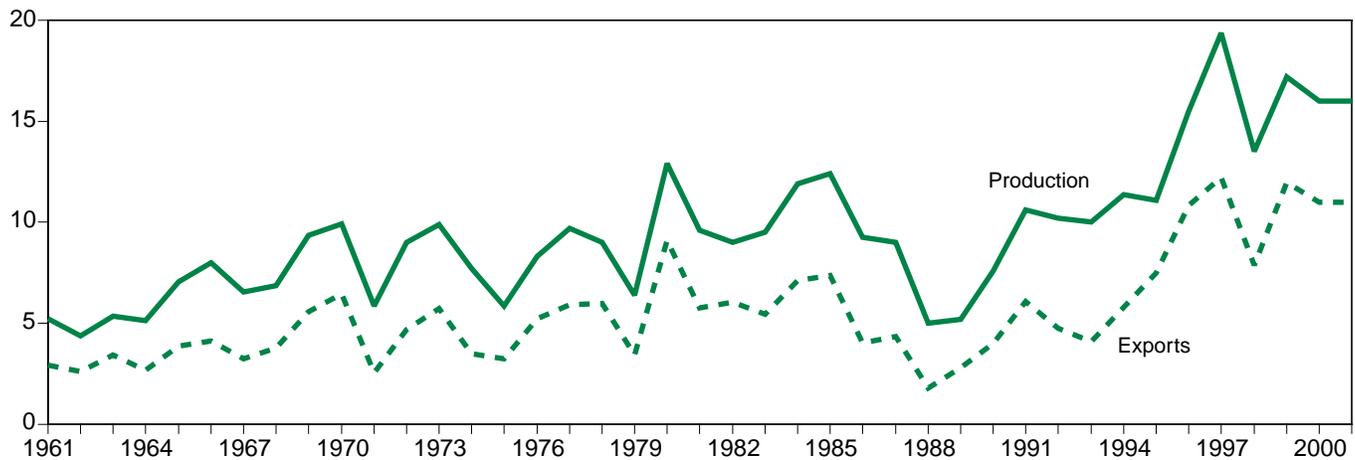
As with soybeans, Argentina is a major player in the international corn market. In 2000, Argentina was the sixth-ranked global corn producer and second leading corn exporter behind the United States. Although global corn trade is traditionally dominated by the United States, Argentina is one of only two non-U.S. sources (along with China) that consistently exports corn into international markets.

Since the early 1990s, Argentina's corn production, exports, and world market share have increased on the strength of both rapid annual area and yield growth (3.8 and 4.1 percent, respectively) (fig. C-14). Argentina's share of world corn exports more than

Figure C-14

Argentina's corn production and exports have strongly rebounded from a decline in the late 1980s

Mil. metric tons



Source: USDA; August 10, 2001.

doubled from a 6-percent average during 1989-91 to a 13.2-percent average during 1999-2001.

Many of the same forces shaping Argentina's soybean sector are influential in the corn sector. Argentina possesses excellent land resources for corn production, and its Southern Hemisphere production cycle provides a strong seasonal competitiveness to its corn exports. In addition, a small domestic market contributes to a strong export orientation. As a result, gains in Argentine corn production translate almost directly into increased exports and greater market share.

Prior to economic and political reforms in the early 1990s, the strong export orientation of Argentina's corn sector left it vulnerable to government policies that taxed agricultural exports and limited access to imported technology and inputs. Argentina's corn area peaked in 1970 at 4.9 million hectares planted (4.1 million harvested), then dropped to only 1.7 million hectares harvested in 1988 and 1989 as weak international corn prices (relative to soybeans) dampened incentives to produce corn. Since the early 1990s, however, Argentina's corn production has been recovering. Production hit a record 19.4 million tons in 1997 when strong international market prices motivated intensive input applications and significant area substitution in favor of corn. Corn yields also attained a record 6.1 tons per hectare (77 percent of U.S. yields) in 1997, but harvested area at 3.2 million hectares remained far below its 1970 peak.

Significant yield growth potential remains to be captured in Argentina for corn. Argentina's corn yields rose nearly 50 percent between 1990/91 and 2000/01, but are still only two-thirds of average U.S. yields (fig. C-15). Expanded plantings of biotech soybeans have helped with weed control in corn-soybean rotations. In addition, varietal improvements and gradually increasing fertilizer use explain much of Argentina's recent corn yield increases. Future yield gains will depend largely on further increases in fertilizer use.

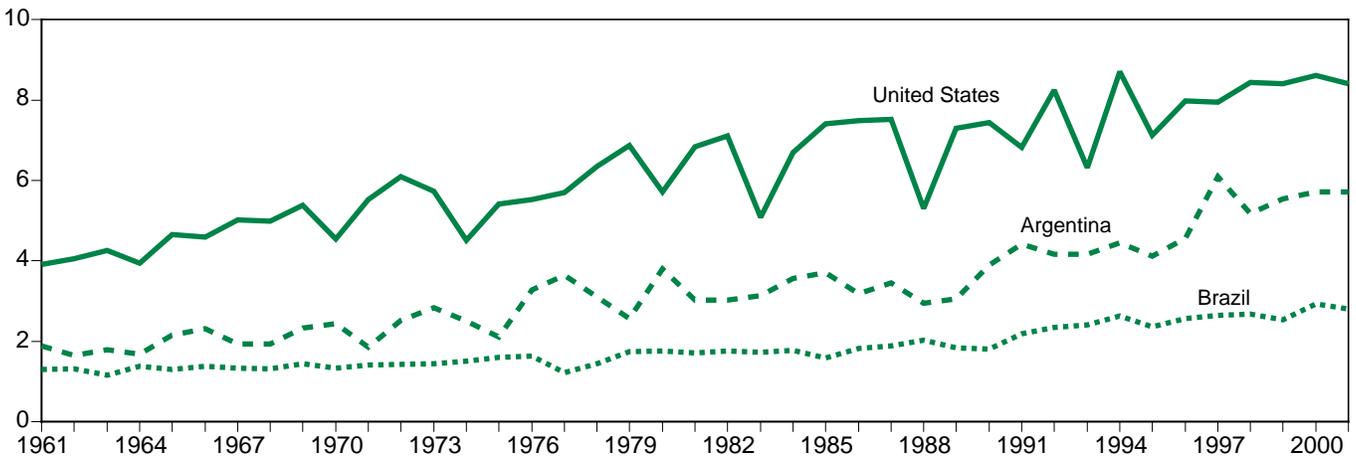
Argentine farmers have also adopted biotech corn varieties. An estimated 20 percent of the 2001 corn crop is planted to insect-resistant (Bt) corn varieties, all of which are approved by the European Union. This compares with an estimated 26-percent share for biotech corn varieties in the United States in 2001. Since 1998, Argentina has pursued a policy of approving new corn hybrids only after they are approved in major export markets (particularly the EU and Japan).

Since 1998, weak corn prices have contributed to a falloff in production. Some area has shifted to soybeans, and producers have had less incentive to apply fertilizer and chemical inputs. Argentina's corn growers remain very sensitive and responsive to price relationships between crops and inputs that govern profitability. For example, Argentine producers are aware of the growing feed demand in Brazil (a major destination for Argentina's corn exports) and are likely to respond to any shift in regional incentives.

Figure C-15

Corn yields in Argentina and Brazil still lag behind U.S. yields, mainly due to low input use

Metric tons/hectare



Source: USDA; August 10, 2001.

U.S. and Argentine corn growers differ widely in abandonment rates. Abandonment of planted corn area is more common in Argentina than in the United States (18 percent versus about 8 percent) and significantly more variable, ranging as high as 37 percent of total corn area in 1988/89.

Argentina Is the World’s Fifth-Leading Wheat Exporter

Argentina has been a consistent wheat exporter throughout the past four decades. Argentina’s share of global wheat exports more than doubled in the past decade, from 4.9 percent during 1989-91 to 10.2 percent in 2001. As with its entire grain sector, Argentina’s wheat industry has a strong export orientation due to a small domestic market, almost no domestic feed use of wheat, and proximity of production to port facilities. Brazil is the principal wheat export destination.

Argentina’s wheat sector has ebbed and flowed over the years with changing market conditions. Wheat harvested area peaked in 1982 at 7.3 million hectares, declined to 4.2 million hectares harvested in 1992 (in response to low international prices), and is expected to reach 6.8 million hectares in 2001/02 based on improving profitability. Although harvested area declined after 1997 in response to weaker prices and more favorable returns to other crops, wheat production remains robust and yields have benefited from the adoption of improved French varieties in recent years (fig. C-16). Argentina’s 2001

wheat production is projected at a record 17.5 million tons, with a record 13 million tons projected to move into export markets (fig. C-17).

Minor Oilseed Crops Grow at Expense of Minor Coarse Grains

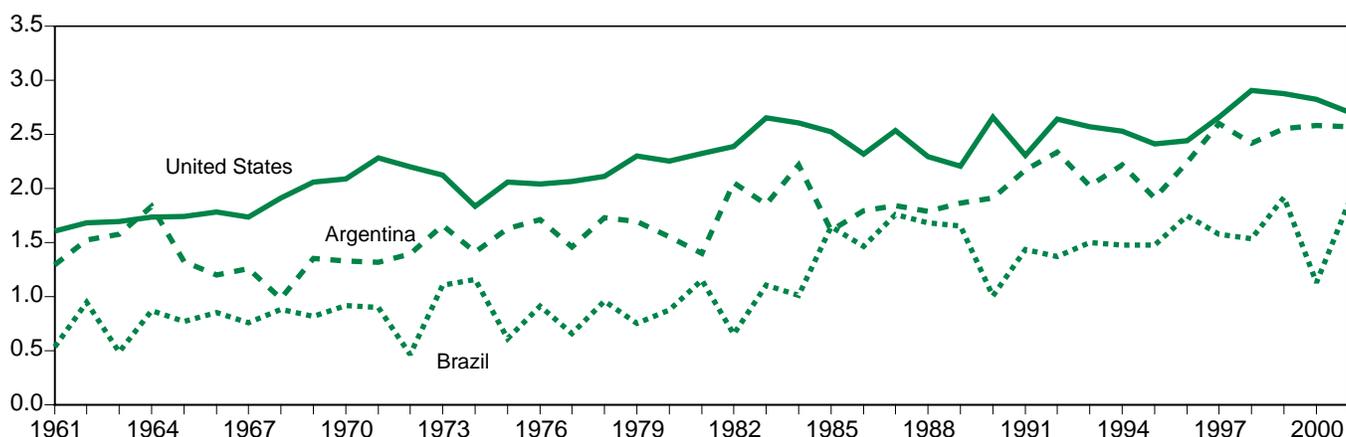
Argentina’s principal noncorn feed grains—sorghum and barley—both experienced declines since the early 1970s, when sorghum planted area exceeded 3 million hectares and barley 1 million hectares (about half planted to feed barley). Limited domestic feeding and modest international demand weakened the relative profitability of minor coarse grains and motivated much of the decline. In 1995-97, Argentina’s sorghum plantings averaged about 800,000 hectares while barley plantings averaged only about 300,000 hectares (over 90 percent of which was planted to malting barley). Argentina has been the world’s second leading sorghum exporter in recent years, far behind the United States, but conducts very little trade in barley.

Argentina’s other major oilseed—sunflower—had also enjoyed a steady surge in plantings and production since the late 1980s. Plantings exceeded 4 million hectares in 1998, having more than doubled since 1986. Production was bolstered by strong yields from hybrids. However, weak international vegetable oil prices have reduced plantings since 1998, and harvested sunflower area was estimated at only 1.9 million hectares in 2000/01. Argentina has consistently been the world’s leading exporter of sunflower oil and

Figure C-16

Argentina has closed the wheat-yield gap with the U.S. since the mid-1990s

Metric tons/hectare

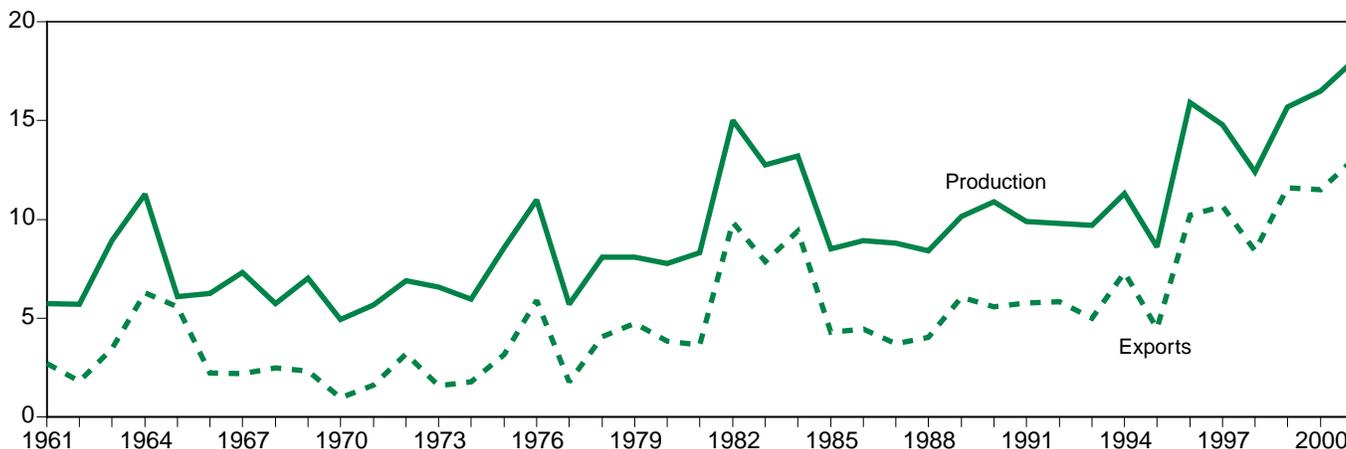


Source: USDA; August 10, 2001.

Figure C-17

Argentina's wheat sector has rebounded, with production and exports reaching new highs

Mil. metric tons



Source: USDA; August 10, 2001.

meal but, as with production, sunseed exports have been very erratic—about 900,000 tons in 1994 and 1998, but only 120,000 tons in 2000.

In Argentina, peanuts are an important minor oilseed crop. Peanut production generally requires a frost-free period of 180-200 days with warm temperatures and light soils. As a result, peanut production takes place almost entirely in central Cordoba, making it a competitor with wheat and soybeans. Therefore, peanut planted area is highly variable in response to relative crop prices and returns. For example, plantings in 1992 were only 110,000 hectares, compared with a

record 407,000 hectares in 1997 and an anticipated 230,000 hectares in 2000/01. Argentina was the world's leading peanut exporter in 1997 and has ranked second or third since.

Most of Argentina's cotton production occurs in the northern Provinces of Chaco and Santiago del Estero, where, under normal circumstances, good cotton-growing conditions often preclude production of other field crops. However, Argentina's cotton industry suffered in the late 1990s due to low international prices, poor weather, and an overvalued exchange rate relative to the Brazilian currency. As a result,

Argentina's cotton harvested area has plummeted from just under 1 million hectares in 1995 to 300,000 hectares in 1999 and 380,000 hectares in 2000.

Most rice production is undertaken in the northeastern Provinces of Entre Rios and Corrientes. Rice production is almost entirely irrigated and, as with cotton, very little cross-commodity competition for land occurs in the principal rice-growing zone. As with most of Argentina's agricultural output, rice is grown principally for export. Again, Brazil is the principal destination. Rice producer incentives have mirrored those of cotton the past several years, with weak international prices and lack of government support curbing plantings. Harvested hectares fell from a record 289,000 in 1998 to only 133,000 in 2000.

Brazil's large exchange rate devaluation in early 1999 underscored Argentina's dependence on the Brazilian market, as both rice and, to a lesser degree, cotton exports fell sharply in 1999.

Livestock Dynamics Play Critical Role in Determining Field Crop Potential

Livestock dynamics will be critical to the longrun evolution of field crop production in Argentina as much of the country's land is used to support the world's fifth largest cattle population—annual cattle inventories averaged about 55 million head during 1998-2000.

Production of beef and veal dominate Argentina's livestock sector, although poultry production has more than doubled in the past 10 years. The sheep industry remains important, but has been in steady decline since 1970 (table C-3).

Argentina has enormous tracts of permanent pasture-land (estimated at over 142 million hectares) that support a largely grass-fed cattle population. Argentina's large cattle herds, predominantly steers and feeder heifers, compete with field crops for

grazing land in the principal production areas. Most of the cow/bull population is in the central Buenos Aires Province. The Salado Basin in central-east Buenos Aires Province is a traditional cow-calf area, where some conversion from pasture to crops occurs under favorable circumstances. A large portion of cow-calf operations and most of the sheep population are spread out further into the marginal lands of western and southern Argentina. At the same time, crop production and cattle raising are considered highly complementary, given the practice of rotating crops with sown pastures to maintain soil fertility.

In the western edges of Argentina's agricultural zone, where the productivity of fertile soils is tempered by drier, more variable precipitation conditions, the tradeoff between pasture and field crop cultivation hinges on market conditions. However, even a very minor shift of pasture into field crop cultivation could have a large impact on total area and production. For example, a shift of just 7 percent of permanent pasture into field crop cultivation would bring about 10 million hectares (equivalent to the average annual total planted area of Iowa) into production, with potentially enormous consequences for international grain markets. Nevertheless, until significant feedlot expansion occurs, shifts between permanent pasture and cropland will probably only occur at the margin.

Argentina has had the world's highest per capita beef consumption for several decades, but it has been trending down the past 15 years, falling from 85 kilograms per capita in the mid-1980s to about 68 kg/capita by the late 1990s. At the same time, lower cost feeding facilities producing younger animals with lighter finishing weights have expanded recently. These patterns, combined with limited population growth, portend a continued decline in domestic beef demand.

Beef export prospects appeared to receive a boost in 2000 when Argentina was declared foot-and-mouth disease (FMD) free. Argentina's beef producers conse-

Table C-3—Livestock populations and meat production in Argentina

Period	Population				Meat production			
	Cattle	Pigs	Sheep	Goats	Beef & veal	Pork	Mutton & lamb	Poultry
	----- Million head -----				----- 1,000 metric tons -----			
1968-70	49.4	4.0	44.4	5.3	2,689	199	193	157
1978-80	56.8	3.6	32.2	3.1	3,018	245	124	291
1988-90	52.6	2.8	29.0	3.2	2,691	168	84	375
1998-2000	54.9	3.2	14.4	3.4	2,652	156	46	927

Source: FAOSTATS, FAO.

quently could target the high-end foreign markets that traditionally consume “grain-finished” beef. However, this potential was short lived due to the April 2001 confirmation of a new outbreak of FMD in Argentina. It will be several years before unprocessed meat exports to countries free of FMD can be resumed. Strong income growth would likely need to occur in international markets before red meat trade experiences the type of takeoff necessary to trigger the development of feedlots “à la United States” in Argentina.

Argentina’s Post-Reform Economy... Losing Stability?

Argentina’s reform programs laid the groundwork for a stable investment climate for agriculture by quelling inflation and establishing confidence in the peso. The reduction of export taxes, import tariffs, and quotas allowed domestic producers to capture a larger share of international market prices, and allowed more of Argentina’s surplus agricultural production to flow into export markets. Argentina’s economy performed well throughout much of the 1990s—annual GDP growth averaged 8 percent during 1991-98, while consumer price inflation has hovered near zero since 1996. Despite four major international financial crises—the 1995 Mexican peso crisis, the 1997 Asian crisis, the 1998 Russian crisis, and the 1999 Brazilian crisis—Argentina has managed to maintain its currency peg to the U.S. dollar.

Nevertheless, the reforms of the early 1990s left many significant problems unresolved and Argentina is now in the midst of a 4-year recession. The economy is still burdened by excessive regulation and labor market rigidities. Employers have little flexibility in firing employees, lowering wages, or hiring part-time labor. As a result, high payroll costs hinder international competitiveness for many sectors. Although significant privatization occurred under reform, in many cases privatization simply involved substituting a privately owned monopoly for a government monopoly with little gain in competition or efficiency.

The Government of Argentina (GOA) employs nearly one-third of the labor force. Despite some initial cuts, government payrolls remain large in 2001, and government expenditures have exceeded revenues since 1995. Rather than cutting expenditures, the GOA has raised taxes in an attempt to reduce the fiscal deficit, which has raised business costs. The mounting public debt—\$130 billion in June 2001—undermines investor confi-

dence in the country’s ability to manage its economy and poses a serious threat to economic stability as much of the debt is financed through short-term credit from international financial markets.

These economic problems are finally catching up with Argentina. The economy has been mired in recession since 1998 with no sign of recovery in the near future, and unemployment has been running at about 15 percent. Significant currency depreciation in Brazil and currency weakness in the European Union (both major trading partners) suggest that the value of the peso has become too high. Meanwhile, the trade-weighted value of the U.S. dollar has risen to near-record levels, further strengthening the peso (whose value is linked to the U.S. dollar).

The current economic outlook in Argentina is for another round of inflation. After negligible inflation during 1996-2000, private forecasters project inflation of 6 to 10 percent during 2002-03. As inflation in Argentina outpaces that in the United States, the peso becomes even more overvalued.

Partial Devaluation of the Peso?

The GOA has been under pressure for some time to consider changing back to a pegged-float or even a free-float exchange rate. On June 15, 2001, Argentina’s economic minister, Domingo Cavallo, announced a package of policy measures referred to as the convergence factor. This package included the introduction of a dual exchange-rate system with an indirect devaluation for commodity exporters through implementation of a set of trade policy tools. Cavallo’s plan also includes an austerity program designed to eliminate the government deficit. The overall package of measures is intended to boost international competitiveness and revive growth, while avoiding a potentially disastrous default on government debt.

Currency devaluation has always been an obvious remedy for Argentina, but has been avoided due to the country’s enormous government debt. As long as the peso is pegged one-to-one with the dollar, the \$130 billion debt can be repaid with 130 billion pesos. A 10-percent devaluation would raise that price to 143 billion pesos. Cavallo’s enhanced convertibility law tries to have it both ways by cutting the impact of currency overvaluation on exporters while retaining the ability to repay international debt with the overvalued peso.

Under the new plan, international finance operates under the usual one-peso-to-one-dollar arrangement, but exporters receive an adjustable reimbursement by the GOA in amounts equal to the difference between the current peso-dollar peg and a peso exchange rate based on a 50-50 mix of the euro and the dollar. For example, during July 2001, the euro traded at about 14 percent below the dollar (1 euro = U.S. \$0.86), so the devaluation for exporters would be roughly 7-percent. On the other hand, importers face what amounts to an implicit tariff of equal magnitude under the new system. The devaluation-induced export gains are to be partially offset by elimination of export tax rebates, while the devaluation-induced higher import costs are to be partially offset by lower tariffs on imports.

If successful, Cavallo's exchange-rate adjustment plan could mean potential gains in Argentina's share of international trade due to lower priced exports. However, of greater concern is the risk of deepening recession and the possibility of a regional spillover of economic difficulties into Brazil and beyond.

MERCOSUR—a regional customs union among Argentina, Brazil, Paraguay, and Uruguay—has increased economic ties among member countries by establishing essentially duty-free trade within the union. But the interdependence of trade among members has made each country more vulnerable to each other's economic problems. For example, depreciation of Brazil's currency has made many of Argentina's commodity exports relatively less competitive. In addition, high common external tariffs have sheltered inefficient industries from competition abroad.

Argentina's farmers are not optimistic about the new policies even though there are some positive aspects for agriculture. For example, taxes on interest payments on credit are to be eliminated, payment of a banking transaction tax and fuel transfer tax are to be deductible against farmers' value-added tax liabilities, and there are plans to lower costly highway tolls by up to 60 percent.

However, diesel fuel prices are to be raised by over 15 percent. According to Argentine sources, every centavo (1/100 peso) increase in the price of diesel fuel costs farmers an additional US\$45 million per year. In addition, farmers are dependent on imports of many important agricultural inputs such as farm chemicals and machinery. Import costs would increase under the dual exchange-rate system. In the end, the proposed exchange rate could simply accelerate the process of squeezing out

less efficient or less well-financed operators, which has been underway in Argentina for most of the past decade.

The bottom line for international commodity markets is that Argentina's wheat, corn, soybeans, soymeal, and soyoil could cost less relative to competitors under the new exchange-rate mechanism. This could mean market share gains for Argentina and greater pressure on international commodity prices in general. If the GOA decided to let the peso float freely (as in Brazil), the currency's value would likely drop 25 to 30 percent, perhaps temporarily overshooting to as much as 50 percent in the beginning.

What's Ahead for Argentina's Economy?

Some commodity markets are still recovering from the last global crisis—the 1997 Asian crisis. Argentina's ability to finance its debt is important for global financial stability because more than 20 percent of all tradable emerging-country debt originates in Argentina. However, the ties between Argentina and other emerging economies are not tight, except with Brazil. Although the possibility of impacts in Latin America exists, the overall risk of spillover is relatively low.

Nevertheless, concerns have been raised in international money markets that Cavallo's announcement merely signals the possibility of even larger currency devaluation and further enlargement of Argentina's debt crisis. Much of Argentina's government debt is short-term credit that will need to be repaid or refinanced soon. Cavallo's policy package is only part of a recent series of measures taken to avoid an economic crisis similar to the 1980s, which was due to the inability of the government to repay or refinance its debt. In December 2000, the GOA received a \$40-billion rescue package from the IMF and other sources to temporarily hold off its mounting debt crisis. In May 2001, the GOA traded \$30 billion in short-term credit for long-term bonds to defer repayment and ease the immediate burden.

Argentina's debt problems will not disappear anytime soon. The country will need to raise about \$12 billion in 2002 to repay or refinance more short-term debt coming due. This dilemma is compounded by the likelihood of a deepening recession. However, if Cavallo's austerity plan and labor market reforms are followed by the Provincial governors, it could help restore investor confidence and build the foundation for future economic growth.