



Coffee Markets

New Paradigms in Global Supply and Demand



*Bryan Lewin
Daniele Giovannucci
Panos Varangis*

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About the authors

Bryan Lewin was previously the Economist of the Association of Coffee Producing Countries and now works in the Agriculture and Rural Development department of the World Bank on commodities and risk management. Daniele Giovannucci is a former corporate executive and market strategies expert. He advises international agencies and governments and is a senior consultant for The World Bank Group. Panos Varangis is a Lead Economist in the Agricultural and Rural Development department of the World Bank, dealing with issues related to commodities and commodity risk management.

Cover graphic

Alex Baluyut, 2002. A farmer tending to coffee cherries. Country unknown.

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Weights and Measures

1 hectare (ha) = 10,000 m² = 2.47 acres
1 quintal (qq) = 100 pounds = 46 kilogram
1 metric ton = 2,205 pounds
1 bag of coffee = 60 kilogram = 132.3 pounds
1 metric ton = 16.67 bags
Million = 1,000,000

Prices

In October 2001, the International Coffee Organization introduced a new calculation method for the Composite Indicator. In order to keep long-term price series consistent, this report has maintained the previous calculation method.

Coffee and Crop Years

In this paper, references are made to production and demand quantities, and supply/demand balances using both crop years and Coffee Years. Each crop year covers an overlapping 18-month period, starting in April of one year with the Indonesian and Brazilian robusta crops, and finishing in September of the following year with the end of the crops in Central America, Colombia and Vietnam.

The Coffee Year is recognized as being the International Coffee Organization's accounting period of October to September. Where the coffee is harvested across this period, as in the United Republic of Tanzania, for example, the crop year is split according to the proportion harvested. In some cases, an entire crop gets moved back one year from its crop year. An example of this effect can be seen in Brazil, where the 2002-2003 Brazil Crop Year production is recorded in the 2001-2002 Coffee Year as it is assumed to have been harvested by the end of September.

This paper represents the views only of the authors and not the positions of the World Bank Group, its members, or its Board of Directors.

Acronyms and Abbreviations

ACPC	Association of Coffee Producing Countries
ABIC	Associacao Brasileira da Industria de Café
AEKI	Indonesian Coffee Exporters Association
AFD	Agence Française de Développement
ANACAFE	Asociacion Nacional del Cafe (Guatemala)
CECAFÉ	Conselho dos Exportadores de Café Verde do Brasil
CFC	Common Fund for Commodities
CFF	Compensatory Financing Facility
CIMS	El Centro de Inteligencia sobre Mercados Sostenibles
CONAB	Companhia Nacional de Abastecimento (Brazil)
CRMG	Commodity Risk Management Group (World Bank)
DKV	Deutsche Kaffee Verband
ECA	European Coffee Association
ECLAC	Economic Commission for Latin America and the Caribbean
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária
EUREP	European Retailers Produce Working Group
EUREP-GAP	European Retailers Produce Working Group-Good Agricultural Practice
FAO	Food and Agriculture Organization of the United Nations
FEBEC	Federation of Brazilian Coffee Exporters
FLOI	Fair-trade Labeling Organization International
FNC	Federación Nacional de Cafeteras de Colombia
G&S	Grades and Standards
GAP	Good Agricultural Practice standards
GATT	General Agreements on Tariffs and Trade
GIO	Geographic Indications of Origin
GIS	Geographic Information Systems
GMO	Genetically Modified Organism
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HACCP	Hazards Analysis at Critical Control Points
IBC	Instituto Brasileiro do Café
ICA	International Coffee Agreement
ICAFE	Instituto Costarricense del Café
ICO	International Coffee Organization
ICP	International Coffee Partners
IFOAM	International Federation of Organic Agriculture Movements
IHCAFE	Instituto Hondureño del Café
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund

IPM	integrated pest management
ISEAL	International Social and Environmental Accreditation and Labeling Alliance
ISO	International Standards Organization
LIFFE	London International Financial Futures and Options Exchange
MARD	Ministry of Agriculture and Rural Development
MRL	Maximum Residue Levels
NCA	National Coffee Association (U.S.)
NGO	Nongovernmental organization
NPK	nitrogen, phosphate, potassium (variable proportions)
NFCG	National Federation of Coffee Growers
NYBOT	New York Board of Trade
OAMCAF	African and Malagasy Organization of the Coffee
OCS	Office Coffee Service
OTA	Organic Trade Association
SAI	Sustainable Agriculture Initiative
SASA	Social Accountability Sustainable Agriculture
SCAA	Specialty Coffee Association of America
SMBC	Smithsonian Migratory Bird Center
SMEs	Small and Medium Enterprises
SOE	State Owned Enterprises
SPS/TBT	Sanitary and Phytosanitary/Technical Barriers to Trade
UCDA	Uganda Coffee Development Authority
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VICOFA	Vietnam Coffee and Cocoa Association
WTO	World Trade Organization

Executive Summary

About 20-25 million families—mostly smallholder farmers—in more than 50 developing nations produce and sell coffee. A number of them are facing considerable difficulties because of the dramatic decline in the price of coffee to 100-year lows in real terms. Since 1970, prices have averaged a 3 percent per year price decline for arabica coffees and a 5 percent decline for robusta. Nicaragua provides a stark example of the impact: Between 1998 and 2001 poverty rates increased by more than 2 percent among those farmers who remained in the coffee sector. In contrast, poverty rates among rural households as a whole fell by more than 6 percent. A similar picture emerges for primary school enrollment rates—falling by 5 percent for households that stayed in the coffee sector and increasing by 10 percent among all rural households.

In several coffee-producing countries, coffee accounts for at least 20 percent of the total export earnings. By some estimates, approximately 100 million people are directly affected economically by the coffee trade. It goes without saying that with a crop of such significance for some countries, the destabilizing effect of the price crisis sparks concern precipitating bank failures, public protests, and dramatic falls in export revenues.

The consequences of the crisis in each country and region have been different according to the industry structure of the country concerned. In Central America, for example, a region with relatively larger farms (compared to Africa) using higher amounts of additional nonfamily labor, there has been high labor displacement, as well as both a worsening of poverty levels among smallholder farmers and default problems in the banking sector. In regions such as Africa, the social costs, particularly for smallholder farmers, are also acute, and difficulties are aggravated at the national level due to balance of payments problems and lost revenues, jeopardizing broader government antipoverty measures.

Historically, coffee price volatility has been a fact of life because of weather shocks (mainly in Brazil) and is not the sole source of the crisis. In recent years, significant structural changes in the coffee markets mean new and emerging paradigms are likely to dictate coffee's future, which will have permanent effects on the livelihoods of the millions who depend on it.

One area of structural change is in the nature of supply, particularly increases in both the quantity and quality of Brazilian and Vietnamese coffees. Along with Colombia, these three countries now account for about 61 percent of total production and, in 2002, 55 percent of global exports, each one having strengthened its domination of a different market segment. Increased access to financial and futures markets particularly in countries, such as Brazil, have enabled some producers to better manage risk. This will have an impact on supply, making it easier to smooth shipments across wide cyclical production swings that occur particularly in Brazil.

The market oversupply was not entirely unexpected, but the depth of its impact has been a shock to most participants and observers. A combination of policy and market failures left producers without access to realistic information about developments elsewhere, while policy signals isolated them from the consequences of expanding production; however, even with good information it is unlikely that many coffee producers would have had the capacity for a suitable response due to their limited resources, as well as lack of viable income alternatives in many poor rural areas.

Roasters have responded to the shift in supply by adapting their technology to increase their use of lower-cost natural arabicas and robustas. They also introduced greater flexibility in their blends to respond to lower-priced availability, though there is recent anecdotal evidence that this tactic may have sometimes resulted in a negative consumer response as coffee quality declined. The increasing concentration of roasters has enabled

them to work with lower inventories by pushing increased just-in-time logistical demands down to their suppliers. Such demands have favored the largest trading companies and led to considerable concentration in this part of the supply chain, as well.

A consequence of the decline in coffee prices has been a decline in the share of the final retail price that is received by producing countries. This decline has been caused by two factors. First, the coffee roasting and retail industries have made profits by developing new products and by taking advantage of various value-adding activities, such as marketing, branding, differentiation, and flavoring. As an example, the recent expansion of demand for soluble coffee, which is among the most profitable parts of the business, has enabled the industry to capture increased value from less expensive raw materials, such as robusta coffees. Second, the noncoffee components included in the retail price of coffee, such as wages, packaging, and marketing, have grown and now represent a much more significant share of the total retail price than the actual coffee itself. Interestingly, a number of countries that import coffee earn billions of dollars annually in taxes from it. In some of these countries, these taxes alone are approximately equivalent to the coffee revenue earned by the producing countries.

Volatility in the producers' share of the retail value will still be more influenced by changes in the price level of green coffee than by changes in any other cost component because the value-adding costs are independent of the price of green coffee. Green coffee prices are the single most volatile expense incurred in putting roasted coffee on the market shelf and, consequently, one of the major determinants of changes in the producing countries' share of the retail value. Producers' ability to capture fair value from their output will require that producer organizations and producer countries act to improve their capabilities and their bargaining position with a clear understanding of these two factors—and of the structural changes and the market failures mentioned above.

Many countries perceive the commodity trading system to be increasingly onerous and partly responsible for the loss of share of market value. The dominant trade paradigm for the coffee industry is of pricing set according to the New York or London exchanges. However, a growing group of producers and coffee firms are pursuing strategies that are independent of commodity pricing and the exchanges. Many of these alternatives include some differentiation of the coffee, usually by either quality or cultivation processes. A number of companies in the industry, including some that are household names, are adopting standards or developing purchasing criteria that transparently link their buying to positive socioeconomic and environmental effects in developing countries. Such emerging trade paradigms may offer producers alternative ways to capture the long-term value of sustainability by linking superior prices to demonstrable advancements in both the quality of the coffee and to more sustainable cultivation and trade practices.

These new trade strategies are also consistent with a complex demand picture. There are structural changes in demand both at the consumer level and at the industry level. These changes include stagnant overall growth in the traditional major importing countries, increased demand for soluble coffee, increased demand for differentiated and higher-value products, new technology allowing greater fungibility in coffee supplies, and geographic-generational shifts in the popularity of different types of coffee products. At the same time, in many markets there is increasing preference for espresso-style coffees that do not depend as much on the flavor profiles of high-quality washed arabica coffees. These shifts, and the strong competitive response of the largest producers, particularly Brazil, are reducing the demand for certain types and origins of coffee, leaving the worst-affected countries with large social and economic costs.

Global coffee consumption has shown noticeable regional differences. Consumption has been mixed in producing countries but is typically low, and Brazil, now the world's second-largest consumer, still sets the benchmark for increasing domestic consumption. Its concerted approach to improving labeling, consumer

perception, and quality while using effective market segmentation provides lessons that are relevant for other countries wanting to expand consumption.

Emerging markets in Asia, Eastern Europe, and the former Soviet Union, which are not traditional coffee consumers, are posting rapid growth in consumption. This is primarily for inexpensive, soluble coffees, though tastes are evolving toward improved quality and novel characteristics, such as premixed cappuccino. Soluble is an important key to developing these traditionally tea-drinking markets because most consumers are unfamiliar with coffee-brewing methods and paraphernalia and less able to afford these. North America and Japan are growing slowly. Northern European consumption, particularly in Germany is stagnant, but in southern Europe, there are some increases. It seems that in this region the differentiated product market is growing the fastest.

The differentiated product market requires that producers distinguish their products by distinct origin, defined processes, or exceptional characteristics, such as superior taste or few defects. These can be traded through more lucrative channels than the typical industrial grades that flow in the undifferentiated commodity channels and include:

- ❑ Geographic Indications of Origin (appellations)
- ❑ Gourmet and specialty
- ❑ Organic
- ❑ Fair trade
- ❑ Eco-friendly or shade grown
- ❑ Other certified coffees

While these differentiated segments can provide some producers with competitive advantages and added value, they are not necessarily easy to access and are still relatively small. Nevertheless, they are important because of their growth rates and their potential to provide better social, economic, or environmental benefits for farmers. Though much of the coffee industry feels that premiums paid to growers for differentiated coffees are reasonable, it may be prudent to de-emphasize price premiums as a reason for entering these markets because it is quite plausible, at least in some cases, that these premiums will diminish. These markets should not however be discounted because they can often have a considerable impact on the income of farmers. Besides premiums, there are several other convincing arguments for fostering the differentiated segments, particularly those certified as organic, fair trade, or eco-friendly because of their positive externalities in the field such as:

- ❑ Increased use of rural labor and organizational development
- ❑ Crop diversification and reduced input costs minimize financial risk
- ❑ Better natural resource management and biodiversity conservation
- ❑ Reduced risk due to improved drought and erosion resistance
- ❑ Crop resilience to adverse weather
- ❑ Fewer health risks due to potential mishandling of agrochemicals

Currently, the differentiated markets import roughly 6-8 million bags of green coffee which represents about 9-12 percent of the total to the developed markets in North America, Western Europe, and Japan, as well as a somewhat larger percentage of profits. Some of the extra value of these coffees is created and captured in

consuming countries, but to the extent that some of this higher value is kept by producers for their differentiation, these markets are breaking the pattern of a declining producer share of revenue.

Because many producers are showing strong interest in these coffees, a word of caution is warranted. As more of these coffees come onto the market, the ensuing saturation could significantly diminish their prices. These markets are still small and even modest changes in supply and demand can impact prices. Most of the major coffee companies are instituting increased requirements for sustainable growing practices that will require further adoption and certification of these practices. Several very large buyers that are now testing the market with these products claim that there is a limited supply if they should decide to make a stronger commitment.

As markets for differentiated coffees grow, there is an increasing need for consumers to understand the sometimes complex verification or certification processes that apply to the standards-oriented coffees, such as organic, fair trade, eco-friendly, Utz Kapeh, and those using Geographic Indicators of Origin (GIO). The legitimacy of third-party certification is a vital market mechanism that can prevent indiscriminate use of these terms. The alternative may be a loss of consumer confidence that would cost the entire industry by damaging one of its few fast-growing segments. Perhaps more importantly, failure to improve clarity of these standards and to support third-party verification could also damage one of the few niches in which small coffee producers have a chance to be competitive in a lucrative global trade. This is particularly important as various organizations, including corporations, are developing their own independent sustainability principles and standards. Differentiated coffees, particularly those espousing social and environmental benefits, can provide a unique and positive image for a beverage whose appeal has become stale in many of the more mature markets.

Differentiated coffees are not a panacea, and industry surveys indicate that two other factors are equally or, perhaps, more important to be competitive in today's coffee markets: quality and consistency. The high value placed on consistency underscores the industry's preference for steady and predictable quality given the costs and risks of sourcing from new suppliers. This critical competitive factor has several implications, particularly for smaller suppliers, regarding the need to improve basic business practices, as well as agronomic practices in their cooperatives and organizations.

Differentiation, while increasingly popular, is only a partial answer in the near term; other answers are needed for the majority of coffee producers. One often proposed is the diversification of some farmers away from a strong dependence on coffee. Though this can be conceptually sensible for some geographic areas, there are very few alternatives that either come close to coffee's valuable characteristics, such as its marketability and long shelf life, especially for remote rural areas, or which present realistic alternatives for the terrains in which coffee is currently grown. Trade protectionism in industrial country markets particularly continued high levels of subsidy in industrial countries for their own farmers, pose additional obstacles to diversification into other activities or into higher value or processed products and thereby leave producers with limited access to these markets.

Given the long-term historic cycles, it is highly likely that supply will eventually align more closely with market demand for a period and that prices will recover somewhat. While conditions for producers will certainly improve as that happens, it will not signal an end to their problems because the economic causes of these cycles suggest that they are likely to continue to repeat themselves regardless of the actual levels at which supply and demand would actually converge. Price recovery then, given the inherently cyclical nature of current coffee markets, is likely to be only temporary, while other issues of social, environmental, and economic sustainability will remain. Structural changes in the ability to manage and finance supplies and the reduction of the historically high weather-related risk also lowers the likely frequency with which prices might return to the previously reached highs.

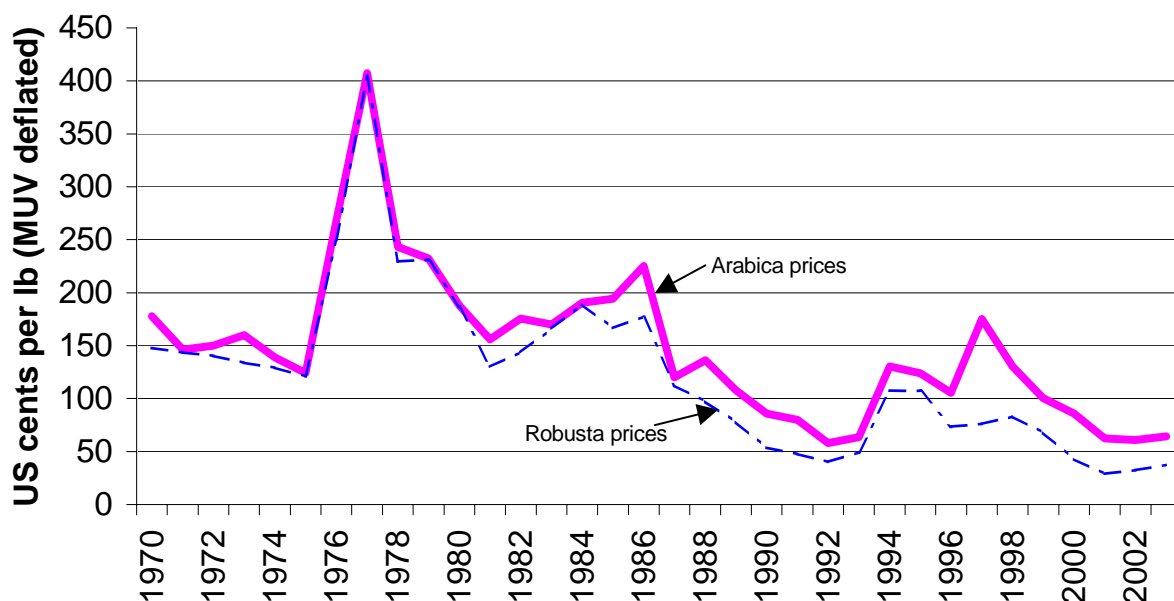
The structural changes in the global coffee industry over the past few years will have a powerful influence on the nature of these markets. This influence could be as important as the cyclical, often weather-related, shifts in supply and demand that have considerably influenced the coffee market in the past. Understanding these changes is important; otherwise in today's free markets there is little hope of relieving the considerable damage caused by market failures, such as imbalances in the trading chain and the persistent failure of private markets (coffee, credit, and risk). In order to thrive in this new business environment, coffee producers must understand the characteristics and the nature of these structural changes. Their governments must be more agile in creating favorable business environments to allow them to successfully adapt to the new demands of the marketplace and to help them potentially shape it. In the current situation of liberalized markets and decreasing state support for agriculture it will be increasingly incumbent upon producer and trade organizations to provide necessary services. Fostering the necessary research, extension, risk management, diversification, and marketing will all require dedicated long-term programs to strengthen and train such organizations. As agriculture increasingly takes on industrial characteristics, these organizations will also need to establish closer relationships and direct linkages with buyers and roasters to adequately respond to market demand and form integrated value chains that help to assure the sustainability of each member.

More broadly, governments need to focus on rural development that will increase competitiveness and reduce dependency on a few primary commodities by broadening the range of products produced by the agriculture sector, improving production and marketing systems, and supporting the creating of nonfarm activities. This will enable countries and sectors to more easily adjust to the kind of price swings and structural changes in world markets experienced by the coffee industry.

1. Introduction

More than 50 nations, almost all in the developing world, produce and export coffee. A number of them are facing considerable difficulties because of the dramatic decline in the price of coffee which has fallen to its lowest levels in 30 years, and to 100 year lows if adjusted for inflation, as a result of worldwide oversupply (see figure 1). Some of these countries are dependent on coffee exports for a significant portion of their international trade and export income as indicated in the preliminary tables. The destabilizing effect of the price crisis has sparked concern in some of these countries that have experienced bank failures, public protests, and dramatic falls in export revenues.

Figure 1 Arabica and robusta prices, 1970-2002



Source: ICO, customized subset of data sent to author, taken from ICO database; World Bank Global Economic Prospects, 2004

Between 17 and 20 million families are directly involved in coffee production. Evidence of considerable human hardships in many producing regions confirms coffee's importance as a primary—and sometimes only—source of cash income for many farmers (IDB, USAID, World Bank 2002; Oxfam 2002).

Most of the world's coffee is produced by smallholders utilizing just a few hectares of land. In the past year, many reports have confirmed the heavy toll on farmers that have had to sell below cost or even give up their coffee farms because current prices do not even cover the most basic costs of harvesting and transport to market, and estimate economic losses for small coffee farmers at US\$4.5 billion per year. The losses can be measured in even more profound ways. In many rural areas, the annual coffee income means the ability to pay for children's schooling, purchase basic necessities such as clothing and medicines, and settle debts (see boxes 1 and 2).

Box 1 Coffee Producers in India

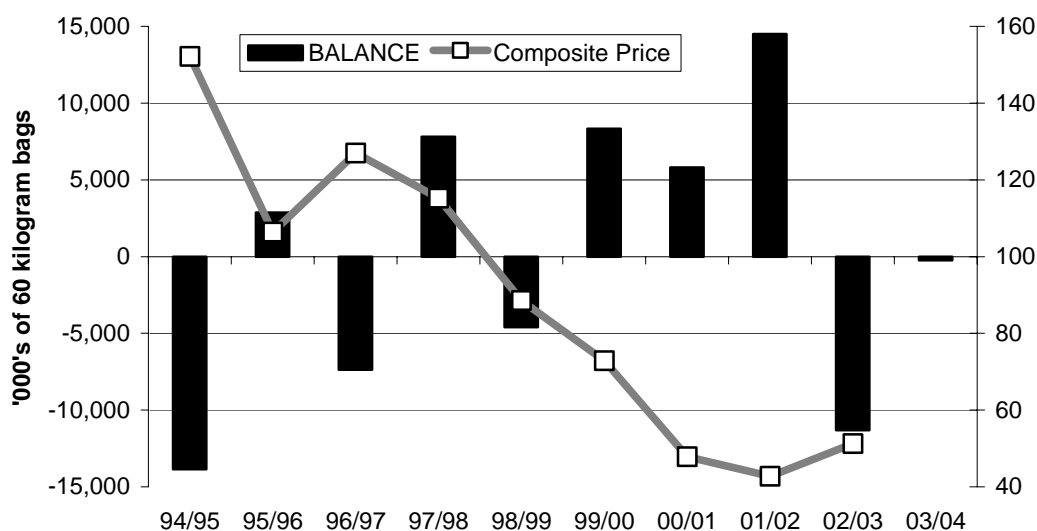
“Reduced to penury by low prices for more than 2 seasons, coffee growers of the southern Indian state of Karnataka have started taking their own lives. The burden of debt and heavy losses, in spite of recent marginal price improvements, have led at least half-a-dozen planters to commit suicide.”

Source: *Financial Times*, August 15, 2002

Historical Background

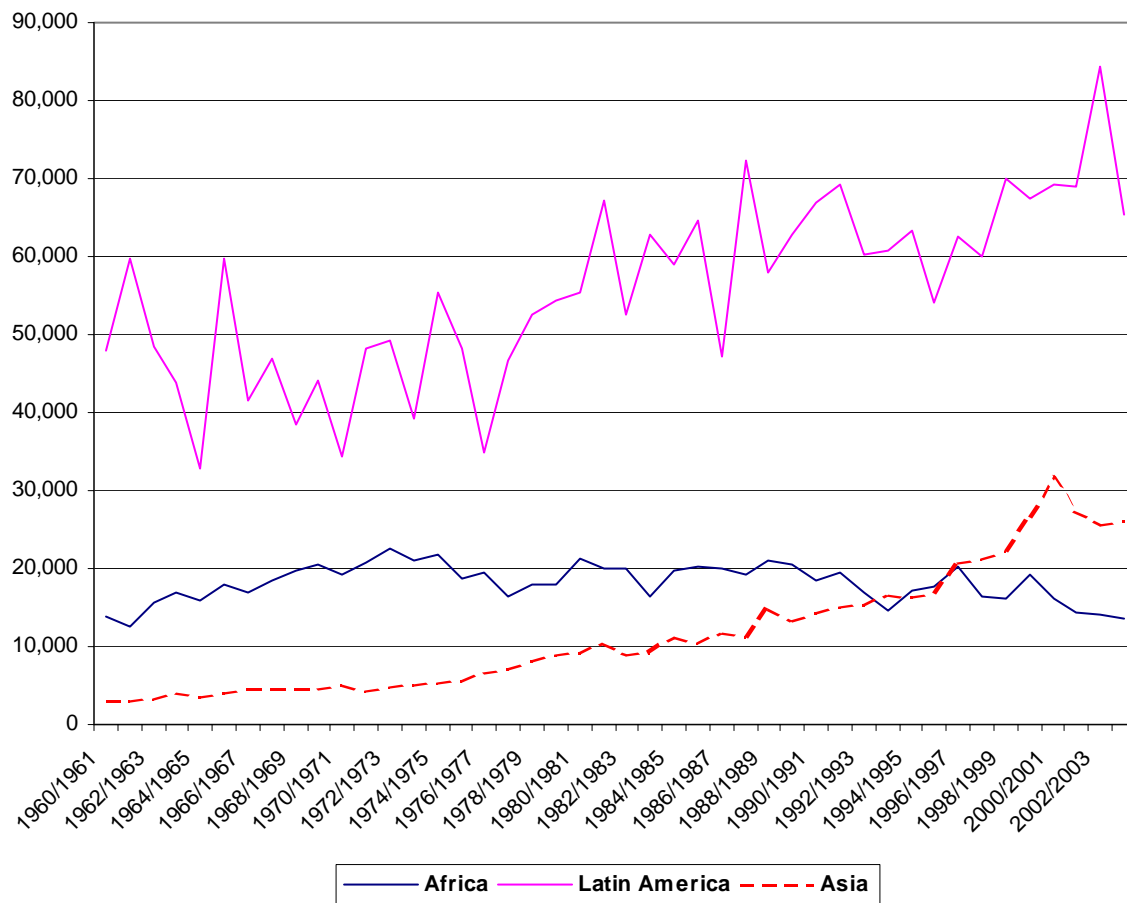
Looking at its long-term context, the cause of the price decline is clear—a trend moving from the production deficits of the early 1990s to the more recent surpluses, the largest of which was in the 2002-2003 crop year, shown as the 2001-2002 Coffee Year (see figure 2). These surpluses of coffee that led to the current crisis were not entirely unexpected: The coffee trade had been expecting a Brazilian crop well in excess of 40 million bags for several years, and mostly bad weather prevented its earlier occurrence. Other countries have also expanded production due to periods of profitable prices in the 1990s. Coffee production is no longer managed by producing country boards or by international agreements so that, although liberalization certainly increased producers exposure to market price volatility, it helped to raise the farmers’ share of these higher market prices in many cases, thus adding to the incentive to expand.

Figure 2 Balance of Supply and Demand in Coffee years 1992/93-2003-2004, including forecast



Source: Author calculations based on an October-September accounting period

However, these supply changes have not been global. As depicted in figure 1.3 of supply from each of the three main producing regions since 1960, African production has never passed its peak in 1972, while Asia and Latin America have both increased.

Figure 3 Global Production Trends by Region

Source: USDA Foreign Agricultural Service, “Production, Supply and Distribution” database

The historical context of the current situation is a repeated cycle (see figure 1). A substantial increase in prices caused by frost or drought in Brazil, followed by new cyclic price lows 5-7 years later, accounted for by the gestation period for new plantings to bear fruit. This has been caused by increased production following each price spike and by improvements in agricultural efficiency as prices fell, which have had some impacts on the next cycle through both improved efficiency and in bringing in new entrants (see figure 1.4). In effect, the history of coffee prices can be regarded as a series of shocks that sometimes introduced a new paradigm shift. The current shifts are among the most substantial ever experienced.

The origin of this cyclic behavior lies in a combination of the low, short-run inelasticity of both demand and supply, combined with the fact that coffee production has a tendency for production shocks. Moderate price increases do not have much impact on consumption levels, so that when production falls below demand, consumption must be met from stocks. In a period of a large production falls, relative to the volume of available stocks, the probability of an elimination of these stocks increases, thus raising the value of the stocks to those that need them.¹ The price rises that follow induce an increase in production

¹ This issue is discussed in more depth in section two.

that lowers prices again, but because of the low elasticity of demand, expanded supply drives prices down below short-run marginal costs and eventually lowers supply below demand, which, in turn, raises prices and the value of stocks.

Unfortunately, market signals, such as the price falls, do not appear to help producers much once they have planted new coffee. Coffee is a tree crop that takes several years to enter viable production and, as a result, may already be in the ground (a considerable investment) by the time market signals reach the producer. The brunt of the ensuing boom and bust cycles are borne mostly by farmers who typically have the highest relative investment and the highest level of risk in the trade chain. Other mechanisms, such as market information, are costly, opaque, and riddled with conflicting signals, while membership of cartel-like organizations can send false signals to producers that their governments have the means to bail them out of the consequences of ill-advised planting and investment decisions.

Increasing consumption is a strategy supported by both producers and the rest of the coffee industry; however, efforts to increase consumption are unlikely to completely resolve the structural issues that plague coffee producers. Only the imbalance between supply and demand and the elasticities of each (not their actual levels) give rise to the cyclic problem. The most evident implication is that the current behavior of the market can be repeated even at higher levels of demand.

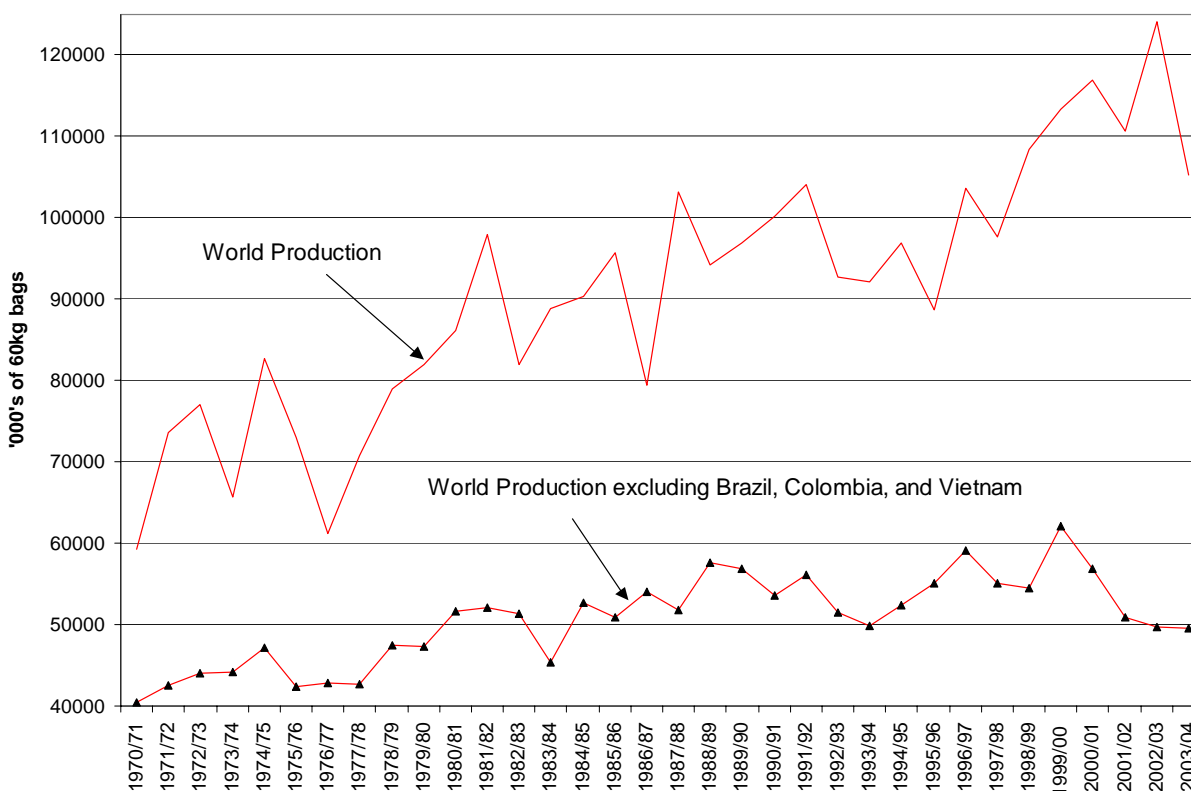
Any increase in world prices above long-run equilibrium marginal production costs resulting from demand increases may prompt an increase in production from those with production costs below that equilibrium level. A long-term goal of raising equilibrium prices might, therefore, depend on raising demand beyond the ability of the current low-cost group of producers to supply it. This seems to be highly unlikely in the near-term, and the cyclic increase in production that would follow an increase in consumption would lower prices back to long-run marginal costs.

In 1993, prior to the two 1994 frosts in Brazil and the following drought, world exportable production was estimated by the USDA to be about 75 million bags giving rise to an overall deficit. The loss of about 13 million bags of Brazilian production in 1994 pushed prices to a very high level in anticipation of a large deficit in the 1995-1996 season. Not all countries were immediately able to benefit—in particular, those countries in which grower debts and poor production capacity was a result of falling prices (which began in 1989 and lasted until coffee prices reached their (then) record lows in 1992).

Box 2 Brazil's advantage

“To give you an idea of the difference, in some areas of Guatemala, it could take over 1,000 people working one day each to fill a container of 275 bags, each weighing 69 kilogram. In the Brazilian cerrado, you need five people and a mechanical harvester for two to three days to fill a container. One drives, and the others pick. How can Central American families compete against that?”

Source: Patrick Installe, quoted in “Mugged, Poverty in your coffee cup,” Oxfam 2002

Figure 4 Global production: total production and production excluding Brazil, Colombia, and Vietnam

Source: USDA Foreign Agricultural Service, "Production, Supply and Distribution" database

Things changed quickly in the second half of the 1990s. Brazilian replanting quickly expanded the productive capacity to include low frost-risk areas without the prior Instituto Brasileiro do Café (IBC) credit restrictions that placed constraints on tree density and agronomic techniques. At the same time, the development of mechanized irrigation and harvesting assisted in cutting production costs (see box 2).

Currency depreciation helped to protect Brazilian growers from reduced world dollar prices, even if this advantage has been reduced more recently by the recovery in the value of the Brazilian Real. Considerable investments in production of both new entrants into coffee growing as well as in other traditional producing countries has contributed to the current coffee surplus. The quality of coffees from some of these new entrants is improving, thereby increasing the threat they represent to the traditional suppliers of better-grade coffees. In particular, Brazil's combination of overall quality improvement, the development of both pulped naturals and of full washing capabilities are allowing roasters to use these coffees in place of a range of the lower-grade Central American coffees. Improvements in quality from Vietnam as evidenced by grading results from the futures markets and elsewhere allow roasters to use more of these coffees also.

Some of those countries unable to expand production after 1994 due to high producer debts were more able to do so after the 1997 price spike, and new price lows in the market have followed 5 years later as the surpluses come to market. The consequence is that when current consumer stock levels were added to supply, total availability was higher as the market hit its low point than at any previous time, including the period immediately following the end of the ICO agreements (see figure 9).

In January 1997, when consumer stocks reached their post1989 low of about 7.9 million bags, about 2.25 million bags were robusta. By the time the stock growth had peaked in August 2001 at 21 million bags, robusta stocks had grown by 6 million bags, but arabica stocks were up by more than 8 million bags, and the biggest gain was in stocks of washed arabicas. Given the big increases in overall demand in emerging markets for robusta coffee and the greater usage of Brazilian coffee, these relative stock changes call into question the claims that the drive to the 2001 lows in the market was solely a consequence of the oversupply of these particular coffees—even if in the 2002-2003 crop year, it was clear that there was an excess of natural arabicas.

Given the global expansion of productive capacity described above, coffee production in the 2002-2003 crop season was the largest in history. The recent December 2003 estimates by the USDA are listed in table 1. For 2002-2003 the estimate of total production of 124.15 million bags are approximately in line with current estimates by the world's largest coffee traders. The reductions for 2003-2004 are almost entirely accounted for by decreases in both arabica and robusta production in Brazil.

Table 1 Global production, 1997 to 2004

	<i>1997/1998</i>	<i>1998/1999</i>	<i>1999/2000</i>	<i>2000/2001</i>	<i>2001/2002</i>	<i>2002/2003</i>	<i>2003/2004</i>
Colombian Milds	13,498	12,509	11,821	12,026	13,229	13,179	13,352
Other Milds	27,965	27,380	31,698	28,480	26,123	25,585	26,318
Naturals	23,436	35,024	30,178	30,717	28,540	43,667	26,217
Robusta	32,753	33,506	39,706	45,638	42,834	41,720	39,345
Total	97,652	108,419	113,403	116,861	110,726	124,151	105,232
Colombian Milds	14%	12%	10%	10%	12%	11%	13%
Other Milds	29%	25%	28%	24%	24%	21%	25%
Naturals	24%	32%	27%	26%	26%	35%	25%
Robusta	34%	31%	35%	39%	39%	34%	37%
Total	100%	100%	100%	100%	100%	100%	100%

Source: USDA Foreign Agricultural Service, "Production, Supply and Distribution" database, December 2003 (crop years)

Paradigm Shifts in Supply and Demand

Apart from oversupply, there are two types of paradigm shifts underlying the current situation:

1. A structural change in the nature of supply, particularly increases in both the quantity and quality of Brazil and Vietnamese coffees.
2. Structural changes in demand, comprising increasing demand for high-end, differentiated products, new technology allowing greater flexibility in blending, and geographic-generational shifts in the appeal of different types of coffee products.

There are dramatic changes in the nature of this new supply. Of particular note is that global supply has become more concentrated. During the previous period of low prices in 1992, USDA data shows Colombia, Brazil, and Vietnam produced 44 percent of world production. In 2002-2003, 60 percent of world supply came from these three producers, and this figure is likely to increase unless production in other countries significantly reverses its decline. For some roasters, these three suppliers can provide almost everything they need, leaving them to buy only small amounts of coffee from other countries.

A particular point to note from figure 4 is that total production from the remaining producing countries has been falling now for 4 years, though the recent increase in prices may have halted the decline in some countries. Comparison with the situation in Brazil is particularly marked, as some estimates suggest that the 2-year average production cycle could stabilize in coming years in excess of 40 million bags—or about 10 million bags higher—than in the late 1990s. After accounting for Brazil's market share, and given projected near-term demand growth, this would leave demand for approximately 72 million bags needed from the rest of the world—just over current production levels. In other words, if Brazilian production is able to stabilize at current levels there is little room in the near term for production recovery by other origins. Additionally, stocks are available to make up any near-term supply shortfall.

An additional impact of the increasing dominance of the largest three producers is the consequence for some countries of the resurgence of Colombian production. In the past 3 years, production has recovered by 2 million bags from the recent low of 9.7 million, which is the production equivalent of a medium-sized Central American country. Colombian coffee now sometimes trades at a discount to some of the higher-quality Central American coffees. As a result, these countries are now feeling the combined pressure of being squeezed on the prices for their lower-quality output by Brazil and on their higher-quality production by Colombia.

Many smaller countries that are negatively affected by the actions of the largest producers have an economic exposure to coffee that is substantially higher than that of the largest producers. These larger producers have available a wider range of policy choices whose associated costs might have much less economic impact than they would do if made elsewhere. This imbalance in the consequences of decision making in individual countries raise further considerable difficulties in dealing with the coffee crisis on a global scale.

Paradigm shifts in consumer markets and roaster behavior have occurred in importing countries, and these changes have consequently affected producing countries. Demand recovered from the small drop seen as a result of the price increase in 1994-1995 and as a result of economic liberalization and growth in the developing economies, such as in Eastern Europe and parts of Asia and Latin-America (notably Brazil), world demand has reached about 113-114 million 60 kilogram bags. Initial estimates for 2002 suggest that demand in consuming countries grew by about 1.5 percent, down from 1.9 percent growth in the previous year; however, within this data, a number of features have emerged:

1. Demand in the major importing countries is growing only slowly.
2. New markets are emerging and growing fast, driven by the availability of cheap coffees in soluble form.
3. New channels for higher quality and differentiated markets are emerging rapidly in many countries.
4. Roasters have learned to increase their use of natural and robusta coffees by processes, such as steaming to remove the harshness of taste.
5. Roasters have learned to work with lower working stocks, but this has increased the logistical demands made on suppliers which favor the largest trading companies. This has led to concentration of the supply chain in the hands of fewer major traders.
6. Roasters have become more flexible and willing to make short term switches between coffee types in order to take advantage of lower prices.

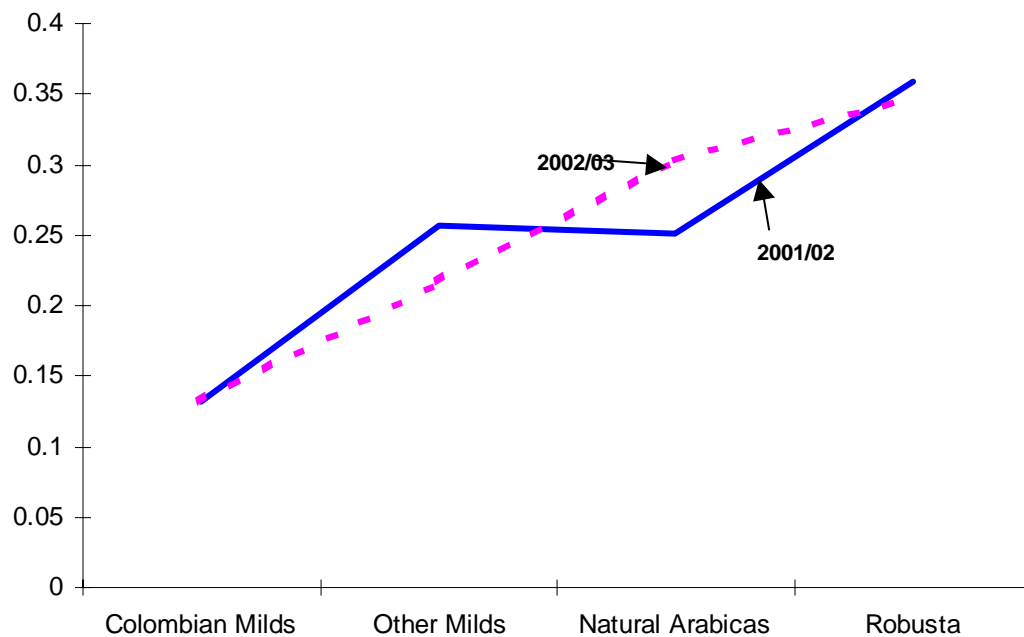
7. The concentration of roasters, particularly in a period of oversupply, demonstrates the fact that consumer coffee markets are “far from a model of textbook economic efficiency” with rapidly clearing markets and without high-cost barriers to entry (Lindsey 2003). Instead, price responses can be slow and lag well behind perceived changes in events. For instance, reported retail price falls hardly reflect the changes in green coffee prices in the world markets even though, as a report commissioned by the Dutch government states, “At the supply chain down to the countries of origin, there is no evidence of cartel behavior of the roasting industry (RIAS 2002)”.

There is also a more complex picture emerging below the surface in which there is a very real increase in demand for high-end quality products and an increase in products reflecting changing lifestyles, such as specialty solubles, instant cappuccinos, etc., that are appealing to younger drinkers. At the low end, solubles are growing fast, fueled by demand in the emerging and the tea-drinking markets. In the middle are the undifferentiated commercial coffees which has had stagnant and, in some cases, eroding growth.

Regional differences are very evident in coffee consumption: Northern European consumption, particularly in Germany is stagnant, but in southern Europe, there are some increases. Eastern Europe is showing notable gains, and consumption is up in much of the region. The increase in consumption there and in parts of Asia recovering from economic problems is being driven by the high availability of cheap robustas allowing the roasters to offer a product at affordable prices. In Brazil’s domestic market, the roasters have taken the opposite approach by concentrating on labeling and improving quality, which has enabled Brazil to become the world’s second-largest consumer. Such a strategy may be relevant for other producing countries that want to expand domestic consumption.

At the current time, the majority of the world’s producer will still sell their coffee to the large roasters that dominate the market volumes. The available evidence from previous large Brazilian crops is that many roasters will aim to maximize their use of Brazilian arabicas as far possible. The initial indications from disappearance data is that in the July and June period of 2002-2003, which makes up the major period of the export of the large Brazil crop, the substantial increase in natural arabica usage was offset by reduction in the usage of both washed arabicas and robusta.

Figure 1.5 compares global offtake by type in the July/June 2001-2002 and July/June 2002-2003 periods. It is clear that Colombian Mild usage fell only slightly in the period, and that robusta and other mild usage was affected more substantially. Proportionally, the largest fall was seen in the Other Milds category.

Figure 5 Global usage by type 2002-2003 compared with 2001-2002 (July/June)

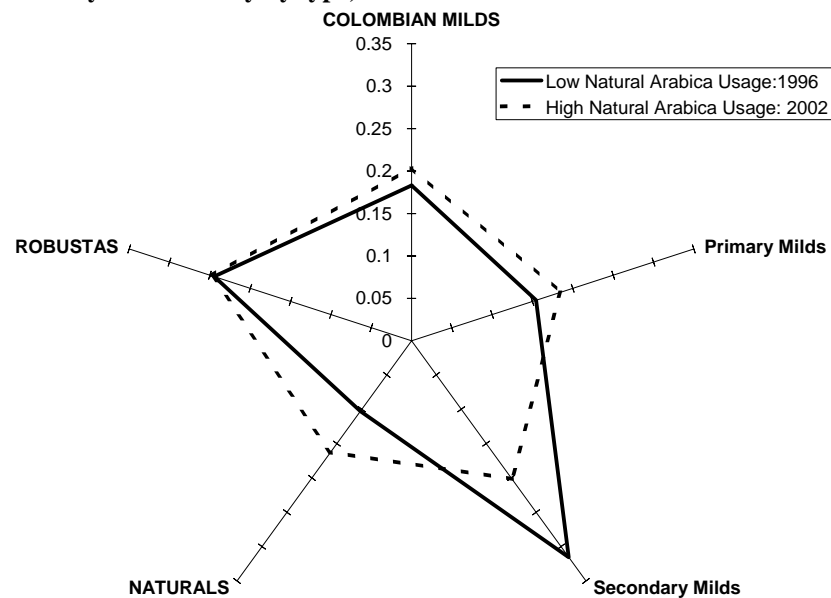
Source: Authors' calculations based on all export and stock data referenced in paper

In some countries, very high robusta usage appears compatible with levels of natural Arabica usage only if there is a high availability of Colombian Milds and/or SHB/SHG coffees for the balance of the blend. As figure 5 illustrates, natural arabicas took market share from both washed arabicas and from robustas, but not from the Colombian Milds group.

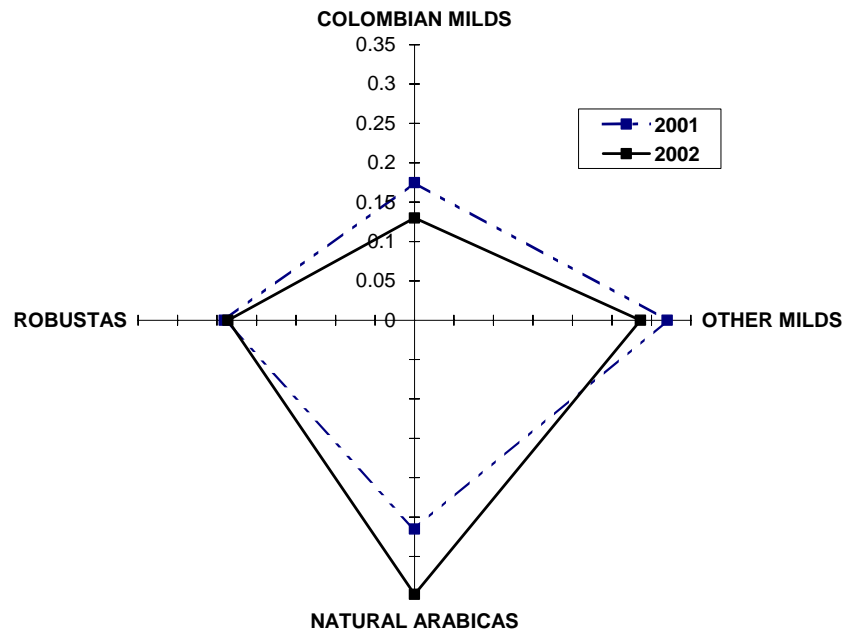
Some of this affect is particularly noticeable in certain countries. Figure 6 depicts the way the United States industry has adapted its usage of different coffees according to availability.

The additional natural arabicas have replaced mostly the secondary milds and a very small amount of robustas and, at the same time, there was some increase in the usage of the better-quality washed arabicas.

In 2002, it became clear that in some cases roasters were willing to push usage of natural arabicas to very high levels without this type of compensatory change. Figure 7 depicts how both Colombian Mild and better-quality washed arabica lost market share to Natural arabicas, while the robusta share in particular remained unchanged.

Figure 6 Usage of coffee by U.S. industry by type, 1996 and 1999

Source: Data derived from U.S. import data and trade data on stock changes by type

Figure 7 Usage of coffee by German industry by type, 2001 and 2002

Source: CECAFÉ, customized subset of data sent to author, taken from CECAFÉ database; F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database

There are a number of potential consequences to this. Suppliers have to adapt to these new market conditions, and recommendations for this are outlined in the recent studies undertaken by the World Bank

and others. They make it clear that not all producers can stay in the market, and market conditions are already inducing some producers to withdraw.² In particular, high Brazilian usage will lead to continuing falls in the usage of low-grade, washed arabicas. This could lead to prices for these coffees falling to the same levels as natural arabicas, making it uneconomic to grow these coffees in competition with the lower production costs. Producers at this level will continue to exit the market (see table 15).

Conceptually, the overall market can be perceived as a quality pyramid with inexpensive soluble coffee at the bottom, standard commercial blends in the middle, and progressing toward high-end and differentiated coffee at the top. While the top and bottom are growing at a healthy pace, the middle section, representing most of the space of the pyramid, has been stagnant. This middle section represents the great majority of the total volume, and its stagnation presents a challenge to sustainable growth for the many producers of average quality producers who supply it. This is particularly true for those that are neither able to significantly lower their costs nor improve their quality or otherwise differentiate themselves. A number of such producers, particularly those in the arabica milds category, are already feeling enormous pressure in the fight for a relatively static market share.

Box 3 The impacts of paradigm shifts on producers

The consequential impact of the new paradigms as illustrated by both the production changes described above and the usage patterns illustrated in figures 1.5 through 1.7 discussed are wide-ranging. In an oversupplied market, in particular, the decisions made by buyers are the critical determinants of what happens to sellers. These paradigm shifts have substantially reduced the demand for certain types and origins of coffee, leaving their producers with fewer opportunities to sell their coffee. In the worst-affected countries, the resulting adjustments have large social and economic costs: Inadequate support for the coffee sector that does not improve quality or speed diversification has aggravated unemployment and increased the potential for social unrest in rural areas.

The most significant social problems are located in areas with both relatively high labor costs and large farms that are heavily dependant on seasonal labor—particularly in Central America. Places in which farmers have stopped employing this labor, the social consequences have been severe, and there have been knock-on effects in the rest of the rural economy and in the banking sector, with several large banks across the region ceasing to exist. The problems are not restricted to this region, and countries such as Vietnam have also experienced problems.

The data in the table to the right shows how dependant the Central American rural areas are on employment from coffee. In the past two crop years, seasonal employment is reported to have dropped by 20 percent and permanent employment by 50 percent.

Additionally, the coffee crisis has occurred at the same time that drought hit food crop production. The overall consequence has been increased malnutrition and food insecurity in these regions. It has led to people leaving the rural areas and moving either to the cities, or cross-border: Some of the deaths reported in the deserts of

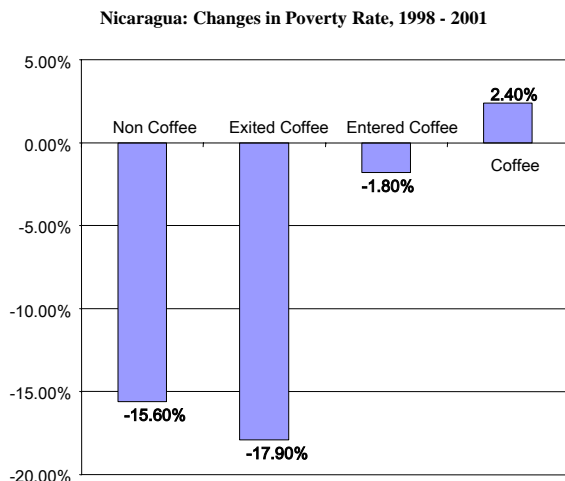
Texas were of coffee farmers from southern Mexico seeking alternative employment north of the border.

<i>Country</i>	<i>Rural Labor Employed in Coffee (Percent)</i>
Costa Rica	28
El Salvador	17
Guatemala	31
Honduras	26
Nicaragua	42
Total Central America	28

Source: ECLAC 2002

^{2 2} IDB, USAID, World Bank. 2002. Managing the Competitive Transition of the Coffee Sector in Central America. Available at www.iadb.org/regions/re2/coffee/workshop/ as well as World Bank sectoral studies on Mexico, Central America, and Colombia.

Box 3 The impacts of paradigm shifts on producers



There have been several studies undertaken of the impact on poverty in the producing areas of Central America. Most show that, while many workers were able to find alternative employment, there was real hardship for small coffee producers. A recent World Bank publication documented the impact of the coffee crisis in Nicaragua. Poverty rates increased by more than 2 percent between 1998 and 2001 for those farmers who stayed in the coffee sector, but fell 6 percent for all rural households overall. The net primary school enrolment rate for those same households fell by more than 5 percent while that for all rural households increased by more than 10 percent.³

According to recent studies in Colombia's coffee regions, even the most successful zones have suffered clear and measurable setbacks in key social indicators. Smaller farmers have been hit the hardest by the need

to reduce meals and food consumption. As a result of the crisis, many farmers, particularly smaller ones, reduced the attendance or the number of children enrolled in school, although access to safety net programs in some countries was conditional on maintaining school attendance.

The very real and dramatic social impacts of the current coffee crisis have been documented by a number of researchers and are the subject of an in-depth study soon to be published by the World Bank (Oxfam 2002; World Bank 2002a;etc). Accordingly, this report will focus primarily on other topics while recognizing and acknowledging the primary importance of these social consequences.

Source: Oxfam 2002; World Bank 2002a; ECLAC 2002

For a small number of producers, the fact that some consumers are focusing more on the quality of what they are drinking is signaling that a focus on quality rather than quantity will be rewarded. The more agile producers have already begun to adapt their production, as differentiated coffees, such as those bearing a particular appellation or are organic, are becoming more evident. In many countries, a growing acknowledgement of the environmental and social problems of coffee producers has led to the development of markets for coffee that is third-party certified to be sustainable. This shift is being fueled by a growing number of coffee companies that are pioneering efforts that encourage the coffee industry to move toward more environmentally friendly practices and more equitable economic relations and social benefits for producers. These companies' new sourcing principles are increasing demand for organic, eco-friendly, and fair trade coffees that are collectively termed "sustainable coffees."

In recent years, the markets for differentiated coffees have shown strong growth and higher than average prices. These coffees include: gourmet and specialty, Geographic Indications of Origin (appellations), organic, fair trade, and eco-friendly or shade grown. Producers are finding that their previously fringe niches are quickly moving toward mainstream credibility and earning substantial revenues along the way.

In order to get beyond the highly competitive and volatile commodity-based trade, many producing countries are looking toward differentiated and value-based products. Developing a competitive position based on such processes that are more difficult to duplicate presents a potentially more viable long-term

³ Some of the contents of this box, including the graph, were based on "Volatility Risk and Innovation: Social Protection in Latin America and the Caribbean," Fall 2003 issue.

strategy. Differentiation can present a feasible competitive platform, especially for countries lacking the necessary factors to be competitive as bulk raw material producers. Such process-oriented strategies lend themselves well to many of the poorer producing countries and present a rare opportunity for rural smallholders to participate in global markets while also safeguarding their natural resources.

Differentiating a product or service or adding value in the country of origin involves an understanding and management of a set of more complex issues, including current market trends, appropriate (though not necessarily state-of-the-art) technology, multiple distribution channels, and the sometimes complex logistical, financial, and risk management requirements of supply chains. Integrating smallholders and the poorest farmers requires that more attention be paid to strengthening organizational and managerial capacities of institutions such as trade associations and cooperatives

The differentiated coffees, particularly sustainable coffees, can have other advantages for farmers and rural communities that are completely distinct from their marketability. Their development often provides benefits and positive externalities for which functioning markets, which would allow them to capture additional financial value, do not currently exist. This has been demonstrated in more than one project (Pagiola and Ruthenberg 2002; Giovannucci and others 2000a). For example they can offer:

- ❑ Improved natural resource management and biodiversity conservation
- ❑ On-farm diversification
- ❑ Community or organizational development
- ❑ Increased rural self-sufficiency
- ❑ Reduced farmer and family health risks from misuse of agrochemicals

As is explored in later sections, the markets for differentiated coffees are quite limited and although they are growing quickly, this is from a very small base. Available estimates put them at 9 percent to 12 percent of total green coffee imports (roughly 6-8 million bags) to the developed markets in North America, Western Europe, and Japan.

Paradigm Shifts—Some Broader Trends

The focus of this report is the paradigm shifts that have occurred that affect the coffee industry at many levels. These include considerable consolidation of the industry, combined with policy signals that may not be in the best long-term interests of farmers, particularly the smaller ones. Market failures, especially in the realm of information, access, and supporting institutions are also hampering producers' ability to adapt to changing conditions. Although we have not tried to calculate empirical effects, there is now a large body of academic work and considerable anecdotal evidence suggesting that inefficiencies in the coffee market have contributed significantly to the deepening of the current market crisis.

At the macro level, a distinct paradigm shift coalesced in the 1990s to impact trends at the consumer, business, and governmental or regulatory levels. This is affecting not just the coffee trade but food and agriculture in general (Giovannucci and others 2000b). The increasing globalization of food trade and the accompanying concentration or consolidation of firms in the industry have an increasing influence on both the supply and demand sides of the coffee trade. In particular, we can identify developments in three environments of note:

- A new **policy-regulatory environment**: A combination of multilateral and regional trade agreements, use of subsidies, and governmental requirements, such as the Japanese Agricultural

Standard, the United States bioterrorism law, EU standards for contaminants, minimum residue levels, and ochrytoxins are making entry into fast-globalizing markets, more demanding than ever for products across the agricultural spectrum.

- A new **business environment** driven by increasing firm consolidation and concern about consumer interests and increased liability, requires “due diligence” and competitive standards, such as those for sustainability that are increasingly being applied to coffee. Supply chain concentration also demands ever-increasing levels of standards and performance measured by global rather than local performance standards. Major buyers, whether traders, roasters, supermarkets, or coffee chains, are increasingly creating their own standards that can be imposed on the agrifood chains in developing countries.
- There is a new **consumer environment** that features increased food safety concerns, a focus on health and diet, and increasingly globalized consumer tastes. In more developed markets, experts predict that social and environmental concerns, especially ethical ones will continue to emerge as not only competitive differentiators but as basic rules of the game and prerequisites for participation.

These new environments will fuel elevated concerns for quality, food safety, and sustainability particularly, but not exclusively, in the more mature markets. Though coffee is typically considered safe, it will probably not be exempt from this overall trend.⁴ This implies a fundamental shift in the role of standards from merely reducing transaction costs to serving as strategic tools for differentiation, quality and safety assurance, market penetration, and product niche definition (Giovannucci and Reardon 2000). Several of the so-called sustainable coffees, such as organics, intrinsically incorporate improved standards and traceability in their certification and also appear to meet consumers demand for specialized and safe products. As a result, they could be considered as a potentially useful part of a producing country’s strategy.

Looking Forward: The Current and Forthcoming Crop Years

Table 1 of global production as estimated by the USDA illustrates that expected production changes in most areas are expected to be very small, with the exception of Brazil. Despite the fall in futures prices that occurred last year, the strengthening of differentials during that period for many grades of washed arabicas meant that many better-quality washed Arabica producers sold for prices at least as good as the previous year. Conversely, a lack of demand for low-grown coffees in particular in the face of higher Brazilian Arabica availability is leading to production from these areas dropping markedly. Authors estimates of production in the coming year, compiled from public and private sector sources give rise to similar estimates of those of the USDA, except in Vietnam, where private sector estimates have risen sharply now that the new harvest is well under way.

This document assumes that production in the 2002-2003 crop year was 123.2 million bags and will be approximately 106 million bags in 2003-2004. Even with this lower current production level, many analysts predict that further coffee price recovery is likely to be slow, at least for the near term. Such a situation threatens the sustainability of coffee production, and, consequently, production will drop below demand for the first time in 5 years in the 2003-2004 season. The December 2003 USDA production

⁴ Remote possibility of Ochratoxin A or Acrylamide contamination are the main notable exceptions, and these are relatively rare.

estimate of 105.232 million bags suggests a deficit close to 9-10 million bags. Table 2 details World Bank forecasts of prices to 2015.

While this deficit will decrease the existing stock overhang, the continuing rate of usage of stocks will be a key determinant of prices, which are heavily influenced by both the quantity and ownership of the stocks—a build-up of stocks in consumer hands generally being regarded as more negative for prices than stocks held in producing countries.⁵ A notable aspect of the 2002-2003 exports was the large quantity of stocks exported—Central America, Ethiopia and Vietnam, in particular, all had considerable quantities of old crop coffee. This does now suggest that—with the exception of Brazil, some coffee left in Vietnam and a small quantity of stocks in Colombia—2003-2004 coffee exports will not exceed exportable production.

Table 2 World Bank Forecasts of Arabica and Robusta Prices, 2004-2015

<i>Year</i>	<i>Arabica</i>	<i>Robusta</i>
2004	68.00	38.00
2005	72.00	40.00
2006	74.43	41.40
2007	76.94	42.85
2008	79.54	44.34
2009	82.22	45.89
2010	85.00	47.50
2011	86.91	49.21
2012	88.87	50.98
2013	90.87	52.83
2014	92.91	54.73
2015	95.00	56.70

Source: World Bank 2004

Consequently, it is the high level of consumer stocks that will remain the principal limiter on the potential for price increases (see figures 1.8 and 1.9). Additionally, the possible deficit figure is very close to the estimated stock build of arabicas in Brazil over the course of 2002-2003, giving roasters plenty of choice of stock sources to use. This also implies that, depending on Brazilian shipment patterns, consumer stock levels may not change very much.

Much of the worst in the decline in production in the Latin-American washed arabica production has already occurred, but losses will continue in the low-grown areas where producers cannot compete with Brazil in price and quality, which itself will continue to improve.

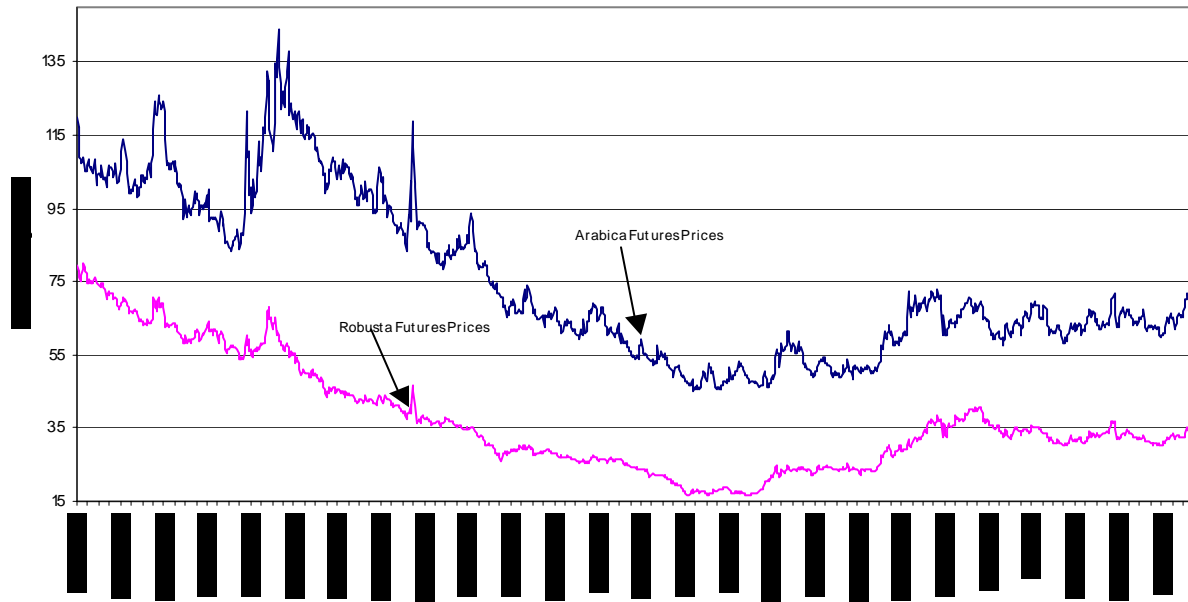
Brazilian production is approximately 33 million bags, down from 51 million bags in 2002-2003, according to the USDA. Although this is at the lower end of recent trade estimates, some of the high-yield areas had very high sensitivity to input usage, raising the financial risks faced by those producers earlier in the growing season more than those that were able to use fewer inputs and waited until later to spend; however, the widespread use of irrigation in the robusta areas will protect robusta output levels.

With the 2003-2004 and the scale of the 2002-2003 better confirmed by shipment levels, market attention is focused on the prospects for 2004-2005. This is expected to be an “on-season,” though a combination of reduced planted area, some weather problems, and the fact that trees can take time to return to yields seen in 2002-2003 has led to estimates for that season that are much lower than 2002-2003. The main published figures so far are from the Brazilian government of 35.79 million bags—an on-year production level last seen in 1998-1999, and for which the USDA estimated there were 3.3 billion producing trees

⁵ Location is used here as a proxy for ownership, as the critical determinant is whether or not they are hedged. More recently, the tendency of producer stocks to be more concentrated in the hands of the three largest producers, more transparent, and to be hedged has lowered the need for a distinction. Some models now treat them alike and look at availability in total, although the comparative efficacy of this remains to be tested.

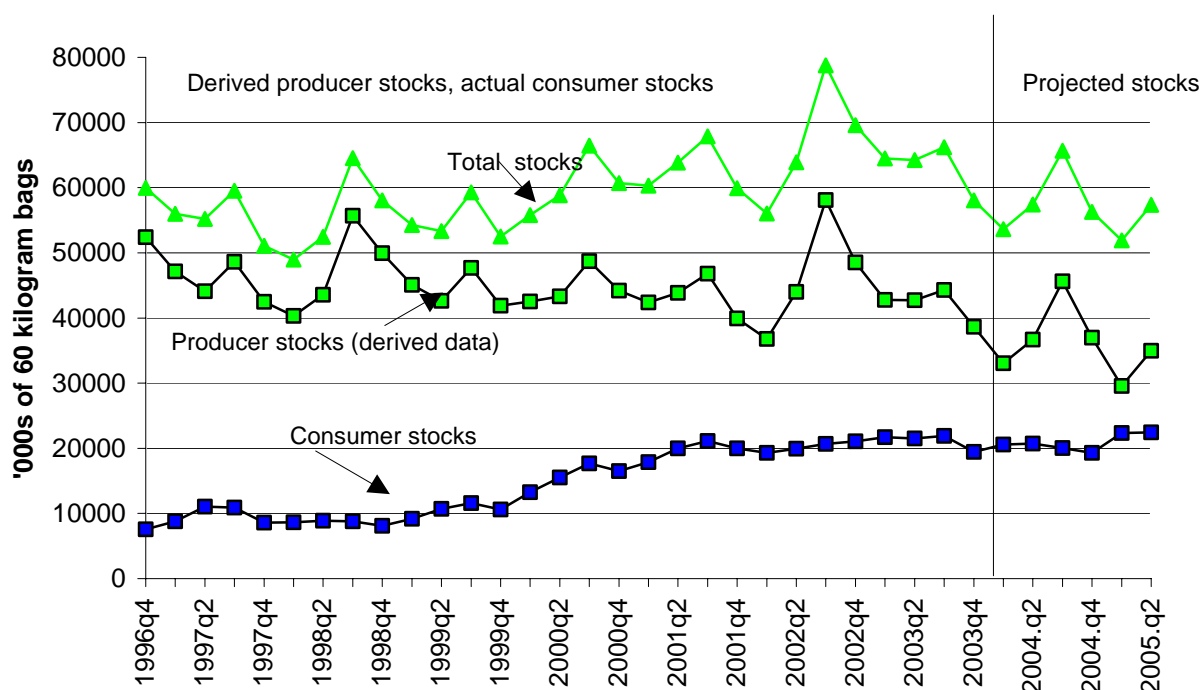
compared to about 5 billion today. A Brazilian research group, Safras y Mercado, puts production at 41.2 million bags, which would be closer in line with the yields seen in 1998-1999.

Figure 8 Arabica and robusta futures prices in U.S. cents per pound



Source: New York Board of Trade, data accessed from Web site (www.nybot.com); London International Financial Futures and Options Exchange (LIFFE), data provided to author

Higher prices at London International Financial Futures and Options Exchange (LIFFE) early in 2003 resulted in greater incentives to robusta producers, though limited effects from the El Niño (which mostly affects Africa and parts of Asia) may have contributed to an overall reduction in robusta output.

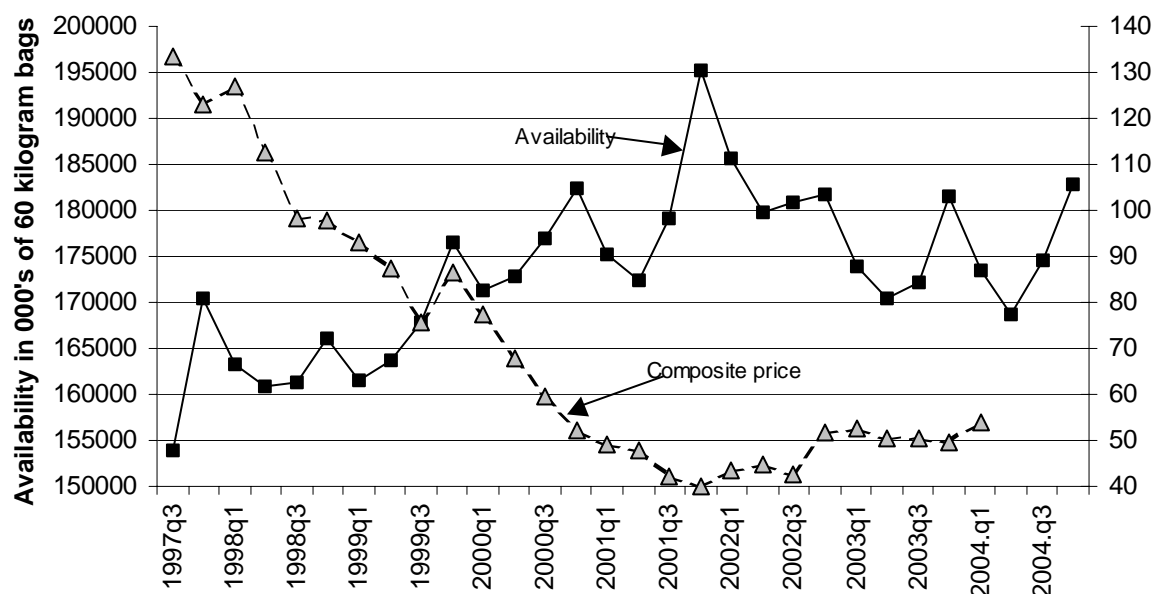
Figure 9 Possible path of developments in producer and consumer stock levels

Source: Authors' calculations from published and unpublished data provided to author from private traders; USDA Foreign Agricultural Service, "Production, Supply and Distribution" database; ICO, customized subset of data sent to author

The levels and variations in stocks in the hands of producers and consumers could consequently develop with stocks only dropping below their current levels at the end of 2003 (see figure 10) and the largest variation remaining the stocks in the hands of Brazilian producers.

A primary driver of uncertainty in the coffee market is the prospects for Brazilian production, and that countries' vulnerability to weather shocks. The level of vulnerability to drought in the coffee growing regions is discussed further in the Brazil section of this document, and there are some demonstrations from the impact of previous droughts on production levels in both Brazil and elsewhere from past data worth considering here.

Looking first at a major Brazilian drought affected crop, production in the 1986-1987 crop was about 14 million bags, down from 33 million bags the year before—a crop size that had only previously been exceeded in 1965 by the rebound from the drought-affected 1964 crop. Consequently, the very low crop of 1985 was an off-year that had followed a very large crop and into a time of severe stress.

Figure 10 Availability and prices

Note: Availability is defined as total stocks + 12 months forward production.

Source: Authors' calculations from published and unpublished data provided to author from private traders; USDA Foreign Agricultural Service, "Production, Supply and Distribution" database; ICO, customized subset of data sent to author, taken from ICO database

Actual losses in 1986 are difficult to measure. In January 1986, the USDA Tropical Products report described Brazilian production potential as being between 27 and 33 million bags, with the range dependant on the on-off cycle, but the picture is obscured by the fact that IBC data showed the productive capacity of Brazil growing faster than the USDA's data predicted. Due to the huge crop in the previous year, the likely potential for 1986 was probably no more than 22-23 million bags. This would put the total loss between 33 and 50 percent.⁶ The consequence of the 1999 drought was to eliminate much of the potential production increase. (Figure 35 in the next section suggests that overall yields everywhere except the smaller states of Espirito Santo (increase) and Parana (big decrease) were otherwise little changed through this period.

The impact of a drought on the following year's production can be enormous. Increases in productivity that are typical after droughts could, for example, occur in some areas in 2004-2005, depending on prices, though the very reduced drought and the late return of rains will make this only a minor affect. Other countries also experience this effect: It was particularly noticeable after the last major El Niño. Low rainfall in some robusta countries during El Niño was followed by spectacular production in the following year. In particular, Cote d'Ivoire production doubled, and evidence from Vietnam suggests that the recovery phase from the El Niño drought led to a big increase in production (see figure 38).

⁶ Association of Coffee Producing Countries, *Market Report*, November 1999.

If production outside the big three producers does continue to decline, then, by 2004-2005, the share of these three countries should easily exceed 60 percent of total production, with Brazil exporting substantially more than Colombia, Vietnam, and Indonesia combined. With trend demand growth leading to a figure close to 88 million bags, a situation potentially arises where the market is oversupplied in 2004-2005 but is dependant on a natural arabica usage figure well in excess of 30 percent in order to balance supply and demand by each individual type. If the global coffee industry cannot take natural arabica usage to this level, then sharp falls in the global stock levels of washed arabica and robustas could occur, while Brazil is left with a stockpile of natural arabicas. This would lead to sharp swings in prices; for both futures prices and for individual country differentials (see figure 8).

2. Prices

Introduction

Figure 1 graphically illustrates the current problem in the coffee markets—prices only just recovering from 100 year lows when adjusted for inflation. Over the period shown since 1970, prices have averaged a 3 percent per year price decline for arabica coffees and a 5 percent decline for robusta. In the sections on historical background (see section one) and supply (see section four), we characterize the price decline as a series of cycles of about 7 years duration within the falling trend, which itself has been driven by a combination of increasing productivity; rising production as new lower-cost producers enter the market; rising producer share of export prices; and a sequence of renewed planting and renovations that follows price spikes that occur occasionally, usually following a frost or drought in Brazil. The short-run inelasticity of supply and demand drives prices higher following a production shock, but the long-run response to these higher prices is to raise production by bringing in new entrants and encourage rehabilitation of farms. This, then, drives prices down until they are below long-run marginal production costs.

The combination of short periods of high and volatile prices and long periods of low prices and low volatility is common to many other crops, not just coffee, and its causes have been extensively analyzed (Deaton and Laroque 1992). In these types of scenario, the value of stocks become key. Unlike the case of money, for example, it is not possible to “borrow” from production that has not been already produced, and, as a result, the available stocks become the limit of additional supply when production drops suddenly. In some types of consumer markets, lost sales cannot later be recovered: for example, in food and beverage markets, what has not been consumed today will not be compensated by double consumption tomorrow. This is very different from some manufactured products, such as automobiles or motorcycles, in which a consumer may be prepared to go without an item for a certain period while they waits for his exact choice to become available. The stock-out cost for a product, such as coffee, is proportionally much higher than for a product that a consumer will definitely buy but will delay their purchase until the product becomes available, and the value of stocks rises through an increase in market prices.

Once excess supply is in the system and prices have fallen, these stocks act as a restraint on price increases coming from short-run supply fluctuations because traders will hold stocks for both speculative reasons, expecting to sell them for a profit at a later date if prices rise, and for precautionary reasons, expecting to meet sales obligations to roasters during shorter periods of coffee unavailability.

Prices and Farmers Problems of Information Access

Quality Incentives and Price Signaling

Coffee is typically sold as a commodity and, though it is graded and classified, this is done in bulk lots that usually mix together the production of many individual growers. This process does not distinguish or reward those with superior or differentiated characteristics and sometimes does not penalize lower quality producers. When a wide range of grades is produced by farmers and mixed at collecting stations, it becomes possible for processors with better grading equipment to unsort the mix according to more exacting requirements. When the structure of differentials allows it, they sell the individual components at a higher total value than the mix, thus capturing quality rewards but also reducing the incentives for growers to maintain or improve quality. This higher value would have otherwise accrued to the growers if the ability to maintain differentiation and capture its value existed. But without such incentives, growers eventually learn that the only requirement is to simply meet the minimum standards and, therefore, incentives for differentiation is lost. Coffee quality improvement efforts or projects must start with a clear understanding of farmer incentives and how to structure the supply chains to deliver these benefits to the individual farmers.

Information Distribution and Price Discovery

Because of the economic importance of coffee, considerable asymmetries in the distribution of market information exists; however, this is not just the problem in coffee but also in several other commodities. Some of the best information is closely held by large traders, while publicly available data may at times be inconsistent: for example, the significant data discrepancies over Brazilian production levels between the Foreign Agricultural Service of the USDA and the Brazilian government. Data and information flows have also suffered as a result of low prices, with the statistical bodies of producer countries unable to maintain accurate information collection and dissemination in the face of funding shortfalls.

The increased availability of primary research tools such as weather satellite data on the internet at very low cost has somewhat lessened the information asymmetry problem, and, particularly in the case of coffee supply and demand data, the ICO retains a large amount of accessible data on their Web site, though this sometimes lacks the benefit of effective access in rural areas and the limited use of, or comparison with, alternative data sources. Advantages still accrue to those best able to access, interpret, and utilize different sources effectively.

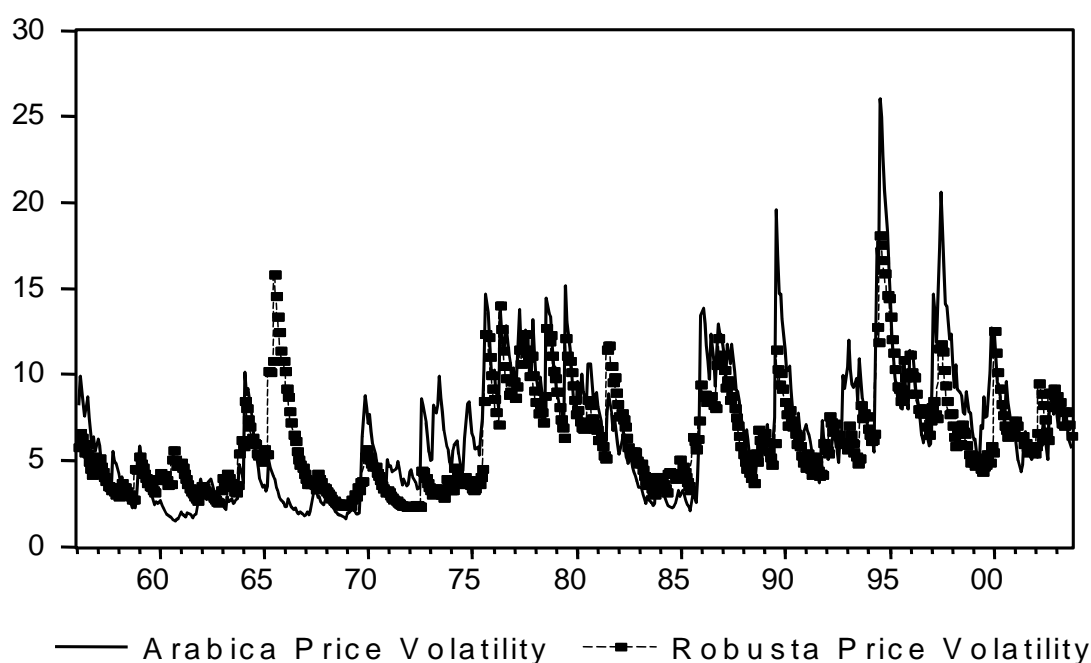
Price Volatility

Despite the rather general use of this term, it is useful to break down this concept into the two different but often interchanged meanings: the inability to predict prices before an event and the retrospective measurement of their level of variation. Many factors, such as the levels of stocks, sudden changes in the supply/demand balance, and inadequate information all contribute to changes in the level of price volatility. Variation in prices is in itself not necessarily harmful if the parameters of this variation are known in advance and can be factored into decision making, but this is often not the case with commodity prices: The variability of prices around an apparent long-term trend is usually far in excess of the size of

the trend itself.⁷ This creates policy problems for governments when trying to decide how to respond to a situation because it may only be clear in hindsight whether a price move was variation around the trend or a genuine shock.

Volatility levels have also changed over time (see figure 11). Work done by the Federación Nacional de Cafeteras de Colombia (FNC), for example, suggests that volatility of coffee prices was higher outside the periods of the international stabilization agreements, though, at times, the agreements were suspended when shocks caused prices to be very high and volatile. Research by Gilbert (1989) and others suggest that overall commodity price volatility has increased with the breakdown of the Bretton Woods currency agreements and that the consequence of higher volatility in meeting dollar-denominated debt has had an impact on commodity earnings.

Figure 11 Monthly volatility of arabica and robusta prices



Source: ICO, customized subset of data sent to author, taken from ICO database

The unpredictability of prices makes it more difficult for farmers to plan. Because tree crops such as coffee requires farmers to take a long-term view, this unpredictability limits farmers' access to credit for improved production and may lead them to adopt low-yield, low-cost production techniques that limit their ability to improve their living standards. As Deaton (1992) notes, "It is a good deal easier to forecast prices once the future is safely past."

It has been suggested that unpredictability has a direct impact on marketing margins—that as prices become more volatile, those parts of the marketing chain with direct exposure to prices will attempt to

⁷ Some studies have claimed that there is no long-term downtrend in commodity prices, only a series of negative breaks or "shocks" in otherwise trendless data; however, the consensus appears to be that there is a weak long-term trend but that the ability to discern it is dependant on the time periods chosen and commodities included in any index. See Sarris 2003 for a full discussion of the literature.

raise their margins to compensate.⁸ When this happens at the expense of farmers, it represents a direct revenue transfer to the traders. Uncertainty also limits coffee producers' ability to respond to market signals, particularly when the actual level of prices is obscured by short-term volatility and when weakening of coffee institutions leads to a lessening of the quantity and quality of available information.

This lack of information and understanding contributes to the problems of inadequate policy responses to both positive and negative shocks that have occurred in producing countries. It may also have helped lead to the large swings in supply and demand that, as described in section one, resulted from large price changes. A survey (discussed in more detail below) of coffee farmers in India undertaken by the Commodity Risk Management Group of the World Bank confirms some other studies indicating that farmers are willing to accept lower incomes in return for reduced volatility. At the micro level, if barriers to access to futures and options markets can be diminished, this would allow producers to more efficiently self-adjust their exposure to risk. The consequences of volatility and unpredictability at the micro level remain an area of active research—with some studies suggesting that diversification at the national level has reduced many countries vulnerability to shocks in any one specific commodity, with some exceptions, notably parts of Africa (Gilbert et al 2003).

Recent work by Cashin and others has focused on the structural behavior of commodity prices, including the trends and volatility issues that have been discussed. A basic conclusion has been that commodity price shocks in a number of commodities—including coffee—are so long-lasting that they make stabilization schemes of the types described in the previous section unviable. Instead, international cooperation should focus on managing the consequences of volatility through the use of some compensatory financing systems during periods of price shocks (the idea behind the creation of the EU's former STABEX facility, or the IMF's Compensatory Financing Facility (CFF), and not in attempting to manage the volatility itself through interventions in the markets.

Speculative Activity and Volatility

Prices have been increasingly affected by relatively new factors, such as the actions of fund managers and financial speculators. Futures prices reflect not just current physical market prices but also the expectations of future events that can have a major impact on prices. The Commitment of Traders Report allows an analysis of the behavior of large speculators and traders, and speculative activity is an important part of the market (see figure 12). It is not clear that speculative activity has necessarily led to an increase in market volatility. Studies of futures markets for commodities, such as cocoa and petroleum, concluded that investment funds can actually increase liquidity and speed the reversion to "fair value" (Gilbert 1994; Weiner 2002).

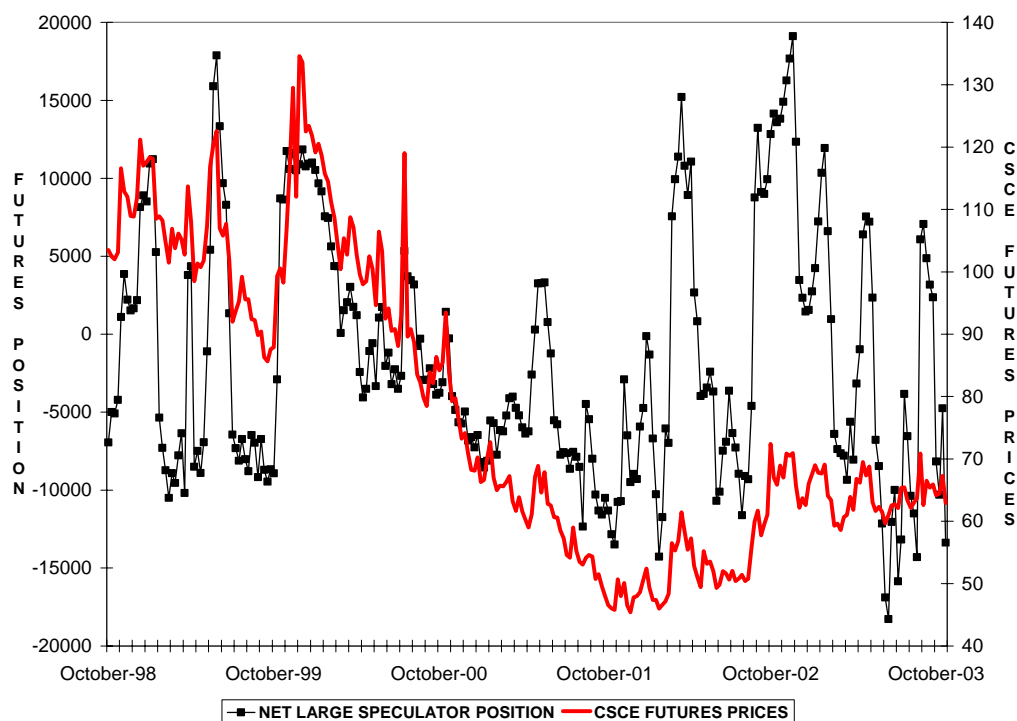
There have been some arguments that speculator activity is responsible for reinforcing trends once they start. There is some weak but not very conclusive evidence that those speculators without access to good information will simply follow what they see other funds doing: herding. This information is available from the Commitment of Traders Reports, but the study of the petroleum markets suggests that this type of activity only occurs among the smallest speculators. The impression given by the chart above that the large speculators are driving the coffee price is not supported to any extent by actual data analysis.

⁸ This area is currently the subject of research by members of the International Task Force on Commodity Risk.

Approaches to Managing Risk

Approaches to managing risk can be subdivided into two often distinct realms: those pursued by the public sector and those pursued by the private sector. Governments have historically taken positions to help their coffee farmers, recognizing that export revenues from the sale of coffee have made vital contributions to many of their farmers and economies. These interventions have been at two levels—international cooperation through agreements, including those that set up the economic clauses of the International Coffee Agreement (ICA) and the Association of Coffee Producing countries (ACPC), as well as at the domestic level through policies, such as the destruction of coffee or the use of internal price stabilization funds and other forms of price support schemes. However, many such interventions have a poor track record.

Figure 12 Arabica futures prices and the level of speculative involvement



Source: Commodity Futures Trading Commission, data accessed from Web site (www.cftc.gov); New York Board of Trade, data accessed from Web site (www.nybot.com)

Despite this poor record, continued government support for commodity producers, including coffee farmers, has ranged from debt restructuring or forgiveness to direct and indirect subsidies, though this support, in many cases, has mostly helped larger farmers whose indebtedness threatened the banking systems. While this may have sometimes been necessary to avert deepening crises, farmers have subsequently expressed expectations for further government intervention, including hope for international assistance, such as a return to the economic clauses of the International Coffee Agreement (IDB, USAID, World Bank 2002). Government support may be useful in reducing the impact of strong commodity shocks on the more vulnerable segments of their population but should be cautiously undertaken because it also sends a false signal that the government is capable of bailing out growers from the consequences of unrestrained production increases. Furthermore, government bailouts contribute to the creation (or

continuation) of a culture of nonrepayment of loans by producers, further discouraging private banks from lending to the agricultural sector. In the long run, government support can be potentially more damaging, not to mention more costly, if it encourages the sector's inappropriate exposure to risk.

International Policy

Partly as a consequence of the Great Depression, the price of coffee collapsed from 22.5 cents per pound to 8 cents per pound in 1931. One of the earliest attempts at international cooperation among coffee producers was a plan to destroy excess production—primarily by Brazil—in the period between 1930 and 1937. Brazil held 26 million bags of coffee in stocks, against worldwide consumption, which, at the time, was estimated at 25 million bags. In the first year, Brazil destroyed slightly more than 7 million bags, and, in 1937, the country destroyed 17.2 million bags at a time when consumption was 26.4 million bags. Brazil soon lost market share as other countries failed to honor the 1936 Bogotá agreement on price differentials, and, at the 1937 Havana conference, Brazil made it clear that it would not act as the world's warehouse and price supporter. When the Pan-American Coffee Bureau failed to deliver a solution to the developing impasse, higher exports resumed and prices soon dropped to 6.5 cents per pound. Lack of transparency and inadequate mechanisms for accountability weakened these agreements. Free-rider problems were very evident: For example, African production expanded dramatically in this period.

There have been many attempts since then to regulate the coffee market through cooperation at an international level, and their history is well-covered in numerous books and papers such as Gilbert (1994). The economic clauses of the International Coffee Agreement (ICA) was the main instrument of international efforts to keep coffee prices stable and at some predetermined levels. This was done through controlling coffee exports at an individual country level via export quotas. Surpluses above the quotas were held as stocks in producing countries or sold to nonmember quota importing countries mainly in Eastern Europe and Asia.

The primary distinguishing factor of the economic clauses of the ICA was that, unlike the Bogotá agreement, and ACPC, they were a joint participation by both producers and consumers in market intervention. While the economic clauses of the ICA were successful for awhile in keeping international prices within their pre-agreed band, except when frost or drought in Brazil pushed prices higher, nevertheless, problems developed that later led to the collapse of the program.

In the international markets, coffees were being diverted to importing countries that were not members of the ICO, so that governments in importing member countries perceived that their consumers were being disadvantaged relative to consumers in nonmember countries. Some producers shipped in excess of their quota but disguised this in several ways, including rebagging the coffee offshore. The coffee industry claimed that the quota allocation among countries did not make available the coffees they needed—a problem that was not considered to have been solved by the introduction of selectivity. Consequently, in 1989, a number of countries withdrew from the program and it collapsed. Various attempts were made over the next 4 years to revive it but without success.

Work done by the World Bank at the time supported the idea that quotas had succeeded in stabilizing prices (Akiyama and Varangis 1990). This was not always to the producers' advantage. For example, when Brazilian production fell in 1985 the price increase that followed was less than it would have been had there been no quotas in the previous year because of the high levels of stocks that had been acquired. It is not clear that all the benefits accrued from the stabilizing effect were evenly distributed. In particular, Akiyama and Varangis (1990) indicate that most of the benefits accrued to the larger producers with

higher quota shares often at the expense of smaller but dynamic/low-cost producers or producers whose coffee quality had increasing demand. These producers were constrained under the ICA quota system.

At the domestic level, state-managed governing bodies, such as the coffee boards, were often inefficient, and, under the ICO programs, their management of the export quotas gave them opportunities for rent seeking (Bohman and Jarvis 1999). When this rent seeking was combined with the inefficiencies, the marketing boards induced in their markets, it served to divert a significant share of the export value of these crops away from the producer toward either governments, the marketing boards themselves, or the export sector. even if they managed to smooth market signals and responses which most likely contributed to lower domestic volatility (Giovannucci, et al. 2002a). It was not surprising that, in many cases, the end of the ICO quota schemes led to both a dismantling of the coffee boards and a rise in the producers share of the export price.

The formation of the ACPC that followed the collapse of the economic clauses of the ICA in 1989 represented a return to a policy of unilateral cooperation between producing countries. The ACPC focused on the need to target a reduction in the levels of consumer stocks using the arguments developed in the opening of this section. Although the ACPC was credited with helping to raise prices initially, events, such as the 1994 frosts and drought in Brazil, became more significant price influencers. Free-rider problems and export quota distribution problems that had become common in the period of economic clauses of the ICA were experienced here, as well. A significant impediment to the implementation of the ACPC agreements was the very liberalization and dismantling of the marketing boards that had followed the end of the ICA economic clauses—effectively the control mechanisms for export flows had been lost. In addition, access to risk management tools among those actually responsible for implementing the retention plans—usually the export sector—meant that this coffee was hedged in the futures and options markets and the price response to the coffee's existence transferred into the markets regardless of whether the coffee was actually shipped.

Some studies of market management schemes, such as those surviving for diamonds and oil, have concluded that the single most important factor for the success of these programs is a hegemonic producer willing to sacrifice its own immediate “good” for the longer-term benefit of all producers (Spar 1994). In the long-run, it is not clear that even this will hold. In the case of oil, the price has been so far above production costs for many Gulf states that it has helped influence the opening up of Central Asian sources. Even so, in neither coffee nor cocoa does the natural hegemonic producer indicate any interest (in the case of coffee) or capability (in the case of cocoa) in performing this role, even if it were able to commit the necessary resources.

A more recent class of international policy initiatives is based on the concept of raising overall quality standards by introducing minimum quality standards into the market as represented by both the ICO's coffee quality-improvement program referred to as ICO Resolution No. 407 and by minimum import standards as in the proposed U.S. Coffee Purity Act. There has been support at the level of international organizations, and ICO Resolution No. 407 fits with Article XI of the General Agreement on Tariffs and Trade (GATT) which does specifically allow for such measures. The ICO resolution requires exporting member countries of the ICO to not export coffee that has more than a certain number of defects⁹.

⁹ These defect classifications include:

- An excess of 86 defects per 300 gram sample *for arabica coffee* (New York green coffee classification/Brazilian method or equivalent).

The resolution also encourages efforts from both producing and consuming countries to eliminate substandard coffees from their domestic markets. Such standards are also expected to reduce the possibility of dangerous mold contamination. Some exceptions on moisture-content are allowed for a few specialties, such as Indian Monsooned coffees that traditionally have higher moisture content.

Resolution No. 407 has been met with two opposing points of view: Proponents of quality standards policies argue that eliminating the supply of the lower-grade coffees would ensure that consumers are drinking “pure” coffee rather than triage and defects that are alleged to be included in many commercial blends; raise the average quality of retail products and, consequently, stimulate demand; and reduce the total availability of green coffee, slightly increasing prices.

Opponents argue that regulation is not needed to do what markets will do naturally since roasters have access to large quantities of high-quality, tenderable-grade, and exchange-certified stocks and make the conscious decision that their consumers are satisfied with the inclusion of lower-quality stocks to keep prices low; are readily able to remove defects from their raw materials if they wish; and that such regulation could hurt the poorest producers who are least able to upgrade their standards.

Some producing countries have voiced support for the standards, and countries ranging from Vietnam to the Central African Republic have already introduced public resolutions designed to foster trade in higher standards. Unless governments and trade associations take a strong stand, the decisions are likely to remain in the hands of coffee buyers and traders because, though the resolution is binding on ICO producer members, there is no enforcement system.

Domestic Policies

Governments have used different ways of managing coffee prices internally. Countries, such as Colombia and Papua New Guinea, have favored the use of stabilization programs. A second group of countries have focused on ways to smooth prices internally without going against the trend—for example, India used a pooling program that spread the revenues more evenly across producers, and Costa Rican coffee law requires that the prices farmers receive are a function of the average price over the season and not just at the time of sale. A recent variation of these domestic solutions is the put options plan for coffee producers in Brazil.

Stabilization funds have gradually been phased out in most countries, though in the light of the coffee crisis, a number of countries have sought financial support from the multilateral organizations to re-introduce them. The Papua New Guinea stabilization fund has been extensively analyzed by Kannapiran (1999) and others, and the findings clearly illustrate some of the general problems of stabilization funds.

In Papua New Guinea, the main method of distributing stabilization fund payments was through the coffee processors, who were responsible for passing on the stabilization payments and then reclaiming the money from the fund. Changes in the available funds were never announced in advance in order to prevent hoarding.¹⁰ A number of studies have questioned the efficiency of this system and, while most

-
- An excess of 150 defects per 300 gram *for robusta coffee* (Vietnam, Indonesia, or equivalent).
 - A moisture content below 8 percent or in excess of 12.5 percent when measured using the ISO 6673 method *for both arabica and robusta coffees*.

¹⁰ Colombia’s fund also had this problem: When the internal price was linked to a moving average of the futures price, farmers would wait through some of the averaging period in order to speculate on the likely change in the internal price at the end of the averaging period.

studies did see that the stabilization fund payouts were fully reflected in what farmers received, some of the evidence for this is contradictory (Simmons and Yarbrow 1993). Also contradictory is evidence on the success of these schemes in the short run. For example, some evidence from the Papua New Guinea cocoa and copra price stabilization funds suggested that these funds had been successful in stabilizing prices but not at stabilizing incomes, which are a function of both prices and quantity variation. This dual price and quantity variability may also account for why there may have been little macroeconomic benefit to stabilization (Kannapiran 1999).

Stabilization funds suffer from a number of structural weaknesses. As discussed above, the tendency of commodity prices to have short spikes and long troughs means that stabilization funds have a tendency to run out of money before a recovery can occur. In the case of Papua New Guinea, this led to the fund having to borrow from the government—loans that later had to be forgiven. There is also an assumption that the stabilization fund managers can better invest the levies received during periods of high prices than can individuals, and producer support for stabilization funds may, therefore, be indicative of a problem of lack of access to financial services.

Much of the work done in Papua New Guinea and elsewhere on commodity stabilization funds has made the general conclusion that these funds may be an entirely inappropriate instrument through which to achieve producer income stabilization. If governments wish to stabilize rural incomes, they would be more likely to succeed by addressing that issue directly.

Another contribution to the demise of stabilization funds was the expectation that the efficient market signals of a liberalized economy would replace the need for most public sector management of the markets. As World Bank reports have highlighted in some countries, such as India, demand came from growers themselves for an end to centralized control of marketing resulting in clear improvements to producer prices (Akiyama et al 2001). The dismantling of some of the African parastatal organizations resulted in farmers recapturing large increases in their share of the export price from the marketing boards (Bohman, Jarvis and Barichello 1996). Nonetheless, in Costa Rica, the averaging system still functions, though larger farmers are asking for participation to be made discretionary.

The put options scheme in Brazil is a new variation on the idea of a buffer stock. In this arrangement, farmers purchase the right to sell their coffee at the strike price of the option to the government, which would add the coffee to its existing stockholding. There was good demand for these products initially when local prices were close to the strike price, but, in the first round of product sales, the combination of rising futures prices and a weakening Brazilian Real substantively increased local prices, and demand for the options fell so low that, in the last auctions of the first round, none were sold at all. The options program was considered to have had the effect of allowing farmers to hold back coffee from immediate sale, thus being partially responsible for the internal price increase that occurred after its introduction (see figure 33).

Not all domestic policy reforms were beneficial to everyone. In some cases, the end of a uniform-managed internal price meant that producers in more remote areas saw their prices fall disproportionately as competition focused on more accessible production. In Mexico, for example, Bohman and others demonstrate that the tax and regulatory regime under quotas benefited smallest farmers and exporters at the expense of larger farmers, while, in Kenya, planting restrictions to keep supply in line with quotas mostly benefited larger farmers. Other accounts of the issues arising from liberalization reforms can be found in a variety of sources, including a study sponsored by the ICO and the World Bank (CFC 2000).

Since the collapse of the ICA agreement, several countries particularly in Central and South America have used emergency funds in the form of governments issuing coffee bonds to provide financial support to their coffee producers. The repayment of the funds is contingent on higher prices in later years. For example, Costa Rica and El Salvador have used emergency funds in the past to support the income of producers when prices declined. The funds were repaid because of the recovery of coffee prices during from 1994 to 1997. Without this temporary price recovery, the repayment would have been questionable. To respond to the coffee crisis after 1999, both Costa Rica and El Salvador—and now Honduras—are again using emergency funds, the repayment of which will rely on the recovery of world coffee prices. If recovery is slow and prices remain at relatively low levels, it will hamper the ability of farmers to repay.

In addition, Costa Rica, El Salvador, Guatemala, and Nicaragua are using programs to restructure the debt of coffee farmers. These programs mainly benefit the medium and larger farmers who receive formal credit. At the same time, some of these countries are starting to embark on longer-term projects to diversify, renovate their coffee plantations, and improve the marketing and quality of their exportable coffees. The main focus of domestic policy response so far still remains the short-term solution: keeping producers in coffee production by providing support to prices and solving their debt problems. In addition, most small producers and laborers have not benefited directly from programs aimed at helping the coffee sector. Responses to low coffee prices do not include necessary measures to address the longer-term problems of structural imbalances and the need for horizontal and vertical diversification for some of the producers.

Though the short-term costs and benefits of government policies bailing out coffee farmers are certainly debatable, small farmers do not always receive accurate and timely signals and may not be in a position to respond appropriately, regardless of the signals. At the producer level, decisions that result from delayed or inaccurate policy and market signals have left producers at a significant disadvantage. Even so, the most successful coffee-producing nations have benefited from a measure of continuity and order through strong sectoral institutions that have adapted to their new roles and have helped growers understand and respond to market signals; however, only few such institutions exist.

Types of Risks at the Micro/Household Level

Surveys of farmers undertaken by the World Bank's Commodity Risk Management Group, as well as various rural vulnerability assessments, indicate that price, weather, and health risks are the most important risks that rural households face.¹¹

A recent survey of coffee farmers in India showed that producers regard weather and prices as their main concerns, regardless of their size as producers (see table 3). Risks are ranked, with five as the most important and one as the least important. It is noticeable that the relative rankings of risks change only for the lower ranks. In particular, concerns about health risks decline with farm size, but concern about the consequences of government policy increases with farm size.

An earlier survey conducted in Nicaragua produced similar results (see table 4). In Nicaragua, the most important risk was ranked three and the least important risk was ranked as one.

¹¹ Reports by the CRMG containing the surveys can be found at www.itf-commrisk.org. Surveys of note can be found in the reports on Dominican Republic and Nicaragua.

Table 3 India: producer risk perceptions by farm size (acres)

	<i>All Farms</i>	<i>0-10</i>	<i>10 - 25</i>	<i>25-50</i>	<i>50-100</i>	<i>100-200</i>	<i>200-400</i>	<i>> 400</i>
Rainfall/weather	4.68	4.77	4.68	4.63	4.61	4.45	4.91	4.60
Fall in rice	4.33	4.17	4.42	4.32	4.59	4.39	4.04	4.20
Unstable prices	4.16	4.10	4.22	4.17	4.22	4.12	3.68	4.30
Crop pest/disease	3.56	3.59	3.44	3.61	3.62	3.67	3.45	3.90
Changes in government policy	3.1	2.96	3.11	3.13	3.08	3.13	3.41	4.00
Withdrawal of credit	2.85	2.82	2.95	2.88	2.80	2.81	2.40	2.40
Fall in other crop income	2.75	2.71	2.76	2.78	2.91	2.63	2.50	3.00
Illness	2.1	2.18	2.18	2.11	2.05	1.78	1.95	1.40
Loss of off-farm income	1.57	1.57	1.55	1.51	1.63	1.58	1.68	1.70

Source: World Bank and Coffee Board of India 2003

Table 4 Nicaragua: producer risk perceptions by farm size

<i>Type of Risk</i>	<i>All Farms</i>	<i>0-4.99</i>	<i>5-9.9</i>	<i>10-19.99</i>	<i>20-49.9</i>	<i>>50</i>
Weather Risk	2.19	2.21	2.15	2.07	2.23	2.25
Fall in International Prices	3	2.98	3	3	3	3
Drop in Yields from other crops	2.51	2.55	2.6	2.52	2.54	2.35
Loss of Employment	1.63	2.15	1.54	1.46	1.44	1.54
Bad Health	2.9	2.97	2.93	2.93	2.9	2.81
Lack of Access to Credit	2.85	2.74	2.85	2.94	2.86	2.87

Source: World Bank 2002a

When Indian coffee farmers were asked which was the single most important risk, as opposed to a ranking question detailed in table 3, they ranked these slightly differently overall, with a fall in prices as the issue of most concern, as shown in table 5. This result reflects the finding of other CRMG surveys, although this particular survey separated out attitudes towards price instability from attitudes toward unexpected price falls. India coffee farmers otherwise appear to have considered price volatility much less important than an unexpected fall in price.

A similar situation can be seen from the data derived from the survey undertaken in the Dominican Republic (see table 6).

Farmers can manage risks, including price risks, in a number of ways, including:

1. On-farm diversification to include other products or differentiating their product with, for example, specialty or certified products.
2. Off-farm diversification to nonfarm enterprise or offering rural labor.

3. Developing long-term contracts with buyers.
4. Formal risk management mechanisms, such as options or futures markets.
5. Reducing exposure by limiting costly external inputs (organic or avoiding credit).
6. Financed inventories to extend the sales periods and allow greater flexibility.

Sometimes risks are traded off. For example, irrigation and higher input usage can lower yield volatility but may leave the producer more exposed to price risk due to the higher costs. Other techniques such as long-term contracts may simply be closed to smaller farmers because, in the absence of information about producer and their credit track record, the buyers may be unable to distinguish between those producers who will honor forward sales in the event of a price rise and those who will default. Working credit bureaus can help reduce these risks but are difficult to apply in the informal credit environment of many rural areas. There are very few cases of clear public policy or regulatory support of such private bureaus; however, many of these techniques, whether formal or informal, may be inadequate or fail altogether when prices are in long-term decline or stay below the cost of production for an extended period of time.

Using Markets to Manage Risk

Markets for price risk management instruments include forward, futures, options, and swaps. These products are traded either in organized exchanges, such as London, New York and Sao Paolo, or in over-the-counter markets in major financial centers. In several coffee-producing countries, larger exporters and producers often use markets to hedge their coffee price exposure, usually for short-term periods and for specific physical operations during the crop season. Sometimes, risk management is a precondition for financing. There are also other ways that producers can manage their price risks through fixing the price of their

Table 5 Risks faced by coffee producing households in India (number and percent of people reporting risk as very important)

<i>Type of Risk</i>	<i>For whom is the most important risk?</i>	
	<i>Number</i>	<i>Percent</i>
Rainfall/weather	183	36.7
Fall in price	194	39
Unstable prices	88	17.7
Crop pest/disease	6	1.2
Changes in government policy	13	2.6
Withdrawal of credit	8	1.6
Fall in other crop income	1	0.2
Illness	5	1
Loss of off-farm income	0	0

Source: World Bank and Coffee Board of India 2003

Table 6 Risks faced by coffee producing households in the Dominican Republic (percent reporting risk as very important)

<i>Types of Risks</i>	<i>Less than 5 hectares</i>	<i>5-10 hectares</i>	<i><More than 10 hectares</i>
Weather-related yield risk	46.5	60.9	49.1
Disease-related yield risk	64.1	67.1	62.5
Price risk	73.2	82.9	81.2
Yield risk in other crops	35.2	46.3	35.7
Loss of employment	30.3	28.1	33.9
Illness	56.3	70.7	60.7
Lack of credit	64.1	78.1	72.3

Source: World Bank 2002b

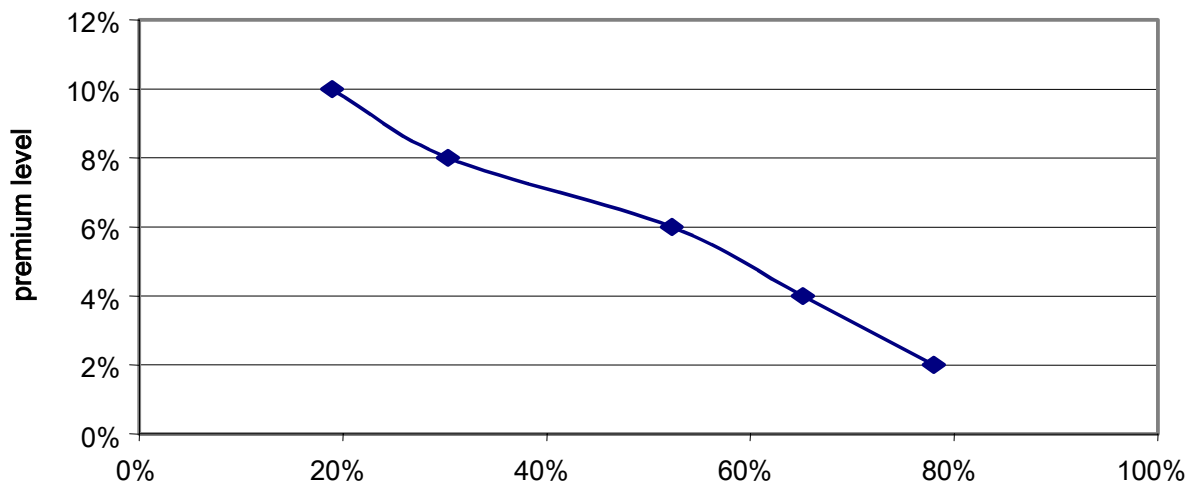
coffee in physical contracts, such as fair trade contracts. Performance risk presents a problem if prices rise above those in the contract.¹²

Although a full range of formal financial instruments and trading mechanisms exist to manage (or hedge) price volatility and risks, smaller producers face barriers to access to such instruments.¹³ There are limits for both the supply and demand for such products. Few small producers understand market-based risk management, such as futures and options, or their applications, and few have access to such knowledge. Even the supply infrastructure often doesn't exist because brokers cannot cover the transaction costs of dealing with a large number of small producers. For situations in which such infrastructure does exist, the instruments may be inappropriate because of contract size, basis risk, or currency exposure.¹⁴ An example is the large size (17.5 tons) of the NYBOT arabica coffee contract, which is traded in U.S. dollars.

Problems also occur because the available instruments do not normally extend across multiple seasons, but cover only short periods. This is partly a liquidity constraint, which also contributes to the absence of long-term, contracts described above. Many parts of the industry appear unwilling to commit very far forward and the furthest-out expirations in the futures markets—6 months forward—usually garner little open interest. Another challenge is basis risk or the lack of correlation between domestic and international (New York and London) prices. Lack of strong correlation reduces the effectiveness of hedging using price risk management instruments.

Producers appear to be willing to pay for risk management instruments. Figure 13 shows the cumulative willingness to pay to insure US\$50 per quintal when the survey was undertaken in February 2002.

Figure 13 Nicaragua: aggregate percent of producers willingness to pay for risk management



¹² For fair trade contracts prices are well above market levels so the risk of default is small. Also fair trade establishes a has strong long-term relationship between producer groups and buyers that lasts more than a specific transaction.

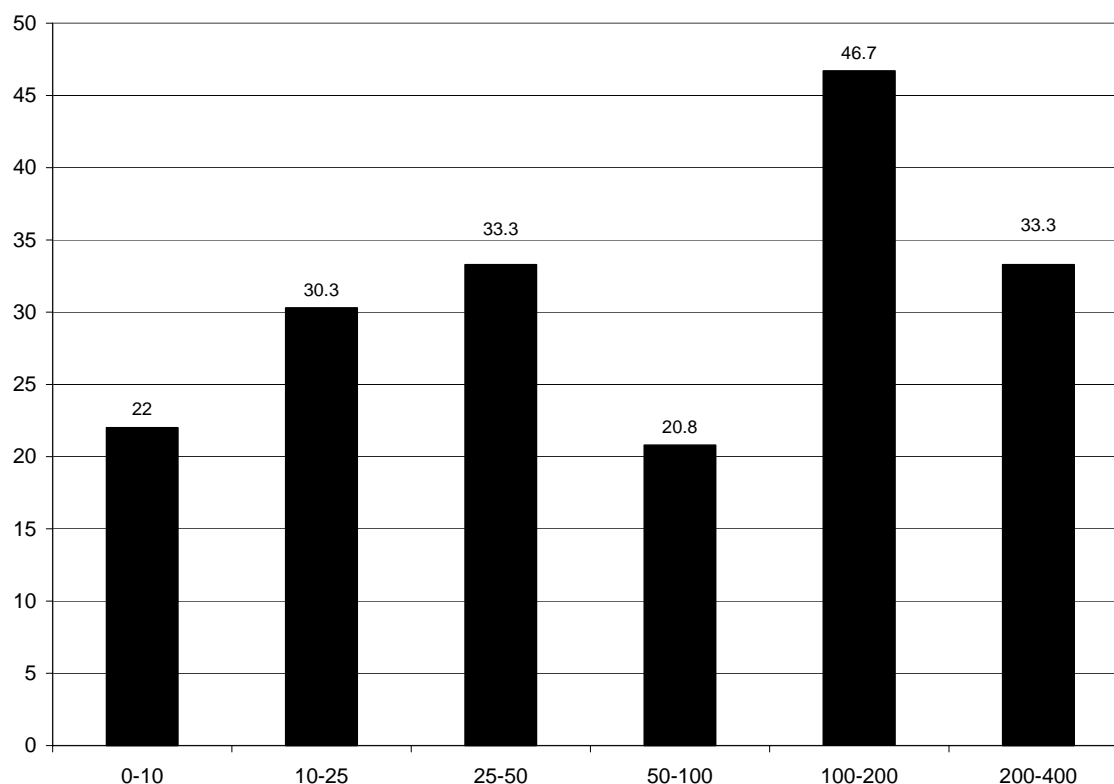
¹³ Hedging usually involves taking a position in a financial contract such as a futures contract that is equal but opposite to a physical position, i.e., a roaster that has a contract to buy 17.5 tonnes of arabica in 3 months time at the market price will have extra costs if the market rises. So he will buy 1 futures contract, and will sell it again when he fixes the price of the coffee.

¹⁴ Basis risk is the risk that the prices of a specific origin or grade will move differently to the futures contract being used to hedge it.

Source: World Bank 2002a

Figure 14 shows the willingness to pay 5 percent of the underlying protected value (the strike price for a put option) as risk management, by Indian robusta coffee farmers.

Figure 14 India: willingness to pay five percent of strike for price protection



Source: World Bank and Coffee Board of India 2003

The CRMG of the World Bank has been investigating ways of addressing the problem of finding institutional channels and models that would aggregate price risks from many small farmers and hedge them in international markets. Potential viable models lie in empowering producer organizations to manage their own business risks and to embed the hedging mechanism or risk-management instruments into the buying agreement between producer organization and the producer. For example, there are now some successful CRMG test cases where cooperatives are giving payment advances to producers and then hedging their price exposure using put options.

Other alternatives include enabling rural financial institutions to buy put options and then fragment them to offer them as prerequisites for loans to producers in order to cover some of the risk of credit default in the case of coffee price falls; however, while there are some successful cases, a key challenge is to scale up activities and create a steady flow of hedging business that would attract the interest of private sector providers.

Informal Risk Management Techniques

The main alternative for risk management for most producers, particularly smaller producers, is self-insurance, which may present numerous problems to the producer. Systemic risks, such as price risks, can cause the collapse of many informal risk-sharing arrangements because most farmers suffer at the same time prices collapse. Furthermore, diversification may come at the expense of higher specialization, and low risk/low input technologies come at the expense of higher yields. While farmers try to reduce income volatility, they may also lower their mean income.

For agricultural producers, risk management is done primarily through income diversification—either on-farm, through additional crops or perhaps livestock, or off-farm, by seeking alternative employment. This leaves the farmer exposed to risks that cut across multiple assets. For example, while income diversification through additional crops can help a producer through a time of an individual crop price collapse, it leaves the farmer exposed if drought affects all his crops and his livestock at the same time. The high level of crop diversification by Indian coffee farmers may explain the rankings in table 3, in particular.

When farmers hold other assets, a need by all farmers to sell such assets at the same time a crisis occurs may lead to a fall in price of the assets, while savings held in credit institutions may all be withdrawn at once, possibly threatening the ability of the institution to repay all depositors at the same time.

Informal risk management practices can impose a number of costs on agricultural producers. In particular, it inhibits the producers' ability to capture the return to scale of specialization, while, in many cases, the other available assets have low returns and cannot be relied on during systemic problems, such as drought or price collapse. The consequence of this is that it may prevent the build up of wealth that allows poor producers to escape from poverty. The costs of informal arrangements can be viewed as one of an opportunity cost, while the use of formal risk management markets very often has cash-flow implications and it is explicit.

Formal or Informal Risk Management: A Policy Issue

The public policy issue here is one of “what is the role of the government?” The beginning of this section highlighted the fact that prices for commodities tend to fall and then stay low for extended periods of time. Although formal risk management instruments enables producers to capture the benefits of specialization during periods of remunerative prices, their inability to insure against extended periods of low prices can transfer the costs of the extended periods of low prices back to the public sector through demands for bailouts and other rescue packages. A public policy needs to better define the parameters and triggers of intervention and clarify ex-ante under what circumstances the government will intervene. It is also very important that the government intervention is not open-ended and that it is targeted to alleviate the crisis for poor people, whether they are small producers or unemployed rural laborers. The government's focus should be more on rural social safety nets in cases of crises and not in interference with commercial practices.

Retail Prices, Concentration, and Shifts in the International Marketing Chain

The shortening of the coffee trade chain in many countries and the loss of market players has led to a concentration of the marketing margins in the hands of the more powerful players. This is certainly evident among roasters who are still the gatekeepers for the bulk of today's coffee flows. Five of them

combine to dominate half of global trade (Pizano 2001). The roasters demand high standards for quantities, just in time inventory management, and quality consistency that lend themselves most to the capacities of international traders with the ability and global scope to supply them. These elevating demands have had a ripple effect that is evident in the increasing concentration of traders as well, with only five accounting for about half of global trade.

Globally, the food industry is consolidating at every level. While this trend increases efficiencies at some levels, it also reduces the range of opportunities for producers, reduces their leverage, and makes it increasingly difficult for smallholders and Small and Medium Enterprises (SMEs) to participate equitably in the markets. The dominant players downstream in the supply chain capture more value and consolidate their suppliers in order to maximize profits, increase entry barriers, and mitigate risks, such as food safety and market or financial risk; their supply chains. At the same time the application of standards are fast becoming one of the more dominant forms of competition. These consolidated supply networks are usually the networks capable of meeting prescribed standards.

An aspect of the concentration of traders in the industry is the increasing difficulties for the coffee export companies owned by local entrepreneurs in countries of origins. Examples of this can be found in Mexico, Colombia, Uganda, and Guatemala—even Brazil may not be immune as evidence of consolidation is present there also. International traders and their local branches have distinct competitive advantages over indigenous local exporters. Particular features of this include both the access to and the cost of financing. Even in Brazil, with its competitive export financing, local traders borrowing domestically must still pay two to three times more for financing than international traders.¹⁵ This cheaper financing has the effects of both lowering the risks of doing business in a volatile commodity with slim profit margins, as well as allowing the international traders to cherry-pick the best relationships using lower-cost access to finance as a “hook.”

While some well-organized producer groups have the capacity to deal with roasters directly, very few producer groups are capable of bypassing traders or importers to shorten the chain, thus leaving them exposed to the types of problems described above. For example, only a few growers and growers groups are able to directly access international financial markets, and these are often available only as part of another type link, such as to fair-trade or ecclesiastic lenders. These few groups will also have unique opportunities to develop the kind of auditable/traceable supply chains that the trade is becoming more interested in, but, given the increasing supply concerns embodied in bioterrorism bills pending in the United States, for example, it seems likely that traceability will become even more important and that direct purchases from growers will continue to be difficult.

The purchasing relationships embodied in consolidated supply networks provide clear benefits for the buyer, including punctual deliveries, improved quality, and reduced risk of default, while the seller expects that his coffee will be purchased and paid for fairly and promptly. Supply chains can risk becoming short-lived control mechanisms unless they explicitly recognize the inherent obligation of helping to assure that each member gets a healthy share of the gains. The current and prolonged pressure on producers may result in negative long-term repercussions for the industry as a whole as default levels and control systems managing standards and timely deliveries erode.

¹⁵ Reports suggest that the cost of financing for a local Brazilian exporter may currently range from 8-12 percent in U.S. dollars, compared to international traders that can finance at rates closer to 3-4 percent. Working in local currency, the contrast is even greater as R\$ interest rates for an advance on export contracts are more than 30 percent, even for the more creditworthy companies.

A declining share of earnings is symptomatic of the already dire situation of most coffee-producing countries. Depending on the years sampled and the method of analysis, the picture can look particularly grim. For example, Morisset (1997) notes that between 1975 and 1993 the free on board price of coffee declined by 18 percent while the retail price paid by consumers increased 240 percent.

However, this apparent imbalance in the distribution of revenue along the supply chain, within the global coffee economy has resulted from downstream participants in importing countries increasingly capturing and sometimes creating value, particularly in differentiated products, such as flavored instants and in formats, such as cafés. In the late 1980s, before the end of the ICA's economic clauses, consumers spent approximately US\$30 billion per year on coffee, and producing countries earned approximately US\$9 billion (or 30 percent of this). Today consumers spend an average of US\$70 billion per year on coffee, and producing countries earn approximately US\$5 billion—or 7 percent.¹⁶ The coffee farmers themselves receive only a portion of the revenue credited to producing countries, ranging from about 50 percent of the free on board price to about 90 percent in some cases.

Published financial statements from leading coffee companies indicate high profit levels from their coffee business operations. The producers' currently reduced share of the retail price is not entirely due to the concentration in the industry. A number of other factors need to be taken into account. First, new and increased value is being added to the product in the consuming countries through processing, marketing, and transformation at the retail level, in cafés, for example. The often quoted difference between a high-value cappuccino or café latte and the producer's share of that can be somewhat misleading when it is oversimplified: It seemingly proposes that the market agents in industrial countries pocket the entire difference as phenomenal profits. Today's average specialty coffee beverage contains 1/45 pound of coffee for which a grower may receive no more than US\$0.02 to US\$0.03, but it also incorporates numerous other products, services, and costs. For most cafés, the cost of milk, sugar, cups, stirrers, and lids is actually far greater than the coffee itself. Add equipment costs, labor, utilities, rent, and other overheads and, while still profitable, the picture is not nearly so one-sided. Furthermore, the percentage of high-cost beverages in the total global coffee market is still very small so that it could be misleading to make an unexplained comparison between a US\$3.00 cappuccino and the grower's US\$0.03 share.

A recent study estimated that over the previous 6 years the green coffee costs accounted for only 27 percent of the total retail price of roast and ground coffee, and, by late 2001, this had fallen to only 20 percent (Struning 2002a and 2002b). The ICO estimates that globally this is now approximately 12 percent at the supermarket level and less than 3 percent of the out-of-home price.

These shifts in revenue distribution are real and somewhat consistent with other data, as well. In 1989, the Economist Intelligence Unit disaggregated the retail price of washed arabica coffee beans into its individual cost components. According to this estimation, that included post-harvest processing and transport, producing countries were getting about 40 percent of the retail price at the free on board level. In April 2002, a similar exercise carried out by the Colombian National Federation of Coffee Growers (NFCG) shows that, in the case of Colombian coffee, even with its reputation, this proportion is now less than 22 percent.

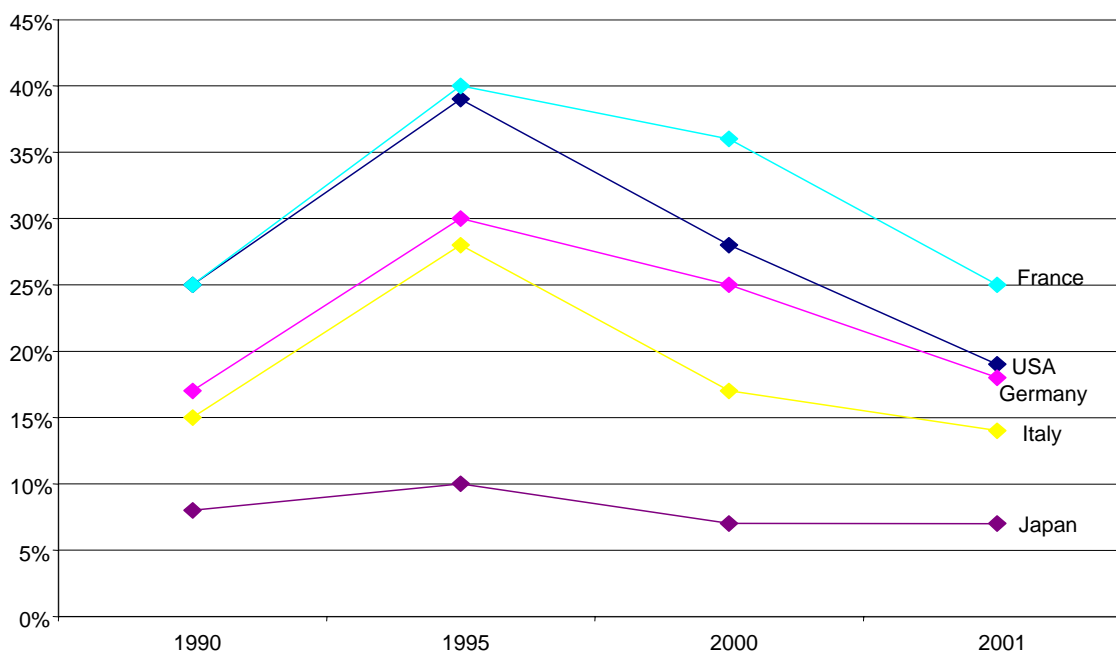
By comparing retail prices with import value, the divergent values are obvious and demonstrate the apparent widening gap in key consumer markets (see figure 15). After some growth since the 1991 post-

¹⁶ ICO estimates in March 2003 of retail value in consuming markets and free on board value to producers, personal communication with P. Dubois, head of operations, ICO.

ICA low, the difference is twice what it was in 1995. Because of consumer resistance to price changes, retail prices tend to be less volatile than green coffee prices. For example, in August 1992, the ICO composite reached a low of 45.9 cents per pound. United States retail prices were US\$2.61 per pound. By September 1994, the ICO composite reached US\$2.02 per pound, an increase of 348 percent. United States retail prices peaked at US\$4.48 per pound, an increase of 121 percent. The same is true when measuring movements in the other direction: Retail prices tend to lag in their response to green coffee price changes. Outright prices of green coffee would, therefore, appear to be a major determinant of producer share of total revenue.

Part of the problem with some of the claims made over this issue relates to methods of measurement. For example, Struning points out that in the period between 1997 and 2002, 74 percent of retail price changes in the United States could be explained by changes in the ICO composite. But when unit values of imports were used as the determining variable, 89 percent of changes in the retail coffee price could be explained by changes in the unit value of imports.

Figure 15 Relative coffee values: CIF prices as a percent of retail price



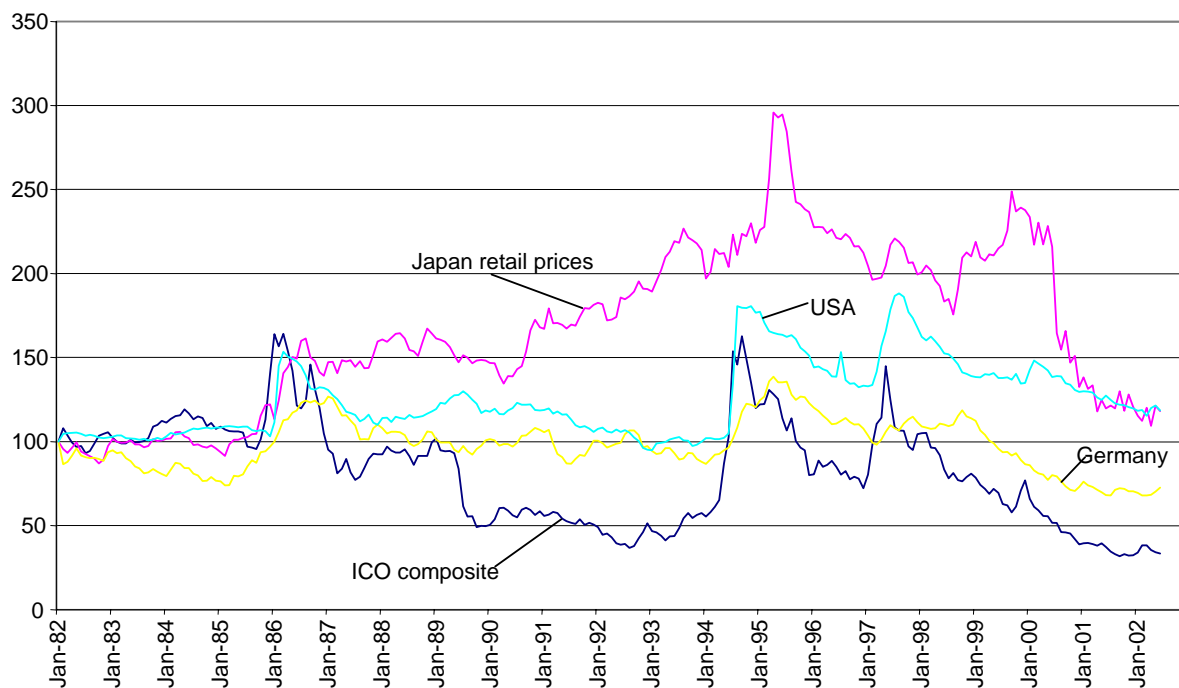
Source: ICO, customized subset of data sent to author, taken from ICO database

Since the early 1980's, green coffee prices have fallen by 65 percent, while, in some consuming countries, retail prices have risen by about 50 percent (see figure 16). U.S. data, however, illustrates how this simple comparison can be misleading.

An analysis of the past 20 years is illustrative. In 1982, the ICO composite averaged US\$1.25 (in line with the price bands of the ICO agreements) and U.S. retail prices were US\$2.56. The green coffee price comprised 48 percent of the retail value. When the noncoffee component of the retail price (i.e., marketing, packaging, etc.) is adjusted for inflation, retail prices in 2002 should have risen to US\$2.41, plus the current price of green coffee. In other words, this would have totaled some US\$2.86 per pound, compared to the actual average retail prices in 2002 of US\$2.96. Hence, the decline in the farmer's

revenue share is as much a function of increasing noncoffee costs of the coffee industry as it is the decline in the current international green coffee price. While the authors of this report acknowledge that some of the assumptions underlying this analysis are simplistic, the numbers illustrate that the issue of producer share of retail prices is more complex than some of the accusations leveled at the coffee industry would allow for. Such analysis also does not detract from the importance of exploring and promoting newer options, such as the differentiated markets discussed in this report, that enable producers to capture a greater share of retail value.

Figure 16 Indexed ICO prices and retail prices



Source: ICO, customized subset of data sent to author, taken from ICO database

If indeed consolidation and increasing fungibility of supply are now dominant competitive paradigms among the large players responsible for most of the world's trade, other options are fast emerging for smaller producers and enterprises to exploit alternatives that large supply chains and mega-enterprises find more difficult and consequently less profitable. Some of the more promising of these alternatives involve varying methods of differentiation at origin. By differentiating their products in close response to and even anticipation of market demand, growers develop competitive advantage that can go beyond generic competitive factors such as price and distribution.

3. Demand: Volumes and Trends

Overall Demand Picture

World demand for coffee in 2003 was approximately 115 million bags, comprised of about 87 million bags in importing countries and 28 million bags in producing countries. Regional differences are apparent. The overall growth trend is expected to continue at a slow pace in the mature markets, with brighter prospects in some of the emerging markets—this will be mostly for lower-quality coffee. But expansion opportunities do exist. One multinational points out that 65 percent of the world's coffee is consumed by just 17 percent of the world's population, suggesting opportunities for market growth.

There is an indication that a number of apparently contradictory trends are occurring in the development of consumption:

The differentiated markets are offering excellent, though limited, opportunities for some groups of producers. Although volumes in most of these markets are still very modest, they show strong growth in the United States, Europe, and parts of Asia.

In the mature markets, the impression of stagnation in volume hides a more complex picture beneath the surface because some major brand name coffees, distributed mostly through common grocery and foodservice channels, are fighting for shares of the same or a declining market, while new consumers are simultaneously entering the market, attracted by new coffee products.

The rapid growth of consumption in coffee-producing countries and the emerging consumer markets is being driven by access to cheaper, lower-quality coffees, making it possible to put affordable products into retail space. Many of these countries are primarily tea-drinking countries, and the growth in consumption is being fueled by both the lower cost and ease of preparation afforded by soluble coffee.

The primary driver of long-term consumption growth is income growth, though urbanization and social changes in developing countries are also having an impact. For example, coffee drinking is developing in the cities in China and elsewhere as more western habits become fashionable but less so in the rural areas. As incomes rise, the impact on household budgets of even quite large swings in retail prices become less significant overall—and more likely to have a lower impact on consumption patterns. An example of this can be seen in the United States, where retail prices are currently about US\$3.00 per pound and where per capita consumption of about 13 pounds suggests a bill for at-home consumption of only US\$40 per year, out of per a capita personal income of US\$28,000.¹⁷

The increase in overall supply is not the only factor having an impact on prices—both the consumer and industry have reacted to relative price and supply changes of raw products in ways that have exacerbated some trends. Roasters are able to incorporate a wider range of coffees into their blends due to technological developments, such as steaming. Most major roasters have demonstrated a willingness to switch the constituent coffees in their blends in order to have access to broader raw material availability at a wider range of prices.

¹⁷ Data from U.S. Bureau of Census, available on Web site (www.census.gov).

It is also evident from shifts in market share of different brands that brand substitution by the consumer is also having an impact on the demand for specific types of coffee. In some cases, individual products may not have changed a great deal as a result of consumer resistance to taste change. In Germany, for example, some major products that increased or added robustas were forced to reverse this change by adverse consumer responses; however, newer consumers are buying different types of coffee products for which coffees from different origins than those traditionally imported are more suited. The sales of the traditional products are stagnating in the face of an aging population cutting their consumption.

This implies that the argument that the relative increase in use of natural arabicas and robustas is bad for overall consumption may not necessarily be true—in fact, it may currently be helping to prevent total consumption from falling. But it is by no means clear that this is either a sustainable phenomena or that it is true in all cases. The composition of these newer products leads to potentially misleading signals that overstate the claimed causal relationship between substitution away from washed arabicas and a claimed negative impact on total consumption volumes.

Supermarkets and other multiple store operations, because of their increasing market dominance, have a very direct influence on the nature of coffee demand. Though they are rarely considered in most discussions about the problems of the coffee industry, they are one of the most influential stakeholders. There has been some lack of retail price response to the price falls of green coffee, with low world prices not fully reflected in the corresponding decline of published retail prices for roast and ground coffee in many major markets. Aggressive discounting is happening in some countries with coffee being used as a loss leader in some cases. Part of the explanation may also involve increased profits by retailers, but another part of the explanation is that a number of costs in the coffee chain, including transport, processing, and packaging have remained stable or increased, and these now represent a greater part of the final retail value of coffee.

The sharply increased retail value of prepared coffees, especially in the cafés of more developed markets, is often presented as a stark contrast to very low producer prices. This difference is certainly very real and makes a valid point that producers are not sharing in much of the coffee industry's success. It should be noted that the cost of green coffee, in this case, is uncorrelated to the other costs of such operations. In this out-of-home consumption market, noncoffee costs, particularly labor and rents, form a very large part of the retail sales price. In such a cost scenario, even doubling the price of green coffee would still add only a few cents to the retail price. Furthermore, although such upscale cafés and restaurants are highly visible, their volume represents a minuscule percentage of the coffee market—total purchasing of even the largest such operator represents only about 1 percent of global green coffee production.

Consumption in the newer consuming markets appears to be led by soluble products with a heavy use of robusta coffee. This does have advantages in enabling new consumers to prepare it in a manner similar to how they prepare tea and, in particular, without having to purchase additional equipment, such as percolators, filters, or presses. However, given the importance of a positive first experience—that is, the first sip of coffee—there is some concern that an over-reliance on lower-grade coffees in these markets may dissuade potential consumers never to ever continue to a second cup.

The Change in Consumer Drinking Habits

For most people in the mature markets, coffee used to be a fairly generic product that came in basic varieties: regular or decaffeinated, and either roast and ground or soluble. In the United States, by the early 1980s, a combination of demographic change, taste blandness, and concerns over quality had led to

a considerable reduction in per capita consumption, and a number of smaller U.S. roasters and retailers were able to achieve considerable success by introducing new coffee products into the resulting gap in the market for better-quality coffee that had opened up. These new products gave consumers the choice of gourmet coffee, dozens of different flavored coffees, single country of origin coffees, espressos and dark roasts, organic coffees, water-processed decaffeinated, and appellation coffees—all of which not previously widely available. These differentiated products were initially shunned by the owners of the dominant mainstream brands but soon proved so profitable that within a decade nearly every major company moved to participate in one way or another. The Specialty Coffee Association of America (SCAA) began in the early 1980s with only a very few members and, in less than 2 decades, has grown to be the largest coffee trade association in the world.

Standard commercial brands still retain the major share of the market based on their price, distribution networks, and promotion. Differentiated coffees are entering the same mass distribution channels—either self-branded or as part of private label programs. They are also making headway in other channels of distribution that have much lower entry barriers, such as out-of-home consumption i.e. restaurants, convenience stores, and food service. Over the next ten years, food service and out-of-home segments are expected to capture nearly two-thirds of new consumer food spending in the United States.

The dramatic expansion in the out-of-home market, especially in convenience stores and gas stations, is worth noting. Some of these are among the largest prepared coffee retailers in the United States. The increased availability of coffee as a convenience beverage, including bottled and frozen drinks, are adding new facets to the search for increased consumption. In some cases, the coffee sold through these volume outlets is not necessarily low quality. In Germany, a large quality-oriented roaster recently announced a program to sell their coffee through a large chain of petrol filling stations.

There is a considerable increase in the easy-to-prepare and less-expensive coffees, both of which are often in soluble form. Three sets of market forces are driving these. First, there is an increasing demand for easy and time-saving preparations. Second, cost is a critical factor, especially in many emerging markets, and inexpensive soluble coffees fill the demand and also have a longer shelf life. Third, new varieties with improved quality, novel flavors, and prestige preparations, such as instant cappuccino, are capturing market share even in the more mature U.S. and European markets. This development has been beneficial for some of the larger roasters who have been able to extract more unit profits from soluble coffee than from roast and ground.

At the other end of the market, new developments are having a different impact in terms of both positioning in the marketplace and new sources of consumption. Two segments of the differentiated coffee market have been recently drawing considerable consumer attention. The first is for espresso-based beverages, such as cappuccino and cafés latte, for which dramatic growth has fueled not only the out-of-home consumption in many countries but has also grown considerably as home-use espresso machines and appropriately ground coffee has become widely and cheaply available. Many companies, including soluble and Office Coffee Service (OCS) suppliers, are capitalizing on this trend and responding to it in their product mix. The second segment is sustainable coffees which can be generally defined as coffee for which production is certified by a third party to combine some measure of economic, social, and/or environmental benefits. Increasing social and environmental awareness combined with food safety concerns has fueled their dramatic growth in recent years. A significant portion of this growth is among younger and middle-aged consumers.

Coffee drinking habits are relatively elastic among consumers under age 35. After age 35, the proportion of people who convert from noncoffee drinkers to regular coffee drinkers is low, suggesting that to grow

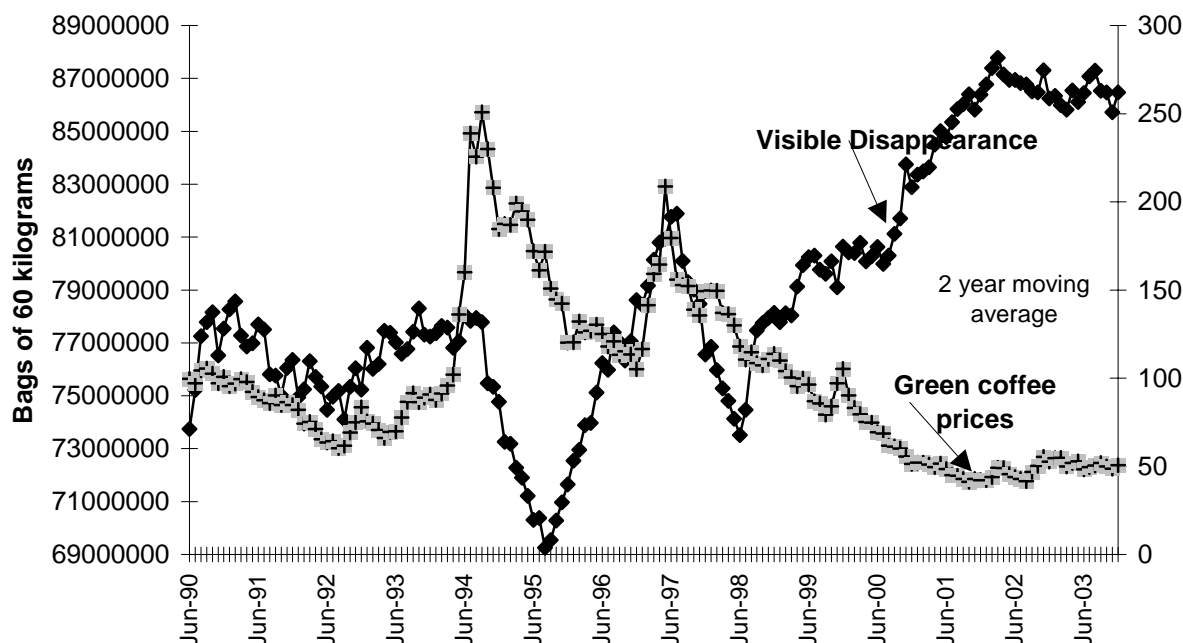
in relatively mature markets, such as the U.S. and Europe, the coffee industry will have to capture more young people as they enter adulthood.¹⁸ This will be increasingly important as their core customer base gets older and as alternative beverages, such as carbonated soft drinks, continue to successfully attract younger consumers.

Though total coffee import volume in both the United States and Europe have shown only very modest growth on the whole, the annual drinking trends survey of the U.S. National Coffee Association notes that U.S. specialty consumption slowed a bit in 2002 after several years of steady growth. These differentiated coffees earned a larger market share between 1999 and 2002 moving from 9 percent to 13 percent of the adult population and now represents about 24 million daily drinkers. Another U.S.-based report measuring a different indicator registers a very dramatic increase in the number of coffee shops from 2,250 in 1992 to 13,700 in 2002, many of which are focused on differentiated coffees (Mintel 2002). Similarly, in Western Europe the expansion of upscale national and regionally based caf  s, as well as the parallel expansion of multinationals implies continued growth for the out-of-home segment. Supermarkets, the dominant food and beverage retail channel in most EU countries, are also increasingly adding differentiated coffees, such as single origins, organic, and fair trade.

Volume Trends

Significant changes in the size of the inventories held by private coffee trade, roasters, and retailers make actual consumption figures difficult to track exactly. Over a period of time, consumption should equal disappearance—net exports from producing countries less change in importing country inventories. Figure 17 illustrates the evolution of disappearance over the last decade. (Note: Some export data and some producer country re-import data is very provisional or is not reported at all. For that reason, trade-house estimates and/or ICO estimates are also used in this data). The implication of this data in figure 17 is that disappearance in importing countries in 2003 rose 1.5 percent to 87.5 million bags.

¹⁸ National Coffee Association of U.S.A, Inc (2003).

Figure 17 Disappearance of coffee in importing countries in rolling 12 month totals

Source: ICO, customized subset of data sent to author, taken from ICO database; USDA, Foreign Agricultural Service, "Production, Supply and Distribution" database; authors' calculations and estimates based on published and unpublished data provided to author from private traders

The data in figure 17 does not capture changes in invisible inventories, but a closer look at the past two years suggests that, after a period of running-down inventories in 2002, trade and industry rebuilt their stocks in early 2003, only to have an unexpected demand fall in some areas, when very hot weather depressed demand, particularly in Europe. But demand did seem to pickup again later in the year. Although the industry in some European countries is reporting that by the end of the year demand was unchanged on 2002, continued growth elsewhere seems to have given an overall increase. Additional problems in measuring demand relate to the lack of clarity in cross-border trading between importing countries. This is particularly true of the EU where, as the internal market has developed, the statistical data on these transfers is no longer readily traceable.

Long-term data suggests a growth rate of about 1.2 percent per year in importing countries and 1.45 percent in producing countries. But this is specific to certain locations, including parts of Asia and, in particular, Brazil.

Per Capita Consumption

Table 7 shows the ICO estimates of per capita consumption in kilograms among the major importing countries, sorted by region and ranked by consumption level in 2002. It is evident that European consumption, in particular, has regional differences, with Scandinavia among the world's highest consumers and the Mediterranean countries, which have much lower per capita income and hotter climates, close to the bottom of the rankings. Analysis of import share that follows also confirms these differences, with high overall arabica consumption in the northern countries and high robusta and natural arabica consumption in the southern countries. This data appears to be based on per capita net imports,

which, because of the inventory changes, can be different from consumption changes. For this reason, per capita consumption numbers discussed in the text of this paper are based on data reported by individual countries through reports, such as the European Coffee Report or the NCA Winter Drinking survey.

Table 7 Per capita consumption of coffee in selected importing countries (kilograms)

<i>Country</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002*</i>
United States	3.98	4.10	4.00	4.14	4.24	3.96	4.08	3.94
European community	5.33	5.57	5.56	5.52	5.51	5.37	5.29	5.37
Finland	8.62	10.56	11.00	11.71	11.37	11.26	11.01	11.24
Denmark	8.70	9.91	8.97	9.57	9.67	8.61	9.66	9.17
Norway	9.04	9.77	9.18	9.52	10.56	8.79	9.46	9.15
Sweden	8.17	8.78	8.46	8.47	8.70	8.00	8.50	8.34
Austria	7.21	8.11	8.17	8.20	8.44	6.57	7.74	7.04
Germany	7.37	7.16	7.22	7.01	7.46	6.70	6.90	6.59
Switzerland	7.97	7.82	6.03	6.84	7.26	6.91	6.80	6.78
Netherlands	8.90	9.84	9.19	7.56	5.71	7.21	6.48	6.55
Belgium-Luxembourg	6.39	6.38	5.69	7.53	5.29	7.32	5.53	9.02
Italy	4.86	4.95	5.08	5.16	5.14	5.36	5.44	5.41
France	5.48	5.69	5.68	5.39	5.52	5.5	5.31	5.54
Portugal	3.38	3.79	3.75	4.30	4.84	4.09	4.48	4.37
Spain	4.21	4.49	4.63	4.68	5.15	4.65	4.27	4.26
Greece	2.20	4.19	4.30	3.87	3.67	4.69	3.47	4.73
Ireland	1.78	1.45	1.59	1.49	2.16	1.31	2.30	2.08
United Kingdom	2.25	2.43	2.46	2.62	2.27	2.38	2.19	2.20
Cyprus	3.53	4.14	3.24	3.92	4.32	5.37	4.34	4.48
Japan	2.98	2.83	2.90	2.91	3.00	3.17	3.31	3.26

Note: Provisional data for some countries

Source: ICO, customized subset of data sent to author, taken from ICO database

Market Share and Substitution

One of the best ways to measure development of demand is to look at the imports from producing countries only, adjusted for changes in free port stocks (see table 8). Some statistical anomalies still remain—for example, the certificate of origin may show a destination, but it will be reshipped on arrival, still carrying its original certificate. Consequently, both the country of arrival, and country of intended origin may show up in different parts of the statistics but representing the same coffee.

Table 8 Shares of offtake by importing region

<i>Product by region</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
United States/Canada	21,659	21,020	20,014	21,035	20,809	21,711	22,145	21,352	22,062	21,700
Colombian Milds	15.2%	20.4%	17.3%	17.8%	18.7%	18.5%	17.7%	18.3%	17.9%	19.6%
Other Milds	49.2%	44.7%	48.1%	47.9%	42.1%	43.2%	41.4%	42.3%	42.8%	39.8%
Natural arabicas	11.1%	10.5%	10.1%	10.4%	15.0%	13.9%	17.1%	14.3%	13.6%	13.9%
Robusta	24.5%	24.4%	24.5%	23.9%	24.1%	24.4%	23.7%	25.1%	25.7%	26.7%
inc. GCA stock change	-1,608	-3,727	-2,097	-663	101	-20	1,219	2966	-195	
European Union*	37,802	37,104	35,571	37,927	38,346	39,207	39,198	39,314	40,162	41,466
Colombian Milds	27.3%	23.3%	22.4%	21.2%	16.5%	17.6%	14.6%	13.2%	13.0%	11.6%
Other Milds	24.0%	27.5%	27.7%	30.5%	26.5%	25.2%	25.9%	27.7%	24.8%	22.3%
Natural arabicas	19.8%	19.5%	19.1%	17.8%	24.3%	23.3%	27.5%	26.0%	27.8%	31.0%
Robusta	28.9%	29.6%	30.8%	30.5%	32.7%	33.9%	32.0%	33.1%	34.4%	35.1%
Japan	5,677	5,969	5,736	5,770	5,735	5,772	6,005	6,461	6,982	7,078
Colombian Milds	23.0%	23.3%	22.6%	24.8%	21.9%	20.8%	18.6%	18.8%	19.5%	21.7%
Other Milds	18.7%	18.8%	22.0%	20.4%	20.6%	19.5%	19.7%	22.0%	21.3%	19.4%
Natural arabicas	30.7%	30.4%	26.9%	26.7%	28.9%	28.7%	31.8%	30.8%	28.4%	30.0%
Robusta	27.6%	27.5%	28.5%	28.0%	28.6%	31.0%	29.9%	28.4%	30.9%	28.9%
Inc. Stock change	-91	-6	-397	142	-56	-33	279	244	-26	
Other ASIA (selected) **	1,935	2,034	1,908	1,888	2,012	1,924	2,103	2,228	2,143	2,199
Colombian Milds	9.8%	10.2%	9.6%	9.8%	8.2%	7.4%	8.5%	8.0%	8.1%	7.7%
Other Milds	29.7%	31.0%	30.5%	34.8%	33.4%	32.1%	30.6%	29.0%	23.3%	23.7%
Natural arabicas	14.3%	13.0%	12.5%	8.1%	9.2%	8.4%	9.5%	10.2%	11.1%	12.5%
Robusta	46.1%	45.8%	47.4%	47.3%	49.2%	52.2%	51.5%	52.8%	57.5%	56.1%
Other ICO members***	1,673	1,773	1,588	1,695	1,499	1,639	1,733	1,660	1,757	1,696
Colombian Milds	23%	24%	20%	22%	18%	19%	17%	17%	18%	19%
Other Milds	32%	33%	36%	39%	37%	41%	37%	38%	35%	31%
Natural arabicas	31%	30%	30%	23%	30%	25%	31%	28%	30%	31%
Robusta	15%	13%	14%	16%	16%	15%	16%	17%	17%	19%
Eastern Europe (selected)****	2,317	2,791	2,693	2,826	3,015	3,319	3,416	3,628	3,664	3,210
Colombian Milds	8.5%	7.7%	6.5%	9.0%	6.3%	7.0%	4.5%	6.0%	5.5%	5.5%
Other Milds	22.9%	25.4%	26.9%	29.1%	17.6%	13.5%	17.8%	16.7%	12.6%	10.8%
Natural arabicas	4.7%	6.4%	5.1%	2.8%	7.1%	6.6%	7.5%	7.0%	8.7%	10.0%
Robusta	63.9%	60.5%	61.5%	59.1%	69.0%	72.9%	70.3%	70.2%	73.1%	73.6%
Others*****	6,377	6,485	6,884	7,792	7,244	7,705	7,947	8,587	8,700	9,000
Colombian Milds	5.9%	3.6%	3.4%	3.7%	3.0%	3.7%	3.7%	3.9%	4.5%	

Table 8 Shares of offtake by importing region

<i>Product by region</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Other Milds	8.6%	9.0%	11.7%	12.8%	12.7%	13.7%	16.4%	15.0%	12.5%	
Natural arabicas	29.8%	35.9%	33.8%	31.8%	31.1%	35.6%	35.7%	30.4%	34.3%	
Robusta	55.7%	51.5%	51.1%	51.7%	53.2%	47.0%	44.2%	50.7%	48.7%	
Total	77,441	77,176	74,393	78,934	78,660	81,278	82,547	83,231	85,470	86,349
<i>Change</i>		<i>-0.34%</i>	<i>-3.61%</i>	<i>6.10%</i>	<i>-0.35%</i>	<i>3.33%</i>	<i>1.56%</i>	<i>0.83%</i>	<i>2.69%</i>	
Colombian Milds	20.8%	20.0%	18.3%	18.1%	15.7%	16.1%	14.1%	13.6%	13.6%	
Other Milds	29.6%	30.1%	31.5%	32.9%	29.0%	28.5%	28.7%	29.5%	27.6%	
Natural arabicas	18.6%	18.9%	18.2%	17.2%	21.8%	21.4%	24.6%	22.6%	23.7%	
Robusta	31.0%	31.0%	32.0%	31.8%	33.5%	34.0%	32.5%	34.3%	35.2%	

* EU stock changes have been largely assumed to take place in the free port areas, and therefore not show in import data.

** South Korea, Taiwan, Australia, New Zealand

*** Cyprus, Norway, Switzerland

**** Hungary, Poland, Czech Republic, Slovakia

***** ICO export data to all other countries not mentioned.

Source: ICO, customized subset of data sent to author, taken from ICO database; F.O. Licht, compilation of various published datasets;

Authors' calculations based on published and unpublished data provided to author from private traders

Coffees of different types and from different regions have very different characteristics, and the key to blending coffee that will appeal to different markets and produce retail products that will be reasonably consistent over time is to know how these coffees interact. Table 8 gives an indication of how this has evolved over time in different consuming regions, but the overall increase in robusta, in some places, and the large drop in usage Colombian Milds (partly a function of decreased availability) should be very evident. Also of note is the increasing usage of Brazilian coffee—in 2002, initial indications were that natural arabicas accounted for over 26 percent of offtake, compared to 24 percent in 2001 and that, in the last quarter of 2002, the share of natural arabicas reached 32 percent, a share last seen only during the peak of shipments from the substantial 1998-1999 Brazilian crop.

Regional tastes noticeably vary: In northern Europe, for example, high percentages of arabica are common. There are also some differences of tastes within the region: Finland, for example consumes much more high-acidity coffee, while there is an increasing tendency in some other northern European countries to move toward an increasing focus on low-acidity origins, such as Brazil. In southern Europe, the preference for darker-roasted coffees for which the nuances of high-acid coffees are lost and for preparations, such as espresso, that benefit from using low-acid coffees means that the use of natural arabicas and robustas is comparatively high.

Developments in technology have enabled roasters to become more flexible with how they combine coffees of different types and origins to give a certain taste. The principal form is steam processing, which removes much of the harshness of robustas and can also eliminate some acidity from arabicas to produce a much milder taste, also often described as being more “stomach-friendly.”¹⁹

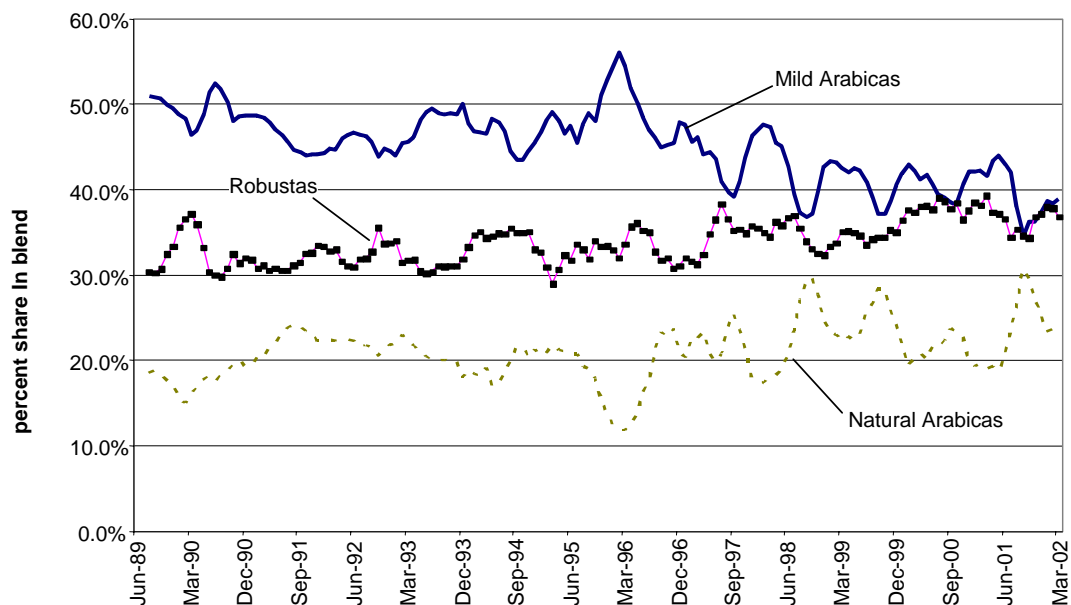
Figure 18 exemplifies how disappearance of coffee by type has changed. Mild arabicas and robusta usage appears to respond to changes in the availability of Brazilian naturals—particularly after 1994 when the loss of part of the Brazil crop led to wide swings in natural Arabica availability, and the simultaneous growth in robusta availability led to an increase in both the levels use of different coffees, as well as a greater willingness to switch between coffees based on availability and price. The trends within individual countries and subregions can be quite distinct and are dealt with separately below.

The Role of Brazilian Arabicas within Consuming Country Blends

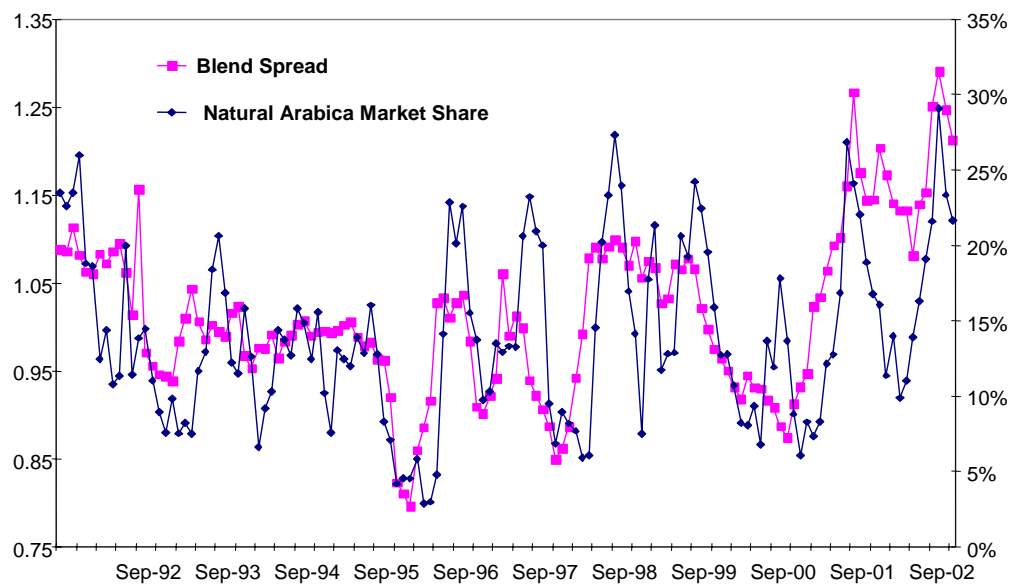
The ability to create different blends with similar taste characteristics for a relatively stable price has helped the coffee industry deal with the large swings in both prices and in the availability of coffee from different producing countries that have occurred. However, the expansion of production in Brazil has been an important factor in enabling roasters to manage these changes as the relative pricing and characteristics of Brazilian arabicas has meant that roasters have been able to use them to replace either arabicas or robustas, or a combination of both together. In most markets, this is purely a price function, though some markets, such as the Middle East, for example, have a price-inelastic demand for a particular flavor profile of certain grades of Brazilian arabicas.²⁰

¹⁹ Steam processing involves subjecting the unroasted coffee bean to high-pressure steam. No additional chemicals are used in the process. While the chemical transformation of the bean is not fully understood—the coffee bean is one of the most chemically complex, naturally occurring item that we ingest—the effects on taste are well-documented.

²⁰ In order to determine the share of imports of arabicas and conillons into a consuming country from Brazil, the import data has been compared to the export data published by Conselho dos Exportadores de Café Verde do Brasil (CECAFÉ), the Brazilian Exporters Association. This is very detailed in its breakdown of exports by destination and by type of export. If, for example, exports are 50 percent arabica and 50 percent conillon, the import data has been broken down in the same proportions.

Figure 18 Share of types in global blends

Source: include private traders, ICO, customized subset of data sent to author, taken from ICO database; Authors' calculations based on published and unpublished data provided to author from private traders

Figure 19 United States: usage of Brazilian coffee and price relative index

Source: ICO, customized subset of data sent to author, taken from ICO database; Authors' calculations based on all import and stock data referenced in paper

Consequently, some indication of the way in which roasters are likely to move can be gained from comparing the price of a basket of a washed arabicas and robustas, with the price of Brazilian natural

arabicas. As figure 19 demonstrates, market share is sensitive to this price relationship, though lags in shipment times, inventory changes etc., make this a general indicator and not an exact predictor. It should also be noted that the way in which the swing to and from natural arabica occurs is also dependant on individual country tastes, with some moving more toward robustas and others toward washed arabicas when making the switch.

The Growth of Robusta Usage

Robusta usage has also clearly climbed and in recent individual months, reaching more than 40 percent of total offtake. There have been positive developments associated with the greater availability of robustas: It has allowed the expansion of consumption of soluble coffees, which will be necessary to shift low-income tea-drinking countries to coffee products that are both convenient and affordable, and it is also providing a means to bring younger consumers into the northern European markets with soluble products where population age-related consumption trends are in decline.

There is a particular cause for concern in some of these markets about the consumption impact of more robustas due to its higher caffeine content. There is some evidence that the individual consumer has a daily tolerance limit for caffeine. High-caffeine content could imply that consumers need less of a product in order to get their daily requirement. This hypothesis may be supported by the absence of the very high-caffeine cola drinks among the products of the major cola manufacturers which seem to be aware that raising the caffeine content of their products may actually decrease consumption.

Any discussion of how to increase coffee demand needs to take into account the means by which consumers acquire their daily caffeine requirements—a cold, canned drink delivers caffeine with very little effort on the part of its consumer, unlike roast and ground coffee which takes time to prepare. This may explain the increasing demand for convenience products such as cold, canned coffee, but, as pointed out by Giovannucci and others, further differentiating these coffee products may also represent new marketing opportunities for producers of higher-quality coffees.

Changes in Stock Levels

As figure 8 demonstrated, consumer stocks of green coffee have grown as surpluses have built up, but producers have been unable to finance its retention in the producing countries. There has also been a long period over which the Brazilian government has been liquidating its large stockholdings, and, at the same time, Brazilian producers have also been willing to lower their stockholding. Stocks in consuming countries in May 2003 were about 21 million bags—or about 12-weeks supply—up from 7.6 million bags (5-weeks supply) in 1996.

Along with this development in stock levels has been a willingness of the roasting industry to work, at times, with lower inventories, and, when combined with the willingness to switch sources, has had a number of effects on the coffee trade—in particular, a need to hold wider ranges of origins of coffee available for rapid delivery to the roaster. This has increased the requirements of logistical and financing capabilities placed on suppliers. These requirements have favored the largest trading companies and have been a major factor leading to consolidation of the supply chain toward fewer major traders. Low interest rates and the “carry” in the futures markets have enabled stocks to be held more easily for the same capital outlay—an issue that has affects the ability to measure invisible inventories elsewhere. Some counter-trend activity has also occurred: The withdrawal of a major commodity trade house from the coffee business alerted the industry to the dangers of this concentration, and there has been evidence of increased support for small niche traders who know particular markets extremely well.

Retail Taxation by Importing Country Governments

Importing countries earn a considerable amount of revenue through the taxation of coffees. In Germany, for instance, the Federal government levies a specific coffee tax of EUR 2.19 per kilogram of roasted coffee, in addition to a 7 percent general sales tax. High tax levels occur in European countries, such as Austria (20 percent), Denmark (25 percent), and Portugal (17 percent), while the UK has 0 percent for packaged coffee but full sales tax for out-of-home consumption. In the United States, sales taxes and its applicability vary from state to state, but it is clear that given the US\$0.03 per cup producer's share of the revenue for out-of-home consumption, the sales tax charged in most states will be in excess of the US\$0.03 received by the producer.

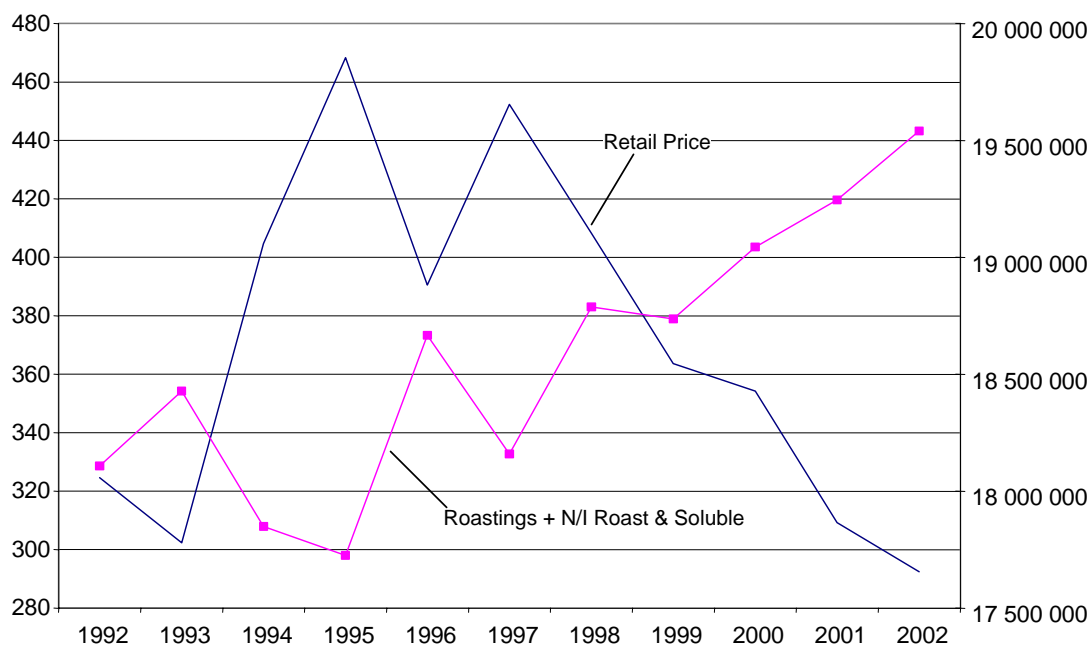
No formal figures of the total share of coffee revenue represented by importing country government taxation exist, but informal estimates suggest a figure well in excess of US\$1 billion or approximately the equivalent of one-fifth of the total coffee revenue (2002) of all producing countries.

Regional Consumption Patterns

United States and Canada

U.S. consumption has grown only slightly (about 0.7 percent per year) over the past decade to 19.52 million bags in 2002 measured by domestic coffee roasting plus net imports of finished products. A growth rate of about 1.45 percent was recorded in 2002. This growth trend reverses a downward trend that had been in place since the 1950s, despite the fact that prices were falling in real terms (see figure 20). Price elasticity of consumption in the United States is low at about -0.1 , after trend adjustments, using annual average retail prices, adjusted by the U.S. Consumer Price Index changes.

Substitution has been a major factor in the U.S. markets, both by industry and by consumers. While the market for conventional coffee is mostly stagnant, some of the increase in U.S. consumption is being fueled by the growth of differentiated coffees, which are attracting new consumers. In some cases, the increased availability of these products is persuading consumers to substitute differentiated coffees for the major industrial blends. Substitution by the main roasters is also very substantial, as figures 1.4 through 1.6 demonstrated.

Figure 20 U.S. consumption and retail prices

Source: U.S. Bureau of Labor Statistics, data accessed from Web site (<http://stats.bls.gov>); Complete Coffee Coverage

Even though more than 80 percent of U.S. imports still come from Latin America, some of the low-to-average quality arabicas have been replaced by naturals or robusta, with an increased usage of Colombian Milds. A major switch to natural arabicas is currently underway: Recent data for the latter part of 2002 suggests that, before accounting for stock changes, arabica imports from Brazil reached 25 percent of all green coffee imports. Consequently, washed arabica from the “Other Milds” group dropped below 30 percent of green imports by the end of 2002. There has also been a shift in robusta suppliers: From mid2002, an increasing share of robusta imports came from Brazil, at the expense of Vietnam. The robusta replacement is accounted for by soluble manufacturers, and the remainder of the robusta and most of the natural arabicas has made its way into blends. Some industry analysts predict that this type of shift in import profile will further polarize the low and high ends of the market. As a result, the differentiated or specialty markets are likely to experience continued growth as more consumers continue to move toward coffee products with higher perceived quality.

Canadian consumption has grown at a slightly higher growth rate (about 1 percent) with consumption now at about 2.3 million bags, moving away from soluble coffee toward roast and ground. Market share data by type suggests that blends are much more stable in Canada than in the United States, although a small decline in robusta usage may reflect a reduction in soluble coffee shipments to the United States.

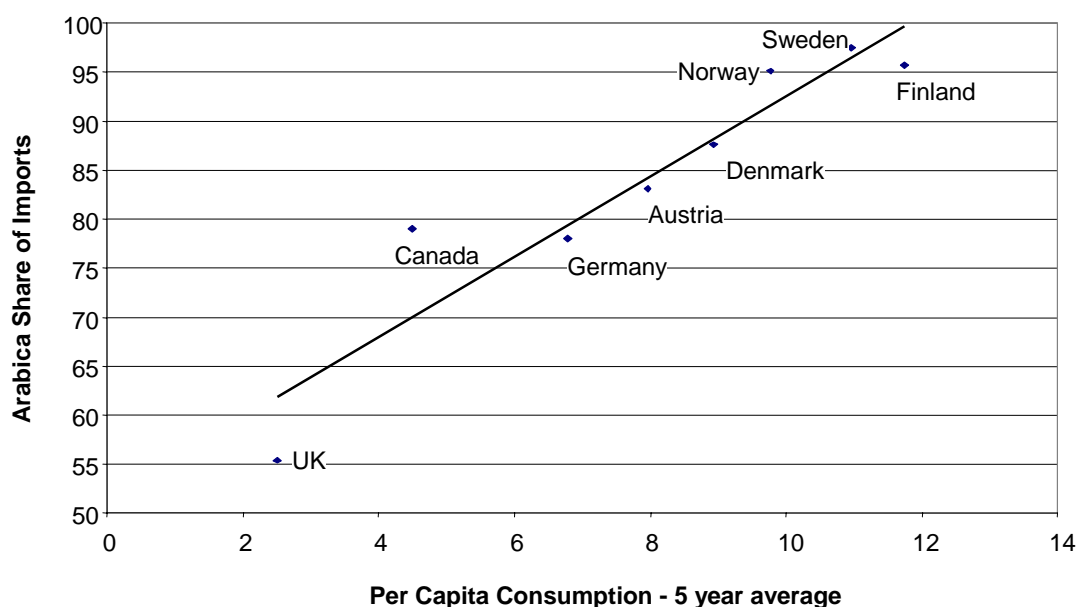
Western Europe

Consumption in Western Europe’s 17 nations grew about 0.2 percent overall to nearly 36.6 million bags in 2001, and indications for 2002 suggests that consumption was mixed, with the ICO net import data for EU countries suggesting an increase of 1.2 percent. Many northern European countries, including market-leader Germany (9.16 million bags in 2001), have experienced overall stagnant or declining markets over the last decade despite general growth in the differentiated or specialty segments. The same holds true for

Sweden (1.5 million bags). Finland (nearly 1 million bags), which is far ahead of most of the world in per capita consumption (11.5 kilogram), also leads many European neighbors with about 1.5 percent annual growth rate over the past 5 years. The Netherlands (2.3 million) and Austria (1 million) have seen their markets decline most, losing 1 percent annually over the past 5 years.

The northern European markets presented opportunities for the sort of high-quality, acidic-washed milds produced most in Latin America, but there has been a trend toward a preference for softer and less acidic coffees. Changes in consumption patterns and, in particular, for the types of products and styles, have led to changes in the way roasters make decisions about blends. However, per capita consumption appears to correlate with the predominance of natural arabica coffees in those markets (see figure 21).

Figure 21 Northern country consumption and usage of natural arabicas



Source: ICO, customized subset of data sent to author, taken from ICO database; F.O. Licht, compilation of various published datasets; ECA; CECAFÉ, customized subset of data sent to author, taken from CECAFÉ database

Europe consists of two markets—northern countries, where this substitution is a major factor—particularly Germany, and the southern countries including France, Italy, Spain, Portugal and Greece, where the usage of robustas and natural arabicas is already high and stable (see table 9). It can be seen that in southern Europe, for example, almost all the increase in the Other Milds category is a replacement for the drop in Colombian usage. Similar trends are evident in some other markets: The UK is an anomaly because of its very high soluble consumption, and robusta imports persist at 42-46 percent of origin imports. There is a general tendency noticeable in some parts of Europe that when one coffee type is very dominant, its share tends to be stable.

Perhaps the most striking feature of table 9 is that the offtake of Brazilian natural arabicas in 2002 reached 30 percent, which occurred at the same time as an increase in robusta offtake—nearly all of which was also due to Brazil.

Table 9 Market share of producing origins in Western European imports

<i>Region by product</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Northern Europe											
Colombian milds	30.60	29.80	25.70	24.70	21.80	17.70	18.60	15.20	13.50	14.50	14.00
Other milds	34.50	39.10	44.10	46.90	51.10	44.00	41.50	41.50	45.30	39.80	33.60
American	27.70	32.50	38.10	40.50	44.90	38.20	34.90	35.00	39.10	34.20	28.20
Asian	2.60	2.70	3.60	3.40	3.70	3.40	4.00	4.30	3.90	3.60	3.40
African	4.20	3.90	2.30	3.00	2.50	2.50	2.60	2.20	2.40	2.00	2.00
Natural arabica	16.90	14.20	14.50	13.50	12.50	20.00	20.30	25.20	21.70	24.60	30.30
Robustas	18.00	16.90	15.80	14.90	14.60	18.30	19.60	18.10	19.40	21.10	22.20
American	3.10	2.00	2.50	2.00	1.10	1.10	1.20	1.10	1.10	1.10	3.30
Asian	6.50	8.00	7.60	7.00	8.40	10.80	12.70	11.60	13.60	16.10	15.20
African	8.40	6.80	5.60	5.90	5.00	6.40	5.70	5.40	4.80	4.00	3.60
Total	100	100	100	100	100	100	100	100	100	100	100
Southern Europe											
Colombian milds	11.40	11.90	10.50	10.70	11.80	9.60	11.60	9.50	9.30	8.20	7.10
Other Milds	16.90	18.50	21.30	18.90	22.10	19.00	18.60	19.00	19.90	18.80	18.10
American	11.50	14.10	15.80	13.20	16.20	13.60	13.70	14.10	14.20	14.00	12.90
Asian	1.30	1.10	2.00	1.50	2.40	2.60	2.30	2.60	3.10	2.80	3.30
African	4.10	3.30	3.50	4.10	3.50	2.80	2.60	2.30	2.60	2.00	1.90
Natural arabica	25.40	24.10	23.40	23.20	20.00	24.10	22.50	25.40	24.90	26.40	27.90

Source: ICO, customized subset of data sent to author, taken from ICO database; F.O. Licht, compilation of various published datasets

In northern Europe, the increase in the use of natural arabicas from Brazil was offset by decreases in the use of washed arabicas from El Salvador, Guatemala, and Nicaragua, in particular. In southern Europe, where the increase in natural arabica was much less, the most noticeable change was the increase in usage of Brazilian robustas, with a corresponding decline in offtake of Ivorian coffee in particular.

Intercountry trade within the EU can no longer be traced because of changes in EU cross-border reporting requirements, but evidence of some trade in finished coffee products is still evident in some data. It is becoming evident that there is increasing trade in finished coffee products, which is lowering the product-preference distinctions between regions.

Germany

Consumption in Germany in 2002 fell by 1.5 percent according to the Deutsche Kaffee Verband (DKV), which only continued the recent trend. Because of lower prices, this had a value of 3.6 billion euros, down from 3.86 billion euros in 2001 (see table 10). The data shows that, within the stable overall numbers, there is a shift in the overall composition of consumption. According to the Institute of Economic Research in Munich, 23 percent of all beverage intakes among Germans were coffee.

Table 10 Consumption breakdown in Germany, 1999-2001 (metric tons)

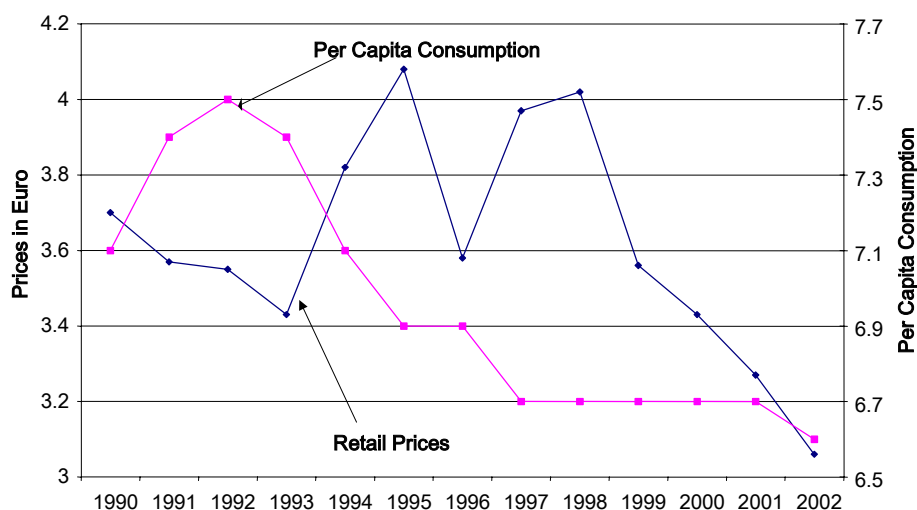
<i>Year</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Total Green Coffee volume	549,520	548,520	549,530	541,050
Roast coffee	432,000 (514,080*)	430,000 (511,700*)	430,000 (511,700*)	422,000 (502,180*)
Roast coffee (caf / decaf)	384,000 / 48,000	382,500 / 47,500	383,000 / 47,000	377,000/45,000
Soluble coffee	13,630 (35,440*)	14,160 (36,820*)	14,550 (37,830*)	14,950 (38,870)
Soluble coffee (caf / decaf)	12,530/1,100	13,060 / 1,100	13,500 / 1,050	13,950/1000

* Green bean equivalent

Source: Deutsche Kaffee Verband (DKV), data provided to author

German coffee consumption has been declining in recent years but indications are that the spread of newer-style coffee bars, which was predicted to reach about 1,100 this year, and an increased variety of new products (mostly soluble) are attracting the younger generation to coffee as a beverage, boosting out-of-home consumption. The soluble coffee sector is clearly doing well with the considerable help of diverse products, such as instant cappuccino (74 percent share of the soluble market in 2002) and flavored coffees (12 percent).

Figure 22 illustrates how consumption and retail prices have developed; the fall in “official” prices is still less than the actual fall due to the consequences of competition from food discounters, such as Aldi and Real. Additionally, the labor time equivalent of coffee prices has also improved—the DKV estimates that in 1958, 0.5 kilogram of roast coffee could be bought with 4 hours of work; by 1985, that number had fallen to 1 hour, and, by 2000, it was down to 15 minutes.

Figure 22 Germany: per capita consumption and retail prices (nominal)

Source: Deutsche Kaffee Verband (DKV), data provided to author

Substitution factors present major challenges for the Latin American washed arabica producers. Figure 23 shows the consequences of two sets of trends in the case of German imports. First, there is the declining

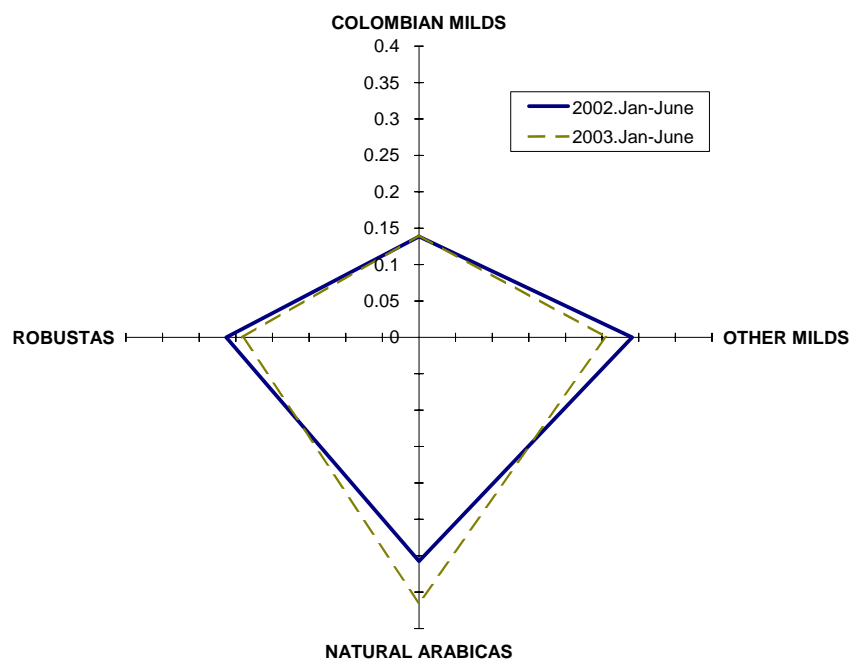
share of washed arabicas within the overall import data, and, second, there has been a move toward secondary mild origins within the reduced market share of mild arabicas. The decline is partly overstated because the big decline in the Colombia share, which is the main reason for the overall decline, has been offset by a move to the better-quality coffees from the other countries, though these are mostly primary mild origins. As examples, the availability of good high-altitude, high-acidity coffees from Peru, Papua New Guinea and some east African origins has made some replacement possible.

It should be noted that given Germany's position as a major gateway port for entry into Europe that some of this coffee is being transshipped to other countries, and these flows are no longer being captured by EU intracountry trade data.

There is a clear contrast between the price/consumption response shown here for Germany and that of the United States. Deeper analysis of trends suggest that a popular hypothesis that consumption has stagnated because roasters have compromised blends and lowered quality (for example, using less-washed arabicas) is not the full story, though there is evidence of consumer resistance to substitution by roasters that has led to changes in market share of the individual companies.

A number of other issues are involved:

1. Decreasing the overall acidity can help boost consumption, so that the increase in natural arabicas from around 15 percent in the early 1990s to 25 percent today may be supportive for consumption levels overall.
2. Younger consumers are coming into the markets but with a preference for the types of products that are described above and out-of-home consumption.
3. Normal patterns of older consumers lowering their consumption with increasing age over time have been noticed in the conventional roast and ground markets.
4. Wider ranges of new products to meet these new markets are driving the shifts in the overall import profile rather than substantive changes to individual coffee products.
5. Taste changes specific to the re-export markets for German roasted coffee (which are outlined in more depth below in the section on Eastern Europe) have an impact on the import profile not mirrored in demand in Germany itself.
6. Economic factors are having an impact on consumption rates (that is, noncoffee issues).
7. Some negative effects may be occurring from the changes in the consumption patterns to higher robusta usage because of the caffeine tolerance levels described above.

Figure 23 Germany: market share of mild arabicas, and the division between primary and secondary milds

Source: F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database

Scandinavia

Table 11 details the imports from producing countries into Scandinavia. Robusta usage is relatively stable at low levels and, in some cases, is used to manufacture for re-export. Consequently most of the movement is between the different categories of arabica. This does mean that as the Natural arabica usage has grown, there has been an overall decline in washed arabica consumption in Scandinavia.

Table 11 Scandinavia: imports from origin and market share

	1995	1996	1997	1998	1999	2000	2001	2002
Origin imports (1,000s of 60 kg bags)	3,527	4,086	3,966	4,096	4,235	3,880	3,977	3,960
Percent								
Colombian milds	35.0	35.6	28.3	27.9	23.7	19.8	22.4	23.8
Other milds	24.2	30.0	26.9	29.7	28.4	34.5	28.9	24.2
Naturals	34.7	28.4	39.3	36.8	42.5	39.4	42.8	46.2
Robustas	6.0	5.9	5.5	5.6	5.5	6.2	5.9	5.8
Combined	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Washed arabicas	59.3	65.6	55.2	57.5	52.1	54.3	51.3	48.1

Source: F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database

There have been large individual shifts over the past two years, in particular. In Finland, for example, Brazilian usage rose from 33.9 percent to 44.3 percent while, at the same time, Colombian usage rose from 11.5 percent to 18.7 percent. Even so, average CIF import values were 21 percent lower in 2002

than in 2001, while retail prices fell by 11.6 percent. In Norway, the swing to Colombian imports was even larger, and there were also large increases in Brazilian imports. But, in a manner that demonstrates the consequences for other producers of washed arabicas discussed in the first section of this book, the main loss of market share was encountered by Guatemala and Mexico. Per capita consumption fell from 9.3 to 9.1 kilogram.

These increases of Brazilian and Colombian usage brought the share of these countries into line with Sweden, which, given the very high levels of imports from both countries, was actually very stable. Despite only small decreases in reported retail prices, consumption was reported to have risen based on data provided by Statistics Sweden.

Southern Europe

The markets of Southern Europe and across to most of Eastern Europe and the former Soviet Union have flavor profiles that are different from much of the higher-quality Latin American production. They prefer heavy-bodied coffees with relatively little acidity, suitable for espresso and espresso-style products popular in the out-of-home markets.

This area shows somewhat more vital markets for certain sectors, as market leaders Italy (5.2 million bags) and Spain (3 million bags) in particular have fast growing segments. Some of the recent performance in **Italy** has been very encouraging: Industry representatives believe that the industry has been growing at about 2.3 percent per year, driven by an increase in both the number of consumers and export demand for Italian coffee products. Actual consumption has been growing by about 1 percent, but consumption of espresso-style coffees, in particular, continues to benefit Italy's industry success. Italy is Europe's third-largest coffee importer and the world's second-largest exporter of roasted coffee, behind Germany. A recent large-scale survey conducted by roasters showed that nearly 65 percent of Italian coffee drinkers would be willing to pay more for high-quality coffee. In 2001, consumption was up an additional 1.1 percent, though this was mostly in the espresso sector, in which consumption increased by 2.7 percent—such an emphasis away from the conventional roast and ground coffee markets is in line with developments seen elsewhere.

In **Spain**, consumption fell slightly in 2002 as the market consolidated its recent gains. The import share of washed arabicas fell to 24 percent as naturals and robustas registered large gains—Vietnamese robustas particularly so. Consumption has also switched toward greater consumption at home, which now makes up 55 percent of Spanish consumption.

In **France**, consumption stabilized at 5.45 kilogram per capita for 2000 and 2001, down from 5.8 kilogram in 1999. In 2002, France recovered to 5.9 kilogram per capita—these swings probably being the consequences of stock changes. There were only small changes in the profile of imports in 2001, though the gradual trend to lower-washed arabica usage continued, but imports from Brazil expanded significantly in 2002, which is part of a longer-term trend in French consumption characteristics. In the early 1990s natural arabica usage was stable at just under 20 percent but has risen, particularly in recent years, to a level of 28 percent in 2002. At the same time, a drop in robusta usage has not been as significant, but there has been a big change in the regional distribution, with the OAMCAF countries, which were the main suppliers to France, gradually losing out to Vietnam. Much smaller markets, such as Greece and Portugal, have also seen high growth rates, though the very wide swings in the data suggests that the per capita figures can be somewhat unreliable.

Eastern Europe and the Russian Federation

The coffee markets in the Russian Federation (RF) and most of the Central and Eastern European republics have grown faster than in Western Europe. Nearly all of this is in the soluble and lower-quality (less expensive) coffees, though increasing disposable incomes may permit higher usage of better qualities. RF, for example, is the world's fourth-largest soluble consumer and sells 65 percent of its coffee as plain soluble (mostly robusta), 20-25 percent as coffee mixes that include sweetener and creamers, and only 15 percent in green bean form. There is clear evidence of a pickup in demand since a dramatic drop following the economic crisis of the late-1990s, though customs data is incomplete so getting a full picture of imports is impossible. Export data from Brazil and India, in particular, does show a resumption of shipments. Total demand growth last year is estimated between 10-20 percent between 2000 and 2001 to about 2 million bags.

Poland is one of the biggest gainers of the larger consumers with 2.7 percent growth, most of which has occurred in the soluble and less expensive coffees (1.9 million bags).

Table 12 shows how the big increase in demand has been driven by the expansion of cheaper coffees and the heightened usage of robusta. This has partly also resulted from a retreat from attempting to sell a Western European product to these markets, replacing products that have been geared toward local taste preferences. This is a similar experience to that of eastern Germany, partly accounting for the big swings in import sources in that country.

Table 12 Poland, Hungary, Czech Republic, and Slovakia: imports from origin by share

	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Imports from Origin (1,000s of 60 kg bags)	2,791	2,693	2,826	3,015	3,319	3,416	3,628	3,664	3,210
Percent									
Colombian milds	7.7	6.5	9.0	6.3	7.0	4.5	6.0	5.5	5.5
Other milds	25.4	26.9	29.1	17.6	13.5	17.8	16.7	12.6	10.8
Naturals	6.4	5.1	2.8	7.1	6.6	7.5	7.0	8.7	10.0
Robustas	60.5	61.5	59.1	69.0	72.9	70.3	70.2	73.1	73.6
Combined	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database; authors' estimates

Growth rates in consumption in other parts of the region are also noticeable, with particularly strong growth being seen in Romania, which has nearly doubled in consumption in 10 years.

Africa and the Middle East

The two biggest consumers in the region by far are **Ethiopia** (1.7 million) and **Algeria** (1.7 million). Ethiopia consumes its own arabica production and a small quantity of soluble. Algeria is one of the world's fastest growing markets and consumes primarily African robusta and a much smaller proportion of arabica. South Africa, Israel, and some of the more affluent Arabic countries represent small but potentially lucrative markets for better arabicas, though these are currently dominated by soluble consumption.

Japan

Japan's steady growth has doubled consumption in the past 2 decades from 3.3 million bags in 1980 to 7.1 million bags in 2002, becoming the world's third-largest importer. Although Japanese volumes show strong steady annual growth of approximately 3.2 percent over the past 5 years, its per capita consumption remains modest. At 3.2 kilogram per person, it is seventeenth among importers and 75 percent of per capita consumption. According to a recent All Japan Coffee Association (AJCA) report, out-of-home consumption has increased, in part by the expansion of coffee store chains that have led to an increase in the consumption of espressos and espresso-based drinks. Although the growth of cafés has cooled recently, there is an overall expansion of the niche/differentiated markets, which are regarded by the AJCA as having the greatest expansion potential.

There has also been an increase in at-home consumption with greater sales of coffeemakers, partly attributed to the recession because people are spending more time at home. The liquid prepared coffees in cans and bottles, a Japanese innovation, have captured about one-third of Japanese consumption share.

Japan has also experienced growth, albeit more slowly, for the low-end coffees used in premixed beverages and the soluble segment. This reflects the development toward both high-end usage and the industrial end developing simultaneously. In comparison to other importing countries some of the substitution has been quite low, and it is possible that this product stability has contributed to the growth of demand. An important innovation which is helping to restrain substitution is the stricter labeling requirements which require roasters to put more data about origin on the packaging. Changes can, therefore, be more easily detected by consumers.

Other Asia and Pacific

This is primarily a tea-drinking region and with the exception of Japan, the region's largest per capita consumer, the rest of this region has very low coffee consumption. The next most important Asian consumer countries are Indonesia (1.6 million in 2002), South Korea (1.3 million), the Philippines (1.1 million), and India (.85 million) Indonesia consumes mostly its own domestic production of robusta and some arabica, although it also uses imports to blend with local production for some consumers. Primary sources are Vietnam and Brazil, and some small amounts from other surrounding countries. In both Malaysia and the Philippines, consumption is driven by their own production of robusta mostly in the form of soluble coffee; Malaysia has gone from being a net exporter to importing approximately 300,000 bags.

South Korea had strong annual growth rates—2.6 percent per year over the past 10 years. Starbucks, a rough indicator of a country's coffee consumption potential, currently has about 80 stores open across the country.²¹ Outside the coffee shops, much of the coffee consumed in South Korea is soluble, including widespread use of 3-in-1 mixes that include milk powder and sugar (table 13)

It is clear that the expansion of consumption in South Korea has come about because of the large increase in robusta imports, which, in the period shown, has grown at 11 percent per year, compared to just 1 percent for arabicas. As South Korea's market matures and its quality profile changes, its consumption capacity represents a very viable opportunity for arabica-producing countries.

²¹ Troy Alstead, senior vice president, Starbucks, personal communication, August 5, 2003.

The **Chinese** market features both some internal production and imports, with estimates of demand of about 0.13 million bags by Nestlé per year, who also point out that this is equivalent to just one cup per person per year.²² Though China is experiencing very slow growth in the roast and ground market, there are indications that it could respond favorably to soluble and prepared drinks much like Japan, another tea-oriented country, has done. According to this Nestlé statement, in 1997, almost all consumed coffee was pure soluble, but, by 2001, four out of six cups were presweetened mixed products. These prepared beverages, unlike soluble coffee, typically require arabica coffees for flavor and could be a potentially more lucrative area for Latin American producers, though internal arabica production in Yunnan and other southern provinces also contribute to this. India's notable expansion of western-style cafés in another tea-preference society points to the enormous potential of an increasingly affluent, 100-million strong middle-class with increasingly western tastes.

Table 13 Imports into South Korea from producing countries: quantities and market share

	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Imports from origin (000's of 60 kilogram bags)	929	1,069	1,024	1,086	1,236	1,239	1,331
Percent							
Colombian milds	13.4	10.5	8.9	11.2	9.9	9.4	7.9
Other milds	32.5	32.2	30.5	29.1	25.9	22.3	22.3
Naturals	9.9	11.7	9.7	11.0	10.9	11.6	12.4
Robustas	44.1	45.6	50.9	48.7	53.3	56.7	57.3
(Washed arabicas)	45.9	42.7	39.3	40.3	35.8	31.7	30.3

Source: F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database

Consumption in Coffee-Producing Countries

Producing countries consume about 25 percent of world demand, but the total of about 28 million bags is concentrated in Brazil (50 percent), Indonesia (8 percent), Colombia (5 percent), Ethiopia (5 percent), Mexico (5 percent), and India (3.5 percent). Many producing countries are now actively pursuing domestic promotion campaigns in order to increase consumption. Brazil is the leading model: The country has doubled its consumption since the late 1980s and consumed approximately 13.5 million bags of coffee domestically in 2001 making it the world's second-largest consumer after the United States. In the past decade, the percentage growth rate of consumption for all producing countries has been higher than that of consuming countries, with soluble coffee being a strong source of growth. The improved quality of the products offered in domestic markets and the emergence of more accessible beverages, such as packaged liquid and presweetened coffee, may further fuel consumption growth in the quality end of the business.

Latin America

With the exception of Brazil and Costa Rica, most countries in Latin America have a relatively low per capita consumption, and only Brazil, Mexico (1.3 million), and Colombia (1.5 million) consume more

²² Statement by Mr. Gordon Gillete to the International Coffee Conference, Guarujá, Brazil, May 2002.

than one million bags. Raising the per capita consumption of Colombia (currently 2.3 kilogram) to that of Brazil (4.6 kilogram) would double their domestic coffee sales to approximately 3 million bags. This is easier said than done, especially because Colombia's domestic coffees have less room for improvement than Brazil's did when they began their campaigns in the 1980s. Colombia's current promotion campaigns have not prevented a recent decline in internal consumption.

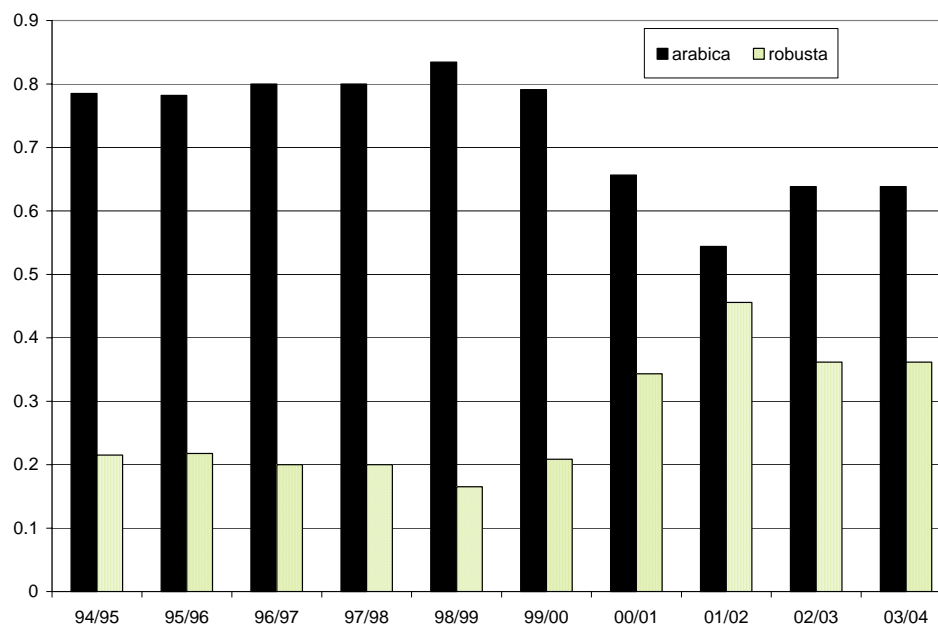
Colombian consumption has been slipping recently to about 1.4 million bags due primarily to domestic economic factors. Consumption had dropped substantially in the 1980s after the government stopped subsidizing coffee for internal usage and then recovered to about 1.55 million bags.

Mexico seems poised to undertake a domestic consumption campaign, and its opportunities for success are probably greater given its poorer domestic coffee quality and reasonably good economic conditions that have led to the emergence of a Seattle-style café culture in many urban areas. The challenge for Mexico is competition with canned soft drinks. Mexico is one of the world's largest per capita consumer of these products.

Brazil is, by far, the largest consumer of coffee among the producing countries and is also the second-largest consumer in total. According to preliminary data from the Associacao Brasileira da Industria de Café (ABIC), consumption reached 14.6 mln bags in 2003, though other data suggest that consumption may actually have fallen – ABIC data acknowledges a small fall in per-capita consumption in 2002. Two explanations are possible for this: First, scanner data may be failing to pick up the fact that there has been a big increase in sales outside the supermarket and that there is also a big increase in small cooperative roasting for local consumption. Second, the growth rate has slowed as a consequence of economic factors and a decline in quality as the usage of conillon has surged.

Figure 24 shows authors estimates derived from private trade and other sources of how the composition of coffee products for the Brazilian consumer has changed over time and how there is a greater use of robustas in blends. In some cases, better-quality robustas are actually replacing the lowest-quality arabicas. Additionally, the spread of higher-quality machinery has enabled producers to separate out to a much greater level the higher and lower grades, using the improved grades to raise the overall selling levels of export coffee and sending the lower grades into consumption.

ABIC initiated a big campaign in the mid-1990s under which much was done to eliminate contamination and the presence of impurities. A purity label was introduced and was supported by a public display of a random sampling of products with the label to test that standards were being maintained. Nevertheless, such measures has not stopped pure, but low-grade coffee from entering into the blends—or a reduction in the growth rate of consumption from that seen previously. ABIC plans a relaunch of its promotion campaign, with a new consumption target of 16 million bags by 2005.

Figure 24 Brazil: consumption by type

Source: Authors' calculations based on published and unpublished data provided to author by private traders

Asia

The promotion of consumption in a number of producers has led to big gains in usage, driven almost entirely by soluble coffee. Thailand, Philippines, and Malaysia all come into this category and all three are now net importers. In Indonesia, however, consumption at one time approached 2 million bags, though similar to the remainder of the region, consumption fell sharply after the start of the Asian crisis.

Consumption in **Indonesia** has never fully recovered from its precrisis levels, unlike the remainder of the region. According to the Exporters Association, per capita consumption was about 500 grams, a total of about 2 million 60 kilogram bags. Consumption fell to about 1.3 million bags once the economic crisis started and is now thought to have reached about 1.7 million bags.

Vietnamese consumption has grown significantly in recent years and is estimated at around 35,000-40,000 tons by the USDA. (Some private sector estimates are considerably higher than this figure—up to 70,000 tons.) This has been helped by the creation of two private sector coffee bar chains—Highland Coffee and Trung Nguyen Coffee, both of which have achieved considerable success on the domestic market. The growth of inbound tourism is also likely to have contributed to consumption levels.

India is the second-largest consumer among producers in Asia after Indonesia, as reported in a study of consumption trends completed and published recently.²³ The Coffee Board of India estimates that consumption in India is about 55,000 tons per year and has stagnated at this level for some time. India is primarily a tea-drinking country—93 percent of the population is estimated to have consumed tea within

²³ Coffee Board of India, 2002.

the last 12 months, and 83 percent had consumed tea within the previous day; however, in terms of total beverage consumption, coffee accounts for only 10 percent. For 69 percent of consumers, tea is the first drink of the day.

Penetration of coffee is high—about 82 percent—and approximately 75 percent of consumers report having consumed instant coffee in the last 12 months; 19 percent have consumed filter coffee. Of those that drink filter coffee regularly, consumption has maintained across the year, but soluble coffee consumers seem to be less committed, and there are wide swings between summer and winter consumption.

There are strong regional differences in coffee consumption, with almost all the consumption taking place in the southern producing states—Karnataka and Tamil Nadu account for 50 percent of all coffee consumed, and 80 percent of consumption takes place in the southern urban areas. The very low per capita consumption figure of about 54 grams disguises the fact that coffee consumption is concentrated in the coffee-producing states, which consume closer to 240 grams per person. Soluble coffees are consumed mainly outside this region, and filter coffee is consumed mostly in the south.

A specialty sector is developing, and several coffee chains, including Barista and Café Coffee Day are being seen in public places both in larger cities in the North such as Delhi, as well as across the southern higher-consuming areas.

Soluble Trends

Latin America—specifically, Brazil, Columbia, Mexico, and Ecuador—all produce soluble coffees. Brazil is the world's largest exporter, though soluble coffee does not have a very large domestic market share—unlike Mexico which is now the world's fifth-largest consumer. Robusta coffee, because of its low price and higher proportion of soluble solids, is the preferred bean for this production. Increased low-cost availability of robusta coffees and quality improvements contribute to increasing business at the low end of the market. At the high end, soluble coffees are produced with arabica beans and these markets, primarily in the consuming countries, have also been growing.

The expansion in soluble demand is not fully benefiting producers. ICO data shows total soluble exports in 2000 reaching about 13 million bags, in green bean equivalent. Exporting country shipments peaked at 4.7 million bags in 1996 and had only just surpassed that level again by 2000. The eventual elimination of tariffs against Brazilian soluble imports into the EU, and the resurgence of demand in RF, will help. An additional problem faced by producing countries is that the soluble buyer tends to be brand-conscious and less likely to buy unknown brand names. Such brand names will also have difficulty obtaining shelf space in competition with the leading consumer-country food companies.

Three of the major manufacturing countries of soluble coffee among coffee growing countries —Brazil, Ecuador and India—grow both washed and natural arabicas, as well as robustas, and, in some cases, have been able to import the types of coffee that they don't produce to give them a wider product range. While phytosanitary issues remain legitimate concerns for producers contemplating possible imports of green coffee by local industry, there might also be benefits in expanding the total market for value-added products from origin.

Better quality and new varieties are making inroads among time-conscious consumers. Others are buying cappuccino-, hazlenut-, and vanilla-flavored solubles to inexpensively participate at home in the generally upscale sentiments associated with the popularity of the new style café chains in North America, Europe, and Japan, despite some recent slowdowns, all expect continued growth in this part of the category.

Many of the emerging markets with lower incomes are also finding that soluble meets necessary price points and has a longer useful shelf life. Eastern Europe, the former Soviet Union, and some parts of the Middle East and North Africa are the leading growth markets. The Russian Federation alone imported nearly two million bags of green-equivalent soluble coffee in 2001 (37 percent of this was from Brazil), makes RF the world's leading importer.

Perhaps the greatest potential lies in Asia where the increasingly affluent middle-class represents enormous opportunity. The demand in these markets is mostly for tea, as it is in Japan, but the success of soluble and ready-to-drink coffee in Japan could pave the way as a prototype market model for other Asian markets to enter. One of the primary barriers is import duties that, though they have been reduced, are still too high to significantly stimulate these processed coffee imports. In RF, attempts are being made to increase tariffs even further to protect the local industry. Even though several major international firms, are investing in Asian processing plants, it is uncertain to what extent these will use Latin America supplies in preference to the Asian producers.

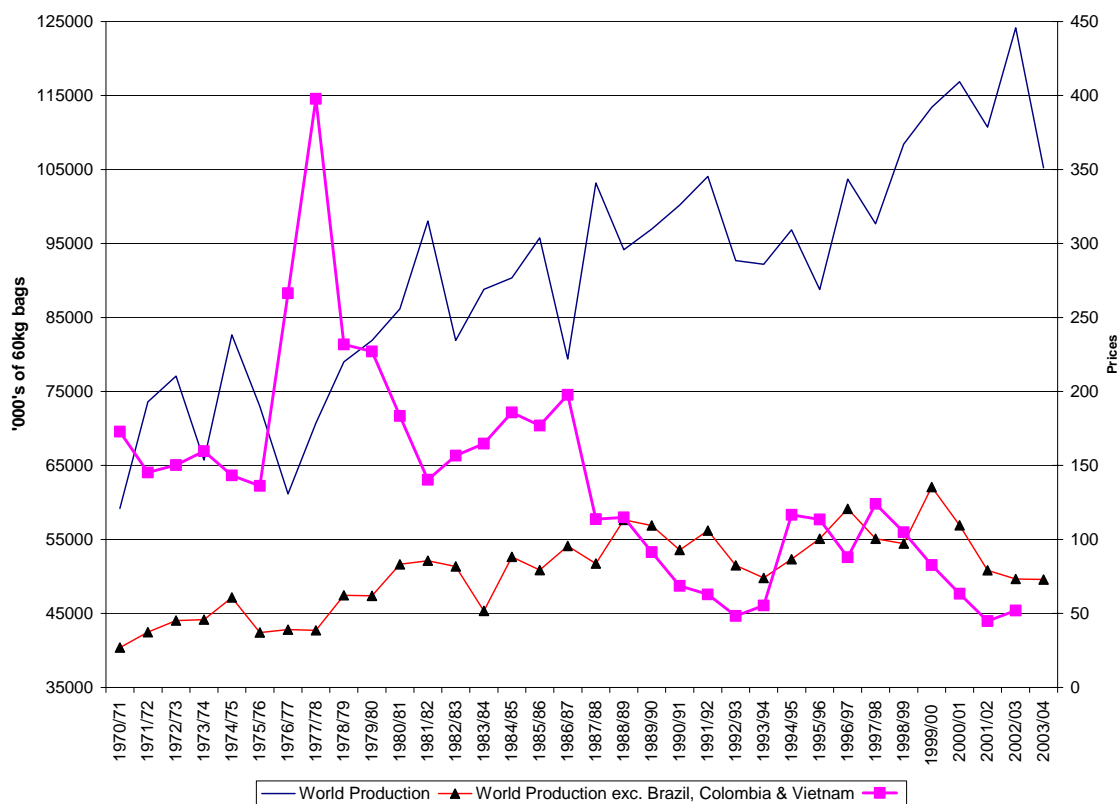
The most inexpensive coffees, especially in soluble form, will continue to have opportunities particularly in the emerging Eastern European and Asian economies. Some of the larger soluble processors have invested in new Asian processing plants, although it is not certain to what extent they will use supplies of non-Asian coffees. New consumers, especially in tea-oriented nations, are appreciating the novelty and ease of preparation of a hot beverage with more caffeine than a cup of tea and a newfound cachet.

4. Supply: Volumes and Trends

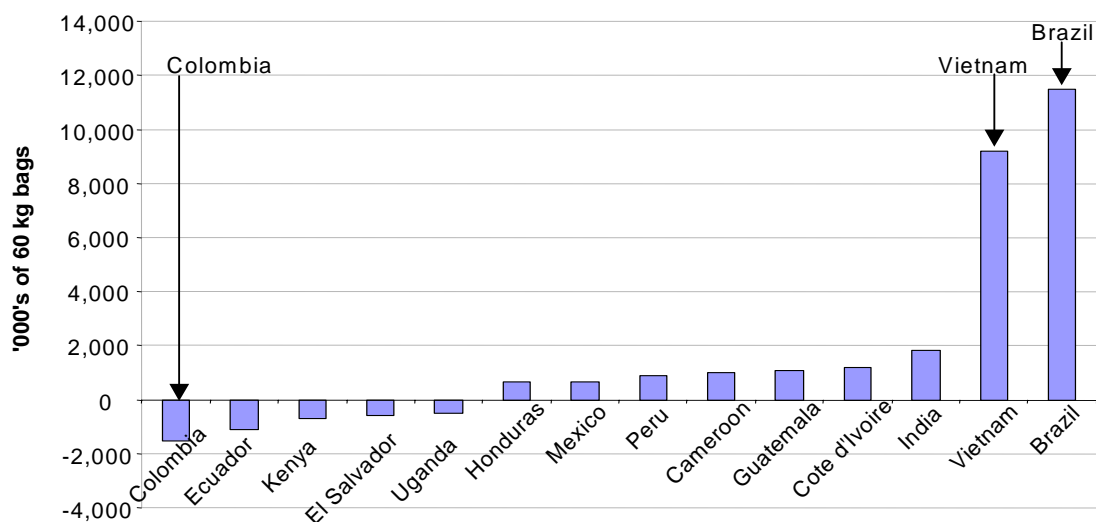
World production, as estimated by the USDA, has been rising by an average of 1.8 percent per year since 1964-1965, as was depicted in figure 3. The apparent conundrum is that this production increase has continued despite the long-term decrease in real prices, as was shown in figure 1. By merging the two charts, the point becomes particularly clear: Production has risen as prices have fallen (see figure 25).

The explanations highlighted in this paper are that a combination of producer responses to sudden big price increases, falling production costs, new low-cost entrants, and inconsistent policy responses to price falls that delay market exit but encourage market entry are too blame.

The lower line in figure 25 of World production excluding Brazil, Colombia and Vietnam shows how production has developed when the three main producers—Brazil, Vietnam, and Colombia—are removed. When these three producing countries are removed from the picture, the growth rate drops to 1.4 percent; therefore, most of the recent growth in world supply has come from the first two of these origins, with a declining trend—until recently—in Colombia. This report focuses on a number of production developments, with an emphasis on Colombia, Brazil and Vietnam. Within this overall trend there have been winners and losers. Production has changed since 1994-1995 when the price rises caused by the Brazilian frost encouraged some countries to rapidly expand production (see figure 26).

Figure 25 Production has risen as prices have fallen

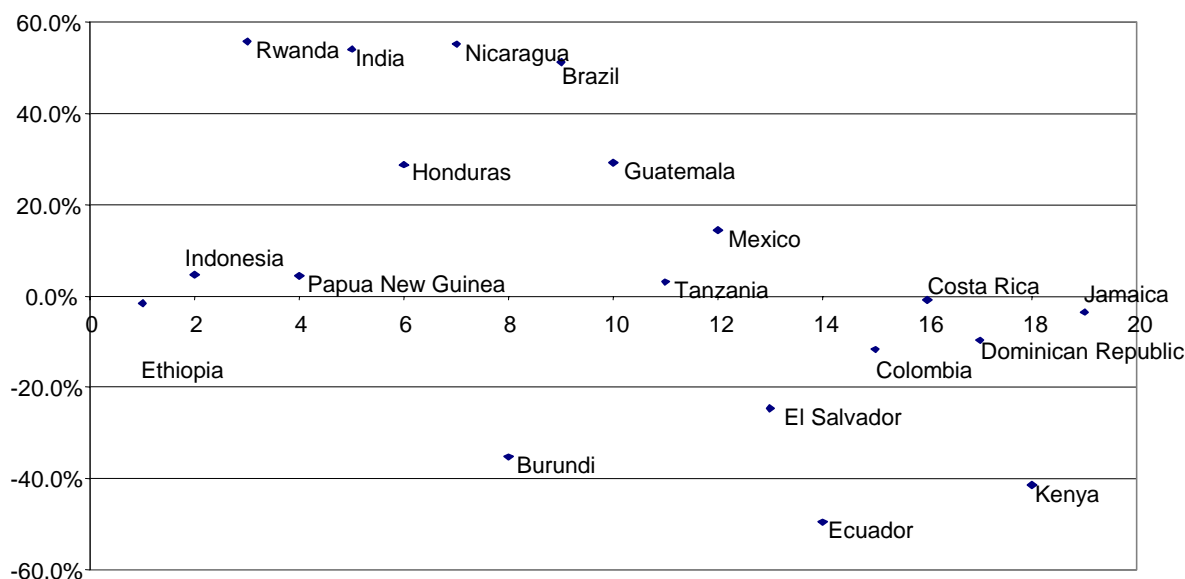
Source: USDA Foreign Agricultural Service, "Production, Supply, and Distribution" database; F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database

Figure 26 Arabica production changes vs. ranked production costs since 1994/95

Source: USDA Foreign Agricultural Service, “Production, Supply and Distribution” database

The countries best able to manage production costs have generally shown the highest growth rates (see figures 4.2 and 4.3). A number of countries, such as Rwanda and Nicaragua, were influenced by special factors, such as civil unrest or war, and others have seen their ability to take advantage of price rises inhibited by the level of carryover debt from the previous period of low prices—a phenomena likely to repeat itself because debt will have an impact on the ability of farmers to exploit higher prices to expand production again following the current period of low prices.

Figure 27 Arabica production changes and ranked cost of production



Source: USDA Foreign Agricultural Service, “Production, Supply and Distribution” database; LMC International, Ltd., data provided to authors

Colombian Milds

The two largest members of this group—Colombia and Kenya—are among the highest cost producers anywhere, hence their position in the bottom right of figure 27. Maintaining the high-quality levels for which both countries are known has contributed to elevated production costs. Another big factor in costs has been pests and diseases—coffee berry borer in Colombia and a coffee berry disease (fungal) in Kenya and other parts of East Africa where a substantive part of the production cost can be attributed to managing it. Both countries have developed resistant varieties. In Kenya, these new species included *Ruiru 11* and in Colombia, *Variedad Colombia* that are resistant to disease.

Colombia is the world's second-largest producer of coffee, and the largest producer of washed arabica, with the advantage of more than 80 distinct microclimates that allow for year-round production.²⁴ About 22 percent of its volume goes into the differentiated or specialty channels, and it is able to add extra value at origin to nearly 30 percent of its crop through quality and specialty premiums as well as industrial processes such as soluble.

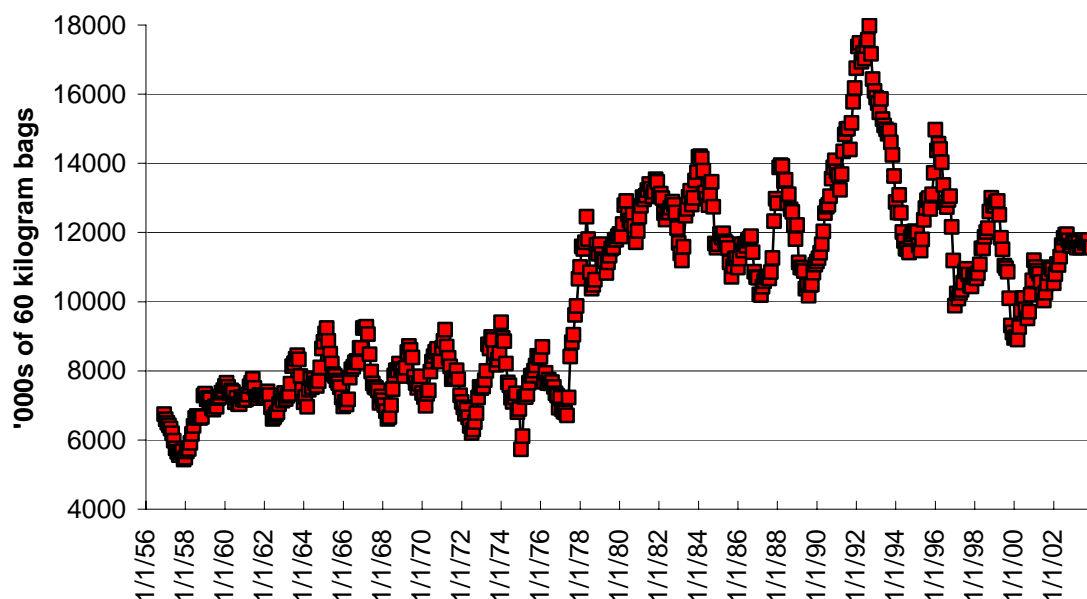
Colombian production for the past two decades has averaged slightly more than 12 million bags. A series of unique circumstances including fertilizer subsidies in the early 1990s briefly pushed production to a record high of 18 million bags, but production is now expected to stabilize at about 12 million bags. Production in 2002-2003 was 11.71 million bags, proving that little changed from the previous year, and recent forecasts suggest that production in 2003-2004 should also be about 12 million bags.

In recent years the Federacion Nacional de Cafeteros (see box 4), has mounted a successful program to renovate some producing areas with the goal of maintaining an average productive tree life of less than six years, assisted by government subsidy. Despite shrinking production area, its increased productivity per hectare is an important factor in its ability to control quality and costs. So far, about 300,000 hectares have been replanted since 1998. as a result, production output is recovering and, by 2002, increased by 27 percent from its 1999-2000 low of 9.5 million bags. In February 2003, the government approved the release of the final tranche of funding for this program which closes this year. The government has supported farmer incomes in other ways, but this support is now being phased out and since the second half of 2002 and an export tax is back in place but it is much lower than before and linked to higher market prices.

President Alvaro Uribe's new market-oriented administration is supportive of coffee growers and is helping to facilitate sectoral adjustments with minimal distortion of necessary market signals. It is helping to develop risk management options using the futures markets, it has helped to put in place fiscal plans to restructure outstanding debt, and it is supporting plans to promote coffee differentiation and even to improve domestic consumption in partnership with Brazil. Although total consumption is high compared to many other producer countries, it has been falling recently, and per capita consumption, at only 2.1 kilos per year, is less than half of Brazil's and one-third of the average in the main importing countries.

Kenya and the United Republic of Tanzania both produce some of the world's finest washed arabicas, and the United Republic of Tanzania produces both arabica and robusta. Tanzanian-washed arabica production is concentrated mostly in the north near Mount Kilimanjaro, while natural arabicas are produced more in the south. Robustas come mostly from the Bukoba region in the north-west. Production is dominated by smallholders, though the introduction of a form of leasing for agricultural land has led to some revival of the estate-sector.

²⁴ For 2 years, growing Vietnamese production made it the second-largest producer, although Colombia produced more this past year the two origins are very close in total volumes.

Figure 28 Colombia: rolling 12 month production January 1956-October 2003

Source: Federación Nacional de Cafeteros, data provided to authors

East African coffee production has been in a period of some turmoil from political factors. In the case of Kenya, farmers have long complained of inefficient and corrupt cooperative management, and the marketing monopoly of the Coffee Board was also seen as inefficient. Like many other producing countries, the coffee sector has also been struggling with a high debt burden. Under these difficult conditions, many buyers feel that Kenya's renowned coffee quality has suffered now for several years.

In April 2002, the Kenyan government passed a new Coffee Act that set up the details of the transition period to wider liberalization. In particular, it gave farmers a choice of three marketing agents, in the expectation that this will allow farmers to cut out intermediaries between themselves and the end-buyers. But it has eliminated the rights of some dealers and roasters to act as coffee buying agents. Additionally, the role of the Coffee Board is being changed to purely that of a regulator, and it is withdrawing from intervention in the local markets.

Uncertainty over the regulations has also affected the United Republic of Tanzania. The government's new plans initially involved directing all the competition for coffee into the auction and eliminating the competition at the village level. No company that is involved in export is allowed to participate in pre-auction parts of the sector. The private sector has protested on the basis that it prevents them from being involved in up-stream quality control issues. A new development will allow some cooperatives to export directly into specialty markets, rather than through the auction system. A further development is the move to an electronic auction system which occurred in mid-September 2002, and which in the long run may be networked with the Kenyan exchange. However, problems have occurred recently with auction pricing, and it is noticeable that the relationship between auction prices for northern washed arabicas and the arabica futures markets has deteriorated markedly in the 2002-2003 crop year.

Box 4 Colombia's National Federation of Coffee Growers (FNC)

Increased competition among origins, plus higher levels of domestic coffee production have led to a recent dropping of Colombia's price differentials, facilitated by changes in the internal structure of the marketing system. Their coffees now trade very competitively against the other milds, particularly those of Mexico and Central America and have regained lost market share for their category. The Federation's primary long-term focus is threefold: help stabilize income using market mechanisms such as put options, provide a purchase guarantee to all coffee growers that meet minimum quality levels, and offer key public services such as research, extension, and promotion. This might seem to be a very extensive set of tasks but actually represents a sharper focus for an organization that owns an airline and at one point owned banks, and a shipping line, and also built schools, roads, and clinics in the coffee growing areas. While Colombian coffee growers have always received a high percentage of the international export price, a significant portion of this revenue was directed by the Federation toward a variety of these services. In recent years, the FNC had come under attack due to its lack of focus and the increasing inefficiencies of a large bureaucracy. Under new leadership, and a significant restructuring, this organization of more than 500,000 growers is striving to find a strategic path not just through the current crisis but also toward a competitive long-term position.

Source: Authors

These are not the only problems affecting the sector, and production of the higher quality washed arabicas in the north of the United Republic of Tanzania in particular has been stagnant. Climate has been a major influence, with two successive years of failed short rains, and these sequences are not uncommon.

Other Milds (washed arabicas)

The American hemisphere is the largest producer of washed arabicas, accounting for a fairly constant 80 percent of the world total. This overview of arabica production takes a regional approach—Latin America, Asia, and Africa.

Production in Latin America

Central American production peaked at 21.3 million bags in 1999-2000, having advanced through most of the 1990s.²⁵ However, the regional perspectives disguise some shifts, with countries, such as El Salvador and Panama, unable to sustain their periodic advances. Production has fallen for three consecutive years as a result of low prices and, in 2002-2003, may have fallen to about 15.1 million bags.

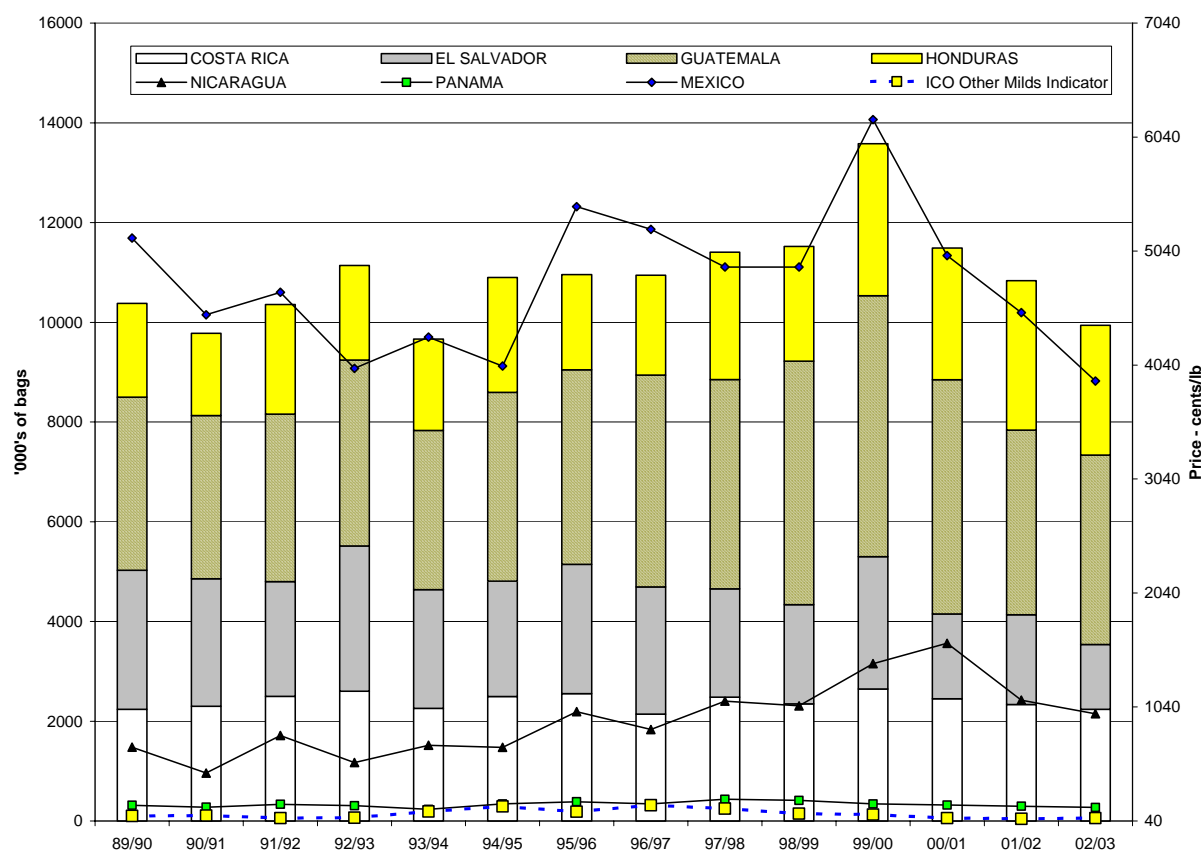
Production data in figure 28 shows how production has evolved. Some of the early data is unclear due to the fact that production and export figures are influenced by the flows of stocks that were inaccurately recorded due to the way the ICO quota system worked. Additionally, informal transfers within the region also have an impact on the data—usually into Guatemala from the surrounding countries. This is because of a combination of the higher prices often available for Guatemalan coffee; differential tax rates between the countries, and past requirements in some countries, such as Honduras, for producers to sell a certain percentage of their production to national roasters at discounts to world prices to provide supply for domestic consumption. Using production data drawn from ICO, USDA and other sources, and planted

²⁵ The situation in Central America is described in more depth in the recent paper by Varangis, Siegel, Giovannucci and Lewin, "Dealing with the Coffee Crisis in Central America—Impacts and Strategies," published by the World Bank in March 2003.

area figures from the USDA, an average supply elasticity across the region of +0.15 is evident. However, individual country figures are not usable for individual production responses, but, as almost all coffee consumed or exported must have been locally produced, some overall regional conclusions can be drawn; however, certain areas will have much lower elasticities simply because of the lack of alternative practical crops and markets for them.

Detailed data from individual countries confirms that the short-run production response to low prices has been very sharp (see figure 29), although the production declines were exacerbated by both drought in some of the countries and financial sector problems that have restricted coffee farmers' access to credit. The low-altitude crops have been particularly badly hit by these factors. The situation for the farmers in these areas has been made worse because the prices for these coffees have fallen most from competition with other origins such as Brazil.

This competition for the low grown coffees is a particular feature of the changes in Central America. Data from some countries show these changes have worked out. In Guatemala, for example, Primes, Extra Primes, and Semi-Hard Bean represented 28.2 percent of exports, while the Hard Bean and Strictly Hard Bean was 55 percent. The former group has fallen to just 18 percent as production has dropped, while the latter has risen to 76 percent of exports. Reports from across the whole region talk of widespread abandonment of farms, and much of this production fall has been in the low-lying regions, where the coffee is being replaced by other crops such as timber. In El Salvador, the situation is also dramatic—the proportional falls in High Grown and Strictly High Grown production are overshadowed by the substantial loss of low-grade, low-altitude central standard coffee (see table 14).

Figure 29 Mexico and Central American coffee production (60 kilogram bags)

Source: ICO, customized subset of data sent to author, taken from ICO database; USDA Foreign Agricultural Service, "Production, Supply and Distribution" database; author's calculations based on published and unpublished data provided to author by private traders; data provided to authors by ICAFE, IHCAFE, ANACAFE, CSC

Table 14 Receiving station returns in El Salvador for crop years 1997-2003

<i>Grade</i>	<i>1997-1998</i>	<i>1998-1999</i>	<i>1999-2000</i>	<i>2000-2001</i>	<i>2001-2002</i>	<i>2002-2003*</i>
Central Standard	438,022	265,209	508,728	236,281	212,970	183,100
High Grown	1,111,679	948,635	1,675,333	1,073,867	969,479	810,424
Strictly High Grown	1,129,048	1,213,334	1,246,001	938,469	1,107,205	802,792
Verde	102,660	77,927	105,415	59,824	54,753	42,336
Cerezas	181,093	67,232	85,338	13,150	26,296	13,274
Prematuros	39,984	6,110	9,610	4,909	9,855	2,781
Others						1,382
Total	3,002,486	2,578,447	3,630,425	2,326,500	2,380,557	1,856,087

Source: Consejo Salvadoreño de Café (CSC), data provided to author

The increase in futures prices during the 2002-2003 season did not help those Central American coffee producers who were keeping stocks at the end of the season because the futures prices increases were offset by a fall in quality price differentials compared to earlier in the season. In some cases, this led to

coffee being delivered to the futures exchange and a consequent rise in the level of the NYBOT exchange certified stocks. This delivery (also known as tender) of coffee to a futures exchange only makes sense when the price at which a futures exchange accepts delivery is the best price offered by any buyer and is conditional on the coffee passing a quality or grading test. However, this has presented a short-term strategy for some growers, who are trying to ensure that their coffee is at least of tenderable standards, so that it can be delivered to the exchange as a last-resort buyer. An additional benefit of this strategy is that once the coffee is in a certified warehouse and a grading certificate has been obtained, this certificate can then be used as collateral for a loan, thus enabling producers to spread their sales across the crop year—or tender to the exchange if they cannot find an outright buyer.

In some Central American countries, there is now an indication of a further fallout from the coffee crisis. In those countries in which displaced laborers found alternative work to picking or processing coffee, they have not now returned to the coffee sector, and this has now led to labor shortages for coffee picking in some areas.

In South America, **Peru** is now a significant washed arabica producer—production has risen from 1 million bags in 1993 to nearly 3 million bags in the current crop year. Production growth came as a result of two sets of influences: First, higher coffee prices following the Brazil frost led economic incentives to shift from illicit crops, and this was aided at the same time by a steep drop in the price of some illicit drug crops following successful action by the Colombian government that broke the supply chains for these products. There has also been strong donor support for this transfer from USAID and other organizations. The second set of influences has been a combination of internal political and economic liberalization, as well as a partial settlement of the security situation that has allowed farmers access to land and given them confidence in expanding production.

Low coffee prices are once again changing the dynamics: A recent report by the National Coffee Board said that coffee growers can get 6 soles per kilogram for coca, compared to 2 soles per kilogram for coffee. Even so, there will be continuing increases in the Northeast in particular from newer plantings, though the National Coffee Board expects that for the next crop a 3 percent decline overall due to cyclic factors, weather and pest problems.

Venezuela, Ecuador, and Bolivia also produce washed arabica. Ecuador produces both washed and unwashed arabicas—its washed arabica output is now very low as it has not fully recovered from the 1997-1998 El Niño. Ecuador's coffee sector suffers from a combination of low productivity, poor infrastructure, an inefficient trade chain and a financial system entirely dependant on funds from Anecafe to provide it with funds for lending to farmers. Only one bank is currently involved in lending to producers using this money—the Banco do Fomento. As a result, Ecuadorian arabica production has not really recovered from the El Niño losses, and much of what is left is used to satisfy the needs of local industry and soluble exporters who use arabicas for higher-quality products according to the demand of the intended export market. Bolivian output—which mostly occurs in the Yungas regions—has also shrunk recently due to cost factors. There are significant costs and problems for coffee producers in getting coffee to markets due to the narrow roads across the Andes. **Venezuelan** production has recently stabilized at slightly more than 1 million bags, but the expansion of domestic consumption has substantially reduced exports.

Asian Milds

India (2 million bags) and **Papua New Guinea** (1.2 million bags) are the largest producers, with **Indonesia** also producing 0.45 million bags. **Vietnam** is also expected to reach that level over time.

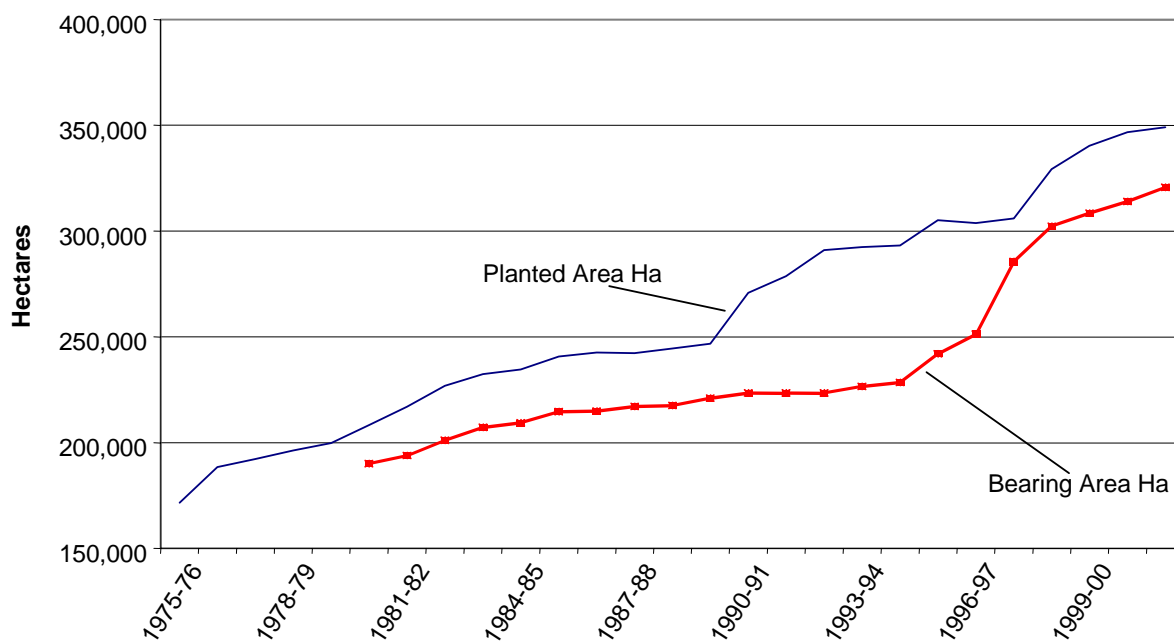
Recent political developments suggest that **East Timor** could once again be a small-scale provider of high quality organic coffee.

Total production (arabica and robusta) in **India** has grown to 5 million bags, which makes it one of the faster-growing producers. India's position as one of the lowest-cost producers and fastest-growing relative to other countries is shown in figure 27, where it appears in the top left-hand corner. Factors driving the expansion include the price rise in 1994, but there has been the additional development of the gradual end to compulsory pooling which has led to an improvement in prices to growers.²⁶ This took place in stages, after which producers were free to sell all their coffee into the internal market. Recent data from the Coffee Board suggests that the increase in harvested area has stopped (see figure 30).

Quality has also improved because the absence of pooling means that farmers can be rewarded for producing better coffee. Its marketing position is helped by the fact that southern European markets, in particular, regard Indian arabicas (and some of the better robustas) as a good base for espresso-type drinks, and it is regarded as a good substitute also for Brazilian coffee.

The government of India, and the state government of Karnataka, the largest growing area, have taken a number of measures to help the industry through the current low-price environment. These include an increase in tariffs on imported coffee to 100 percent from 70 percent, a rescheduling of loans and lowering of interest rates and tax exemptions for small growers.

Figure 30 India: planted area



Source: Coffee Board of India, data provided to author

²⁶ According to the Coffee Board of India, the apparent rise in planted area after the 1989 price collapse represents some statistical adjustments of robusta area, as well as the fact that local robusta prices were supported through the pooling mechanism.

Papua New Guinea, which produces primarily arabica but also a small amount of robusta in the lowlands, has seen a trend of continuing improvements in its quality and increases in its export volume. A notable difference with other producing countries is that cultural and tribal beliefs do not recognize the concept of land ownership as known in the West. Like other countries in which land title is an issue, this has posed challenges in the development of credit programs. The coffee industry is characterized by a large number of small farmers with no formal relations between themselves and the buyers—coffee is often sold at the roadside to buyers traveling the regions with trucks. Papua New Guinea was one of the leading early suppliers of organic coffees, though increasing competition from other origins has reduced premiums at a time when certification costs in Papua New Guinea are considered to be high and discouraged new entrants.

Indonesian arabicas are grown primarily in Java and in the Sumatran province of Aceh, as well as in other provinces, such as Sulawesi. Indonesian arabicas normally account for about 10 percent of total Indonesian production, though the government has announced plans to switch some robusta growing areas to arabica in areas where it might lead to higher returns. Twenty thousand hectares were scheduled for conversion between 2002 and 2004, and the government distributed some 21.5 million arabica plants. Arabica output from Indonesia has been increasing and is now some 0.6 million bags.

Coffee is likely to be the most important export earner for East Timor until oil and gas income develops over the next four years. Production, which is almost entirely organic, is thought to be about 130,000 bags, though figures vary dramatically according to source. A post-conflict World Bank survey undertaken after the peace accord and independence highlighted the high average age of trees, and the low grade of processing capacity as constraints to further development, though a project run by the National Cooperative Business Alliance of the United States has apparently had considerable success in organizing farmers in cooperatives, and establishing access to fair-trade markets.

In Vietnam, arabica production has reached about 250,00 bags in 2002-2003, according to average estimates and the forecast by the USDA. (Robusta production features later in this report.) However, the lack of centralized planning or statistics means that there are very mixed opinions on the current arabica output, as well as on the potential for growth. There is an additional complication of informal transfers at different times across the northern border into, or more recently, out of China. Estimates of actual output there vary according to source, with figures of around 15,000 tons being average. Production of arabica is mostly found in the north-central regions, with some also seen in the Gia Lai and Lam Dong provinces.

The origins of modern Vietnamese arabica production are mostly anecdotal, but indications are that it was initially tested as a replacement crop for illicit drugs production, but the volumes resulting from this were rapidly passed by volumes of coffee produced for other reasons, such as replacing robusta-producing areas with higher-value products. A number of problems have been encountered with arabica development, and the view of the Ministry of Agriculture and Rural Development (MARD) is that the initial peak of producing area, about 20,000 hectares, was reduced to 15,000 hectares after losses due to frost in the northern areas—plus the consequences of using the wrong tree varieties, which produced no coffee on the available soils, farmer mismanagement, too little inputs in the early stages, and agronomic errors. Some of these conditions still prevail, and have reduced expectations. In addition, on a previous visit to Lam Dong province by the authors of this report, it was clear that areas of young arabica trees 1-2 years old, had died as a result of a drought and this has added to the losses.

VICOFA told the authors of this report that trees were being planted at very high densities—up to 6,000 trees per hectare, with output currently running at 1.2-1.3 tons per hectare (equivalent to 20-22 60 kilogram bags per hectare) although a few places in the north were achieving close to 2 tons per hectare

(33 bags per hectare). This lower figure is still above many producing countries. Some experimental farms are reported to have even higher yields, but there is not evidence yet that this is sustainable.

External funding for the expansion of arabica was due to come from the Agence Française de Développement (AFD), which had pledged to provide 212 million French francs (US\$30.8 million) to the program with an interest rate of 3.5 percent per year, or 0.29 percent per month. Repayment would only begin from the tenth year.

However, cost factors have severely limited the actual take-up, as first the Finance Ministry, then Vinacafe, and finally the banks have increased the rates or added extra charges either to cover costs or to compensate for risks such as exchange rates. Project support for this has also come from some European roasters, who have helped with quality improvement projects, in particular—in some cases in conjunction with Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), the German aid agency.

African Milds

African washed arabica production is concentrated in East, central, and south eastern Africa, although Ethiopia is largely a producer of natural arabicas. The dominant producers in the area (excluding Kenya and the United Republic of Tanzania in the Colombian Milds group) are Burundi and Rwanda. Production in this group peaked in the mid-1980s and various factors have led to production today—about 1.3 million bags, which is about half of its peak. Some robusta is produced in most of the countries—in particular Uganda and the Democratic Republic of Congo, which are primarily robusta producers. Coffee diseases, the AIDS epidemic, and low prices for coffee have all had a major impact on the sector. In Rwanda, for example, no robusta was produced this year at all.

Some recovery is being seen in the two main countries after periods of civil war. **Rwanda** is taking steps to boost production with a major program to replace the coffee tree stock with higher-yielding varieties that is being funded by the EU. About 5 million trees have been planted since the program began in 1999, although the Coffee Board acknowledges that some of the new plants are being used as additional trees, not to replace older ones. Additionally, with the assistance of USAID, the government plans the construction of 100 more washing stations, targeting differentiated or specialty markets.

In **Burundi**, production levels are proving to be very cycle and weather-sensitive; the current year is expected by the local authorities to be double the current year on weather and cyclic reasons, but a substantive drop for 2003-2004 is expected for the same reasons. However, the overall trend remains fairly constant, despite a replanting program currently underway. In 2002-2003, 9.9 million new trees were planted, about the same for the past 4 years. Similar developments are occurring in **Uganda**, which is also the recipient of USAID money for new washing stations, although mostly for washed robusta. Uganda currently produces about 300,000 bags per year of washed arabicas.

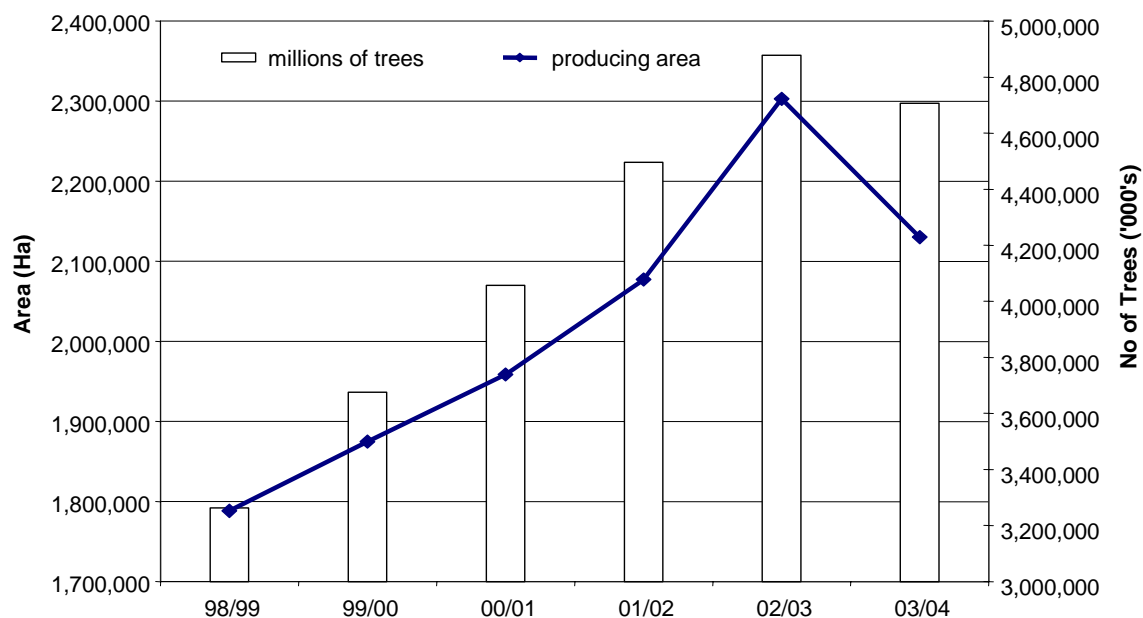
Natural Arabicas (Unwashed)

The two big producers of unwashed (or natural) arabicas are **Brazil** and **Ethiopia**. This production process does not involve any water: The cherries are dried in the sun or in mechanical dryers and then milled to produce the green bean. Contact with water can negatively affect the quality, particularly if it starts fermentation within the cherry, so this production system depends on having a reliably dry harvesting season. Both Brazil and Ethiopia produce some washed and (in Brazil) semi-washed coffee. In Ethiopia, 10-15 percent of output is washed—in particular the Yergacheffe and similar coffees that are highly valued for their particular cup characteristics.

The sheer size of Brazil has made it possible to become the largest producer globally—a position it has held for most of the period it has grown coffee. Today it is capable of (and in some years already has) produced three to four times the volume of coffee produced by the second-largest producer. To put the developments in Brazil into an international context, it took Vietnam 9 years to add 13 million bags to its production. In 2002-2003, the USDA estimated that Brazil's output increased by much more than that amount from the previous year.

Brazilian arabicas have a major impact on the world's coffee market given both the country's total volume and the willingness of the industry to use them to replace other arabicas or robustas in their blends according to price. It, therefore, warrants more careful consideration than most other producers. In the early part of the twentieth century, Brazil already had a hegemonic position, which made it a key player in price support strategies of that period, such as the massive destruction of coffee that took place in the early 1930s, right up to its membership in the ACPC and its participation in the retention and export control programs in the late 1990s.

Figure 31 Brazil: tree stock and planted area estimates



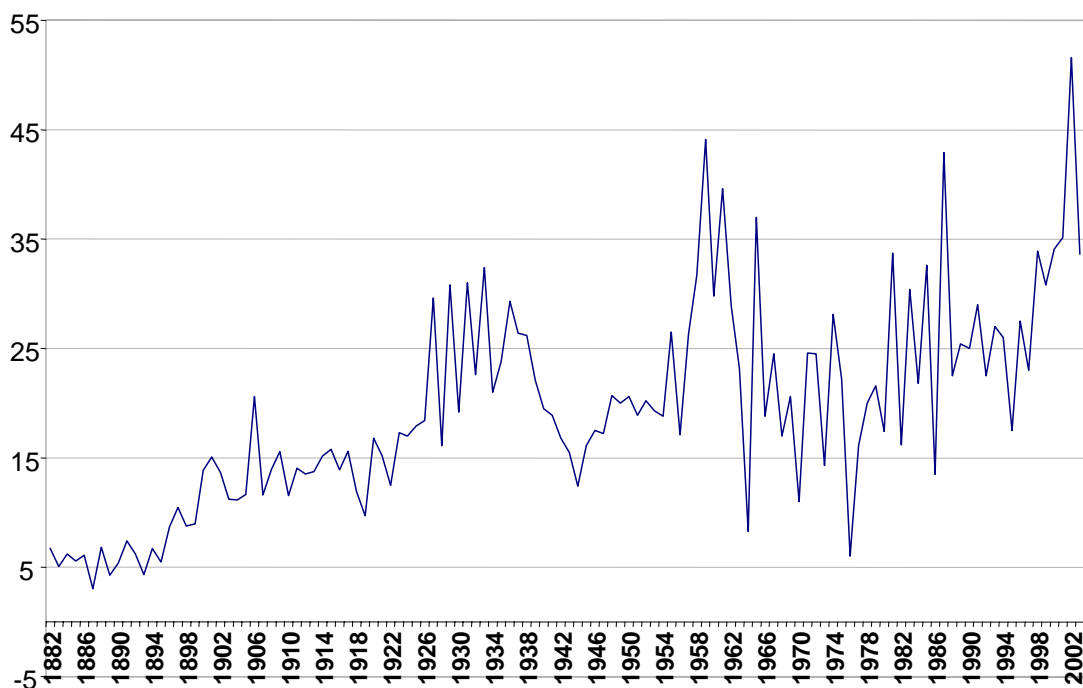
Source: CONAB/EMBRAPA, data provided to author

A combination of factors has led to Brazil's dramatic expansion in recent years. In particular, the destruction caused by the frosts and drought of 1994 led to widespread replanting in the new areas—partly paid for through the increase in prices of coffee that the frosts caused. Additionally, policy changes at the beginning of the decade led to liberalization of the sector that included the removal of certain export and internal taxes, thus lowering costs, and the end of controls over agronomic practices and related credit restrictions that came with the disbanding of the Instituto Brasileiro do Café (IBC). This consequently increased the farmers' share of free on board prices so that it is now about 90 percent.

Figure 32 shows Brazilian production from 1882 to the present day.²⁷ After allowing for trends, the chart indicates both the on-off production cycle, as well as the huge impact of frosts and droughts on production levels.

Almost all of Brazil's arabica coffee is natural Arabica. Apart from the semiwashed process described below, there is only a very small quantity of washed arabicas, some of which goes to the specialty markets.

Figure 32 Brazilian production, 1882-2003



Source: Published and unpublished data provided to author by Federation of Brazilian Coffee Exporters (FEBEC)/CONAB and private trade sources

The semi-washed processed coffees—also known as pulped naturals²⁸—uses water to remove the pulp, but stops before fermentation of the sugar coating of the coffee bean which is then reabsorbed by the bean. The primary advantage of this process over natural coffees is that it ensures the removal of any unripe coffees from the batch, thus raising the average quality of the batch, as well as leading to a higher degree of consistency of standards. The recent large increases in the availability of pulped naturals has had an impact on the Central American coffee producers, in particular, because the higher and more

²⁷ Some of the data was derived from various sources, and there are significant inconsistencies with the USDA for example, on the very large crop numbers in excess of 40 million bags, due to doubt over whether it was actual production or stock changes.

²⁸ Comparisons of the profitability of the natural and pulped natural processes are complicated by the fact that although the amount of mechanical drying needed to produce pulped naturals is reduced in adverse weather conditions because the first process involves water-based removal of the pulp rather than heat drying, in perfect weather, when natural coffees can be dried by sun alone, water processing can represent an additional cost.

consistent quality of the pulped naturals has enabled a large swing towards Brazilian coffee from the Central American than might have otherwise been possible.²⁹

For some part of the coffee crisis period, the devaluation of the Brazilian Real protected farmers from the full consequence of price falls in the international markets, and most price series show that only late in 2001 did internal prices drop below their previous trough when the 1998-1999 crop was at its peak of marketing. This enabled farmers to go on developing their productive capacity, aided by low production costs and, as referenced earlier, the ending of agronomic controls has allowed Brazilian producers to experiment with different tree densities that have allowed considerable increases in yields.

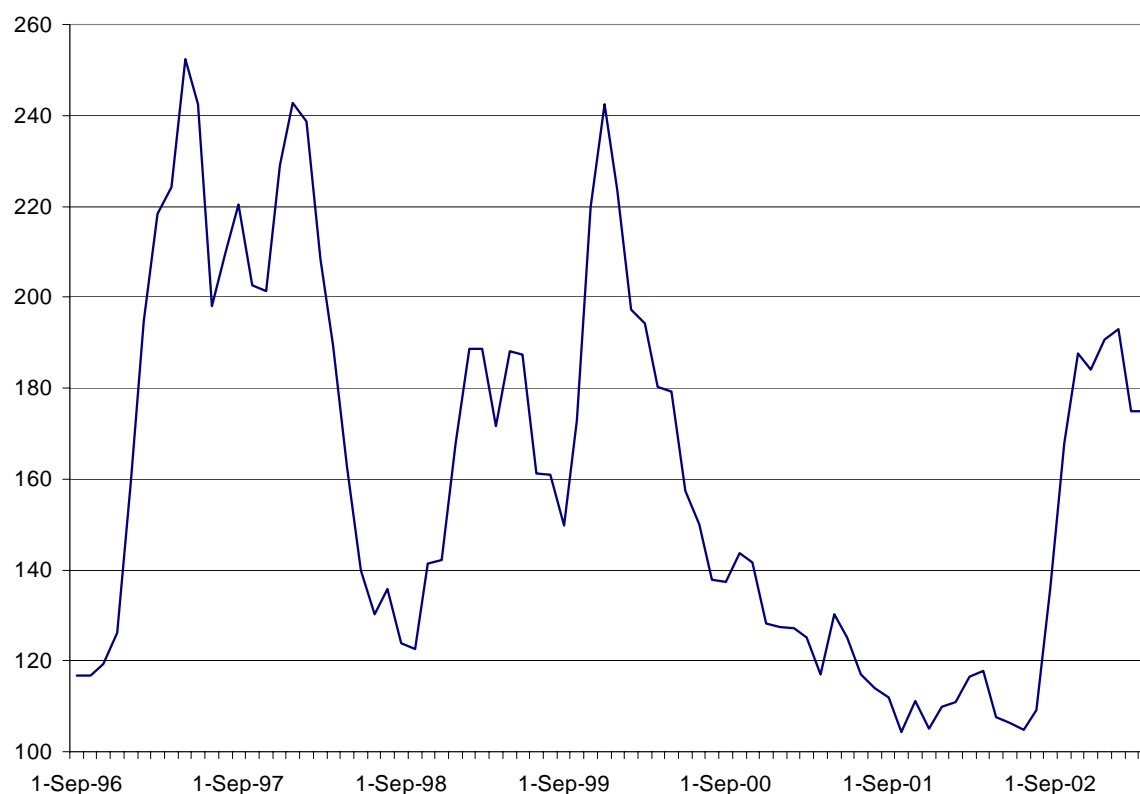
Official estimates indicate that planted area may have declined slightly in response to lower prices (see figure 31). In some cases, there are reports of food crops such as soya and corn replacing at least some of the coffee on small farms, and sugarcane becoming more attractive as a cash crop. With the recent revaluation of the real, it might prove that the current land area planted area is reduced further—the USDA estimates a reduction in planted area of about 0.2 million hectares and the Conselho Nacional de Café forecasts that another 0.5 million hectares could be removed by the end of 2004. However, as the USDA tree stock data in figure 34 indicates, the number of younger trees with growing productivity has risen in recent years, and so production could still expand—particularly given that CONAB acknowledges a further 0.2 million hectares in formation with 0.684 billion trees.

Brazil Land Area and Yields

To gain its productive position, Brazil has used land that is among the furthest south of any producing country, and the consequent effects of frosts in the producing regions have caused major losses to capacity with dramatic effects on international prices. Although not necessarily a function of latitude, Brazil is also prone to drought problems, and the impact of losses from these droughts have, in some years, been as big as the impact of frost. Since the two frosts and the drought of 1994, the expansion of the planted area and the increase in the tree stock is such that production will have increased from about 28 million bags in 1994 (immediately pre-frost) to 51.6 million bags in 2002-2003, according to the USDA.

Given the sheer size of the coffee-producing region, it is not surprising that there are still differences of opinions over the total area, and, therefore, of output; however, in an effort to resolve this, funding for a satellite survey has been approved and is currently expected to be used on an experimental basis for part of the June 2004 crop survey.

²⁹ While it is currently mostly arabica that is being prepared this way, the pulped natural process is also now being applied to some robustas, although volumes are currently very small

Figure 33 Brazil—arabica coffee prices, September 1996 to October 2003

Source: University of Sao Paulo College of Agriculture (ESALQ), data republished by USDA and provided to author

Planted Area

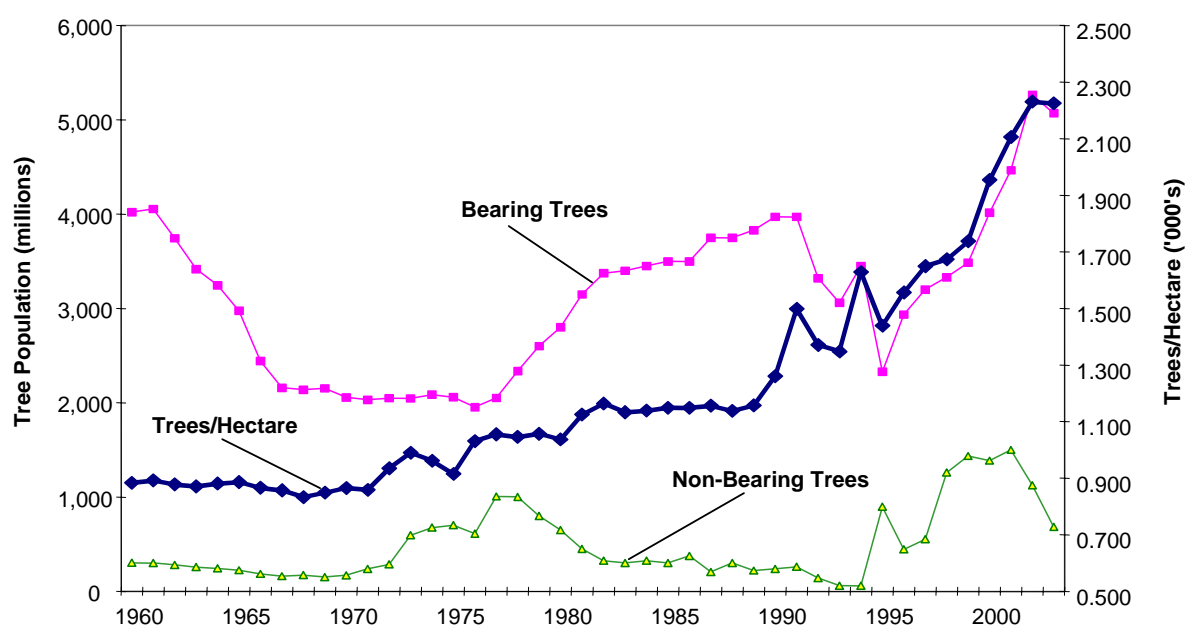
There has been a substantial drive northwards in production capacity as a result of the frosts. In particular, there has been an increase in the north-western and eastern parts of Minas Gerais, but also within that state to localized areas that have not suffered as badly in the past. For example, of the 560,000 hectares added since 1997, 140,000 were in southwest Minas Gerais, there are large increases also in Zona de Mata (120,000), as well as in Sao Paulo (120,000). Much of the remainder is in new areas away from the frost belt, where drought is a major threat. The vulnerability to drought is increased by the fact that some parts of the new areas are on high flat plains, where irrigation systems are necessary to make up for a lack of rainfall even in normal years. These farms are highly mechanized and dependant on harvesting machinery rather than labor, as well as high usage of inputs. Other states such as Bahia have also been expanding into new areas that are dependant on irrigation and inputs and have been able to do so with yields claimed of up to 90 bags per hectare.

Meanwhile, states such as Parana, which used to be a major producing area, are becoming less important. For example, in 1970, Parana accounted for 37 percent of the tree stock, according to IBC data, and Minas Gerais only 15 percent; today, EMBRAPA places it at 7 percent of the total, with Minas Gerais now at 37 percent.

Tree Densities

Tree stock figures differ widely according to source. (The data below is from the USDA.) The substantive increase in planted area has been accompanied by an increase in tree densities, particularly in Minas Gerais and an increase in productive capacity northwards out of the more frost-prone areas; however, increases in productive capacity within the more frost-prone areas suggest that the overall proportion of production subject to frost may not have fallen substantially. In Sul do Minas, for example, tree densities may have risen to 3,100 trees per hectare, from 2,100 pre-frost, compared to about 25-30 percent increase in other areas. The increased tree densities have made production much more sensitive to input usage and precipitation levels than before—the latter raising the sensitivity to weather problems, particularly of low rainfall.

Figure 34 Brazil: tree stocks and densities, 1960-2003



Source: USDA Foreign Agricultural Service, "Production, Supply and Distribution" database; USDA, Global Agricultural Information Network "Brazil Semi-Annual 2003", November 2003

The period since the 1994 frosts have seen a steady recovery in yield patterns as tree densities and productivities have increased. Of particular note is Espírito Santo, primarily a robusta growing area. EMPRAPA data suggests that tree densities have climbed from 1,600 trees per hectare to 2,100 trees per hectare, and there has also been a 25 percent increase in planted area. The yield figure of about 1.25 tons per hectare is still well below those of Vietnam.

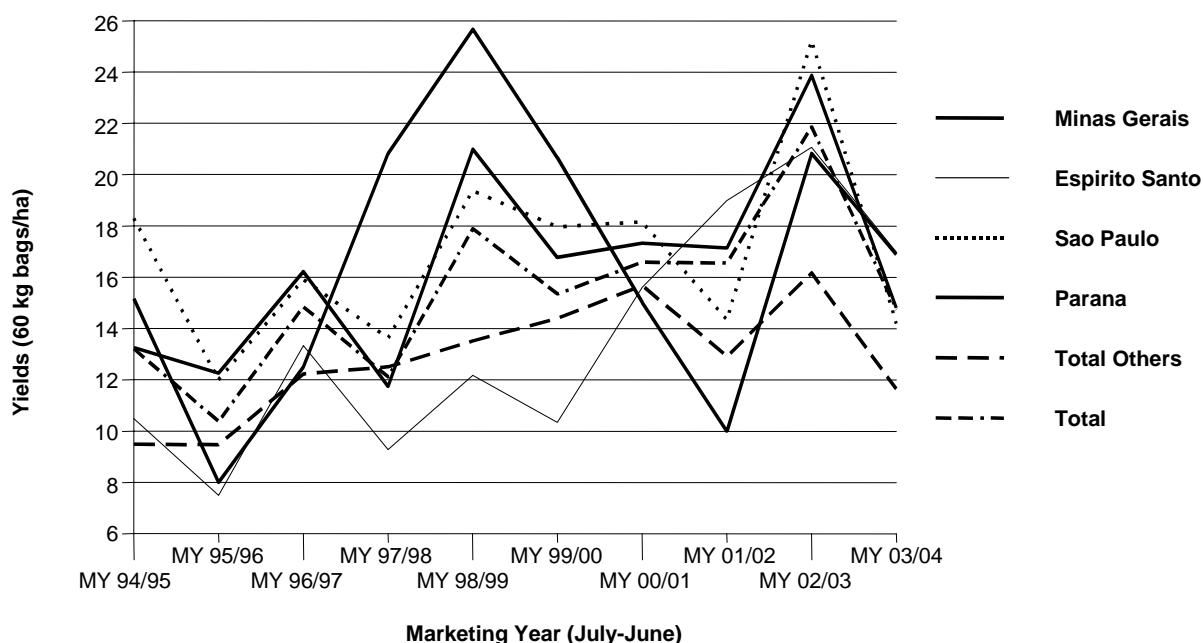
In the 2002-2003 arabica crop, the impact of the combination of 2 years of unchanged, low yields and ideal weather facilitated the big increases in yields that were observed in arabica areas, followed by declines that may be of around of 32 percent into the new crop (see figure 35).

Exports and Export Strategy (2003)

By May 2003, Brazil's 12-month exports had peaked at 29.62 million bags (green coffee and the green equivalent of soluble), the highest figure for many years. Exports from the 2002-2003 crop were 22.85

million bags (green and the green equivalent of assumed arabica component of soluble) while robusta exports (green and soluble) were 6.843 million bags, out of total exportable production of about 37-38 million bags. When the increase in domestic robusta usage is factored in it indicates that the robusta crop must have been closer to the higher end of initial estimates.

Figure 35 Brazil: yields by state



Source: USDA Foreign Agricultural Service, "Production, Supply and Demand" database

Brazil's export strategy in the near future will depend on a number of factors, including:

- ❑ Producer beliefs about the size of the cyclical production changes.
- ❑ Government policy on financing harvesting costs and stock building.
- ❑ Sale of put options to producers by the government.
- ❑ Outright prices.
- ❑ Behavior of the exchange rate and other macroeconomic variables.

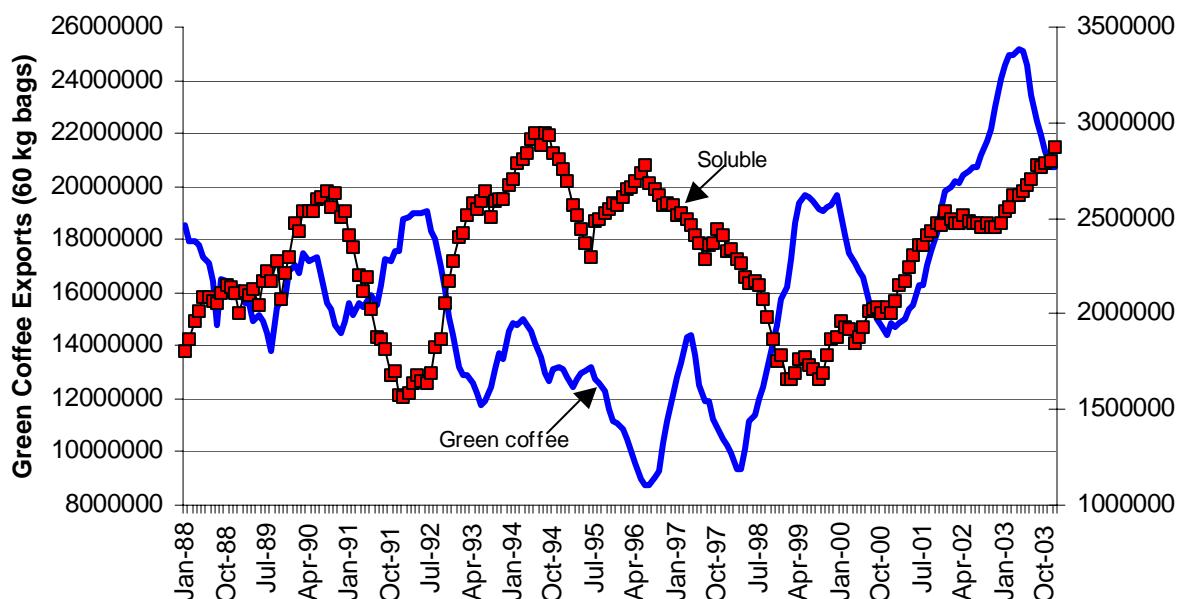
The rate at which producers dispose of stocks (if at all) will depend partially on their expectations of the cyclical production changes, with stock reductions usually occurring just prior to the arrival of large crops. For example, official forecasts for current (2003-2004) production are 28.46 million bags, rising to 35.79 million bags in 2004-2005, because of the cycle effect. Though the yield increases seen in 2002-2003 were unusual, so is a drop of the size implied by the official figures for 2003-2004. A 20 percent fall is often considered normal but can be much larger in years following a big crop. Trade estimates are that production in 2003-2004 was more than 30 million bags, an assumption that continues to be supported by recent estimates released by the USDA in December 2003. The higher production levels could lead to a situation in which global balances alternate on an annual basis between surplus and deficits, with the balance each year being smoothed by local stockholding. This would be helped by both the types of financing measures and options programs outlined below.

The authors estimate that the Brazilian private sector added about 8 million bags of arabicas to its stockholding at the end of the 2002-2003 crop, which would be available for exports over the current year. This would suggest that exports during the 2003-2004 season would be lower than 2002-2003, at about 26 million bags—a little more than this if producers believe that the 2004-2005 crop will again be large and seek to clear out old stocks in advance. At the end of October 2003, the annualized rate had fallen to 26.7 million bags (see figure 36) as coffee was being delivered to the government against the options program outlined previously in section two, and the conillon crop, in particular, appeared to be either in the hands of well-financed traders. It is also possible that it, too, is being tendered to the government under the options program.

The government had initially provided a financing package for producers worth 690 million reals that allowed the retention of 2002-2003 crop.³⁰ This was in the form of 491 million reals of harvest loans that will be reclassified as stock loans that could be rolled over for a further 30 months. In many cases, this rollover is already happening. A number of problems had arisen, including the fact that many of the farmers who would be most able to use the money were excluded by having other debts. (The government had problems with some of the banks that were unwilling to take on debts for production, although they may well do so for stock financing where the stocks can be used as collateral.) These problems have led to discussions of new stock financing plans for farmers who have problems with existing debts and has resulted in additional resources from the wider farm credit budget made available to the coffee sector—this would increase availability of funds by about 21 billion reals. The government also committed 300 million reals from Funcafe for farm maintenance and crop husbandry for the 2003-2004 crop, currently at a rate of 9.5 percent—still well below rates closer to the 26.5 percent charged to other sectors. In November 2003, growers asked for an additional 2.5 billion reals in support.

³⁰ From mid2002 until mid2003, the exchange rate ranged from approximately 3-4 reals to the U.S. dollar it is currently approximately 3 reals.

Figure 36 Green and soluble exports from Brazil: 12 month totals to December 2003



Source: CECAFÉ, customized subset of data sent to author, taken from CECAFÉ database

A new element in Brazilian coffee marketing introduced from the 2002-2003 crop year has been the sale by the government of put options to coffee producers described in section two. The government re-introduced the program for the 2003-2004 crop, though at lower strike prices than producers wanted, and sold options for 2.8 million bags of arabica and 0.8 million bags of robusta, split between expiries in September 2003 and November 2003. Strike prices for the arabica options were 190 for the September 2003 expiries and 195 for the November 2003 expiries; strike prices for the robusta options were 113 for September 2003 and 118 for the November 2003 expiries respectively. A combination of a stronger Brazilian real and weaker international prices has led to almost all of these options being exercised.

In previous years, producers have held coffee as a hedge against high inflation and sharp devaluations of the currency. When the managed float system ended in 1999, there was an immediate increase in exports to take advantage of the short-term gains in reals' prices following the devaluation. A large reduction in stocks also took place ahead of the entry of the current 2002-2003 crop, but this was also due to expectations of the size of the crop. However, the recent strength of the real, despite concerns over economic and fiscal stability, may well have an impact on developments in the Brazilian markets as it will lower the real value of a U.S. dollars' selling price.

Production in **Ethiopia** varies between 3 million and 3.9 million bags, primarily according to weather patterns, and to a lesser extent, prices. Because about 55 percent of production is forest or semiforest coffee, located mostly in the southwestern parts of the country and without inputs, production is primarily weather dependant. But the extent of picking is largely dependant on differences between selling prices and alternative employment opportunities. Much of the remainder is smallholder grown and intercropped. Liberalization of the sector began in 1991 but remains unfinished. A particular problem until recently was that minimum prices were set by the Central Bank and were not always realistic. The heightened

competition in natural coffees from Brazil and elsewhere had led to a buildup of stocks, but the recent changes to this regulation have allowed this coffee to be sold, albeit at extremely low prices. Ethiopia also produces some washed coffees, and some estimates note that Ethiopia may now be the second-largest African producer of washed arabica after Kenya.

Robustas

The long downtrend in robusta prices illustrated in the introduction has been from levels that facilitated the big increase in production of robustas—coming from Brazil and Vietnam in particular. Brazil and Vietnam together have added about 20 million bags to world supply since 1991, though Brazil now consumes about half of its own robusta production. Excluding these two countries, which have their own dynamic, robusta production from other producers has a supply elasticity of about 0.2, with a 3-year lag on prices. The other major increase has come from India, where robusta production has nearly doubled in a 10-year period.

American Robustas

This group comprises primarily Brazil, Ecuador, and Trinidad, although a number of Central American countries—notably Mexico and Guatemala—also produce very small amounts, most of which goes into domestic soluble consumption.

Production of robusta coffee in **Brazil** has increased from about 3 million bags in the late 1980s to an estimated 12 million bags (USDA estimate) or more for the 2002-2003 crop and, in doing so, has significantly changed the dynamics of the robusta market—a notable example has been the way U.S. roasters shifted from Vietnamese robustas to Brazilian robustas in 2002 (a drop of about 1 million bags) which have gone to the European markets, at the expense of traditional suppliers. Brazilian robusta production is concentrated in the eastern state of Espírito Santo, which in 5 years has risen from 3.2 million bags to 8.5 million bags, according to the USDA. Production cost estimates vary, and according to a recent study by Embrapa, averaged about 91 reais per 60 kilogram, or about US\$440 per ton (3.45 reais equals US\$1.00) for the 2002-2003 crop in Espírito Santo—fairly close to costs in Vietnam, at the quoted exchange rate. However, other studies suggest that variable costs are only 65 reais and represent about 80 percent of the total—that is, a total production cost nearer to 80 reais per bag. The improvement in the exchange rate since then may have reduced the competitiveness of Brazilian production to some extent.

Yields in the main producing areas have increased significantly as the impact of new plantings has developed, and the high density irrigated areas are achieving yields of about 3.3 tons per hectare, compared to about 1.9 tons in the traditional areas—again, close to Vietnamese levels. The higher yields has been helped by the use of irrigation and inputs—more than 40 percent of robusta production in Espírito Santo is now irrigated, and that this irrigation is concentrated in those parts of the state which previously have shown themselves to be most vulnerable to drought in the past. This should lead to lower yield volatility than seen in other countries; even if irrigation cannot affect the outcome severe falls in rainfall; consequently, Brazilian robusta yields are expected to be more stable than in many other countries, assuming no other changes, except in periods of the most severe water shortages.

Exports

Over the years, approximately 40-80 percent of robusta exports from Brazil have been in soluble form, but, Brazil has had four specific factors that have hampered expansion at various times

Nine percent import tariffs against its soluble exports to Europe (although these have now been removed).

1. Higher costs due to the fact that the soluble industry in other countries that are able to import for reprocessing can use locally produced robustas which, at times, will be cheaper than local prices for conillon or end-of-the-intercrop period. Although the import of robustas in Brazil is technically legal, every attempt by manufacturers to import has led growers and lobby groups to mount obstacles such as phytosanitary concerns. However, the recent large increases in the production of robustas is expected to help resolve this problem.
2. For a period of time, Brazil's overvalued currency meant reduced competitiveness against other exporters. Devaluation has addressed this in recent years.
3. Consumption changes, including both a big increase in robusta consumption in Brazil redirecting more of the production away from exports, and a collapse in demand in some of its larger soluble markets such as the Russian Federation after the start of the financial crisis in the late-1990s also had an impact on demand levels.

Ecuador mainly produces robustas in the eastern part of the country and producers therefore have been largely protected from the worst effects of the two main El Niño's of recent years. This still has not prevented a long-term decline in productivity for all the reasons described above for Ecuadorian arabicas. Some producers are better organized: The Amazon Coffee Growers Corporation has made efforts to improve efficiency in conjunction with external donors but, like many of the small cooperatives in Ecuador, producer groups in the region were badly affected by the recent periods of very low prices.

African Robustas

Little change has been seen overall in the region's output. Robusta production is dominated by two main producers—Cote d'Ivoire (which produces only robusta) and Uganda of which about 90 percent is robusta. Coffee Wilt Disease, or tracheomycosis, has been a problem in the region since it was first identified in 1927 in the Central African Republic. In 1948, tracheomycosis appeared in the Democratic Republic of Congo, and, about 10 years ago, it appeared in Uganda. The disease now threatens much of this part of Africa, and a number of projects, funded by the EU and others, are underway to control it, improve cultivation methods, and develop hardier tree stock. There is currently no known fungicide, and the only available solution is to destroy the infected trees on-site and then to disinfect the growing area.

Historically, **Cote d'Ivoire** has seen periods of high production but with high volatility. After a high level of response of yields to prices changes, and to weather extremes brought about by El Niño and other influences, average yields, and production are little changed from 10 years ago, as farmers are currently doing little to harvest coffee or worry about quality. More recently, problems have been exacerbated by internal strife. Producer incentives, as measured by their share of free on board prices, are also low compared to the other major robusta producers: They have only exceeded a 60 percent share in the two years in which there have been major price increases because of global production shortfalls.

Ivorian yields are very low in international terms, and the USDA data suggest an average of three bags per hectare over the past 3 years, compared to 2.5 bags per hectare in the early 1990s. But price falls and recent data suggest that yields will have fallen back to those of the early 1990s. Data on recent actual yields has been distorted because farmers have not dedicated themselves to just harvesting coffee. Many farmers also grow cocoa—about 55 percent of the total—and have devoted available funds for harvesting totally cocoa, given the substantial price increases in cocoa seen this year. The government is taking

various steps to cope with the situation, including the use of Stabex funds to support prices, as well as the removal of export taxes. They have also banned the export of black and broken beans.

Uganda robusta production benefited substantially from the process of liberalization that began in 1991. Production rose quickly, despite the trends in the market due to the rapid rise in the producers' share of the free on board price. The new environment, combined with much higher prices, led to substantial investment by the international trade houses, many of which built new processing factories, so that, at its peak, total capacity was thought to be about 16 million bags, or almost enough to process the entire robusta output of Africa. This resulted in heavy competition between traders for the coffee but with no stimulus for quality. Given the regulators had no mechanism for enforcing quality regulations, export qualities and eventually prices, suffered. Recent actions by the Uganda Coffee Development Authority (UCDA) to remove low-grade coffees from the market allow exporters to deduct the cost from the growers for the percentage of undergrades in a sample as part of a plan to eliminate these from exports, in line with the new ICO plans.

Tracheomycosis now affects every robusta-growing district in Uganda, and a campaign to replace the entire tree stock with clonal varieties is underway; however, some recent evidence suggests that these new varieties may be succumbing to Tracheomycosis also. This tree-replacement program has kept overall production costs high, and, when aggregated with the problems of a series of years with difficult climate conditions and falling prices, it is unsurprising that output has not recovered its 1996 high, even if it remains above the levels of the previous 10 years. Additionally, informal cross-border transfers from neighboring countries—particularly north-west Tanzania and from DR Congo has suggested a higher variation in output than is likely to have actually occurred.

The impact of the fall in prices has been severe on Uganda—the UCDA estimates that the countries' coffee revenues fell from US\$432 million in 1994-1995 to just US\$84 million in 2001-2002; however, production is expected to be maintained at its current level in 2002-2003—the UCDA estimates about 3.4-3.5 million bags.

Production and export data from a number of the mid-size and smaller African countries is incomplete, but a picture of output can be seen by reconstructing export flows from import data. Most countries are well below their early-mid 1990s peak, although the decline was exacerbated by the powerful El Niño, and some signs of recovery emerged. However, forecasts are for falling production again this year, in line with developments in Cote d'Ivoire.

Asian Robustas

The emergence of Vietnam as a robusta coffee producer is undoubtedly the main development in the robusta market, although as noted above, Brazil is now probably the larger robusta producer of the two. Indonesia is the other major producer in the region followed by India. Thailand, and the Philippines also are significant robusta producers.

Outside Vietnam, the main growth in production has come from **India**, where low production costs have allowed for substantial expansion: It has doubled from 1.5 million bags in 1990-1991 to 3 million bags last year. This has resulted from both the increase in yields resulting from the expansion of irrigation, as well as expanded planted area. The introduction of irrigation has also helped to stabilize yields variability that had been experienced previously by Indian robusta producers. Farmers can distribute some of the production costs because of the diversification opportunity afforded by intercropping black pepper, which is grown around the trunks of shade trees. The very low variable production costs of pepper means that it

can make quite a significant contribution to farm income but without the need for expensive infrastructure that would be involved in dedicated pepper production. The expansion of pepper production in Vietnam threatens this in India, however.

Higher production costs, farm abandonment, climatic factors, and sociopolitical problems in **Indonesia** have meant that robusta production from that country has never surpassed its peak in the mid 1990s. Production in the **Lao People's Democratic Republic** has also approximately doubled over the past 10 years, but to only 0.3 million 60 kilogram bags. Further development in Lao PDR seems likely to be hampered by the very low population densities in the Boloven Plateau, as well as by low prices. In the **Philippines**, low prices and high imports have made it difficult to sustain production, and the USDA reports that more land will be taken out of production, leading to a small production fall.

Vietnam

Vietnam is primarily a robusta coffee producer but is now turning its attention to developing some arabicas. Robusta production has grown at an average rate of about 27 percent per year, and Vietnam is now the world's second-largest producer of robusta, the largest robusta exporter, and the third-largest coffee exporting country overall after Brazil and Colombia.³¹

Coffee was first planted in Vietnam in 1857, and the planted area remained a minimal few thousand hectares until the 1970s. The subsequent drive to increase the planted area took place as a result of two key triggers: a 1986 policy decision—*Doi Moi*—that allowed the establishment of the private sector in agriculture and further liberalization throughout the 1990s, and the two frosts and drought in Brazil which led to a price hike, picking up again after the subsequent price rise in 1997. Vietnam continues to be a communist state, though it is undergoing some free market reforms.

An additional factor seems to have been a desire by the Soviet bloc for a coffee source that could be purchased without hard currency. In the early 1980s, technical assistance programs from some of these countries plus some soft loans led to a large increase in planted area. (Anecdotal evidence given to the authors of this paper suggest that Soviet bloc investment increased the planted area from about 13,000 hectares to about 40,000 hectares, as well as improving the yield levels.)

The opening up of the main coffee regions in and around DakLak continued with a process of the government encouraging internal migration of ethnic Vietnamese (Kinh) in to the so-called New Economic Zones of these provinces—the western parts of the Central Highlands. For some of the ethnic minority groups, coffee growing offered an alternative to more traditional slash-and-burn forms of agriculture, (a factor also evident in the eastern provinces of Cambodia where coffee growing is also developing). This planned migration continued beyond the period of *Doi Moi*, but, by this time, spontaneous migration into the region by ethnic Vietnamese started to exceed planned migration. This became very substantial after 1991. Although it is clear that not all this was to grow coffee, there is a close relationship between total migration and the expansion of the coffee areas.³² Vietnam has suffered social costs as a result of the decline in coffee prices. Financial hardships have led to some tension between the ethnic minorities and the ethnic Vietnamese.

³¹ If forecasts of a large drop in production in the 2002-2003 crop season are correct, then Vietnam may cede this position to Brazil, which would then become the world's largest robusta producer also.

³² Tan, 2000.

Despite oft-repeated claims about both multilateral and individual donor input into planned expansion of the coffee areas, it is evident that the expansion of planted area has occurred independently of government control. Documentation from Vietnam's primary donors indicate that funding earmarked for coffee totaled about 5 percent of the costs of expansion.³³ This expansion has had both benefits and disadvantages. National marginal income from coffee rose until 1997, when lower coffee prices meant that even the additional production did not further increase incomes. Full income potential was not realized due to poor infrastructure and lack of experience which led to wasted investment and lower prices due to poor quality.

The consequence of this unplanned and unmanaged expansion is that the historical data on planted area estimates have to be treated as indicative at best, and we would caution that the analytical results outlined below should be treated only as an indicator of what may be happening in the coffee areas and not an exact description. The government does now seem to have increasingly better data, with both MARD and the Department of Land Use researching information.

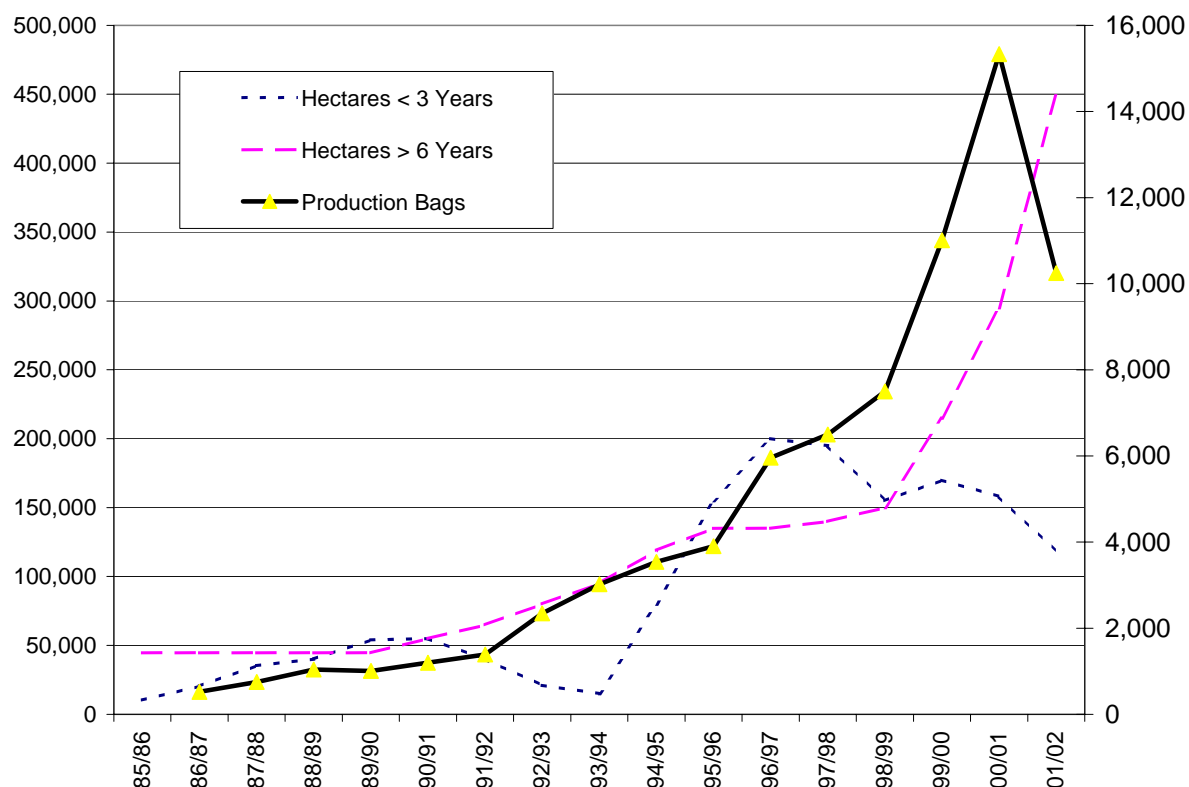
Vietnam Planted Area and Land Use

Recent data on production reports that in 2001, 566,800 hectares were planted to coffee, of which 420,300 hectares are in production. Government policy is to reduce this by about 100,000 hectares in an attempt to rationalize production. Most of the production is in the Central Highlands, which accounts for 476,800 hectares, broken down as:

- ❑ Dac Lac, 257,100
- ❑ Lam Dong, 124,300
- ❑ Gia Lai, 81,000
- ❑ Kon Tum, 14,400

Private estimates by the Vietnamese coffee trade association of the total land area planted to coffee are that it may now actually be about 600,000 hectares, and this is supported by satellite data. Figure 37 shows Vietnam Coffee and Cocoa Association (VICOFA) data on how the changes in planted area have fed into production and demonstrates the extent to which the price consequences of the frost in Brazil was a major trigger in the expansion of the planted area. The state-owned banks' report that 1995-1996 was the year of maximum borrowing for new plantations. When prices picked up again in 1997, there was renewed planting that is only now starting to be productive.

³³ The vast majority of the expansion from about 40,000 hectares to approximately 600,000 hectares occurred from the late 1980s to the late 1990s. The approximate costs of establishing coffee production (primarily land preparation, seedlings, fertilizer, and labor) on this land area total more than US\$1 billion. Donor funding earmarked for coffee projects in this time period came after most of the planting had already occurred and totaled approximately US\$60 million representing about 5 percent.

Figure 37 Vietnam: changes in planted area, area age, and coffee production

Source: VICOFA, data provided to author; USDA Foreign Agricultural Service “Production Supply and Distribution” database

The falls in prices to record lows have resulted in an end to new plantings. According to the VICOFA data, 2- to 3-year-old trees account for about 27 percent of all productive capacity.

Government policy to reduce planted area is being implemented to a very modest degree, and uprooted trees are noticeable through parts of the producing areas. In some cases, trees were stumped as far back as possible and are likely to re-enter production again within a few years. It is likely that the tree removal has been concentrated in the areas of lowest marginal profitability. Financial institutions are not lending for new coffee development unless farmers are switching to arabica under plans approved by local government (People’s Committees). These committees also have some influence over the choice of replacement crops for which farmers can borrow for startup costs; however, many farmers are already in debt to their banks and find that this limits their ability to borrow for crop substitution.

Yields

Most sources quote an average yield of two tons per hectare. Yields of this level are very high compared to most other producers. Even the current record robusta crop in Brazil is based on an expected yield in some areas of as much as 1.8 tons per hectare. These are levels not seen there previously, for example.

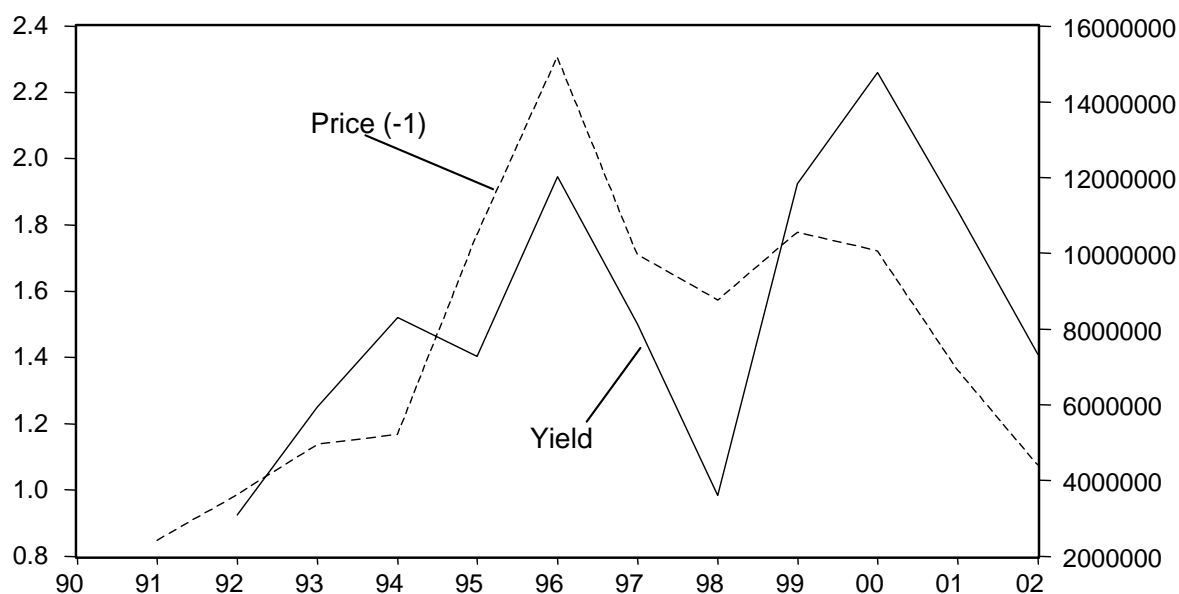
Yield data indicate that they are very sensitive to input changes. Output has a direct correlation with input levels—specifically, 1 ton of NPK produces 1 ton of coffee, which rises to 2.5 tons of coffee and 3.5 ton

of coffee with 1.5 or 2.5 tons of NPK, respectively. Productivity at this level is going to depend heavily on the ability to maintain both irrigation and input usage. Colombian research offers an example of the magnitude of the drop in productivity when fertilizers are withdrawn as they experienced a 30 percent decline in the two years following the ending of fertilizer subsidies.

During the course of a 2002 field visit, it was clear from the state of the trees at the end of the drought period that the final production data for 2002-2003 will have been determined by both the extent to which the farmers were able to pay for irrigation and local microclimatic conditions. With the return to higher prices in late-2002, intensive irrigation was visible almost everywhere, and the main concern of farmers seems to be the increase in fertilizer and irrigation costs due to the increased cost of petroleum.

Figure 38 shows an illustrative (given the data limitation) indication of how yields on mature trees behave relative to the likely money that a farmer has available from one season to pay for inputs in the next, given the generally low level of access to credit. The substantial limitations of the data make an exact elasticity calculation impossible, although the indicative number is in line with the very high dependence on fertilizer and irrigation and suggests that a period of low prices in which inputs are withdrawn could lead to the types of productivity drops currently being discussed as having occurred for the recent crops. Figure 38 also indicates the possible impact of El Niño on productivity.

Figure 38 Derived data on yield of trees more than five years old and previous-season robusta prices



Source: ICO, customized subset of data sent to author, taken from ICO database; author's calculations based on published and unpublished data provided by private traders; Data presented at the U.S. National Coffee Association Annual Conference, March 2002

Production Costs

Claims of production costs vary widely, with estimates as high as US\$600 per ton for private farms to US\$1,000 per ton for the state farms when all the social costs, such as the provision of schools and local infrastructure are included. As there has been little financing available to much of the private sector for establishment costs, and land has mostly been appropriated, many farmers have relatively few startup or

fixed costs. Discussions with lenders in the coffee regions suggest that they see default problems arising when prices drop below US\$450 per ton.

State Farms

Separate production costs for state farms are difficult to impute because, in some farms, the contract with the farmer involves a fixed volume exchange between inputs from the farm and salary payments on one hand, and the delivery of coffee at the other. The figure quoted above of up to US\$1,000 by the state-owned enterprises (SOEs) is attributed to the high social costs incurred by state farms, but anecdotal evidence suggests that no new social benefit activities are being planned that would give rise to such costs and suggest that efforts were being made to transfer any residual liabilities to the government.

Small Farms

See table 15 for an illustration of the breakdown of production costs. For the level of inputs quoted, the farmer is expected to get two tons per hectare, which would cost US\$257 per ton.

Table 15 Illustrative basic production costs of a farm yielding two tons/hectare

	<i>Quantity</i>	<i>Price (dong)</i>	<i>Value (dong)</i>
Labor	210 days	15,000	3,150,000
Fertilizer	1.5 tons	2,500,000	3,750,000
Chemical	4 apps	50,000	200,000
Irrigation	3 apps	250,000	750,000
Total Cost /Ha			7,850,000 or US\$523
Total Cost/ton			3,925,000 or US\$262

Source: Authors' calculations based on data from small farms visited, May 2002

This approach does not address the fact that, in the absence of alternative employment, farmers will need enough money from their farms to cover both living and production costs. Assuming farmers are willing to tolerate a reduction to just basic living costs, then production costs become input costs and living costs combined. In the example presented in table 15, this would take production costs up to about US\$340 per ton. However, this is not likely to be a sustainable arrangement, but it would allow farmers a short timeframe to see if prices rose again. Valuing the labor closer to the higher market rates of 20,000 VND per day raises the production costs to US\$340 per ton.

Large Farms

Discussions with larger farmers needing specialist labor for certain tasks showed that they faced labor costs well in excess of that assumed for a small farm using family labor (see figure 28).

Table 16 shows author calculations made for a 10 hectare farm visited in Lam Dong province. Some of this data is out of line with the costs quoted elsewhere. In particular, the yield of two tons per hectare, and 3 kilogram of fertilizer per tree is out of line with other estimates. This farmer claimed his own production cost estimate was nearer to US\$600 per ton.

Exports From Producing Countries

Exports from producing countries have fluctuated with production and, to a limited extent, attempts to manage stock flows. The two largest falls in exports reflect, first, the drought in Brazil of 1976; the frost and drought of 1994 came at the end of a period of falling production following the collapse of the ICO agreement and the subsequent price fall in 1989.

Table 17 and figure 39 illustrate the problem from the producer perspective: Exports in 2002 were approximately 89.7 million bags before accounting for producer re-imports—down from the highest ever in 2001. But export revenues (at US\$5.25billion) fell to their lowest levels since 1978.

Table 16 Illustrative production costs for a 10 hectare farm, Lam Dong Province

	<i>Quantity</i>	<i>Price (dong)</i>	<i>Value (dong)</i>
Labor	270 days	23,000	6,210,000
Fertilizer	3 tons	2,500,000	7,500,000
Chemical	4 apps	50,000	200,000
Irrigation	3 apps	250,000	750,000
Total cost/ha			14,660,000

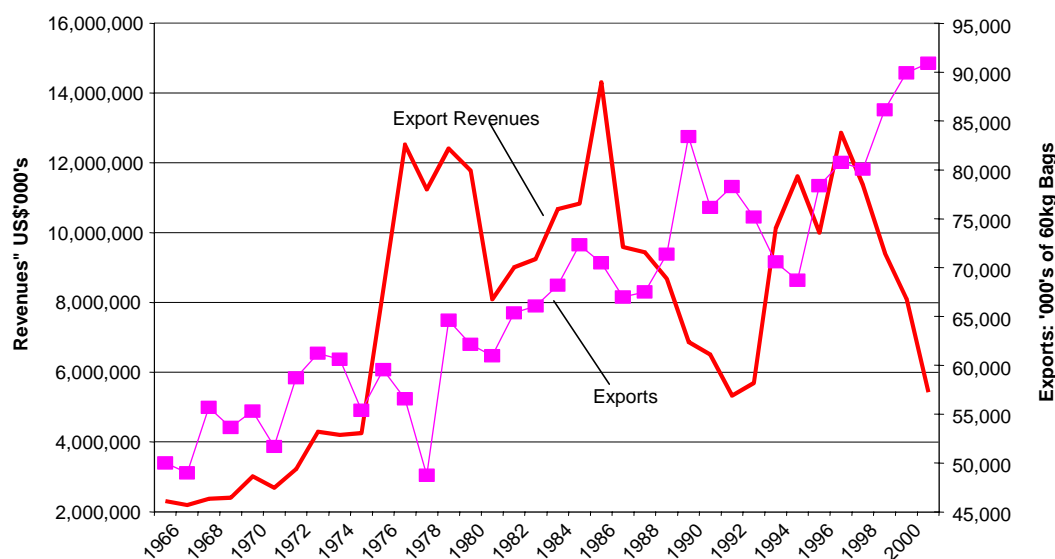
	<i>Production</i>	<i>Cost (dong)</i>	<i>Cost (US\$)</i>
	2 tons/ha	7,330,000	481

Sources: Authors' calculations based on conversations with local farmers and traders, May 2002

Table 17 Coffee year exports, 1994-2003

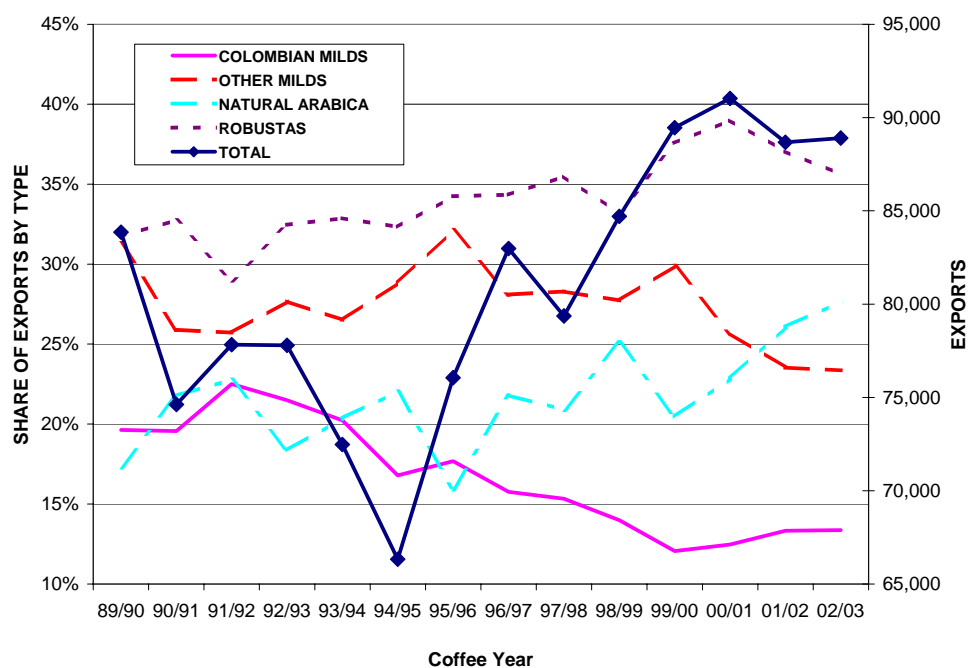
<i>Type of coffeee</i>	<i>94/95</i>	<i>95/96</i>	<i>96/97</i>	<i>97/98</i>	<i>98/99</i>	<i>99/00</i>	<i>00/01</i>	<i>00/02</i>	<i>02/03</i>
Colombian milds	11,139	13,448	13,082	12,169	11,851	10,794	11,360	11,821	11,885
Other milds	19,120	24,447	23,316	22,461	23,491	26,745	23,373	20,863	20,771
<i>American</i>	<i>15,435</i>	<i>19,857</i>	<i>18,878</i>	<i>18,139</i>	<i>19,034</i>	<i>21,799</i>	<i>18,805</i>	<i>16,470</i>	<i>16,429</i>
<i>Asian</i>	<i>2,020</i>	<i>3,096</i>	<i>2,864</i>	<i>2,937</i>	<i>3,147</i>	<i>3,543</i>	<i>3,262</i>	<i>3,218</i>	<i>2,890</i>
<i>African</i>	<i>1,664</i>	<i>1,495</i>	<i>1,575</i>	<i>1,385</i>	<i>1,309</i>	<i>1,403</i>	<i>1,306</i>	<i>1,175</i>	<i>1,452</i>
Natural arabica	14,625	12,109	18,091	16,578	21,282	18,304	20,797	23,133	24,590
Robustas	21,448	26,053	28,492	28,164	28,087	33,613	35,494	32,860	31,837
<i>American</i>	<i>4,646</i>	<i>3,832</i>	<i>3,219</i>	<i>3,011</i>	<i>4,248</i>	<i>2,969</i>	<i>3,010</i>	<i>5,585</i>	<i>5,775</i>
<i>Asian</i>	<i>8,922</i>	<i>12,544</i>	<i>14,007</i>	<i>15,049</i>	<i>14,608</i>	<i>19,875</i>	<i>23,759</i>	<i>20,140</i>	<i>19,244</i>
<i>African</i>	<i>7,879</i>	<i>9,677</i>	<i>11,265</i>	<i>10,104</i>	<i>9,231</i>	<i>10,770</i>	<i>8,725</i>	<i>7,134</i>	<i>6,818</i>
Total	66,332	76,057	82,981	79,371	84,711	89,456	91,025	88,677	89,083
Colombian milds	16.8%	17.7%	15.8%	15.3%	14.0%	12.1%	12.5%	13.3%	13.3%
Other milds	28.8%	32.1%	28.1%	28.3%	27.7%	29.9%	25.7%	23.5%	23.3%
Natural arabica	22.0%	15.9%	21.8%	20.9%	25.1%	20.5%	22.8%	26.1%	27.6%
Robustas	32.3%	34.3%	34.3%	35.5%	33.2%	37.6%	39.0%	37.1%	35.7%
Total	100%	100%	100%	100%	100%	100%	1.00	100%	100%

Source: F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database; CECAFÉ, customized subset of data sent to author, taken from CECAFÉ database; authors' calculations based on published and unpublished data provided by private traders

Figure 39 Exports from producing countries and export revenues

Source: USDA, Foreign Agricultural Service "Production, Supply and Distribution" database; F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database

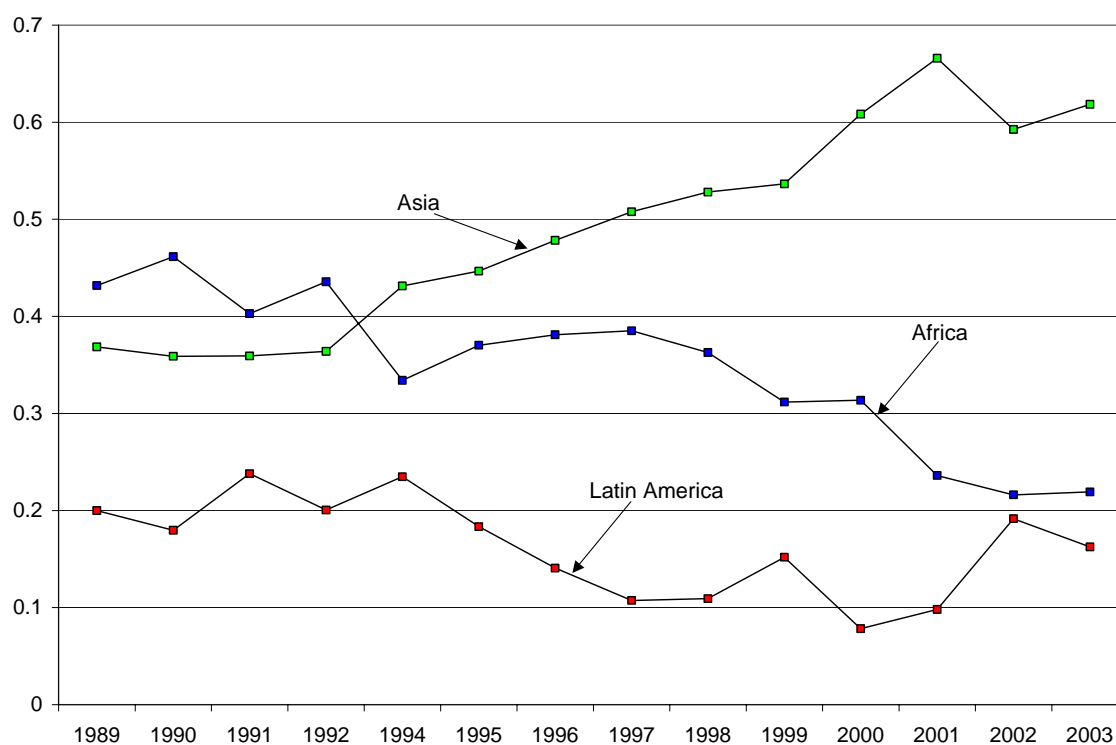
However, within this, the export data shows a number of major trends that reflect the changes in production described above. The most significant is the change in share of Brazil in 2002. Provisional export data for the year suggests exports were unchanged in 2001, but Brazilian exports rose almost 4.6 million bags—and from 25.5 percent of global gross exports to 30.4 percent (see figure 40)

Figure 40 Exports to all destinations, total volume and by type

Source: ICO, customized subset of data sent to author, taken from ICO database; authors' calculations based on published and unpublished data provided from private traders; CECAFÉ, customized subset of data sent to author, taken from CECAFÉ database

In the case of robusta exports, figure 41 shows that the proportion of exports in world supply represented by Asian producing countries has grown dramatically. Although the actual volume of South American robusta production is growing again, the fact that Brazil's internal usage of robustas has also grown has meant that until 2000 their market share of exports was falling. However, with the big increases in production in Brazil, this has reversed and can be expected to continue. It is also clear that regardless of who takes larger share between Brazil and Asia, it is the African robusta producers who are gradually losing their markets.

Figure 41 Robusta exports: market share by region, 1989-2002



Source: F.O. Licht, compilation of various published datasets; ICO, customized subset of data sent to author, taken from ICO database

Almost all global coffee exports are of green coffee: ICO data shows that in the period 1996-2001, 94.5 percent of all coffee was exported as green coffee. Opportunities for value-added products outside of the soluble industry have been limited. In the same period, soluble exports accounted for 5.4 percent of volume (see table 18). The United States and Japan continue to protect their markets for processed coffee products while the EU has, in most cases, opened up to competition from producing countries. In some cases, outright tariffs have been reduced, but nontariff trade barriers, such as internal taxes, still exist. These substantially restrict the potential for value-added exports from producer countries. Despite such difficulties, four of the developing countries, Madagascar, Ethiopia, Uganda and the United Republic of Tanzania, have been able to export some processed coffee products averaging US\$3.4 million per year

from 1995-1999. Most of this is to neighboring countries since they lack access to the higher paying developed markets.

Table 18 Soluble exports by origin

(000 bags green bags equivalent.)

<i>Country</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Brazil	2,697	2,708	2,558	2,569	2,374	1,678	1,962	2,066	2,494	2,562
Colombia	487	524	486	585	627	645	527	599	598	609
Other Latin America	556	621	751	571	582	658	576	694	875	736
Asia	400	459	569	606	913	983	966	1,060	1,183	1,223
Africa	348	282	225	307	394	410	460	409	404	468
Total	4,488	4,594	4,589	4,637	4,889	4,374	4,492	4,828	5,554	5,599

Source: ICO, customized subset of data sent to author, taken from ICO database; F.O. Licht, compilation of various published datasets

The ability of producing countries to capture the value added by roasting and grinding has been limited by a number of factors that include the fact that most coffees are sold as blends and are, therefore, roasted together, as well as shelf-life limitations of finished product. However, especially estate and single origin coffees, are starting to roast at origin, and some more innovative projects are aimed at giving producers a share in the benefits derived from processing and marketing—a recent example is the new soluble plant in Bulgaria that is partly owned by Vinacafe and which purchases Vietnamese robustas from state owned farms.

5. Outside The Commodity Box: The Differentiated Markets

Much of the focus of the previous sections of this paper has been on coffee as viewed as a commodity and priced according to the New York or London exchanges. This is the dominant trade paradigm for most of the coffee industry; however, a growing group of producers and coffee firms are pursuing strategies that are independent of commodity pricing at the exchanges. Many of these alternatives include some differentiation of the coffee, usually by either quality or cultivation processes. These coffees take on many forms, such as estate coffees or certified organic, and include specialty coffees that typically share the commonality of being well-prepared (processed) with some distinctive attribute in their cup quality and no discernible defects. In a related development, an increasing number of companies in the industry, including some that are household names, are developing purchasing criteria that transparently link their buying to positive socioeconomic and environmental processes in developing countries. Such emerging trade paradigms may offer producers alternative ways to capture the long-term value of sustainability by linking usually superior prices to demonstrable advancements in both the quality of the coffee and to more sustainable cultivation and trade practices. The world's largest coffee traders and other industry leaders recognize an obligation to help their business partners: the producers. They also see that these new trading paradigms can present new marketing and goodwill opportunities for coffee at the consumer level.

Commodities Systems and Other Options: Differentiation or Diversification

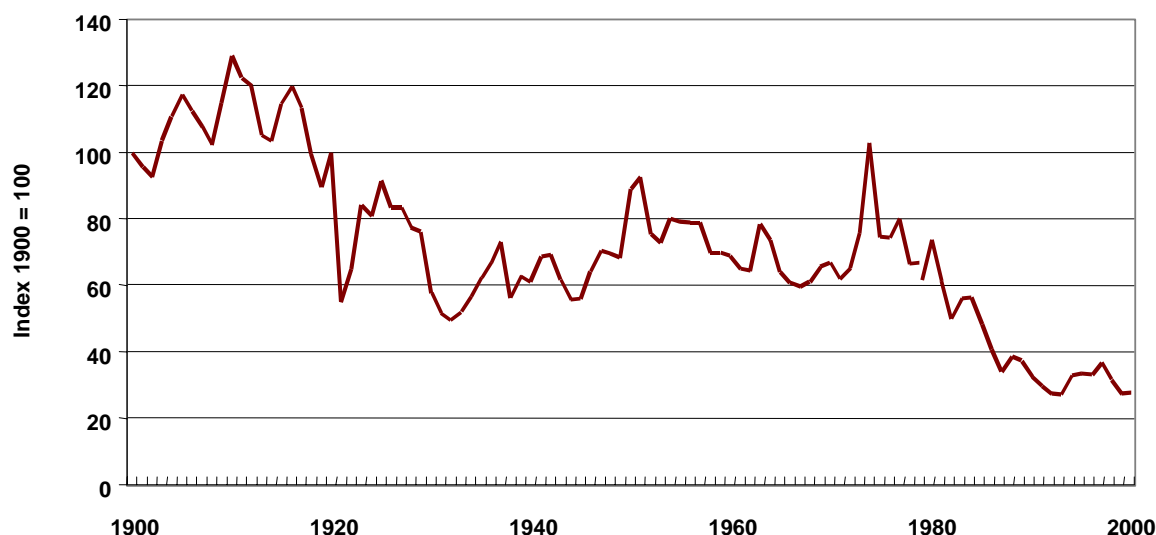
For decades, most coffee-producing countries have passively accepted their role as raw materials suppliers. Although much of the discussion in coffee markets today revolves around the themes of

oversupply and increased production efficiency and their role in the declining producer price, equally important changes have occurred in the relative distribution of industry revenues. The slow recovery of producer prices currently makes coffee production a tenuous pursuit for many. Meanwhile, on the demand side of the market, roasters and retailers have shown a capacity to add considerable value to green beans by targeting increasingly segmented and fragmented consumer markets. Firms in consuming nations and multinationals have been relatively more successful in capturing downstream margins than most producers who, because of the long-run decline in prices, have seen their share of total value decline substantially: from approximately 30 percent of the total to about 5 percent in the past two decades.

Given the apparent declining long-term commodity market price trends, many developing countries may not find their participation in these to be very rewarding in the long run (see figure 42). While raw commodity production may be an excellent opportunity for some developing country producers with superior factors of production, many will find themselves competing fiercely (primarily on price) in a race to the bottom. Even though some of the problems of global commodity trade were recognized and addressed in the international coffee agreements, these have not resulted in a lasting difference for producers.

In order to get beyond the highly competitive and volatile commodity-based trade, many producing countries are looking toward differentiated and value-based products for at least a portion of their production. But differentiating a product or service or adding value in the country of origin is not an easy task. It can require understanding and managing a set of more complex issues including current market trends, appropriate (though not necessarily state-of-the-art) technology, multiple distribution channels, and the sometimes complex logistical, financial and risk management options of supply chains. The integration and participation of smallholders and the poorest farmers requires that more attention be paid to strengthening organizational and managerial capacities of institutions, such as trade associations and cooperatives. Competitiveness factors such as macroeconomic stability, productivity, cheap land and labor, logistics, and consistent reliability—though still vital—are not quite as important to competitiveness as they once were. Competitiveness in differentiated markets increasingly requires paying attention to a more diverse set of factors:

- ❑ Supply chain integration and distribution capabilities
- ❑ A greater role for new standards and technologies in everything from seedling quality and field productivity measures to postharvest processing equipment.
- ❑ Labor and management skills (harvest and postharvest).
- ❑ Technology added value (processing, packaging, and branding).
- ❑ Affordable credit.
- ❑ Knowledge systems (not just information).
- ❑ More agile policy and regulatory environments.

Figure 42 One hundred years of commodity prices (Real price of a mixed basket excluding petroleum)

Source: World Bank (various issues). *Commodity Price Data*, Washington, D.C.

There are a number of projects, both public and private, working to promote increased value for producers. While many such projects come and go—a product often of uncoordinated donor support—some, such as the GEF-financed Rainforest Alliance/Salvanatura project in El Salvador, continue to provide valuable support for the producers involved. A few, such as the Internet auctions pioneered during the Gourmet Coffee Project (ICO et al. 2000; Chrispeels 2002), continue (as The Cup of Excellence program) to expand their efforts to educate as well as identify and reward quality producers through credible market-oriented mechanisms rather than ongoing government support. The majority of producers must find their own value-adding or differentiation strategies. Helping them to both assess their capabilities as well as the nature of particular markets, and also gain access to higher value markets is still a challenge for most development projects.

Some countries have effectively turned to diversification in rural areas, especially to high-value products, but are often joined by many other producers as production and trade opportunities further globalize and become more widely available. For most farmers, it is not easy to learn new production methods and find new markets. Seeking competitive advantage, a number of them have begun to consider ways to add value to their production and move toward some measure of independence from commodity markets, but this is not an easy path. Potentially viable alternatives, such as processed or roasted coffees, face tariff barriers in many industrial countries that protect their established industries.

While a handful of producing countries export processed coffees, the volume is modest, and the vast majority of these exports are of soluble coffee. Highly competitive soluble markets, along with their considerable capital and operating costs, severely restrain new entrants. Roasted coffees and extracts are mostly produced in the consuming markets and account for a very small fraction of producer countries' exports. The primary difficulty in expanding producer country value-added exports is their access to

markets. Increasing concentration at every level of distribution makes it difficult to enter without a partner in the consuming country that can not only help provide access but also the vital and fast-changing market information necessary to remain competitive. Without costly branding and promotion strategies, most vendors would be limited to channels such as private-label and institutional sales.

Other difficulties are more readily surmountable. Capital and technology requirements for coffee roasting and packaging are readily accessible, though, for many countries, inputs such as valve lock bags and packaging films must be imported, thereby elevating costs. One challenge that can increasingly be overcome, thanks to fast improving and lower-cost logistics, is the need to satisfy the just-in-time requirements of most distributors or retailers that often require costly warehousing of stocks. It should be noted that these strategies offer little evidence of significant direct benefits for most farmers since, to be competitive, local roasters would usually pay growers the going market rate. A significant hurdle for many countries is the requirement to achieve consistency of both quality and flavor profile throughout the year. In the case of coffee blends, this could require the importation of coffees from other origins, a policy that not all producer countries permit. In some cases select origins, for example, 100 percent Colombian coffee (already selling nearly three million bags), Kenya AA, or Jamaica Blue Mountain could bypass some of these barriers and provide a retailer with their own proprietary or cobranded finished product.

The commodity markets (undifferentiated bulk products) typically reward the lowest cost production of increasingly fungible and standardized products. Focusing on operational efficiency and productivity are valuable but are limited approaches to competitive advantage because most producers are pursuing the same goals. Even though operational investments may yield higher productivity, higher quality, and reduced time to market, these improvements do not necessarily translate into perceived advantages that the consumer or buyer would be willing to pay for. A value proposition based on the ability to produce more efficiently is therefore not enough for higher cost producers because lower-cost competitors—as Brazil and Vietnam have recently demonstrated—can imitate or overcome that advantage rather quickly.

Efficiency and productivity are certainly important as competitive factors but are not necessarily the only sustainable source of competitive advantage. Instead, developing a competitive position based on processes that are more difficult to match presents another and perhaps more viable long-term solution and a new paradigm. This form of differentiation can present a feasible competitive platform, especially for those countries lacking the necessary factors to be competitive as bulk raw material producers. Such process-oriented strategies, including those for high quality, are not necessarily dominated by large players and lend themselves well to many of the poorer producing countries. Processes, such as organic and eco-friendly certification, present a rare opportunity for rural smallholders to materially participate in global markets while safeguarding their natural resources.

Consumer markets for such differentiated coffees are still relatively small but have been growing much more quickly than conventional markets. For example, the SCAA predicts that in just 2-3 years there will likely be a shortage of the coffees they require. Supplying these differentiated markets is particularly important because they represent one of the few growing segments of the coffee industry. Unfortunately, the intrinsic nature of the coffee trade stifles this differentiated development in most of the world. Most small and medium coffee farmers typically bring their sacks of coffee to processors where it is combined with the production of others for bulk processing.

These undifferentiated coffees trade as bulk commodities based on either the New York or London exchange prices that do not reward coffees exceeding basic exchange-based grades and standards. For the producer to capture the value from a superior product or a desirable process (for example, an eco-friendly

process) he or she must seek and market their unique selling proposition to trading channels outside of the commodity process.

As noted above in section two, there are negative consequences for growers' quality incentives in the common practice of combining different grades of coffees together. In particular, this greatly reduces the incentives for growers to improve quality, inadequately values their efforts, and stifles differentiation. Differentiation and quality improvement efforts must start with a clear understanding of farmer incentives, such as price premiums, extension services, and prompt payment, and then help to structure the supply chains to deliver these benefits to the farmers. Only by addressing the current structures of trade can a new and more equitable trading paradigm emerge. There is evidence that it is already happening as even the larger global traders are increasingly adapting their procedures in order to receive and reward differentiated coffees that can then also be separately traced from the farmer to the roaster.

The channels for differentiated coffee often involve a shorter supply chain in which information, financing, technology, and sometimes even risk are more readily transmitted between the participants. The tendency in such closely coordinated supply chains is to develop consistent working relationships that promote continuity and competitiveness as a result of ongoing improvements. These improvements can help producers understand and more readily meet the buyer's demands and participate more closely in the market. By reducing some of the inherent asymmetries that put producers at a disadvantage these channels may improve the sustainability of coffee production.

Nevertheless, these alternative trading channels are still relatively new and quite small in comparison to the total commodity flows of coffee. In order to participate, producers require not only a differentiated product but also the ability to both access the buyers for these products and effectively export to them. For many, traders and middlemen still play a vital role. For the process-oriented differentiation of coffees, such as organics, there are ample reasons, beyond their marketability, to justify their adoption, and these are addressed later in this document.

In recent years, the mounting downstream concentration of power in the hands of only a few traders, roasters, and retailers likely contributed to a decline in traditional long-term personal relationships and an increase in the commoditization of coffee. In contrast, the differentiated chains must develop closer relationships and include viable incentive structures that support differentiated qualities, certifications, and audit trails.

The emergence of strong differentiated channels has begun to shift the locus of power, and some of the coffee industry is beginning to take note. It appears that the most progressive firms are staking claims with better producers in many countries and strengthening those relationships. A number of the most prominent companies in the industry are already adopting Sustainable Sourcing Guidelines that help stimulate demand for sustainably produced coffees by favoring those producers that take active steps toward sustainable practices. A number of major trade and industry buyers increasingly facilitate longer-term trade relationships by increasing the volume of their coffee purchased by long-term contracts with producers. There is also an increasing trend toward contracts that are at least somewhat independent of the commodities market prices and reflect an agreed-upon value for the growers' coffee. These relationship coffees are a positive development that benefits both the grower and the buyer with increased stability and therefore contributes to sustainability. Some forward-thinking producer countries such as Colombia are even attempting to facilitate these arrangements between their producers and coffee buyers.

Definition of Differentiated Coffees

Differentiated coffees are those that can be clearly distinguished because of distinct origin, defined processes, or exceptional characteristics such as superior taste or zero defects. In contrast, mainstream coffees are nearly always pre-ground blends that are often unidentified in terms of origin. These are usually, though not always, distributed through mainstream channels such as supermarkets, foodservice, and institutional and they compete strongly on the basis of price. Differentiated coffees are often distinguished by a closer and sometimes direct relationship with a roaster or buyer rather than being traded in bulk or via the commodity markets.

Differentiated coffees can help the coffee industry compete with other beverages by leveraging unique characteristics that include:

Geographic Indications of Origin (appellations)

- ❑ Gourmet and Specialty
- ❑ Organic
- ❑ Fair trade
- ❑ Eco-friendly or shade grown
- ❑ Private or Corporate standards

Flavored and decaffeinated coffees can also be somewhat differentiated. Since they represent value added by roasters and food processors in importing countries, they are very much a downstream phenomenon and much less relevant for the coffee grower.³⁴

There is considerable confusion in the industry about what these “differentiated” coffees actually are. This is in part due to the inconsistent use of various terms such as “specialty” resulting from the failure of a globally diverse coffee trade to define its terms resulting in the imprecise use of terms such as “mountain grown,” “shade,” and “gourmet” in marketing campaigns. For example, at a recent conference of the coffee industry, there was no consensus among regional and international experts on what is “specialty coffee.” Even organic coffee and eco-friendly coffee suffer the same confusion even though these both have clear definitions. Clearly, if the industry itself is unclear, one can only assume that consumers are equally at a loss. Consumer confusion is known to depress rather than stimulate markets; therefore, clarity and consistency could potentially contribute to growth. The following paragraphs offer basic definitions for these coffees.

Geographic Indications of Origin

Coffees from areas that are specifically demarcated and acknowledged as having distinct physical characteristics such as microclimate, soil composition, and particular varieties have successfully been marketed utilizing their specific Geographic Indications of Origin (GIO). Development of GIOs creates the mechanisms for a new agronomic model, similar to the wine industry. Much like the wine industry, this permits a unique competitive advantage and, if properly marketed, can result in stronger demand and higher prices that may be somewhat more immune to market fluctuations than commodity products. This

³⁴ This could eventually change if growers and consumers are willing to accept coffee plants that are genetically modified to produce lower caffeine content or to express flavors such as vanilla hazelnut and if these ever make it to large-scale field trials.

category can also loosely encompass estate coffees. Despite recent setbacks in seeking legal protection for GIO in the United States, this differentiation strategy has been successful for many regions, including Jamaican Blue Mountain, Hawaiian Kona, and Guatemala Antigua whose popularity have spurred global sales far greater than their actual production volumes. The EU, in 2003, proposed international WTO protection for 41 of its GIO products and appears amenable to the recognition of other countries' products protected by GIO. This implies that such initiatives on the part of producing countries will also require investment in monitoring and enforcement.

Specialty and Gourmet Coffee

The term “specialty” is used in different ways by different people, making it very difficult to either characterize or measure adequately. The use of the term “specialty”—some would say overuse—can be traced to the United States where it was originally used by smaller roasters and retailers to differentiate their offerings from the mainstream offerings of the largest commercial roasters who were often called “the cans” in reference to their preferred packaging style. Specialty coffee has sometimes come to be used interchangeably with “gourmet” coffee although the former still commonly refers to a larger set of coffees. This larger set of coffees, in addition to high-quality, single origin or sustainable coffees, can also include coffees that may or may not be special such as flavored, espresso-based, decaffeinated, and cold, ready-to-drink preparations. The latter coffees can perhaps best be characterized as differentiated and as having most of their value added in the consuming country. Today, the specialty industry itself is searching for a clearer definition of this term to avoid the obvious confusion it engenders.

Perhaps the best and most succinct definition goes back to the quality-oriented roots of the specialty movement and defines specialty, in the words of SCAA's executive director as “Great taste, no defects.” This category can include estate coffees. These coffees, for which provenance is from well-known farms that specialize in producing coffees with exceptional quality characteristics, often enjoy long-term contracts and premium prices. **Gourmet** is used to refer strictly to higher-quality and exceptional coffees. Before the term “specialty” lost most of its meaning because of overuse, such coffees were typically sold, often as whole beans in dedicated coffee stores or cafés. Although this term still suggests a degree of exclusivity, such coffees have actually penetrated most marketing channels and are available now even through mass merchants and supermarkets. Market receptivity and strong growth trends suggest that there is room for such expansion given that increasing market fragmentation allows price differentiation even at the mainstream levels.

The market expansion for differentiated and specialty coffees, as exemplified in the boom of cafés openings led by some highly visible brands, has been significant in the U.S. markets and is now spreading back to Europe where the café concept originated. In the United States, where coffee imports account for one-fourth of global totals, the specialty coffee industry accounts for nearly 20 percent of the total volume; yet its US\$8.4 billion in 2002 sales represent more than 40 percent of the U.S. coffee market's total revenue and an even greater percentage of its profits. It is currently the only segment of the coffee industry that has shown consistent and notable growth.³⁵ According to the ICO and the SCAA, most potential specialty coffee markets are far from saturated, and sales in many global markets continue to expand.

³⁵ National Coffee Association (NCA) estimates average annual growth of about 30 percent in last five years to 2002.

Sustainable Coffees

The coffees that are often called “sustainable” (that is, organic, fair trade, and shade grown) are predominantly produced by small farmers and characterized as paying farmers reasonable prices, providing incentives toward organic production and rewarding farmers for practicing good natural resource stewardship.³⁶ They tend to promote water conservation and protection, energy conservation, nutrient recycling, and even community/cooperative development. Until recently, their scarce presence in the marketplace caused some confusion about what they each actually represent. Now with both clear definitions and international certification standards, it is incumbent upon the coffee industry and regulatory bodies to help educate consumers and ensure that coffees using these labels are indeed certified by an independent third party. Failure to do so will cost the industry a valuable means of differentiation, and the resulting erosion of consumer confidence will render the terms meaningless and will remove a valuable tool from the repertoire of the small coffee producer who can least afford such a loss. A more complete discussion of sustainability, and other types of coffees that can contribute to it, can be found in the section on sustainability later in this section.

Organic coffees incorporate management practices to conserve or enhance soil structure, resilience, and fertility by using cultivation practices and only nonsynthetic nutrients and plant protection methods. Although many producers grow coffee without the use of synthetic agrochemicals, this passive approach is not sufficient to be considered organic for market certification purposes. Organic requires active cultivation practices that are monitored and verified by means of a certification process. Organic certification is also required of the processor and roaster in order to be sold as such. This helps to reduce the risk of organic products being contaminated or mixed with nonorganic coffees. Certification is conducted by a growing number of enterprises throughout the world, many of them private businesses. The most useful in terms of broad acceptance in cross-country trade are those accredited by an umbrella organization known as the International Federation of Organic Agriculture Movements (IFOAM). In exchange for the certification of their sustainable cultivation practices, many farmers receive price premiums.

Fair trade coffee is purchased directly from internationally registered and certified cooperatives of small farmers³⁷ who are guaranteed a minimum and consistent contract price, as well as access to some credit from the purchaser if necessary to complete production and harvesting. Fair trade’s mechanisms encourage community-driven investment in public goods such as education, healthcare, and infrastructure. It is the only major certification system that requires the buyer rather than the small producer to cover all of the costs, most of which are embedded in the base price.

The fair trade market sets a minimum floor price currently US\$1.26 for washed mild arabica and US\$1.41 if organic certified. This price is a bit less in some countries (see table 19). When market prices rise above this, the fair trade premium is only US\$0.05 more than the market price per pound. The price benefit is particularly noticeable during low price markets. Arabica farmers averaged premiums over market prices of US\$0.64 per kilogram in 1999 and US\$0.95 per kilogram in 2000.³⁸ Though these premiums are

³⁶ Partly adapted from Conservation Principles for Coffee Production, available at www.consumerscouncil.org

³⁷ Changes are now being considered to accommodate farmers that are not members of cooperatives

³⁸ Difference between average annual “C” market prices and FT contract prices. Robusta figures are lower, according to FLO.

considerable, it should be noted that only about 20 percent of the global fair trade production capacity is sold at fair trade prices.

Table 19 FLO international conditions for sustainable coffees (U.S. cents per pound)

<i>Type of coffee</i>	<i>Regular</i>		<i>Certified Organic</i>	
	<i>Central America, Mexico, Africa, Asia</i>	<i>South America, Caribbean Area</i>	<i>Central America, Mexico, Africa, Asia</i>	<i>South America, Caribbean Area</i>
Washed Arabica	126	124	141	139
Nonwashed Arabica	120	120	135	135
Washed Robusta	110	110	125	125
Nonwashed Robusta	106	106	121	121

Source: FLO, International Conditions for the Purchase of Coffee, partly available at www.consumerscouncil.org

A number of institutions exist in most of the developed consumer markets that monitor and coordinate fair trade. Many of these now coordinate through a single European office of the Fair Trade Labeling Organization International (FLO). Among its roles is the registration and monitoring of participants in the fair trade system.

For many years fair trade coffees have not met consumers' affinity for environmental issues, though this is beginning to change as almost half of fair trade sales are now also organically certified, and FLO is considering the inclusion of more explicit environmental components into their criteria.

Shade or Eco-friendly coffee production systems maintain and enhance wildlife habitat and biological diversity particularly through effective management of the forest canopy on the farm and protection or restoration of surrounding natural environments. The term "shade" is often used as shorthand because this differentiates between the above method and most conventionally produced coffees that are monocropped under full or partial sun exposure and require considerable, often synthetic, agrochemical inputs. Of course, until the 1970s, most coffee producers naturally used rustic or traditional shade production systems.

The recent emergence of this category in the 1990s responded in part to the inadequacy of organic certification for biodiversity conservation. Although the spirit of the organic movement embodies harmony with the natural environment and implies the fostering of biodiversity, it does so primarily from the point of view of agriculture that has some biodiversity rather than biodiversity that incorporates agriculture. The difference is evident in the field where some organically certified coffee farms bear a closer physical resemblance to conventional monocrop production than to the integrated forest canopy of most shade-certified farms.

Some organic certifiers are now taking up shade certification. There are two internationally recognized certifications in this category:

1. Smithsonian Migratory Bird Center (SMBC) certifies that there are adequate multi-storey shaded forest settings that maintain and support ecosystem biodiversity. Within this, birds are an indicator species of a healthy environment. This type of coffee is also sometimes called "bird-friendly."
2. Rainforest Alliance certification incorporates most of the SMBC criteria apart from organic requirements and adds social responsibility criteria particularly in terms of labor practices and

worker facilities. More specifically this includes requirements for: decent housing, sanitary facilities, potable water, electricity when possible, safe cooking facilities, fair pay (at least the legal minimum, except in emergency situations such as a “food for work” program), access to medical care, and the availability of schooling. This certification encourages organic production methods but only requires the implementation and steady improvement of integrated pest management (IPM) methods. This facilitates the participation of producers, particularly larger scale plantations that are in transition toward organic methods.

Coffee farms vary in how much shade they can support without seriously diminishing production. Scientists note that not all shade is equal, and there is spirited debate over how much shade is sufficient to warrant certification. Yet, none of these certifications recognize those cropping systems that incorporate only single species or “specialized” functional shade since these are not considered sufficient to foster biodiversity. The Rainforest Alliance has nevertheless explored a variety of certification options. For example, their scientists elected to certify a 3 thousand acre Brazilian farm in an area of shrub forest where a canopy high enough to shade coffee would be unnatural. Although biodiversity parameters must be flexible enough to adapt to different natural requirements, there is a danger in the increasing number of producers claiming their coffee is “shade grown.” This is incorrectly propagated by some of the national coffee promotion councils. Unfortunately, the abuse of this term will eventually lead to loss of trust among not only industry buyers but also consumers. A valuable point of differentiation will have been lost for many producers if the industry does not better disseminate the correct definitions of these terms/criteria and help to foster and enforce their correct usage. Ultimately the only assurance of compliance with these or any criteria is independent third-party certification.

Private or Corporate Standards

Some corporations and corporate-driven groups are developing their own differentiation around the issues of sustainability. They have developed their own criteria to improve sustainability and to help manage their risk of participation in socially or environmentally difficult situations in countries of origin. The best of these agricultural production standards promote—and pay for—fair labor practices, the minimization of agrochemical inputs, environmental biodiversity management, and traceability. These initiatives are an important trend that ought to be considered seriously because they can quickly introduce some sustainability standards to the mainstream industry that provides most of the world’s coffee supply. Since they have the potential to have widespread influence when marketed by large firms, they can serve to educate consumers about sustainability standards and about what the higher price premiums are used for.

However, these corporate standards face some critical challenges. For these standards to be credible, they must be independently verified. Lacking such independent third-party certification presents a greater opportunity for misrepresentation or fraud. Some are criticized for setting the criteria so low that they present only a modest improvement for the producer. Indeed most of these corporate-driven standards fall short of the requirements embodied in more established certifications such as organic, fair trade, SMBC, or Rainforest Alliance. By competing with existing standards, in-house corporate certifications can actually be harmful to consumers and growers by confusing them and thereby reducing the market effectiveness of the currently accepted certification systems. These questions pose an ethical and possibly reputational dilemma for the companies involved with private standards and opens them to accusations of free riding on the established market credibility of systems, such as fair trade or organic, and ultimately eroding the ability of these to continue providing benefits for producers.

Some corporations adopting such standards have not yet chosen to make the standards public. Some fear that this could induce consumers to believe that other—noncertified—coffees are unsustainably produced. This is likely to change in the near future as these issues become more public or as some companies act to capture a first mover advantage. These changes are already happening. The Utz Kapeh foundation, originally set up by one of Europe's largest food retailers, has reportedly certified more than 250,000 bags of coffee (15 million kilos) to its "decency standard" in 2003. Major brands are also investing in market tests. It is estimated that the world's third-largest food retailer will claim that all of the coffee they roast for their European stores meets the EUREP-GAP coffee standard in 2004. Companies deciding to pursue private standards face a decisive challenge when investing in this individual pathway: If they adopt a standard that is eventually less accepted or even discredited, they will incur the fiscal and competitive costs of catching up to the rest of the market's dominant standards.

An emerging difficulty for producers is the possibility that buyers demand that elevated standards be met as a precondition for doing business without offering adequate compensation for achieving such requirements. Some of the certifications do not guarantee any compensating premium for meeting their requirements or pay prices well below those of the most commonly known certified coffees. In such cases, these standards impose a complex and costly burden on producers without any transparent assurance of a certain level of remuneration. The market power of the usually larger buyer combined with a producer's often inadequate market information leaves the grower to negotiate this with the buyer from a vulnerable position. This almost certainly will diminish the producer's economic sustainability—the very issue that such standards purportedly support.

Judging the different standards' respective values at the field level can be difficult since they each have some distinct objectives. There is an increasing demand for effective impact evaluation of these sustainability standards and the Sustainable Agriculture Initiative (SAI) is one of several that is beginning to explore the actual impacts on the supply chain of different sustainable practices. Box 5 lists important questions that farmers, policymakers, and businesses alike should ask when considering the different standards options.

Box 5 Selecting appropriate standards: some sample questions

- Are the full benefits and costs of a particular standard clear to the grower?
- Have buyers been identified who require the standard? What is the market value?
- Is technical assistance available to help farmers comply with the standards?
- Are there incentives to meet the standards?
- Are the standards comprehensive enough to meet the desired goals? Do they cover an adequate range of farm-management, conservation, social, environmental and community issues?
- How are the standards actually implemented in the field? Do the farmers see the standards as guidelines to better manage their own farms or as impositions from a firm or NGO?
- Is the certification process consistent, transparent, and well-documented?
- Does the certification program promote continual improvement?
- How are the audits conducted? How often are audits conducted and are there surprise inspections?
- Who does the auditing, and what are the requirements to be an auditor? Are the auditors experts who know the culture, agronomy, ecology, laws, and language? Who does quality control of the auditing?
- How useful are the audit reports? Can farmers get enough guidance from the reports to make a practical farm-management plan?

Source: Author; Chris Wille, personal communication

The Nature of Differentiated Markets

There is great interest in the economic, social, and environmental benefits of differentiated and specialty coffees. The differentiated markets could be one valuable tool with which producers can earn higher revenues and superior market reputation. These markets have been growing strongly for a number of years and, though they are not a simple panacea for all producers, they provide useful alternatives for some.

Box 6 Some useful shorthand definitions

Differentiated coffees are quite simply those that can be clearly distinguished because of distinct origin, defined processes, or exceptional characteristics like superior taste or zero defects. In contrast, **mainstream coffees** are nearly always preground blends that are often unidentified in terms of origin. They are often, though not always, bought and sold on the basis of price and distributed through institutional or mainstream channels, such as supermarkets. Differentiated coffees are often distinguished by a more direct relationship with a roaster or buyer rather than being traded in bulk or via the commodity markets

Specialty coffee has two characteristics: “Great taste, no defects.” (Lingle SCAA 2002)

Gourmet is used to refer strictly to higher quality and exceptional coffees. Such coffees are most often sold as whole beans.

Geographic Indications of Origin (GIO) apply to coffees from areas that are specifically demarcated and acknowledged as having distinct physical characteristics, such as microclimate, specific varietals, or soil composition that together may impart distinctive flavor characteristics. This category can also loosely encompass estate coffees.

The coffees that are often called **sustainable** (organic, fair trade and eco-friendly or shade-grown) are predominantly produced by small farmers and typically characterized as earning farmers reasonable prices, encouraging community development and providing incentives toward organic production and natural resource stewardship. Such practices are monitored and verified by means of a certification process.

Organic coffees incorporate management practices to conserve or enhance soil structure, resilience, and fertility by applying cultivation practices that use only nonsynthetic nutrients and plant protection methods. Although many producers grow coffee without the use of synthetic agrochemicals, this passive approach is not sufficient to be considered organic for market purposes.

Fair trade coffee is purchased directly from cooperatives of small farmers that are guaranteed a minimum and consistent contract price, as well as access to some credit from the purchaser if necessary to complete production and harvesting. Part of the proceeds are earmarked for democratically selected community projects. Most are internationally registered and certified.

Shade or Eco-friendly coffee production systems maintain and enhance wildlife habitat and biological diversity particularly through effective management of the forest canopy on the farm and protection or restoration of surrounding natural environments. One such system also requires decent working conditions and fair pay.

Source: Authors

Although they are relative newcomers, the market presence of differentiated coffees has grown dramatically in recent years. This growth has been fueled as much by the industry’s interest and support as by consumer demand. These coffees are known to fetch higher prices but are even more important for

the industry because of their high growth rates and their contribution to producer sustainability, as well as their ability to command a price premium. At the far end, of scale this price premium can be considerable—as is the case for Indonesia’s Kopi Luwak, which can sell for up to US\$75 for one-fourth of a pound.³⁹ Though this is an extraordinary example, it makes the point that many forms of differentiation are possible. Differentiated coffees can access market niches that are competitively different, and often involve direct relationship with buyers. The markets for these products should be approached with caution because they are still limited and can involve considerable farmer effort to adapt to their more stringent requirements.

Because differentiation has typically been the realm of smaller producers, it should be noted that even with differentiated products, they can still face difficulties to access markets, including the markets for such products. One promising solution has been civil or public sector support for the structuring of marketing partnerships directly with private sector firms in consumer markets. While these public private partnerships can be very useful, providing producers improved technology, market access, financing, etc., they can also be problematic. If they are poorly structured, they can concentrate benefits for corporate coffee buyers, using public money, but giving farmers only the potentially short-lived benefit of one or two years of sales.

The comparative characteristics of differentiated and conventional coffee markets are summarized in table 20.

Table 20 Comparison of conventional and differentiated markets

<i>Conventional markets</i>	<i>Differentiated markets</i>
<ul style="list-style-type: none"> ▪ Commodity price pressures ▪ Reward for quality and Price ▪ Easy market access ▪ Intense competition ▪ Gov. support: subsidy, extension, R&D ▪ Broad market size ▪ Short learning and cost curve 	<ul style="list-style-type: none"> ▪ Consistently higher prices ▪ Reward for quality and process ▪ Limited market access ▪ Moderate competition ▪ Limited government support ▪ Very limited market size ▪ Longer learning and cost curve: certification

Source: Authors

Although differentiated coffees are still relatively small in terms of volume, they benefit the entire industry in terms of increased sales and greater profits all along the supply chain occupy. Despite their smaller market niche, they offer attractive benefits for several million people, mostly small to medium, farm households. Among these benefits are certain positive externalities that are fostered by several types of differentiated coffees. These benefits can include:

- ❑ Increased use of rural labor and organizational development.
- ❑ Crop diversification and reduced input costs that together minimize financial risk.
- ❑ Better natural resource management.
- ❑ Biodiversity conservation.

³⁹ The Luwak, a small mammal that consumes coffee cherries, adds exceptional postharvest processing value, such as flavor through fermentation, via its digestive tract.

- ❑ Improved crop resilience to adverse weather.
- ❑ Fewer health risks due to potential mishandling of agrochemicals.
- ❑ Traceability.

Certain standards in particular offer further benefits such as traceability and process management that can help prepare smaller producers to better compete in modern agricultural trade for these and for other farm products.

Sustainability

One of the most useful simple definitions of sustainability in the coffee world states that a sustainable producer shall meet long term environmental and social goals while being able to compete effectively with other market participants and achieve prices that cover his production costs and allow him to earn an acceptable business margin.⁴⁰

The coffee commodity market, like most other agricultural commodity markets, is a purely economic proposition that does not internalize either the environmental or the social costs of production into its pricing. The coffee industry is, however, among the most enlightened in the sense that it recognizes the importance of sustainability in two distinct but interrelated ways. First, economically it makes good long-term business sense. Evidence from successful industrial supply chains highlight the critical importance of every link in the chain to achieving high levels of competitiveness. In this regard, many leaders in the coffee industry understand that they must improve their relationships with the growers who supply their basic raw materials. Second, it fulfills important social needs. Many leaders in the coffee community visit the origins and are personally aware of the difficulties faced by many coffee growers. Many coffee buyers and traders have developed a humane understanding that while their companies are reaping healthy profits, their suppliers are in some cases cutting back on food and are forced to keep children out of school.

Leading members of the coffee industry have recently proposed a number of initiatives intended to define sustainable coffee standards. Some are moving beyond the talk to actually putting these standards into operation. The Sustainable Commodity Initiative (SCI)⁴¹, under the banner of UNCTAD/IISD, has animated a broad and inclusive dialogue on different market-based approaches for improving sustainability in the coffee sector. Pursuant to demands from stakeholders all along the coffee supply chain, the SCI is currently facilitating the development of a multi-stakeholder platform in the form of a “Sustainable Coffee Partnership”. This effort aims to create a transparent, equitable, and inclusive platform for the development of a shared sustainability strategy for the coffee sector based on the experiences and successes of existing industry standards and related sustainability initiatives. In the past, three systems have been pioneering what are arguably the best attempts at fostering more sustainable production in the field. Organic, eco-friendly, and fair trade systems already meet a number of the vital environmental, social, and economic needs of about three-fourths of a million coffee producers.

Of course, these three systems of coffee production and marketing neither offer a guaranteed sustainability, nor are they the exclusive path to sustainability in coffee production. Other production

⁴⁰ Adapted from personal communication with Michael Opitz, executive director, E.D.E. Consulting, April 25, 2003.

⁴¹ Sustainable Coffee Discussion Group: http://www.iisd.org/trade/commodities/sci_coffee_discussion.asp

systems and other coffees may also contribute to sustainable development. Indeed, a number of efforts are underway to develop standards that might be more acceptable to the mainstream coffee industry. It is certainly important to take steps in this direction and to recognize the sincere efforts made by the larger companies to improve production sustainability. It is quite feasible that being the first industry to collectively achieve a high measure of sustainability could have a significant market impact at the consumer level. It can conceivably generate the sort of goodwill for coffee that the industry already seeks through other methods, such as promoting the scientific studies that link coffee with positive health effects. Nevertheless, sustainability is difficult to measure and even more difficult to achieve. Some of the so-called sustainable initiatives set the bar so low as to have very little impact on a producer's sustainability and have been accused of being little more than risk management measures or public relations gambits on the part of the corporations that support them.

While far from perfect, organic, eco-friendly, and fair trade systems possess intrinsic qualities that most closely fulfill the balanced social, environmental, and economic requirements necessary for sustainability. They are also among the few that have transparently defined international standards and permit reasonable independent verification of their claims. For these reasons the use of the term "sustainable coffee" is a useful shorthand description used in this and other documents. It is not intended to imply that other noncertified coffees are necessarily unsustainable.

Certification

Certification occurs primarily around the sustainable coffees: organic, fair trade, and eco-friendly, as well as Utz Kapeh. There is also a growing interest in facilitating the certification of coffees based on their GIO using geospatial information systems. In addition to its traditional role of verifying relevant claims of origin or production methods, certification is now also emerging as a mainstream tool for many forward thinking firms.

Private companies increasingly use certification systems to ensure that food safety, labor, or environmental criteria are being met by their suppliers in order to reduce their exposure to legal or reputational risk. Certification systems can also help to provide traceability, improve quality, and can alert them to potential problems in the field. The discussions within the SAI, EUREP, the GTZ-led Common Codes for the Coffee Community project, and the Utz Kapeh Foundation appear to be moving in the direction of independent certification by agencies or through multistakeholder arrangements. Many large companies, although they know that such certifications will be difficult at first, increasingly understand that they may be necessary in the long term. Nestlé's Hans Joehr has proposed a landmark idea about companies working together on precompetitive issues to achieve sustainability at the farm level.⁴² This implies collaborations that contribute to the overall "public good" or sustainability of the growers and communities and do not alter the relative competitive position of buyers in the playing field. While it is true that many of the industry's large corporations—a handful of which dominate coffee markets—have done little more than sponsor modest projects or adopt soft general guidelines, a number of innovators are already implementing concrete purchasing guidelines that are transparent for verification and are paying farmers to achieve them.

Although each of the sustainable coffees has very specific criteria, as defined by their respective certifying agencies, the definitions and distinctions are often unclear to many coffee companies, retailers,

⁴² Hans Joehr, corporate head of Agriculture in Geneva, Switzerland, personal communication, December 9, 2003.

and consumers. This is further complicated by the increasing number of certifications and by some variations in criteria among the certifying agencies as well as distinct bureaucratic procedures in certain countries. Growers face similar confusion at origin.

The confusion also allows free riders to take advantage of naiveté and to market coffees that are not what they appear to be. For example, a number of companies sell shade-grown coffee without any verification of this growing standard or in cases where the shade comes only from a single species of tree and therefore does not meet the internationally acknowledged criteria for shade-grown coffee.⁴³ Third-party certification and verification in all of these markets can prevent indiscriminate use of these terms. The alternative may be a loss of consumer confidence when such discrepancies are discovered. Such a reputational issue could have an impact on the entire industry and not just the specifically certified products for the same reasons of consumer confusion mentioned above. Perhaps more importantly, it will also damage some of the few niches that are particularly beneficial for small coffee producers. It is possible that other sustainable agricultural practices for a number of crops will also suffer collateral damage in the marketplace much as meat and dairy products in many European countries suffered heavily during England's mad cow debacle.

Organic certification is the most widely recognized and available certification, although in several European markets fair trade coffee is more popular than organic. Eco-friendly, shade-grown, and GIO verification are in their infancy but have strong interest particularly in North American and Japanese markets. It is evident that certification in general still has a long way to go in terms of broad market visibility and acceptance. Nevertheless, it is considered important for at least four reasons:

1. It allows for consistency of characteristics and claims and improves market transparency.
2. It provides marketplace credibility.
3. It captures demand and price incentives of niche markets.
4. It "glues" participants to multiple objectives such as commerce, conservation, and social justice by linking economic success to monitored certification principles.

Geographic Indicators of Origin (GIO) identify a crop by its specific growing area that is often defined by satellite aided location or Global Positioning System (GPS) or more traditional demarcations that are sometimes termed "appellations." For GIO coffees the predominant criteria are national geophysical standards that, in some cases, are supported by international agencies helping to map and define the standards. The most effective method is using Geographic Information Systems (GIS) which supplements satellite imagery with on-the-ground verification. Since coffees, like wine, can often carry the distinct characteristics of their particular microclimate, many of the world's finest and most costly coffees have been identified with a particular place. Jamaican Blue Mountain, Hawaiian Kona, Tanzanian Kilimanjaro, and Monsooned Malabar are a few examples that are prized around the world and fetch considerable premiums for growers in those regions. Similar to the wine model, there is ample room in the marketplace for many other appellations especially as consumers become increasingly aware of their flavor variations.

The SCAA and USAID are central to many of the GIO efforts with mapping results already achieved in Costa Rica, Peru, and Guatemala. Other countries, such as Colombia and Mexico, have also taken steps to

⁴³ The Smithsonian Migratory Bird Center (SMBC) has established criteria that are the benchmark standard used by certifiers. For more information, see www.si.edu/smbc.

more clearly delineate and “certify” some of their growing regions. Efforts are underway to make this information readily available to buyers on the Web and to develop verification systems to prevent mislabeling and fraud, but these are not yet adequately funded.

There have been discussions at the WTO level, stimulated by the EU proposals for the establishment of a multilateral system of notification and registration of GIO in order to protect producers and consumers alike.⁴⁴ Although most of the industry trade associations support this, it will probably be most beneficial if the industry itself actively helps to form and support these GIOs because governmental legislation and bureaucracy tend to be slow and cumbersome.

More than two-thirds of the North American specialty coffee industry believes that certification of sustainable coffees will be important to their business in the future (Giovannucci 2001). Similarly, about two-thirds were in favor of a simpler way of communicating sustainability in the marketplace, in effect a “super seal” incorporating criteria from organic, shade-grown, and fair trade coffees. This may be in part because—apart from a core group of “committed ideological supporters”—it is not clear whether more mainstream consumers differentiate much between the claims of different seals (Giovannucci 2003). Retailers and the coffee industry are indicating preferences for more cohesion between these sustainability standards. European buyers also feel that certification is important and that there is some confusion about the different certifications. Businesses are noting a consumer preference for simpler choices that do not require trading off one advantage for another. With shelf space at a premium and market share for these coffees still small, some leading European supermarkets now insist on dual certification especially for their private labels (Giovannucci and Koekoek 2003). In the case of fair trade, in 1996 only one percent was also certified organic, whereas, by the end of 2002, nearly half of fair trade coffees were also certified organic.

Each of the NGOs, firms, and nonprofits that manage or support the certifications systems for sustainable coffees are committed to their own particular system and to its value. Harmonization between the major systems would undoubtedly reduce both confusion and costs for coffee producers and perhaps even for consumers as well. There has been some progress in discussions toward certification criteria that harmonizes the best aspects of these independent certifications while not significantly compromising their integrity.

One of the challenges in pursuing harmonization is to not lose the benefits of certification as a developmental tool that can help to address some of the social and environmental needs that are particular to smallholders and to the poorest farmers; therefore, any harmonization efforts must be cautious in understanding the potential impacts on them.

In the near- to midterm, it appears more likely that individual developments within the fair trade and organic movements will lead each of these to include broader sustainability criteria. Fair trade is developing labor standards for large estates and a more complete set of environmental criteria while the organic accreditation system is now discussing how to better incorporate social standards and biodiversity criteria. The Rainforest Alliance is fast emerging as a major certifier since its standards incorporate social criteria that include plantation or corporate laborers, as well as extensive environmental criteria. They do not set a baseline price, work with some small but mostly larger farmers, and do not require organic certification. On one hand, this could undermine some of the efforts of the organic and fair trade

⁴⁴ According to the European Coffee Federation, the EU has made proposals for the implementation of article 23.4 of the TRIPS agreement relating to this topic.

movements, and, on the other hand, this facilitates the participation of large farms and corporations that might have difficulty meeting organic or fair trade standards.

The International Federation of Organic Agriculture Movements (IFOAM), in its recent annual conference, noted a strong push toward social and environmental criteria and has committed to furthering these aspects, as has the international federation of accreditation bodies (ISEAL). IFOAM, in particular, has begun to discuss whether biodiversity shade criteria should be a part of organic criteria since they both share very similar principles. There has been some progress toward a more formal harmonization of the major coffee sustainability criteria under the stewardship of the Consumers Choice Council who coordinated the participation of several major NGOs and a number of experts to create “The Conservation Principles for Coffee Production.”⁴⁵ The German development agency, GTZ, is also developing a set of baseline sustainability guidelines in cooperation with other organizations and members of the German coffee industry. It does not intend to establish new certification standards but simply to set up a baseline benchmark that eliminates the worst ecological and social practices in the industry. The Mexican Sustainable Coffee Council has developed a set of sustainability criteria and is the first producer country body to do so.

Ultimately, the only assurance of compliance with these or any criteria is independent third-party certification. Despite the extra cost of such verification, the inherent confidence and traceability are vital for these standards that are still relatively new to most consumers and whose credibility would be seriously damaged by scandal. The costs and even some of the confusion around their requirements can however be daunting for the average farmer. The Social Accountability in Sustainable Agriculture (SASA) project has been launched to capitalize on the commonalities between some of the cause-related or process standards.⁴⁶ This initiative explores the possibilities of coordinating their information, training, certification, and inspection in order to reduce the grower’s transaction costs. Some organic certifiers, particularly in Mexico, have already been independently trained in eco-friendly and fair trade certification and, by combining certification and inspection visits, have considerably reduced producer costs.

Market Awareness

In North America, both the industry and consumers are very much aware of higher-value, differentiated coffees, and coffee drinkers, according to several surveys, are aware that there is something beyond the average supermarket can of coffee or the jar of instant coffee (Rice and McLean 1999).

The U.S. National Coffee Association’s annual surveys consistently indicate a high level of consumer awareness about specialty coffees. An independent 2001 coffee industry survey points out that 95.1 percent of firms were *aware* of at least one or more types of sustainable coffee:⁴⁷

- 98.7 percent were aware of organic coffee.
- 82.5 percent were aware of fair trade coffee.

⁴⁵ Conservation Principles for Coffee Production are currently the closest thing to joint or umbrella criteria, although these are not certifiable. For more information, see www.consumerscouncil.org.

⁴⁶ Part of the International Social and Environmental Accreditation and Labeling Alliance (ISEAL) seeking to improve the field level efficiencies of standards such as SAI 8000, organic, fair trade, and Rainforest Alliance.

⁴⁷ Sustainable Coffee Survey of the North American Specialty Coffee Industry is available in three languages. For English, see www.scaa.org; For English, Spanish, and French, see www.cec.org/coffee.

- 76.4 percent were aware of shade coffee.

In a number of Europe's major consuming countries, it is often said that the overall quality of mainstream coffee is superior to that of the U.S. and that there is a high level of differentiation by the roasters themselves. As a result, there has been less of a push toward coffees that producers differentiated by quality. This appears to be changing. Until recently, many countries had a plethora of small roasters who were able to individually brand, and thereby differentiate, their own offerings leaving less room for the differentiation of producers. As these markets consolidate and a few large roasters take over the business, this scenario is changing. The awareness of fair trade, and to some extent organic coffees, is often higher than that in the U.S. market, though this varies somewhat from country to country. Few are aware of eco-friendly coffees, but this is changing as first movers—including a multinational industry giant make a commitment to this certification. In some of the Asian markets, primarily Japan, awareness is increasing, though the level of market penetration is still relatively shallow. This is mostly concentrated among higher income urban dwellers.

Availability

In North America, differentiated coffees are widely available but primarily through the specialty market channels, though this is fast changing as large retail chains increasingly add upscale products. An overwhelming majority of the coffee firms surveyed in North America carry at least one type. Even some large convenience store chains such as those operated by the Southland Corporation (7-Eleven) and gasoline retailers are offering more differentiated products to their growing numbers of customers. The presence of differentiated coffees is certainly growing but still limited in mass distribution channels, such as supermarkets. Millstone—an upscale supermarket-oriented roasters/distributor owned by Procter and Gamble—offers an example of how this is expanding beyond the traditional quality segmentations: It now has three certified organic coffees in its lineup and is testing the market for certified fair trade and eco-friendly products.

It is very difficult to generalize about European markets in this regard. Sustainable coffees tend to have a higher level of visibility and greater sales than they do in North America. A history of social activism has elevated fair trade coffee to the most visible and the most widely distributed of the “sustainable” coffees in Europe, though organics are now growing at an even faster rate while eco-friendly coffees are just beginning to turn up in a few countries. GIOs are much less common, though producer-driven options such as single origins, are now beginning to emerge as the retail landscape changes. Gourmet or specialty coffees are more often visible as branded coffees, relying on the credibility of the roaster or retailer, than just on the certification. Local shops and brands that have been a trusted form of differentiation have traditionally dominated the retail landscape at the expense of other forms of differentiation. Several factors are converging in Europe to probably stimulate a greater shift in this direction:

- *New café culture.* The cultural popularity of Seattle-style cafés—and their diverse coffee selections—is fast increasing.
- *Quality differences.* The reported decline in the quality of some standard commercial coffees opens room for competition. Some standard commercial coffees, used as loss leaders in supermarket chains, may further sacrifice quality to meet promotional price points.
- *Multiple store retail chains.* These are fast changing the retail landscape as they increasingly dominate food distribution channels and are adopting increasingly differentiated product lines, sometimes under their own private label.

- *Consumer awareness.* A combination of very active NGOs, sympathetic media, and supportive governments particularly with EU harmonization, have greatly elevated the awareness of environmental and social justice issues.

Japan's trading system has allowed differentiated coffees to permeate every type of distribution channel, ranging from the highest gourmet quality to common consumption. The Japanese consumers buy many of the world's most expensive differentiated coffees, such as Jamaica Blue Mountain. They also use certified eco-friendly coffee for one of their premixed canned coffee beverages. Large-scale retailers are also increasing their position with differentiated coffees because supermarkets now sell more than 60 percent of the volume. Convenience store chains like Family Mart are promoting more differentiated coffee products, including certified sustainable coffees. High prices appear to prevent more widespread availability of differentiated coffees and stifle demand beyond the more affluent urban areas. At the same time, the consistent stability of major blends means that consumers have less incentive to move away from products that they already know and like. Consumers are particularly conscious of traceability and value the auditable/safe food chains of certified products because of recent high-profile scandals around the mass contamination of both milk and blood products. This may have further stimulated demand for easily traceable products, such as certified organic or eco-friendly coffees.

Price Premiums

Substantial price premiums are currently earned for all of these coffees. Gourmet coffees are easily earning twice the current market price, as are fair trade coffees. Some industry pundits point out that some premiums, such as those for gourmet quality, are the product of scarcity; they are concerned about what will happen if too many producers start growing the same product. The United States specialty coffee industry predicts a continuing shortage of the coffees it needs, but this can change; it is prudent to de-emphasize significant price premiums as a reason for entering these markets because it is quite plausible that these premiums could eventually diminish. These price premiums should not be discounted for their current impact, particularly in areas where there is a finite supply or where even a modest premium can make a substantial difference toward covering costs.

Given the growth rates for differentiated markets in recent years and the predictions of many companies, it is unlikely that premiums will disappear in the near future. One indicator of this confidence is the 75 percent "yes" response of the North American coffee industry when asked if they feel that price premiums for sustainable coffees are reasonable (Giovannucci 2001). The European industry, in a separate survey agreed that premiums—better termed compensation—are justified and was also confident that they would continue (Giovannucci and Koekoek 2003).

Some of the differentiated coffees, such as those identified by their GIO, have inherent supply limitations. For them, premiums will probably depend more on their marketing, maintenance of quality, and perhaps policing the market for impostors. Specialty coffee industry associations like the SCAA already claim that there is a foreseeable shortage of supply for specialty or distinctive gourmet coffees and that price premiums for these will likely continue to be substantial. It is likely that those differentiated coffees, for which growing processes can be duplicated, will be most at risk for a decline in premiums. For this reason, it is imperative for any encouragement of sustainable coffee production to be closely linked with corollary measures to improve quality, consistency, and market efficiencies. The industry has already clearly indicated that consistency and quality are even more important for value and premiums in the marketplace than are sustainability principles (Giovannucci and Koekoek 2003; Giovannucci 2001).

There is no consistent data source on the exact value of these price premiums to the producer. It is clear that they vary considerably due to various factors, such as type (gourmet, certified), processing (screen size, washing) region (high-grown, preferred zones), and availability. The most consistent figures are those for fair trade coffee: The mandatory base price for many mild arabicas is US\$1.26 per pound with an additional compensation of US\$0.15 per pound if the coffee is organically certified. For organic coffees, price premiums have declined considerably over the past decade from highs in excess of 100 percent. In early 2003, some low-quality and remote (far from market) coffees have been offered for fees as low as US\$0.10 per pound while established quality-oriented producers could command premiums of nearly US\$1.00 per pound. On average, the range for organic certified arabica is roughly US\$0.15 to US\$0.40 per pound more than the existing market price. Compensation for certified eco-friendly coffees show considerable variability, ranging from almost nothing to substantial premiums depending on individual negotiations. SMBC certification, because it includes organic certification, fetches at least the organic premium. One of the world's largest coffee roasters has reportedly committed to paying up to 20 percent more for eco-friendly certification. "Up to" is the key phrase, and if 20 percent is indeed paid then it would currently be equivalent to about US\$0.13 per pound for arabica. Utz Kapeh, using EUREP-GAP as its standard, recommends a differential for fulfilling these sustainability practices but does not interfere in the negotiation between buyer and seller. Utz Kapeh recommends a specific premium of US\$0.07 per pound for washed arabica and US\$0.04 per pound for unwashed arabica but only when arabica coffee dips below US\$0.70 per pound on the New York C market. The suggested robusta premium is US\$60 per ton (US\$100 per ton if washed) when the market dips below US\$650 per ton.

For some of these products, the issue of farmer compensation is not clear. For many proponents of sustainability, this represents a distinct danger. Given the inherent asymmetry in negotiations between farmer and buyer, there is a very real risk that farmers will be inadequately compensated for the costs of complying with standards. Historically, industry standards quickly devolved to represent a baseline entry requirement that is necessary for doing business but that is not directly compensated by the buyer. This, of course, raises the requirements for farmers and forces them to absorb additional costs. For example, premiums for meeting EUREP-GAP coffee standards are expected to typically be very low and subject to negotiation between buyer and seller. The failure to have adequate, and widely accepted, discovery of the actual costs of achieving new standards and having these certified makes the recovery of these costs increasingly subject to negotiations in which farmers, because of their often weaker position, may be at a distinct disadvantage. It will, as a result, be critical that the industry jointly define at least the minimum fair compensation for the basic costs of meeting a particular standard and having that certified. It would otherwise be onerous for the producer to negotiate or bear the full burden of these costs. This is especially justified in the case of sustainability standards that represent a clear public good, and they should, therefore, not be entirely subject to the vagaries of market negotiation. If buyer payment of these costs of certification are not a compulsory requirement, then farmers may be unable to recover them.

Current research, particularly in the European and Japanese markets, indicates that it is not always clear to both professional buyers and consumers exactly who benefits from the premiums for sustainable coffees, and how much actually reaches the producer. This can consequently limit the appeal of such coffees.

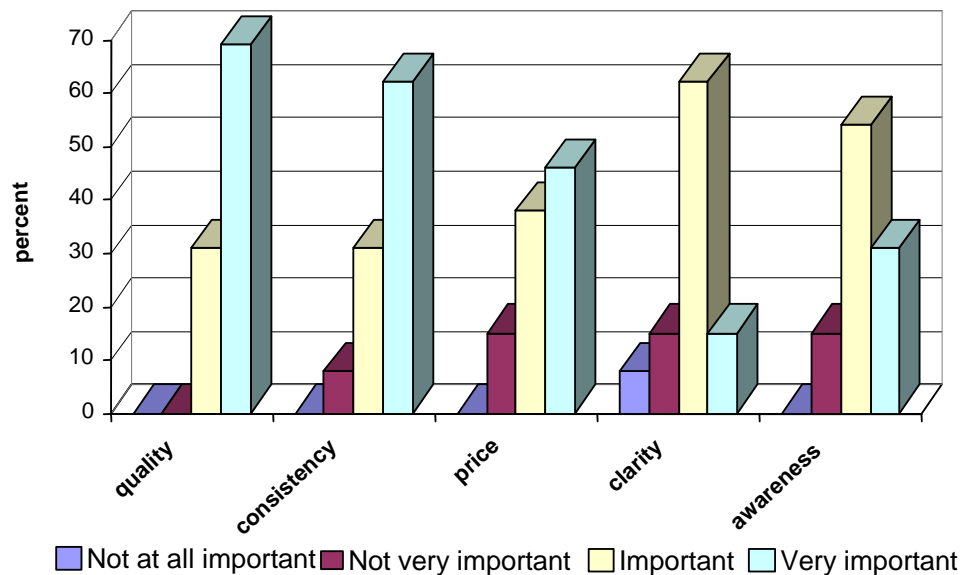
Critical Competitive Factors

Coffee quality and consistency are found to be the most important criteria for the decisions of both European and North American coffee companies purchasing sustainable coffees (Giovannucci 2001; Giovannucci and Koekoek 2003) (see figure 43). This was even more important than price or customer

awareness/demand. Given that both surveys were conducted during uniquely low price periods, the valuation of price may have been somewhat skewed. Nevertheless, informal extracts from these surveys indicate that this finding would also apply to their purchasing decisions for other differentiated coffees. In Japan, one of the world's largest coffee markets, the poor quality to value ratio has been identified as a constraint to further market growth.

In some European markets, quality was not deemed to be a constraining factor. Nevertheless, the increasing competition for a share of slow-growing markets means that quality may be the deciding point in many of the more inelastic markets.

Figure 43 Key factors for the expansion of sustainable coffees



Source: Giovannucci and Koekoek 2003

The relatively high value placed on consistency underscores the industry's typical preference for steady and predictable quality given the costs and risks of sourcing from new suppliers. This critical competitive factor has several implications, particularly for smaller suppliers who typically find it most difficult to achieve consistency every year.

For small producers to achieve consistency it will be vital to improve basic business practices in their cooperatives and organizations. These improvements range from local supply coordination and accounting to contracting and export procedures because these are key factors that prevent the satisfactory fulfillment of contracts. For many it will be equally important to strengthen their collaborative capacity as efficient and democratically run cooperatives/associations that can take advantage of scale economies and ensure the consistent fulfillment of larger contractual obligations not to mention the vital importance of assuring that the financial benefits reach the individual farmers in an equitable and transparent way.

Source Countries

Latin America is the leading source of many differentiated coffees. Its long historic focus on quality and the establishment of infrastructure and institutional mechanisms to foster consistency and quality provide

a competitive advantage; however, this advantage does not pertain to all Latin American producers and the region's first-mover advantage certainly can be short-lived as other producers improve. As noted in section four of this report, Ethiopia, Uganda, India and Rwanda are among those already advancing strategies to penetrate higher value markets.

The East African countries and Indonesia are among the strongest competitors to the Latin American leadership in this field, while efforts in parts of Africa and south Asia are still relatively underdeveloped. Kenya and the United Republic of Tanzania have struggled with quality and output in recent years, though both are now making concerted efforts to address these problems.

This regional advantage is even more pronounced for the supply of sustainable coffees. Organic, fair trade, and eco-friendly production and certification is increasing much more rapidly in Latin America than elsewhere. Mexico, Central America, Columbia, and Peru are the market leaders for organic and fair trade. Even Brazil, the world's leading producer of conventional coffee, is growing its participation in these markets, already producing about 2,000 tons of certified organic coffees in 2002. Certified eco-friendly coffee has its roots in Central America and its certified production is already spreading to Mexico, Uganda, Ecuador, Peru, Brazil, and Colombia.

Just as some producers of differentiated coffees have difficulty identifying and accessing the more lucrative trade channels, so do buyers sometimes find it difficult to access differentiated coffees. This is perhaps most applicable to those coffees grown by smallholders including the three common sustainable coffees. In Latin America, one nonprofit organization now offers a directory of Latin American exporters of sustainable coffee. The Centro de Inteligencia sobre Mercados Sostenibles (CIMS)—in English, the Sustainable Markets Intelligence Center—was recently launched to help buyers locate organic, fair trade, and eco-friendly coffees but does not yet offer a listing of potential buyers.

6. Differentiated Markets: Size and Outlook

Although individual markets vary considerably, there is an overall consensus that the differentiated coffees have shown a healthy rate of growth in recent years despite the flat or even declining sales in the conventional coffee channels documented earlier in this paper. It appears that these general trends will continue an overall positive growth for the near term, though not necessarily for every type or in every market. Just as important for producers is the fact that many of these coffees trade well above the range of the New York and London commodity contract price, and some have managed complete independence in setting their prices.

Currently the markets for differentiated coffees import roughly 6-8 million bags representing about 9-12 percent of the volume—and a larger percentage of the profits—in the most developed markets, such as North America, Western Europe, and Japan. In the United States, for example, where the differentiated coffee markets account for less than 20 percent of actual green coffee imports, they now register more than 40 percent of the coffee sector's profits.^{48 49} To the extent that some of this higher value is kept by

⁴⁸ This U.S. calculation typically includes other value-added coffees in addition to the expected gourmet and whole bean coffees. These include flavored, decaffeinated, prepared coffees (that is, ready to drink), and some specialty solubles.

⁴⁹ SCAA estimates 2002 U.S. Specialty Industry retail sales figures to be approximately US\$8.4 billion. A significant portion of this coffee is prepared or transformed, and much of its total value is captured outside of producer countries.

producers, these markets are breaking the pattern of a declining producer share of revenue as payment for their differentiation.

Appellation Coffees

Strong sales and limited availability of the appellation coffees with GIOs are stimulating the identification and development of additional appellations in a number of countries. Although there is no cohesive global data for GIO coffees, all indications point to very strong and growing demand in all of the major consuming markets.

Jamaica's Blue Mountain coffees still lead this category with export values at about 15 times the ICO average and retail prices typically in excess of US\$80 per kilogram. Although there are few producers, they receive more than twice world market rates. Prices do fluctuate, but production has been amply profitable for decades. Blue Mountain's popularity also helps to stimulate the sales and higher prices of other coffees grown in the proximate area. These second-tier coffees have similar monikers, such as Jamaican Mountain or Blue Mountain Blend, and sell in much greater volumes than their close cousins. This famous appellation has led to a thriving domestic coffee industry based on the tourist trade, as it has in other locations, such as Hawaii, Guatemala, and Costa Rica where roasted coffees are attractively packaged and sold locally at prices that are close to those of retail shops in the United States. and EU. The demand for some of the best-known differentiated coffees with their higher prices is so great that, according to industry insiders, considerably more than the actual production manages to be sold. A few years ago, the high demand and high price for Hawaii's Kona coffee resulted in fraudulent sales totaling millions of dollars that were eventually exposed and prosecuted.

This demand is not limited to the best-known of these coffees. Uganda's Bugisu and Burundi's Ngoma coffees still fetch a market premium, though few consumers are familiar with them. In Colombia, Nariño coffees are contracted for in advance, but other less recognized regions also have a strong following. Even new appellations can quickly develop a market as happened for the Haitian Blue Mountain production.

Specialty and Gourmet

In the early 1980s, the specialty coffee industry in the United States was widely perceived to represent a quasifanatical fringe market. Its meteoric rise, especially in the last decade, makes it one of the most outstanding success stories in the coffee world and has stimulated the formation of specialty coffee associations in many other parts of the globe. Although it did not register on anyone's radar screens 20 years ago, it is now a leading segment of the industry. Many experts feel that the differentiated coffees supported by the specialty industry will continue to expand at a much faster rate than conventional coffees.

The definition of specialty in the United States is undergoing a shift. It currently includes coffees that may not necessarily be high-quality and are otherwise only differentiated by being flavored (chocolate, cinnamon, hazelnut, etc.) and served as an espresso or milk-based beverage, or by being decaffeinated. This is confusing and certainly complicates a better understanding of this market. This confusion can be particularly perplexing from the producers' point of view; producers find that the difficulty of targeting this market is further exacerbated because most of the added value comes from importing country processes like those mentioned above, over which they have no control. The industry is beginning to redefine "specialty" to reflect more of a quality orientation. If we define the U.S. specialty market as those coffees having no defects then the market size is about 3 million bags; otherwise it is approximately

4 million bags, according to the SCAA. Overall estimates for the U.S. specialty coffee industry indicate that retail sales reached US\$8.4 billion in 2002 while total industry sales were approximately US\$18.5 billion (SCAA 2002).⁵⁰

The U.S. specialty market, in the midst of an overall economic downturn, estimates a 5-10 percent growth rate. Much of this growth is expected to come from the out-of-home or prepared beverage segment where approximately 14,000 specialty coffee shop and café retailers account for about three-fourths of the segment's business value.

The European differentiated or specialty industries are more integrated into the overall coffee business than in the U.S. and do not count with separate, verifiable data on market size and development. In recent decades, the overall level of variety and quality readily available to Western European consumers has probably been somewhat higher than in the United States so there was less stimulus for the development of a distinct specialty segment. Even some of Europe's largest roasters have positioned themselves in the differentiated and specialty markets directly or through their subsidiaries. There is nevertheless considerable growth in out-of-home consumption of differentiated products especially espresso-based beverages, a trend that is similarly occurring in the United States.

The Japanese differentiated market is distinct from its conventional market and has more in common with the U.S. structure than with Europe's. Although most of the importers are large and very few dedicate themselves exclusively to specialty coffees, they are respectful of the segment and encourage its growth. Many operate through a network of wholesalers and distributors who service the needs of specialty roasters. The trend toward U.S. style cafés increased rapidly in the late 1990s and early parts of this decade, serving to increase the visibility of high-quality coffees although their strong growth has now begun to slow. Because the market is tightly managed through significant branding and market segmentation, it is difficult to introduce individual new coffees outside of existing channels or blends. Japanese consumers pay some of the highest prices in the world for coffee. They are, for example, key customers for the high-value coffees of several countries, such as Colombia's Emerald Mountain preparation, India's Monsooned Malabar, and Jamaica's Blue Mountain. Japan's uniquely successful development of coffee sales through vending machines has led to increased visibility and consumption of all coffee products. One unique and successful prepackaged coffee beverage features their specific regional origins, such as Colombia or the United Republic of Tanzania. This approach is likely to provide some lessons for coffee development in other predominantly tea drinking countries.

Other differentiated markets are emerging in Australia, Singapore, Hong Kong, Taiwan, and South Korea, driven in part by U.S. style cafés and rapid chain business and franchising expansion. The same is occurring in several producing countries, such as Brazil, Colombia, Mexico, and Vietnam. Although these markets present interesting opportunities and demonstrate notable growth, they are—with the exception of Brazil and Vietnam—still quite small.

Sustainable Coffee Overview

The term sustainable coffees has been commonly used to refer to certified organic, fair trade, and eco-friendly coffees, but sustainable is now changing to include new entrants.⁵¹ These sustainable coffee

⁵⁰ Jay Molishever, director of communications, NCA, personal communication, June, 2003.

segments are growing in most but not all markets. Although they are often perceived as beneficial for growers, it is clear that sustainable coffees also very much benefit the sellers. The industry is in many, but not all cases, seeing increasing sales and higher prices from the product differentiation and price premiums of these coffees. Furthermore, it appears that the industry is generally optimistic about the future of differentiated coffees and seems to increasingly understand that the future of these is intimately linked with the viability of good quality producers.

The demand for sustainable coffees comes primarily from the more developed consumer markets—the United States, Western Europe, and Japan. While these coffees are certainly available in other markets, their volume there is rather small. Total traded volume of certified coffees in 2001 was approximately 600,000 bags. This represent on average between 1 percent and 2 percent of the trade in the countries where these coffees are sold. A more complete figure, including estimates of coffees that were sold with claims of sustainable production practices (that is, ethical, eco-friendly, Utz Kapeh) could add another 500,000 bags for a global total of approximately 1.1 million bags in 2002. This represents nearly 2 percent of all the green coffee imported into the leading consumer countries. Early assessments for 2003 indicate strong and considerable growth fueled by the increasing interest of large industry players.

To gain a better perspective of the importance of the sustainable coffees, it must also be noted that smallholders disproportionately produce them: When disaggregated from the mass of conventional quality coffee, sustainable coffees represent a much greater proportion of the production from small producers. Approximately three-quarters of a million coffee producer households, or 3.5 million people, benefit directly from sustainable coffees. Most of these coffees move through higher-value channels and consequently capture substantial premiums, both monetary and otherwise, in terms of competitive advantage. While sustainable coffees may only represent a small proportion of total global trade, they are quite important in terms of their value for smallholders.

Organic, fair trade, and eco-friendly coffees have traditionally pursued three divergent markets, even though there is considerable overlap among them. Their acceptance into mainstream consumer channels has meant distribution by larger retailers, some of which are increasingly requiring multiple certifications for one coffee. A small but growing number of firms, particularly in Europe, are finding the various certifications to be confusing and prefer to impose their own seal. This could eventually diminish the power and credibility of international third-party certification and may also stimulate the three distinct sustainable coffees toward a more harmonized or unified set of sustainability criteria.

In the U.S. and Canada markets, organic coffees represent the most volume, though fair trade is experiencing faster growth rates. Eco-friendly coffees have even faster growth rates and some distinct niches, including a few mainstream supermarket chains, are still in the nascent stages of development. These certified sustainable coffees are relatively new and are together responsible for green coffee sales, totaling approximately 85,000 bags in 2000 and approximately 147,000 bags in 2002 after estimated strong double-digit growth that is continuing in 2003.

The longer history of fair trade in Europe has helped it to have a notable presence in many of those markets. Although fair trade is the most popular of these coffees in Europe and is growing very strongly

⁵¹ Much of the data in this section is drawn from *The State of Sustainable Coffee: A Study of 12 Major Markets*, a book jointly published by the International Coffee Organization, The International Institute for Sustainable Development, and UNCTAD (2003), as well as *The Coffee Survey of the North American Specialty Coffee Industry* published by the CEC and the SCAA (2001).

in some markets, the average overall growth projections are modest. Organic coffees are growing somewhat faster in much of Europe, fueled in part by recent food safety scares. Eco-friendly coffees have been recently introduced but still have small presence in Europe. The overall market share for sustainable coffees continues to grow in most countries. The highest market shares, in the range of 3 percent, have been realized in Switzerland, the Netherlands, and Denmark.

The Japanese market has shown an affinity for sustainable coffees despite some upheaval as it adjusted to formal organic standards in 2001-2002. The recent application of the Japanese Agricultural Standards now regulate organic coffees so that no uncertified coffees will enter. By the end of 2002, Japan, with approximately 5,000 tons (or 83,000 bags), was the world's third-largest consumer of sustainable coffees, behind the United States and Germany. Some of Japan's leading roasters and coffee retailers have recently introduced eco-friendly coffees throughout Japan. While fair trade continues to be popular, it is less familiar to average Japanese consumers and most is conducted as part of a network of informal relations between socially conscious Japanese buyers and coffee growers; only a small percentage of this is formally registered and shows up in the fair trade data.

In the United States and in most of Europe (see table 21), sustainable coffees started on a very small scale and often through independent roasters and retailers. Since the mid-1990s, some smaller and specialty supermarket chains have carried these coffees, but mainstream supermarkets are now beginning to incorporate them, as well, albeit in smaller selections and quantities. Sustainable coffees appear to be at a crossroads because they now earn their place on the shelves of large multiple store retailers. If their growth consequently escalates, then the challenge will clearly be to provide a consistent and high-quality supply. In the United States, some major coffee chains tested these coffees successfully and are now giving them considerable visibility through renewed larger-scale commitments as they discover consistent sources of supply. High-profile distribution deals are also helping to dramatically raise the visibility of these coffees among consumers. For example, a leading ice cream manufacturer is now launching a new ice-cream flavor, "Coffee for a Change," using a certified eco-friendly coffee extract.

The out-of-home consumption market is expanding in Europe but more slowly than in the United States. Given the increasing importance of out-of-home consumption, the foodservice and café channels could be significant areas of future growth for European countries in particular.

In 2000 and again in 2001, most firms reported experiencing either increased or similar sales of sustainable coffees in most markets with some notable country variations. In North America, more than half of coffee sellers queried in 2001 expected sales to increase over the next few years. Although some projected growth to remain flat, almost no one projected decreases. Among those who projected increased sales, estimates of growth were approximately 27 percent and were spread over the next two years—a bit less than 15 percent per year. In Europe, industry growth estimates differ dramatically from country to country, and ten percent per year represents an approximate overall estimate for 2003-2004.

Table 21 Volume and share of sustainable coffees in key European markets, 2001

<i>Country</i>	<i>Metric tons Green</i>	<i>Market Share (%)</i>
Belgium	1068	1.65
Denmark	1685	3.37
Finland	214	.38
France	1338	.40
Germany	5945	1.10
Italy	947	.29
Netherlands	4136	2.92
Norway	439	1.06
Sweden	1477	1.64
Switzerland	1610	2.85
UK	2408	1.73
Totals	21,267	1.63*

*unweighted average

Source: Giovannucci and Koekoek 2003

Organic

The overall organic food and beverage market has shown remarkable resiliency over the long term, growing at approximately 20 percent per year for more than a decade. The International Trade Commission conservatively estimates that the global retail market for certified organic food and beverages grew from approximately US\$10 billion in 1997 to US\$17.5 billion in 2000 (Kortbech-Olesen, 2000). For 2001, the less-conservative calculations by the Organic Monitor for global organic retail sales were about US\$26 billion. In North America and in Europe, organics are fast becoming mainstream and are gaining new distribution channels through the dominant supermarket chains even in more conservative regions.

Certified organic coffees are a relatively new business. They have been on the market for about two decades, mostly in health-food shops and some specialty retailers, but broad appeal and volume sales have only occurred more recently since the mid-1990s.⁵² In the United States, the Organic Trade Association (OTA) has registered rates of approximately 12 percent average annual growth for organic coffee over the past five years among its respondents. The coffee industry's own estimates have been higher. Most industry projections predict continued growth, though the estimated rate of future growth varies from less than 10 percent to nearly 20 percent per year (Giovannucci 2001; OTA 2001; Giovannucci and Koekoek 2003).

The Sustainable Coffee Survey of the North American Specialty Coffee Industry estimated organic coffee consumption at approximately 5,000 tons in 2000 (predominantly U.S.). There are clear indications that this is growing according to various supporting sources, including the OTA survey cited earlier, unpublished industry reports, and a National Coffee Association (NCA) survey. This NCA survey noted a considerable increase of consumers purchasing organic coffee at least once—13 percent or 8 million people—just among those who are specialty or gourmet coffee drinkers (NCA 2002). In an informal poll of some North American importers and roasters in early 2003, certified organic coffees were showing growth rates of about 20 percent for 2002.⁵³

In 2001, Western Europe consumed more than 11,000 metric tons certified organic coffee. This is considerably more than the North American volume even when adjusting for the 15 percent greater population in the 11 country European sample. Survey estimates show that Germany led Europe with approximate consumption at nearly 3,500 metric tons. Northern European countries appear to dominate this niche. Denmark's organic coffee has a higher share—2.4 percent of the total domestic coffee market—than any other country.

⁵² The much earlier third-party certification of Finca Irlanda in Chiapas, Mexico (Demeter biodynamic) was the first ever recorded, but very few such coffees were available on the open market at that time.

⁵³ Mention should be made that this poll was from a modest starting point.

European organics have positive growth outlooks in most countries with industry estimates of growth and projections averaging about 10-15 percent per year in the 5-year period of 1999-2004 (see table 22) (Giovannucci and Koekoek, 2003). This growth rate will mean a near doubling in volume over that period. In the EU, organic certification has for a decade been governed by regulation 2092/91 and has served to make the organic trade more transparent. The independent application and management of the EU rules in each country but has meant that the organic industry still has to sift through the confusion created by the various regulatory agencies in some of the states.

This has, according to the coffee industry, caused difficulties and impeded growth. Beginning in July 2002, more stringent EU import authorization rules for organic products mean that valid transaction certificates issued by recognized certification agencies will be mandatory. Failure to provide the certificates when applying for an organic import authorization for any coffee from outside of the EU will mean that the product will be classified as conventional and cannot be legally sold as organic.

The Japanese market participated in the global surge of organic coffee demand and reportedly showed excellent growth rates through the late 1990s but had recently dropped to an estimated 1,700 metric tons of certified coffees in 2001 before picking up again. Two reasons seem to explain this anomaly: First, the recently enacted Japan Agricultural Sector laws governing the certification and labeling of organic products apparently disturbed the markets because many traders were unprepared for the new criteria that replaced much looser organic standards. Second, the Japanese consumer expects the quality levels of organic products to be similar or better than conventional products and, in the past, many of the imported organic coffees have apparently not met consumers' flavor and quality criteria. It appears that the Japanese market is now moving beyond both hurdles and 2002 figures indicate that Japan is the world's second-largest consumer of certified organic coffees with imports in excess of 4,000 tons.

By early 2002, the global supply situation was much improved with 26 countries exporting certified coffees. In recent years, producers have seen a considerable reduction in the premiums paid with much more attention paid to quality. Organic premiums range from a low of US\$0.10 to US\$0.15 for average or lower-quality coffees and can easily reach US\$0.40 to US\$0.60 for better coffees. Several sources report considerably higher premiums paid in some cases. Although some sources of organic supply can still be poor or inconsistent in quality, many have demonstrated significant improvement as a result of competitive pressures. The recent winner of Brazil's Cup of Excellence, a prestigious internationally judged competition, was certified organic. Hawaii's Kona coffee, one of the world's most prized origins, recognized a certified organic producer as the winner of its annual competition in 2002. One of the world's most popular café chain now identifies enough good quality certified organic coffee to develop a permanent organic blend for its U.S. stores. With this new blend, it expects to initially need at least an additional 300 metric tons of certified organic coffee per year.

Table 22 Organic coffee sales in select European countries

<i>Country</i>	<i>Volume 2001 (green metric tons)</i>	<i>Avg. Annual Growth, 1999-2001 (%)</i>
Belgium	456	15
Denmark	1448	4
Finland	103	18
France	600	18
Germany	3502	17
Great Britain	691	18
Italy	641	60
Netherlands	978	15
Norway	230	2
Sweden	1477	28
Switzerland	431	15

Source: Giovannucci and Koekoek 2003

Fair Trade

The fair trade market has achieved widespread European acceptance since its modest beginnings there in the 1970s (see table 23). It is the most popular of the cause related coffees in the European markets and surpasses the market share of organic coffee. In its brief history, it has provided considerable support to hundreds of thousands of small producers in two dozen countries. Most, but not all, of the fair trade network is now coordinated by the Fair Trade Labeling Organization International (FLO). The clarification and harmonization of policies, labeling, certification, and inspection are proving to be valuable steps forward. This niche is emerging from the earlier stages of its development as a limited network, dependent on a high level of ideological solidarity and toward a more viable market entity with widespread consumer appeal.

Globally, sales have averaged about 8 percent annual growth over the past 5 years with 2002 volumes reaching nearly 16,000 tons. Fair trade coffee is sold in about 20 countries and has a market share of about 2.5 percent to 3 percent in the Netherlands, Denmark, and Switzerland. For most other countries, the fair trade market share is less than 2 percent (see table 23). In some of the more seasoned markets, there is concern about the capacity of fair trade for future growth beyond this level. Although it is not yet clear, it appears that in a few countries such as The Netherlands and Denmark, consumption levels may have matured and reached a potential ceiling. There is general agreement, even among some of its proponents, that to move beyond fair trade's apparently limited base of partisan support and increase its reach and volume, that it must position itself strongly in the more mainstream distribution channels. This is just beginning to happen in Europe as various supermarkets take an interest.

In the North American markets, fair trade has positioned itself as part of the specialty trade and has not met heavy consumer resistance in this high-end channel. In the four years since the official introduction of Transfair certification in North America, it has generated dramatic growth. The United States posted imports of approximately 4,600 metric tons of green coffee in 2002, an increase of 45 percent over 2001 when increases were closer to 50 percent more than the previous year. The vast majority of this, about 83 percent, was also certified organic and only very modest quantities were certified as shade grown. Canada grew from 190 metric tons in 2000 to 360 tons in 2001 and nearly 600 tons in 2002; approximately one-half of this was also certified organic. A portion of the North American imports were used in blends or were otherwise not labeled as fair trade. The visible amount of 100 percent fair trade registered coffees sold in stores and cafés is somewhat smaller, but this has little or no effect on the direct benefits that producers receive.

The Japanese fair trade market is particularly difficult to gauge because only Transfair keeps statistics, and they currently represent only a small portion of the Japanese fair trade market. Transfair figures show

Table 23 Fair trade coffee in select European countries

<i>Country</i>	<i>Volume 2001 (green metric tons)</i>	<i>Avg. annual growth, 1999-2001 (%)</i>
Austria	503	8
Belgium	698	11
Denmark	836	0
France	1134	88
Finland	116	18
Germany	3754	-2
Great Britain	2271	12
Italy	562	14
Netherlands	3726	0
Norway	214	78
Sweden	361	27
Switzerland	1554	-2

Source: compiled from data provided by FLO and author's independent research (Giovannucci and Koekoek 2003)

a 17 percent annual increase to nearly 8 tons in 2001; while total fair trade estimates are more than 500 tons.

The three most cited sources of resistance to the adoption of fair trade into the mainstream channels are a) its requirement to make prefinancing available to growers if necessary; b) that the benefits to producers are not clear; and c) what is considered a high price in relation to the current market. The first is partly an issue of mechanics as many large buyers do not deal directly with producers and would have to authorize and track deposits along their supply chains. In practice, this is often a moot point since many producers do not request such financing. A number of firms, including some that sell fair trade coffees, voice concerns that they are not certain about exactly how producers are actually benefiting. This complaint may be surprising to some because buyers who participate in fair trade usually have direct contact with the growers and could have ready access to such information. The fair trade organizations have taken steps to improve inspections and reporting from the field and, perhaps, more can be done to educate the roasters and buyers about their specific impacts in the coffee-producing communities. Some buyers have an issue with the FLO floor price claiming that this price is oriented toward income support without being necessarily reflected in corresponding high quality. They also argue that it is artificially set and not reflective of market realities, and it will not be sustainable in the long run because it could easily send signals to produce more when the market is oversupplied.⁵⁴ The other side of the argument holds that the minimum fair trade price is only a just compensation and that the market does not fairly value the costs and risks of production. When the world price is above the minimum, the fair trade premium is only US\$0.05 more per pound (and, therefore, not onerous). It is expected that producers will respond with competitive quality, and buyers, who have more to choose from, will eschew poor quality. Currently, less than 20 percent of the certified fair trade coffee is actually sold through its channels at the minimum floor price.

For fair trade to expand its consumer base and be perennially competitive in mainstream markets, these concerns will have to be addressed. The recent entry of these coffees in a number of EU supermarket channels may determine whether fair trade's offerings will appeal to the masses. If there is a healthy acceptance in these supermarkets, its volume and market share could easily show dramatic growth. There are also other reasons for an optimistic outlook. For example, one fair trade company in only ten years has captured about 6 percent of the ground coffee segment of the UK market and has extended its brand into instant coffee and even tea.

The question remains whether mainstream consumers will understand the fair trade message and be willing to pay more than they do for conventional coffee. One of America's largest coffee companies is already testing the concept in supermarkets. Fair trade is managing to grow at a healthy pace in many markets, even in the current difficult price situation in which the difference between the international commodity price and its base price (approximately 100 percent in 2002-2003) is remarkable.

More than 24 producer countries currently have fair trade certified producers. These approximately 600,000 producers have the capacity to produce more than 100,000 metric tons. They are led by (in volume order) Mexico, Peru, Colombia, Nicaragua, and Guatemala. Global exports have grown by 32 percent between 1996 and 2001. Most but not all of the fair trade flows through the official FLO system. More than 17,000 tons of exports were officially certified as fair trade in 2001, an increase of more than 12 percent over the previous year, and 2002 showed a nearly 10 percent increase. The unofficial figure,

⁵⁴ Originally based on a modest profit margin added to ICO calculations of production costs for quality oriented producers.

including FLO numbers, could be 10 percent to 15 percent higher. Nearly half of this coffee is also certified organic.

Eco-Friendly or Shade

This relatively new category is not homogenous and actually includes certifications with some similarities—primarily those of the Rainforest Alliance and the Smithsonian Migratory Bird Center (SMBC)—that share a primary concern for ecological biodiversity. They are known as shade-grown, bird-friendly, and certified by the Rainforest Alliance (formerly Eco-OK). These coffees directly contribute to the conservation of ecologically sensitive areas and respond to a shortcoming of some organic certification standards in this regard.

Eco-friendly coffee made its first significant commercial appearance in the late 1990s.⁵⁵ Although its volumes are much smaller than the more established organic and fair trade segments, it has received relatively quick acceptance. They have recently begun with some modest sales in the UK, but have had very little exposure and awareness elsewhere in Europe. This could soon change the world's second-largest branded food company, begins its commitment to source Rainforest Alliance-certified coffees for four of its European markets. Taiwan has introduced these coffees and they recently achieved national distribution in Japan. North America is the most popular market for eco-friendly coffees where they flow through nearly all of the distribution channels, though still in limited quantities.

This category could have the greatest potential for mainstream market success because it appeals to larger-established producers because it does not require strict organic production and, unlike fair trade, is not limited to smallholders. These larger producers often have the market contacts and volumes to more quickly establish a relationship with larger buyers.

Approximately 4,000 metric tons of eco-friendly coffee from seven countries were sold in 2001, the bulk of which came from Guatemala and El Salvador. In 2002, sales were considerably higher with the help of large new clients in the United States, Japan, and new markets in the UK. Further expansion to France, Belgium, and the Netherlands will certainly increase the volumes sold in 2003. Brazil, Mexico, Costa Rica, Nicaragua, Panama, Colombia, and Peru are the other producers with certified farms. This is a considerable jump from estimates for 2000 sales of certified shade-grown coffee that were approximately 500 metric tons, though much more was sold uncertified. Premiums paid to producers are often linked to coffee quality and vary considerably from US\$0.05 per pound to as high as US\$0.80 per pound, with the most common premiums ranging from US\$0.10 to US\$0.60 per pound.

Sustainable Coffees: Helping Producers to Capture Diverse Forms of Value

Policy options, especially for smallholders and most especially for growers in remote and environmentally sensitive areas, are usually limited. In these situations there are often very few economic alternatives and a limited scope for diversification. A proactive policy toward sustainable coffees can have notable socioeconomic and environmental impacts for the growers. A shift away from rustic cultivation methods that do not use external inputs to organic methods that incorporate local inputs and actively manage the cultivation cycle can improve yields and incomes with only modest external

⁵⁵ Audubon's modest earlier attempt in the 1990s to launch a bird-friendly ecologically sound coffee was problematic, and the coffee was removed from circulation.

investment and without environmental imbalance, as shown in Mexican, Costa Rican, and Guatemalan studies (Rice and Ward 1996; Moguel and Toledo 1999; Akkerman and Van Baar 1992; Mexican Coffee Council—Certimex unpublished). In comparison to many crops, coffee, as an evergreen crop integrated with other trees, can also be intrinsically advantageous for biodiversity.

The downward trend of certification costs is facilitating the access of poorer growers to high-value markets. Even during the transition phase prior to organic certification, coffee can often be sold at a small premium. Sustainable coffees provide one of the few viable opportunities for the smallholders to not only access high-value markets but also do so while maintaining or even improving their natural resource management and their environment.

These market options are especially valuable because there are only a few remunerative crops with which smallholders can participate competitively in the marketplace. Today's flooded commodity market is but one instance where many producers earn minimal prices and barely recover their costs while many sustainable or differentiated coffees sell at considerable premiums. Furthermore, a number of other benefits accrue to growers and their communities that follow sustainable growing practices that are somewhat independent of the success or failure of sustainable coffees in the marketplace. These reasons, outlined below, provide a convincing rationale for public support to help promote these market oriented production methods.

The most common accusation levied against many sustainable production practices is that their output is relatively low in comparison to intensive, chemically-supported agriculture. According to Brady (2001), Akkerman and Van Baar (1992), and Boyce et al. (1994), researchers documented that, though conventional, chemically oriented sun coffee production provides higher yields, and it also results in lower net revenues per hectare than organic production for smallholders. Sustainable coffee producers often manage their farms using multiple crop production strategies, offering food crops, timber and nontimber forest products with which to augment their income and improve their nutrition.

The costly upfront input investments of intensive, chemically supported cultivation are sometimes not available to farmers and when calculated with the costs of borrowing for these inputs can, in some cases, make such intensive production methods less competitive. Application and contamination risks should also be considered especially when inexperienced family labor is used. Sustainable production methods eliminate the risks inherent in not only the upfront investment but can also reduce the dangerous dependence on a single crop. Finally, one or more of these sustainable methods will also typically offer a number of other benefits:

- Shade trees help to preserve the soil structure, preventing erosion and protecting watersheds. They also provide nutrients in the form of leaf litter and sometimes nitrogen fixation.
- Cover trees offer alternate crops for food security or home consumption and for market, such as citrus, banana, avocado, and lumber.
- Organic soils better support microbial life, ensuring a natural control of pests and pathogens. The improved tilth improves water retention and soil stability which can dramatically reduce the impacts of drought and excessive rain.
- Species diversity improves both nutrient recycling and on-farm diversification and as part of a total yield strategy, helps to manage risk.
- Reduced expenses for external inputs tend to minimize financial risk.

- Increased rural self-sufficiency can be achieved through community or organizational development and the greater use of rural labor fostered by sustainable coffees.
- Farmers and their families might benefit from the reduced health risks due to the minimized use of agrochemicals.⁵⁶

The intrinsic value of sustainable production methods, especially in environmentally fragile or low income rural areas, have made them a popular choice especially for smallholders.

⁵⁶ According to the World Health Organization, at least 40,000 people die from pesticide poisoning every year and another 3-4 million are severely poisoned requiring hospitalization. This is especially in developing countries where the more toxic materials continue to be widely used and easily available (IFOAM 2000). These records do not capture the much larger estimated number of people affected by agrochemicals and who are not formally hospitalized.

Appendix Quick Reference on Coffee Production

Table A1 Fifty-five coffee-producing countries by principal type and region

<i>Milds</i>	<i>Natural Arabicas</i>	<i>Robustas</i>
Colombia Milds <ul style="list-style-type: none"> *Colombia Kenya Tanzania 	All Natural Arabicas <ul style="list-style-type: none"> *Brazil Ecuador Paraguay Yemen 	American Robustas <ul style="list-style-type: none"> *Brazil Ecuador Trinidad and Tobago
American Milds <ul style="list-style-type: none"> Bolivia Costa Rica Cuba Dominican Republic Ecuador El Salvador Guatemala Haiti Honduras Jamaica *Mexico Nicaragua Panama Peru Venezuela United States (PR and HI) 		Asian Robustas <ul style="list-style-type: none"> India Indonesia Lao PDR Malaysia Philippines Sri Lanka Thailand *Vietnam African Robustas Angola Benin Cameroon Central African Republic DR Congo Equatorial Guinea Gabon Ghana Guinea Liberia Madagascar Nigeria Togo Sierra Leone Tanzania *Uganda
African Milds <ul style="list-style-type: none"> *Burundi Cameroon DR Congo Madagascar Malawi Nigeria Zambia Zimbabwe 		
Asian Milds <ul style="list-style-type: none"> *India Indonesia 		
Papua New Guinea		

*Asterisk indicates leading-producing country by type and region in 03/06 crop year, according to the USDA. Source: USDA, data provided to author

This survey of the development of coffee supply looks at coffee by classification then by region. The ICA divides coffee output into four major groups—two groups for washed arabicas, and one group each for natural arabicas, and robustas. The washed arabica group is divided in two—Colombian Milds and Other Milds. In this paper we have further split the discussion of each category into a regional focus. This does

mean that the countries in the Colombian Milds group—Colombia, Kenya, and the United Republic of Tanzania—are separated from the regional overview of washed arabica production. There are a small number of cases where the production of a certain type of coffee is not shown because of its small quantity, and this is reflected in the tables in this document, regardless of data source. Examples include the robusta production of Guatemala and Papua New Guinea.

Table A2 Share of export value of commodities represented by coffee

<i>Country</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>Average</i>
Burundi	81.36	77.29	77.89	52.10	55.13	68.75
Rwanda	49.79	68.47	67.97	46.14	66.95	59.86
Ethiopia	67.37	56.58	51.66	30.49	33.64	47.95
Uganda	59.02	52.86	27.24	21.44	22.21	36.55
Sierra Leone	57.44	38.15	22.93	0.23	0.71	23.89
Nicaragua	31.67	25.83	26.23	17.78	13.50	23.00
Honduras	28.03	22.00	24.45	12.20	14.29	20.19
Guatemala	22.63	24.48	21.18	12.36	12.09	18.55
El Salvador	19.72	20.80	22.70	9.58	8.52	16.26
U.R. Tanzania	19.31	14.50	11.89	8.00	3.73	11.49
Madagascar	26.80	13.77	3.12	0.90		11.15
Colombia	18.84	12.29	9.17	7.10	7.28	10.94
Kenya	10.84	11.03	8.52	4.97	3.61	7.79
Papua New Guinea	11.85	8.09	5.10	4.26	4.70	6.80
Congo, Dem. Rep. of	13.72	6.03	2.75	2.05		6.14
Cote d'Ivoire	8.76	4.97	9.44	4.55	2.73	6.09
Central African Rep.	5.63	9.75	5.69	1.77		5.71
Costa Rica	7.11	4.95	4.43	3.40	2.98	4.57
Cameroon	3.96	5.75	4.24	2.78		4.18
Vietnam	6.42	4.89	3.18	2.27	1.83	3.72
Brazil	5.07	5.12	3.22	2.43	2.27	3.62

Source: ICO, customized subset of data sent to author, taken from ICO database

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