



The Long Run Impact of the Ending of Coffee Control

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1. The Coffee Price



The End of Coffee Control

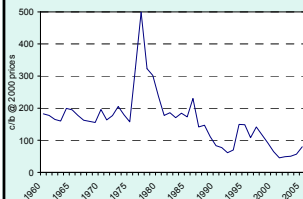
ICA export controls ended on 4th July 1989, now 16 years ago.

What have been the effects of the ending of controls

- a) on the level of prices, the price trend and price volatility?
- b) on coffee production and its distribution across producing countries?

Can one extrapolate these changes into the future and, if so, how is the structure of the coffee industry likely to evolve?

The Real Coffee Price, 1960-2005



ICO Composite Indicator Price, c/lb,
deflated by US Producer Price Index
(Industrial Goods), 2000=100

Excluding 1976-79, the real coffee price averaged 178c/lb in 2000 values over 1960-88; but only 87c/lb over 1990-2004.

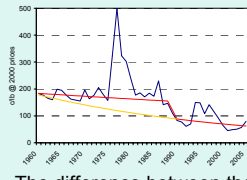
The difference is statistically significant ($t = 8.5$).

The ending of controls appears to have resulted in a halving of the coffee price.

The Price Trend

- The estimate of a 50% fall in the real price after the ending of controls is too high. An alternative estimate is closer to a 40% fall. (My estimate is 41.5%).
- Non-oil commodity prices are all subject to a downward trend as the result of productivity advance. The coffee agreements effectively suppressed this trend which re-emerged once controls ended.
- Over the post-control period, real coffee prices appear to have been falling at around 2¼ p.a. against only ½% p.a. prior to 1989 (these estimates are imprecise). By not adjusting the price support range downwards in the '80s, the ICO increasingly lost touch with market realities.
- With little inflation in the prices of industrial goods, this translates into a similar tend fall in nominal coffee prices.
- Coffee prices have moved broadly in line with other non-fuel commodity prices since 1989.

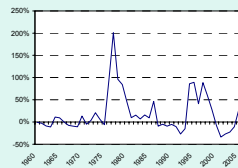
Trend and Cycle



The estimated price trend (in red) is super-imposed on the price graph. My estimate of the current trend price is 72c/lb at today's values.

The difference between the actual price and the trend defines an irregular cycle, with periodicity of 11 years.

Currently, the real coffee price is around 28% above its trend value.



Price Differentials (relative to Other Milds)

	Naturals	Colombian Milds	Robustas
1976-88	10.8%	8.2%	- 13.1%
1990-95	- 7.9%	6.1%	- 29.9%
1996-2005	-13.9 %	7.3%	- 48.0%

- Arabica differentials over robustas have widened sharply in the post-control period, in particular since 1995.
 - This reflects three factors:
 - a) quota allocations in the coffee agreements may have discriminated against robusta producers;
 - b) productivity advance has been faster in the robusta sector over the past 15 years;
 - c) growth of the speciality market has favoured producers of high quality arabicas.
- Statistical analysis suggests that the decline in the robusta relativity is permanent, favouring the productivity explanation.

Is Coffee Still a Single Commodity?

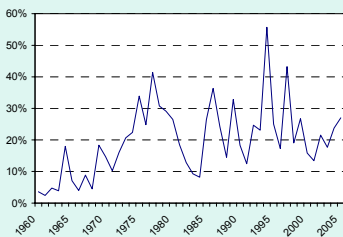
	Naturals	Colombian Milds	Other Milds	Robustas
Naturals		0.607	0.656	0.604
Colombian Milds	0.892		0.820	0.699
Other Milds	0.942	0.952		0.853
Robustas	0.752	0.727	0.773	

- Correlations of monthly price changes, 1976-88 and 1990-2005. Prices move more closely together post-control than, particularly within the arabica group.
- The ICO Indicator Price average has little meaning (no coffee trades at this price), but prices move as (or more) closely together than previously.
- Coffee remains a single, but heterogeneous, commodity.

Prices over the Future?

- The adverse price trend, estimated at 2¼% p.a., reflects continued productivity advance. This must be expected to continue. It will put particular pressure on African robusta producers.
- My central estimate for 2010 is 64c/lb (2005 values) and for 2015, 57c/lb. However, these are subject to very wide margins of uncertainty and, as always, one can expect very high prices if a shortage emerges.

Price Volatility



Intra-annual standard deviation of percentage changes in the nominal ICCO Composite Indicator Price at an annual rate.

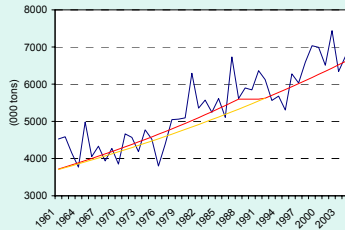
Volatility is high (average 1990-2004 is 23.9%) but does not appear much different in the post-control period than from 1975-88.

Market liberalization may have increased farmgate price volatility.

2. Coffee Production



Production Growth



Production of ICO exporting members (source: ICO from 1975, FAO before 1975) plus estimated production of non-ICO exporting members (source: FAO).

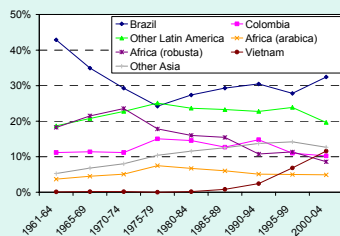
Production growth has been modest, averaging 1.75% p.a. over 1962-2004.

Production is constrained by low consumption growth although this may now be picking up.

Production Location

- Despite the slow overall rate of production growth, the location of production has changed dramatically over and after the period of control.
- The pattern of this evolution is consistent with the view that export quotas effectively protected high cost producers and limited expansion opportunities for lower cost producers. The ending of controls has permitted low cost producers to expand.
- A consequence is that average production costs, kept high over the control period, have fallen through the increase in low cost production. This seems particularly important in the robusta sector.

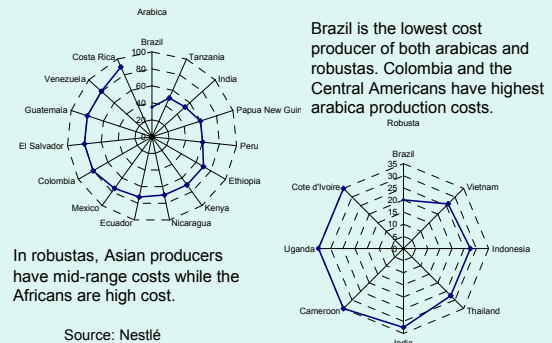
Production Shares



Brazil's share declined over the first two decades of control from 43% to 24%. It has now recovered to 32%.

The share of the African robusta producers peaked at 24% in 1970-74. It has subsequently fallen back to 9%. Colombia and the remaining arabica producers saw a small increase in share in the '70s and '80s but now have similar shares to the early '60s.

Production Costs

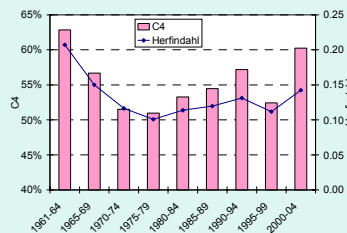


Brazil is the lowest cost producer of both arabicas and robustas. Colombia and the Central Americans have highest arabica production costs.

In robustas, Asian producers have mid-range costs while the Africans are high cost.

Source: Nestlé

Concentration



C4 = Share of 4 largest producers in total production. Herfindahl is the sum of the squared shares over all producers.

Quota controls lowered production concentration. C4 fell from 63% ('61-64) to 51% ('75-79).

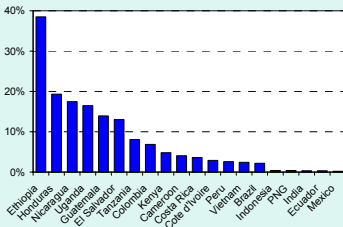
Concentration has increased since the '80s with C4 now at 60%.

However, the identity of the 4 largest producers has changed over this period.

The Exchange Rate Regime

- The country's exchange rate regime is important in determining the distributional impact of falling prices.
- In an economy with a floating exchange rate and high coffee concentration in exports (e.g. Uganda), the real exchange rate will adjust down to maintain the competitiveness of the sector, at the expense of raising the cost of imported goods throughout the economy.
- In economies in which coffee is relatively unimportant, or where nominal rates are fixed (e.g. CFA franc countries), the real exchange rate will adjust much less and the coffee sector will bear the full impact of falling prices.
- Countries with high costs and inflexible exchange rates may find it difficult to maintain an efficient coffee sector.

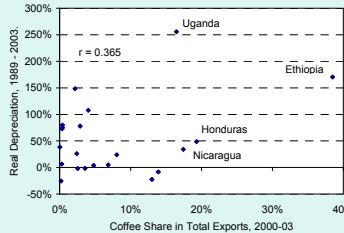
Export Concentration, 2000-03



Four countries have coffee export shares in total export revenues in excess of 15%: Ethiopia, Honduras, Nicaragua and Uganda.

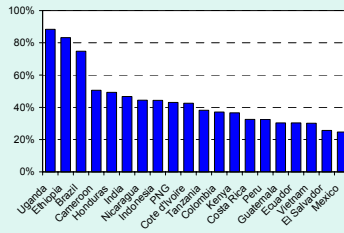
Source: FAO and IMF

Exchange Rate Depreciation



The four countries with coffee share in excess of 15% have all seen real exchange rate depreciation over the period since the ending of coffee controls.

Effects on Local Prices



Although the real local currency equivalent of ICO prices have declined on average by over half, they have decreased by less than one quarter in three countries which have seen large real depreciations – Brazil, Ethiopia & Uganda.

ICO prices converted into local currency and deflated by local CPI, 2000-03 relative to 1988.

Sustainability

- In countries in which coffee has national importance and where the exchange rate is flexible, the exchange rate can ensure continued viability of the coffee sector.
- In countries in which coffee has a lower degree of national less importance, and in countries in which the exchange rate is less flexible, proportionately greater efforts will be required to ensure viable coffee sectors.
- It may be difficult to sustain profitable coffee production in Central American and Asian countries in which increased prosperity results in real appreciation, and also in those African countries in which membership of a currency bloc limits real exchange rate variation.

3. Policy and Conclusions



Market Power (short run)

- Brazil's increased market share gives it the potential of exercising a degree of market power.
- A 1% cut in Brazilian production will raise the world price by $\alpha\%$ where $\alpha = w/[e + (1-w)\epsilon]\%$ and w is Brazil's share of world production, e is the elasticity of consumption demand and ϵ is the elasticity of non-Brazilian supply.
- Take $w = 1/3$ and $e = 0.1$. In the short run, supply is inelastic so take $\epsilon = 0.1$. Then $\alpha = 2\%$ and Brazilian revenues rise by 1% for each 1% production cut.
- There is short term advantage for coffee Brazilian producers in the exercise of market power. However, Brazilian coffee consumers lose offsetting these gains.

Market Power (long run)

- The coffee control experience suggests that, in the long run, the non-Brazilian supply elasticity is relatively high.
- If we take $\varepsilon = 5$, we obtain $\alpha = 0.1$, so a 1% cut in Brazilian production lowers producer revenues by 0.9%. Brazil has market power in the short but not the long run.
- In the long run, the major beneficiaries of a hypothetical exercise of Brazilian market power would be the Central American and African producers who would see smaller production declines than otherwise.
- Coordinated reductions across several producers face the same problem – short run gains but at the expense of loss of market share and revenue to non-participants.

Supply Management

- This is not currently on the international policy agenda and, fortunately, in coffee, there is no current need for it.
- Over the medium term, it is likely that national shares in world coffee exports will continue to evolve towards a more concentrated structure. This would make agreement on a supply management structure even more difficult than in the past.
- Over the long term, as export shares stabilize, increased concentration might ease negotiation problems, in particular if Brazil, likely to be by far the largest producer, were to become favourable to this response.

Exchange Rate Policy

- Exchange rate policy is determined at the governmental or regional level, and not by industry. However, the choice and management of exchange rate regime is crucial to the future of the coffee industry.
- By allowing the national currency to fluctuate, government can partially insulate agricultural exports from adverse price movements.
- Exchange rate movements are moderated within a regional bloc since individual commodities, such as coffee, are less important. If governments participate in such blocs, they may need to envisage more active support in times of low prices.

Hedging

- Hedging, through forward sales or options purchase, allows producers to lock into to favourable prices.
- This is particularly important where producers have financed through credit and increasingly, banks are likely to insist on price protection.
- Hedging also enables cooperatives to compete on more equal terms with private traders. However, cooperatives often lack the managerial structures which enable rapid decision making. It is likely that banks may assume this function on their behalf.
- Improved risk management is likely to develop in conjunction with improved access to agricultural credit.
- I estimate coffee prices as currently almost 30% above trend. This is a good time to start thinking about hedging.

Quality

- Quality issues take two distinct forms in coffee:
1. All exporters need to ensure minimum quality standards. There is no need to destroy sub-standard coffee but it should be clearly identified as such, and must not contaminate good quality coffee. (Traceability and phytosanitary regulations raise the same issues).
 2. Producers of high quality arabicas can obtain high premia in the speciality market, but this requires consistency of quality and good marketing.
- It is not clear that quality supervision functions are always best performed by governments – producer organizations may do this better in particular in assisting cooperatives and exporters who lack appropriate experience and skills.

Conclusions (prices)

1. The ending of coffee controls resulted in a one time drop in coffee prices of around 40% plus the re-emergence of the previously suppressed negative price trend (around 2¼% p.a.). The price trend results from productivity advance, common across all agricultural commodities.
2. Arabicas, which traded at a small premium to robustas in the control period, have fared much better than robustas even though there has been little change in the arabica-robusta mix – productivity advances may have been more rapid in the robusta sector.
3. Price volatility remains high, but not notably higher than in the seventies and eighties.

Conclusions (production)

1. Export controls favoured Central American producers and African (robusta and arabica) producers, who benefited from increased market shares, largely at the expense of Brazil. Production concentration fell.
2. The post-control period has favoured low cost producers who have been able to regain market share. The major beneficiaries have been Brazil and Vietnam, and the major losers the African robusta producers. Concentration has risen.
3. For coffee producers with high export concentration, future profitability depends to a large extent on the exchange rate regime. A flexible exchange rate spreads adjustment costs across the entire economy while a fixed rate, or participation in a currency zone, confines adjustment to the coffee sector.

Conclusions (policy)

1. Long run supply elasticities are high. No producer or group of producers has sufficient market power to benefit from restricting production (although there could be short term advantage).
2. In the medium term the rapid evolution of national shares in the world coffee trade, is likely to make producer even more difficult than previously. Once market shares stabilize, higher producer concentration may make multilateral supply management easier in the longer term, should such a need arise.
3. Producers and exporters who rely on bank credit will find it advantageous to hedge and banks may require this. With current coffee prices above trend, this is a good time to start thinking about this process.
4. Quality issues are important. It may be better if producer organizations maintain responsibility.

A Personal Note

- From the outside, the coffee industry appears markedly healthier now, at the time of the Second World Coffee Conference, than four years ago at the time of the first conference.
- Prices are higher.
- More importantly, most origins have found that they can survive and even be profitable in a competitive environment, although the sacrifices have been greater, and less equally shared, in some countries than in others.