



International Coffee Council
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**Volatility of prices paid to coffee growers in
selected exporting countries**

Background

In the context of its programme of activities, the Organization pays particular attention to price fluctuations, especially in the case of prices paid to growers in exporting countries, since the consequences of such fluctuations on producer earnings may have a serious effect on the sustainability of the coffee economy. This document contains a study on changes in prices paid to growers and their volatility.

Action

The Council is requested to take note of this document

VOLATILITY OF PRICES PAID TO COFFEE GROWERS IN SELECTED EXPORTING COUNTRIES

EXECUTIVE SUMMARY

1. Unpredictable and volatile market prices can have serious and long-lasting effects for coffee growers. Investment and planting decisions have to be made based on the information available at any given time, but unforeseen changes in prices can undermine these choices, often with detrimental consequences. It is therefore important to analyse the evolution of changes in prices over time, in order to shed light on future developments.

2. This study examines trends in volatility and developments in prices paid to coffee growers in seven exporting countries over the last thirty years. It is found that amid the price rises over the last decade, volatility has also increased in four out of the seven countries under consideration, albeit only slightly. The introduction of the free market system in the 1990s, however, did lead to increased volatility in all but one country. The exact transmission mechanisms for this volatility will depend on the internal market conditions of the individual country, and would benefit from further analysis.

INTRODUCTION

3. Volatility is a measure of the tendency for a price to change over time. It is used to describe the risk associated with price fluctuations. In many exporting countries price volatility is a far more serious risk than risks linked to production. There are two main sources of income instability for coffee growers: production uncertainties and post-harvest price uncertainties. For this reason, it is important to determine the variation in prices paid to growers or farmgate prices. The following points will be covered:

- I. Development of prices paid to coffee growers in selected exporting countries
- II. Volatility of prices paid to coffee growers in US dollars
- III. Volatility of prices paid to coffee growers in national currencies

4. The methodology used is based on observations of prices paid to Arabica coffee producers in selected exporting countries over the last thirty coffee years, namely from 1980/81 to 2010/11. The main criterion for the selection of exporting countries was the

availability of information on prices paid to growers or farmgate prices. The exporting Member countries selected for the study are: Brazil, Colombia, El Salvador, Ethiopia, Guatemala, Honduras and India. These seven countries recorded production averaging 59 million bags during the last thirty years, representing 56.7% of average world production during the period 1980/81 to 2010/11 (Table 1 and Annex I). These countries provide the Organization with regular information on prices paid to growers¹.

Table 1: Average production of selected exporting countries since crop year 1980/81

	Brazil	Colombia	El Salvador	Ethiopia	Guatemala	Honduras	India	Total	World total
Average production (1980/81 - 2010/11)	31 722	11 943	2 128	3 790	3 635	2 315	3 524	59 057	104 152
Percentage share in world production	30.5%	11.5%	2.0%	3.6%	3.5%	2.2%	3.4%	56.7%	

In thousand 60-kg bags

I. DEVELOPMENT OF PRICES PAID TO COFFEE GROWERS IN SELECTED EXPORTING COUNTRIES

A. Prices expressed in US dollars

5. Average prices in US dollars during the period 1980/81 to 2010/11 are shown in Annex II. The highest price levels were recorded in coffee year 2010/11 in almost all selected countries, with the exception of Ethiopia and Guatemala which recorded the highest prices received by growers in coffee years 1994/95 and 1985/86 respectively. Apart from Guatemala, growers in all the countries selected received their lowest prices during coffee years 2000/01 to 2003/04, the period corresponding to the crisis of low prices in exporting countries. Developments since coffee year 2004/05 show high levels of prices to growers in many countries. Coffee year 2004/05 marked the beginning of the recovery of international coffee market prices which has produced substantial increases in prices paid to growers in many exporting countries.

¹ Brazil, Colombia, Ethiopia, Guatemala and India provide monthly statistics on prices paid to growers; the other two countries provide annual statistics only.

Table 2: Average prices paid to growers (in US cents/lb GBE)

	All periods	1980/81- 1989/90	1990/91- 1999/00	2000/01 - 2010/11*	2000/01 - 2003/04	2004/05 - 2010/11
Brazil	77.32	66.02	85.30	80.33	42.25	102.09
Colombia	87.73	75.11	84.78	101.90	54.86	128.78
El Salvador	67.25	65.61	70.21	66.05	24.85	89.59
Ethiopia	64.29	56.56	79.56	56.75	38.07	69.21
Guatemala	88.76	98.28	74.87	92.73	51.36	116.37
Honduras	74.57	74.93	71.46	77.07	39.99	98.25
India	84.90	78.73	78.10	96.69	45.39	126.00
NY 2&3	119.59	132.53	112.54	114.23	64.43	142.68

* Average October 2010 - July 2011

B. Prices paid to growers in national currencies

6. Farmgate prices in national currencies are shown in Annex III. In almost all selected countries prices paid to growers have increased steadily since coffee year 2002/03. In some countries these prices started to increase even during the crisis of low prices that affected the coffee sector in exporting countries. Exchange rates between national currencies and the US dollar probably helped to maintain the upward trend in farmgate prices despite the low level of international prices. Table 3 shows average prices paid to growers in national currencies. All prices have risen to very high levels during the last two coffee years.

**Table 3: Average prices paid to growers
(in national currencies)**

	Brazil (BRL/60kg : G)	Colombia (COP/125kg : P)	El Salvador (CES/SQ : G)	Ethiopia (ETB/17kg : G)	Guatemala (GTQ/SQ : G)	Honduras (HNL/SQ : G)	India (INR/50kg : G)
All periods	206.10	251 296.26	490.85	163.60	465.81	819.74	3 026.08
1980/81-1989/90		31 743.70	248.30	43.92	161.64	161.15	1 052.49
1990/91-1999/00	164.98	211 980.44	617.81	171.87	465.96	769.01	2 952.25
2000/01-2010/11*	224.79	486 631.14	595.95	264.89	742.19	1 464.58	4 887.35
2000/01-2003/04	141.53	306 533.89	220.55	121.73	411.07	679.71	2 347.21
2004/05-2010/11	272.36	589 543.86	810.47	346.69	931.40	1 913.07	6 338.87

* Average price from October 2010 to July 2011 for coffee year 2010/11

II. VOLATILITY OF PRICES PAID TO COFFEE GROWERS IN US DOLLARS

7. The volatility of international coffee prices is essentially influenced by supply and demand conditions, particularly exogenous impacts affecting these conditions. In the case of supply, the situation is determined by the production pattern in exporting countries and variations in stock levels. Volatility of prices paid to growers in exporting countries depends

not only on international prices but also on internal marketing conditions. These local marketing conditions can sometimes limit the transmission of international price volatility on prices paid to growers. The extent to which prices paid to growers are unstable must, therefore, be determined. For this purpose we will use historical monthly volatility based on past and current price variations from coffee years 1980/81 to 2010/11.

8. Volatility during a particular year will be calculated on the basis of monthly observations of prices paid to coffee growers. The following equations will be used to measure the volatility:

Equation 1: $\text{Var} (P_m, P_{m-1}) = \text{Ln} (P_m/P_{m-1})$

Var = variation in farmgate price from one month to the next

P_m = farmgate price for month m

P_{m-1} = farmgate price for previous month

Ln = Napierian logarithm

Equation 2: $\sigma = \sqrt{\sum_{m=1}^N \text{Ln}(P_m/P_{m-1})}$

N = total number of months of farmgate prices during the year

σ = standard deviation for the year

$\text{Volatility} = \sigma \times \sqrt{N}$

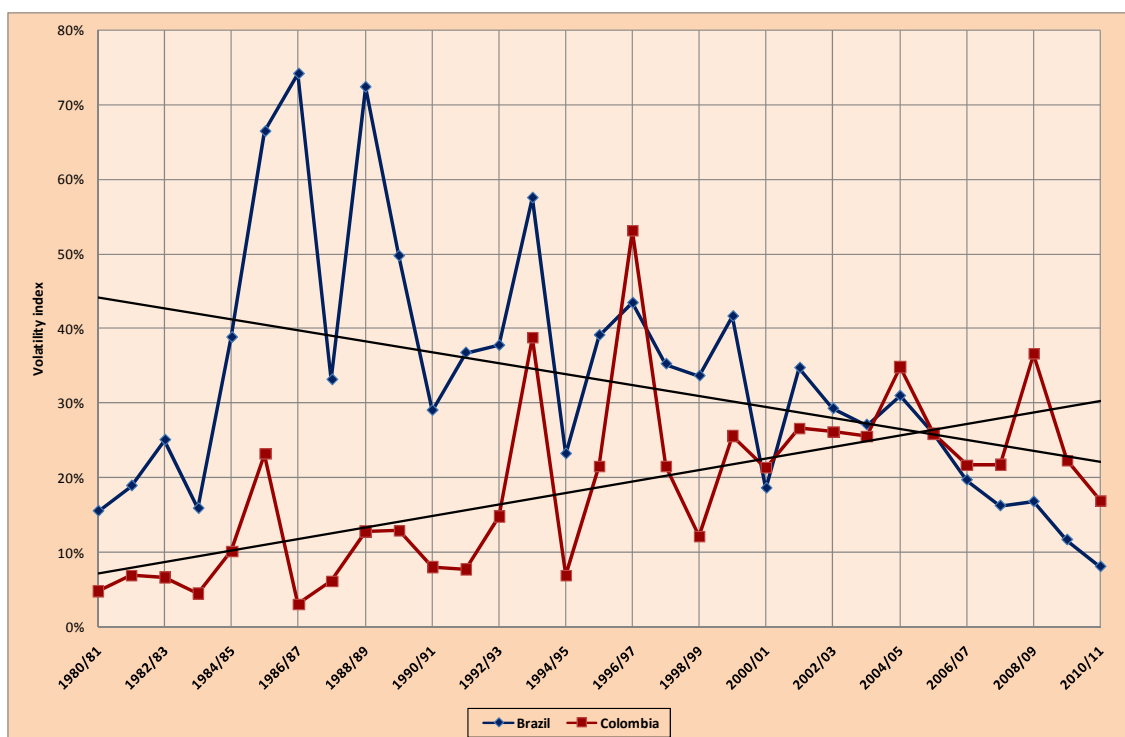
9. Table 4 shows average volatility indices for prices paid to coffee growers in the seven selected countries. Annex IV contains various volatility indices for coffee years 1980/81 to 2010/11. For the period as a whole volatility was relatively weak for prices paid to growers in Colombia (18.8%) and India (14.2%) but was very much higher in the other countries. During the period 1980/81 to 1989/90, which is regarded as having been influenced by mechanisms for regulating the international coffee market, the volatility of prices paid to growers was again much weaker in Colombia (9.2%) and India (3.5%).

**Table 4: Average volatility indices
(calculated from prices in US cents/lb GBE)**

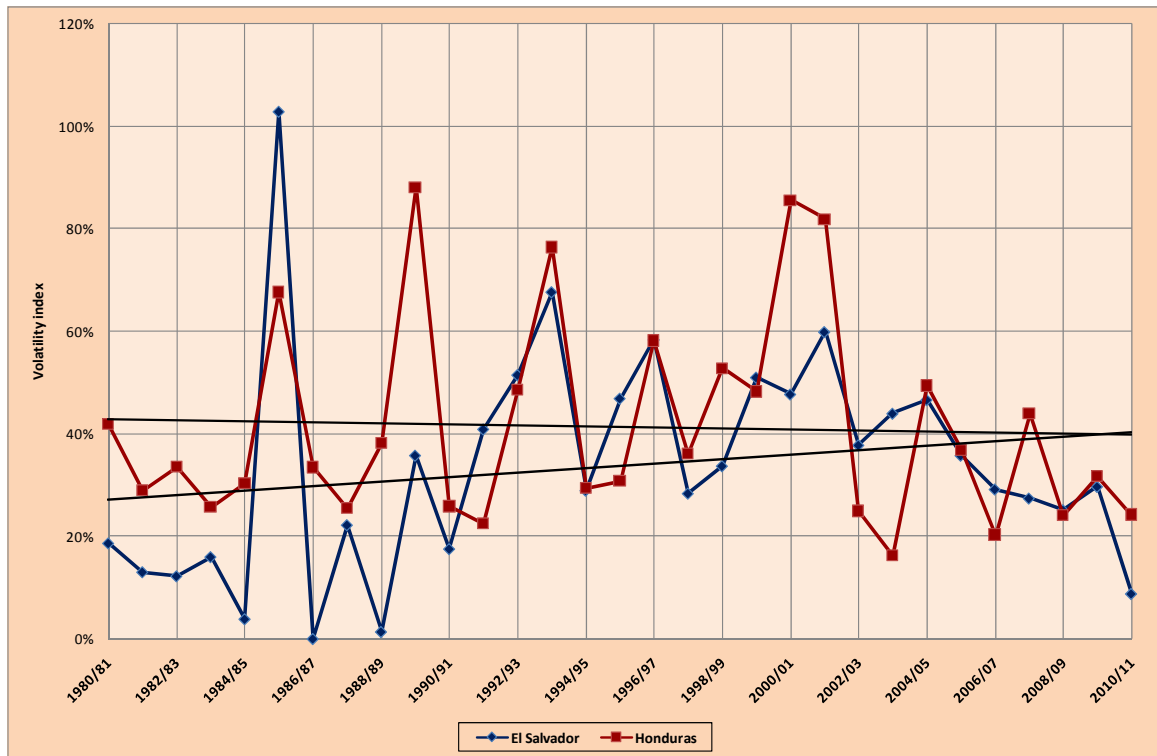
	All periods	1980/81 - 1989/90	1990/91 - 1999/00	2000/01 - 2010/11
Brazil	33.1%	41.0%	37.7%	21.7%
Colombia	18.8%	9.2%	21.0%	25.4%
El Salvador	33.6%	22.6%	42.5%	35.6%
Ethiopia	38.2%	28.8%	49.4%	36.5%
Guatemala	37.6%	46.0%	33.4%	33.9%
Honduras	41.3%	41.3%	42.9%	39.9%
India	14.2%	3.5%	19.2%	19.3%
NY 2&3	23.4%	20.1%	28.8%	21.4%

10. The volatility of the average price on the New York futures market, which serves as a world benchmark for the international Arabica market, is calculated for comparison with prices paid to Arabica producers in the selected countries. During the last two decades (1990/91 to 1999/2000 and 2000/01 to 2010/11), which correspond to the free market period, volatility increased slightly in the two countries already mentioned (Colombia and India), but fell considerably in Brazil. Graphs 1 to 3 show changes in the volatility of prices paid to coffee growers.

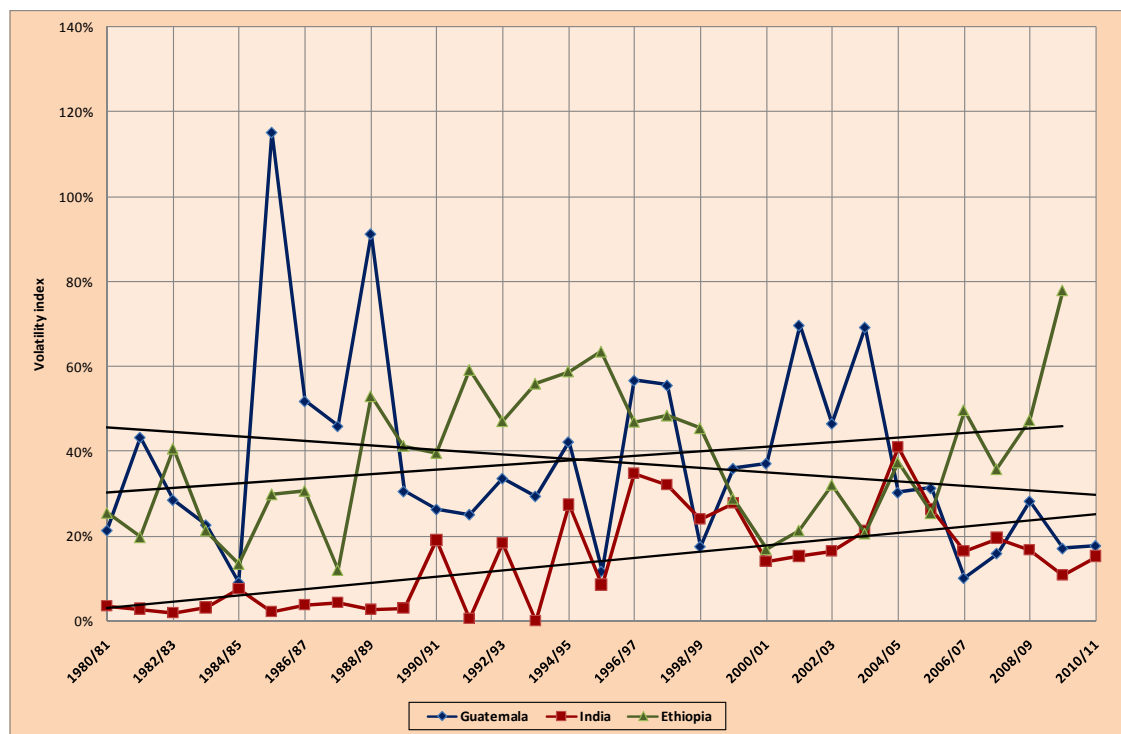
**Graph 1: Volatility index of price paid to coffee growers
in Brazil & Colombia**



**Graph 2: Volatility index of price paid to coffee growers
in El Salvador & Honduras**



**Graph 3: Volatility index of price paid to coffee growers
in Ethiopia, Guatemala & India**



III. VOLATILITY OF PRICES PAID TO COFFEE GROWERS IN NATIONAL CURRENCIES

11. Table 5 shows average volatility indices for prices paid to coffee growers in national currencies and Annex 5 shows annual data on volatility indices for the entire period from 1980/81 to 2010/11.

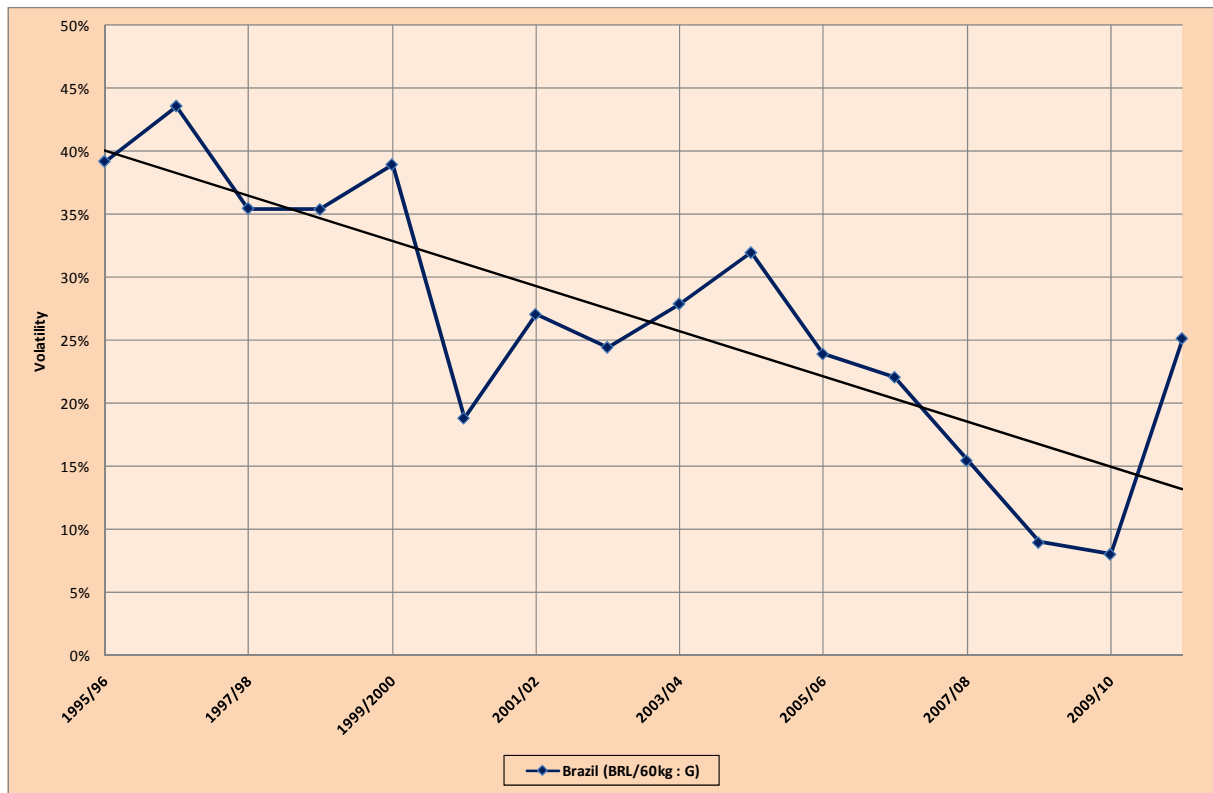
Table 5: Average volatility indices

	<i>All periods</i>	1980/81 - 1989/90	1990/91 - 1999/00	2000/01 - 2010/11
Brazil*	26.6%		38.5%	21.3%
Colombia	17.9%	9.1%	18.6%	25.2%
El Salvador	33.0%	18.3%	43.7%	36.7%
Ethiopia	38.5%	28.8%	50.5%	36.4%
Guatemala	35.2%	38.4%	32.6%	34.6%
Honduras	39.2%	36.5%	40.5%	40.6%
India	11.2%	0.0%	14.0%	18.9%

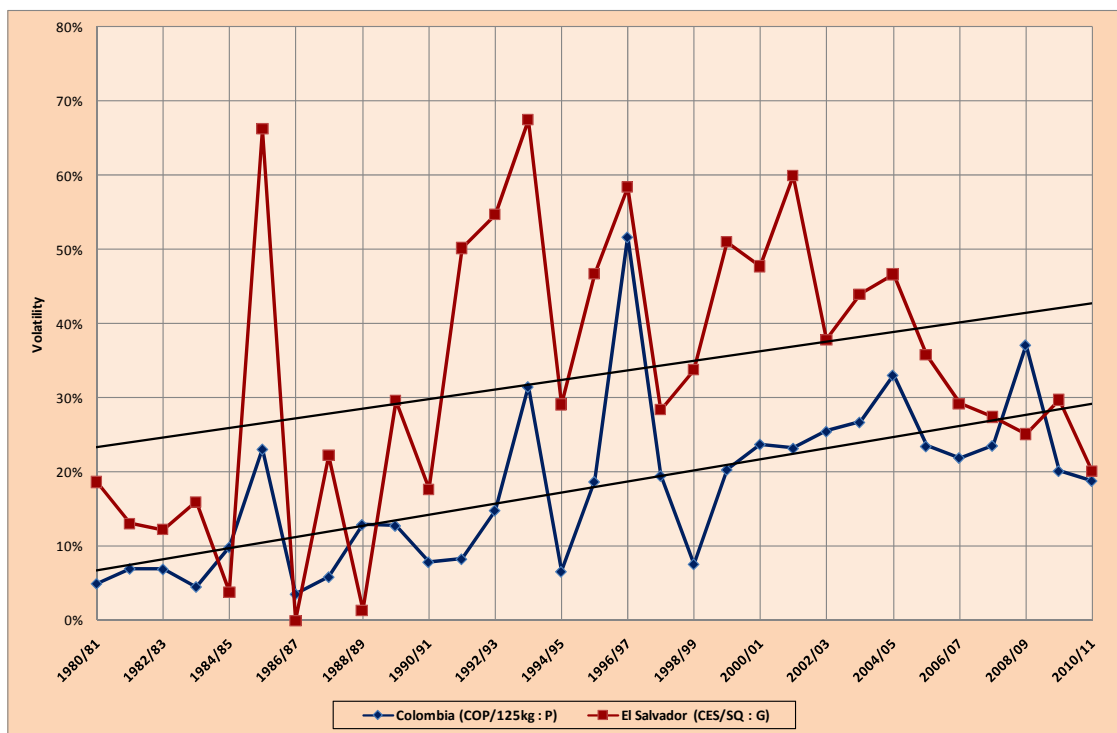
**Given the several changes in Brazil's currency before 1994, analysis of the volatility of prices paid to growers in national currency only takes into account coffee years 1995/96 onwards.*

12. Volatility during the last period (2000/01 – 2010/11) fell in three countries (Brazil, El Salvador and Ethiopia) but increased in the other four. During the first free market period from 1990/91 to 1999/2000 volatility of prices paid to growers increased in all selected countries except Guatemala, indicating the increased risk of price fluctuations at the producer level. This risk was slightly attenuated in some exporting countries but remained considerable in many others. Graphs 4 to 7 shows changes in volatility indices for prices paid to growers for the period as a whole.

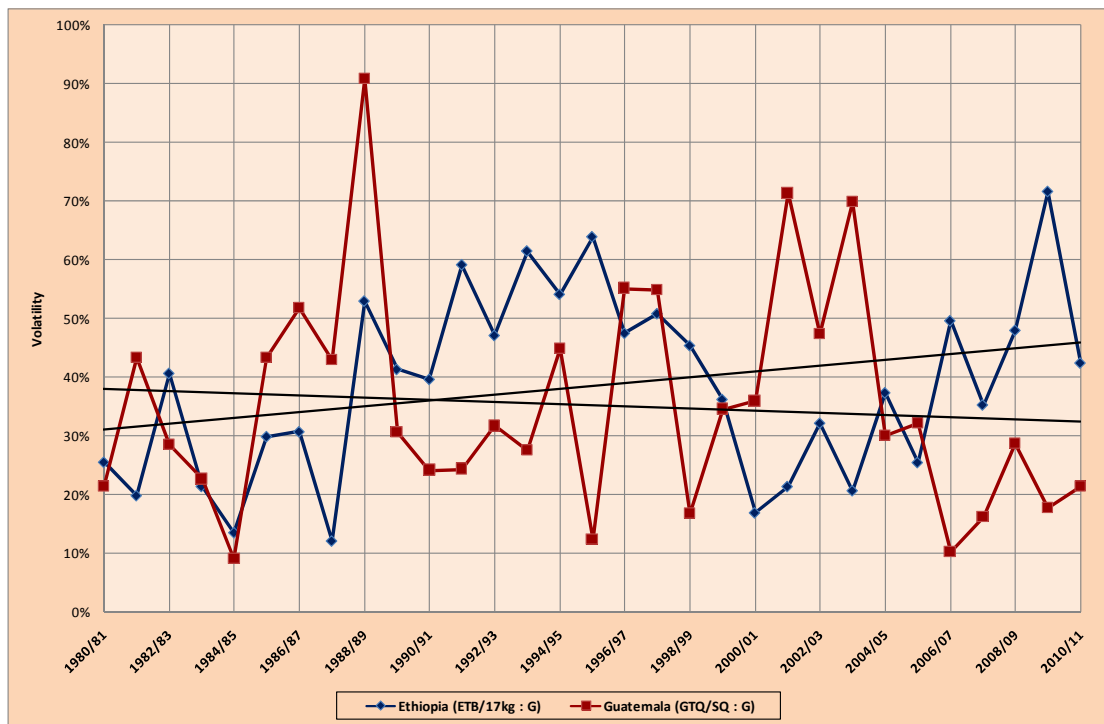
Graph 4: Volatility index of price paid to coffee growers in Brazil



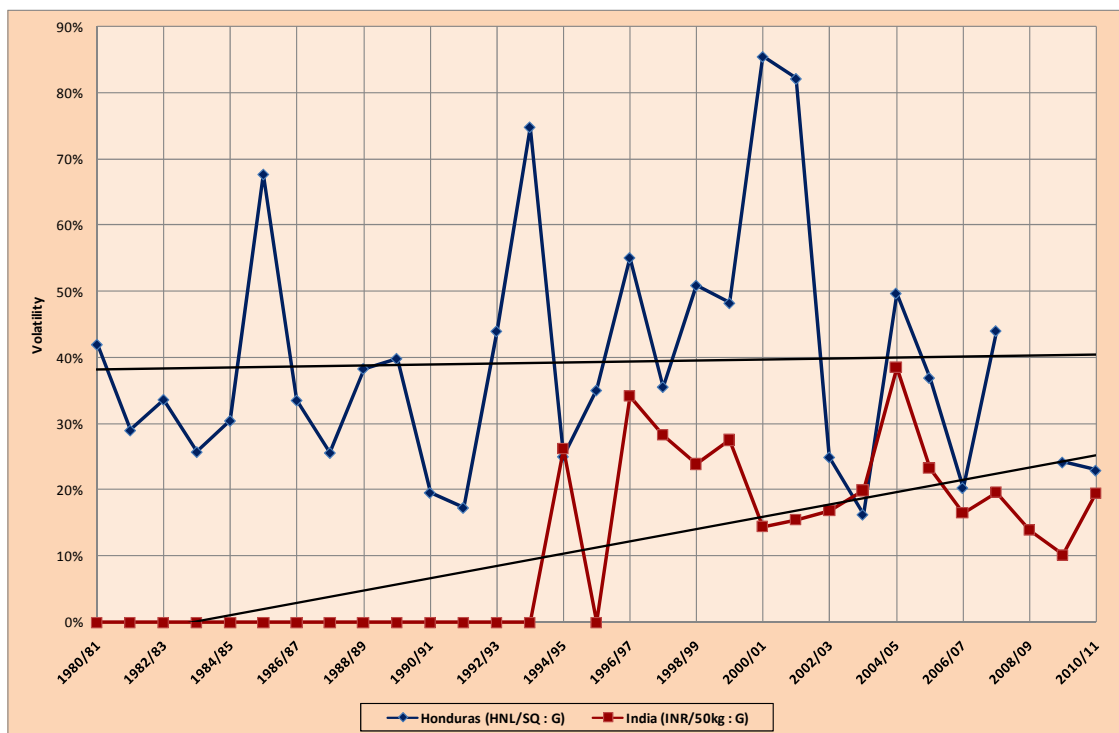
Graph 5: Volatility index of price paid to coffee growers in Colombia & El Salvador



Graph 6: Volatility index of price paid to growers in Ethiopia & Guatemala



Graph 7: Volatility index of price paid to coffee growers in Honduras & India



13. These graphs clearly indicate a downward trend in the volatility of prices paid to coffee growers in Brazil and Guatemala, while an upward trend is evident in India, Colombia, Ethiopia and El Salvador; Honduras remained relatively stable.

Conclusion

14. Volatility of prices paid to coffee growers during the period covering coffee years 2000/01 to 2010/11 increased in four exporting countries, namely Colombia, Guatemala, Honduras and India. These increases are relatively weak, however, in relation to the preceding period from 1980/81 to 1989/90. The other selected countries recorded lower volatility in relation to the same period. Internal marketing conditions may have limited the transmission of international price volatility on prices paid to growers in some countries. Further analysis will be necessary to determine in what extent these internal marketing conditions affect volatility of prices paid to growers.

15. Fluctuations in exchange rates between national currencies and the US dollar do not appear to have influenced the volatility of prices paid to growers since the volatility indices are relatively similar or their development reflects the same trends.

16. It should be noted that in many cases prices paid to growers in US dollars are influenced by developments in prices on the New York futures market. Volatility on this futures market is transmitted by contagion to local prices paid to growers.

PRODUCTION IN SELECTED EXPORTING COUNTRIES

	Brazil (A/R)	Colombia (A)	El Salvador (A)	Ethiopia (A)	Guatemala (A/R)	Honduras (A)	India (R/A)	Total	World total
1980/81	17 307	13 069	2 750	3 304	2 770	1 301	1 962	42 462	80 730
1981/82	34 686	14 522	2 988	3 214	2 662	1 330	2 697	62 098	100 499
1982/83	18 746	12 319	3 230	3 725	2 517	1 899	2 212	44 648	84 688
1983/84	28 065	12 969	3 153	3 888	2 361	1 367	1 452	53 256	89 255
1984/85	21 405	11 035	2 240	2 321	2 834	1 426	3 261	44 521	83 988
1985/86	30 102	11 764	1 782	2 833	2 632	871	1 571	51 556	90 173
1986/87	14 958	10 752	2 343	2 973	2 942	1 554	3 618	39 140	81 048
1987/88	43 014	12 757	2 501	2 883	3 052	1 520	1 941	67 668	107 774
1988/89	22 938	10 543	1 512	2 700	2 990	1 680	3 032	45 396	89 336
1989/90	24 541	13 048	2 788	3 439	3 473	1 767	1 785	50 840	94 151
1990/91	27 286	14 268	2 465	2 909	3 271	1 568	2 829	54 596	93 102
1991/92	27 293	17 815	2 198	2 925	3 497	2 322	3 000	59 049	101 104
1992/93	34 603	15 189	3 001	1 825	4 318	1 918	2 823	63 679	98 771
1993/94	28 167	10 298	2 378	2 967	3 536	1 829	3 533	52 708	90 546
1994/95	28 192	12 862	2 293	2 763	3 787	2 181	3 002	55 081	93 231
1995/96	18 060	12 963	2 585	3 165	4 002	1 909	3 717	46 401	86 896
1996/97	29 197	10 719	2 534	3 407	4 525	2 004	3 417	55 803	103 156
1997/98	26 148	12 219	2 175	3 057	4 219	2 564	3 805	54 188	99 550
1998/99	36 761	10 979	2 055	2 928	4 893	2 195	4 417	64 227	109 021
1999/00	47 578	9 679	2 598	3 784	5 120	2 985	4 867	76 610	131 647
2000/01	31 310	10 400	1 751	3 115	4 940	2 667	4 370	58 553	113 180
2001/02	31 365	11 962	1 686	4 044	3 669	3 036	4 604	60 367	107 895
2002/03	48 480	11 735	1 438	4 094	4 070	2 496	4 776	77 089	124 329
2003/04	28 820	11 230	1 477	4 394	3 610	2 968	5 534	58 033	107 720
2004/05	39 272	11 573	1 437	5 213	3 703	2 575	4 159	67 932	117 479
2005/06	32 944	12 564	1 502	4 779	3 676	3 204	4 090	62 760	111 974
2006/07	42 512	12 541	1 252	5 551	3 950	3 461	4 563	73 830	129 586
2007/08	36 064	12 504	1 505	5 967	4 100	3 842	4 319	68 299	120 572
2008/09	45 992	8 664	1 450	4 949	3 785	3 450	3 950	72 240	129 213
2009/10	39 470	8 098	1 065	6 931	3 835	3 575	4 950	67 925	124 351
2010/11	48 095	9 200	1 840	7 450	3 950	4 290	4 983	79 807	133 760
Averages	31 722	11 943	2 128	3 790	3 635	2 315	3 524	59 057	104 152
World share	30.5%	11.5%	2.0%	3.6%	3.5%	2.2%	3.4%	56.7%	

In thousand 60-kg bags

ANNEX II

AVERAGE PRICES PAID TO COFFEE GROWERS

	Brazil	Colombia	El Salvador	Ethiopia	Guatemala	Honduras	India	NY 2&3
1980/81	69.04	78.80	50.79	49.68	80.69	64.48	85.99	118.96
1981/82	53.72	78.96	69.20	71.70	85.16	73.08	83.13	127.63
1982/83	58.51	76.33	62.63	50.59	90.90	50.34	70.12	126.32
1983/84	39.45	71.13	68.34	50.13	113.74	73.21	70.51	140.63
1984/85	59.38	64.08	72.50	52.94	114.30	72.49	72.39	140.54
1985/86	102.21	80.72	90.28	73.83	193.14	116.96	104.20	204.83
1986/87	128.93	81.05	54.92	49.50	90.29	73.46	71.04	127.07
1987/88	40.22	75.41	64.69	55.77	81.76	86.51	94.46	132.35
1988/89	52.93	74.42	67.28	55.90	81.40	85.61	71.62	117.08
1989/90	55.83	70.16	55.48	55.57	51.40	53.20	63.80	89.94
1990/91	49.78	68.16	46.83	65.32	59.66	57.18	68.00	91.43
1991/92	44.31	58.94	32.22	69.91	42.86	43.88	50.82	71.04
1992/93	47.62	49.00	33.28	56.02	38.68	36.06	56.96	69.86
1993/94	55.24	71.51	78.23	98.94	62.14	60.31	67.24	119.99
1994/95	131.90	104.25	113.86	125.58	101.63	117.96	94.55	163.16
1995/96	110.24	90.56	75.07	71.53	89.85	63.99	72.26	112.45
1996/97	102.48	130.57	115.54	78.92	88.35	106.74	125.92	151.95
1997/98	149.21	107.75	94.52	99.48	109.41	105.56	107.38	136.38
1998/99	86.56	87.95	60.23	68.99	79.03	63.71	71.30	105.32
1999/00	75.70	79.08	52.36	60.87	77.13	59.24	66.60	103.81
2000/01	56.60	62.09	20.77	47.73	49.00	37.35	47.90	66.24
2001/02	33.81	53.24	18.71	27.92	47.33	34.81	38.71	52.36
2002/03	32.75	48.84	26.22	33.15	48.71	40.65	43.65	65.89
2003/04	45.86	55.29	33.71	43.49	60.42	47.17	51.30	73.24
2004/05	65.12	84.71	64.05	65.00	88.44	75.48	93.08	108.03
2005/06	88.58	88.61	64.12	55.56	89.79	78.18	91.05	108.17
2006/07	87.60	95.39	72.23	64.23	95.99	79.62	105.15	118.70
2007/08	103.96	116.91	90.46	76.44	112.09	97.88	123.19	140.37
2008/09	101.39	128.59	74.44	70.54	106.31	80.68	126.67	150.79
2009/10	108.39	166.54	95.56	83.50	131.48	105.53	146.88	149.06
2010/11	159.61	220.69	166.29		190.51	170.41	196.00	223.66

In US cents/lb GBE

AVERAGE PRICES PAID TO COFFEE GROWERS

	Brazil (BRL/60kg : G)	Colombia (COP/125kg : P)	El Salvador (CES/SQ : G)	Ethiopia (ETB/17kg : G)	Guatemala (GTQ/SQ : G)	Honduras (HNL/SQ : G)	India (INR/50kg : G)
1980/81		9 118.41	128.77	38.58	81.83	130.78	786.70
1981/82		10 688.34	175.44	55.67	86.37	148.23	853.40
1982/83		12 495.50	158.78	39.28	92.18	102.09	767.80
1983/84		14 825.25	173.25	38.92	115.35	148.48	846.50
1984/85		18 078.17	183.82	41.11	115.92	147.03	987.59
1985/86		32 783.92	349.87	57.33	250.75	237.22	1 420.90
1986/87		41 137.08	278.50	38.44	228.90	149.00	1 015.70
1987/88		46 832.33	328.00	43.31	212.04	175.46	1 396.99
1988/89		58 986.75	341.13	43.40	223.61	173.62	1 239.34
1989/90		72 491.25	365.42	43.15	209.42	199.59	1 210.00
1990/91		89 939.50	380.30	50.73	304.34	320.41	1 529.50
1991/92		94 664.08	266.23	54.28	222.28	241.49	1 450.00
1992/93		90 529.50	296.82	105.07	215.21	224.40	1 814.88
1993/94		134 538.92	691.60	198.13	363.96	498.17	2 325.00
1994/95		200 307.92	1 011.81	283.84	591.93	1 096.59	3 296.67
1995/96	138.52	206 208.33	666.79	169.78	553.56	708.10	2 800.00
1996/97	139.23	309 382.52	1 025.74	195.68	536.15	1 397.98	4 982.08
1997/98	217.03	321 480.77	839.19	268.41	696.93	1 418.56	4 724.83
1998/99	148.78	320 402.76	534.67	201.51	568.50	903.21	3 361.42
1999/00	181.36	352 350.09	464.92	191.30	606.71	881.23	3 238.17
2000/01	140.47	309 224.66	184.37	150.01	386.72	578.98	2 472.50
2001/02	108.50	278 803.81	166.06	89.55	379.35	572.16	2 070.75
2002/03	139.61	308 325.25	232.67	106.71	387.49	706.60	2 275.58
2003/04	177.53	329 781.83	299.09	140.65	490.71	861.09	2 570.00
2004/05	244.23	442 475.08	568.37	210.92	687.17	1 436.71	4 502.50
2005/06	271.89	459 148.67	568.99	180.89	692.89	1 498.03	4 554.17
2006/07	249.19	451 347.42	640.97	213.68	745.72	1 525.66	4 952.50
2007/08	253.62	489 125.67	802.71	268.54	859.95	1 876.46	5 596.17
2008/09	259.03	633 373.83	660.51	294.27	862.32	1 545.97	6 826.42
2009/10	266.45	703 544.67	847.94	421.81	1 083.08	2 022.06	7 475.08
2010/11	362.12	947 791.67	1 583.76	836.72	1 588.65	3 486.61	10 465.22

ANNEX IV

VOLATILITY INDEX OF PRICE PAID TO COFFEE GROWERS (CALCULATED FROM US CENTS/LB GBE)

	Brazil	Colombia	El Salvador	Ethiopia	Guatemala	Honduras	India	NY 2&3
1980/81	15.5%	4.9%	18.7%	25.5%	21.3%	41.9%	3.4%	29.3%
1981/82	18.9%	6.9%	13.0%	19.8%	43.3%	28.9%	2.8%	16.7%
1982/83	25.1%	6.7%	12.2%	40.6%	28.5%	33.6%	1.9%	7.8%
1983/84	15.9%	4.6%	16.0%	21.4%	22.6%	25.6%	3.1%	9.7%
1984/85	38.8%	10.2%	3.9%	13.5%	9.1%	30.4%	7.5%	7.5%
1985/86	66.4%	23.2%	102.9%	29.9%	115.2%	67.7%	2.2%	42.4%
1986/87	74.2%	3.1%	0.0%	30.7%	51.8%	33.5%	3.7%	28.2%
1987/88	33.1%	6.2%	22.2%	12.1%	45.9%	25.5%	4.3%	15.1%
1988/89	72.4%	12.9%	1.4%	53.0%	91.3%	38.2%	2.6%	29.4%
1989/90	49.7%	12.9%	35.8%	41.3%	30.5%	88.1%	2.9%	14.8%
1990/91	29.0%	8.1%	17.6%	39.6%	26.3%	25.8%	19.0%	14.6%
1991/92	36.8%	7.8%	40.9%	59.1%	25.1%	22.4%	0.5%	14.2%
1992/93	37.7%	14.9%	51.5%	47.1%	33.6%	48.6%	18.3%	31.0%
1993/94	57.5%	38.7%	67.7%	55.9%	29.4%	76.5%	0.0%	55.6%
1994/95	23.2%	6.9%	29.0%	58.8%	42.2%	29.4%	27.3%	23.7%
1995/96	39.1%	21.5%	46.9%	63.4%	11.7%	30.8%	8.5%	26.2%
1996/97	43.4%	53.0%	58.4%	47.0%	56.7%	58.2%	34.8%	45.8%
1997/98	35.3%	21.6%	28.4%	48.4%	55.6%	36.0%	32.1%	24.8%
1998/99	33.7%	12.2%	33.7%	45.4%	17.5%	52.8%	24.0%	21.9%
1999/00	41.6%	25.6%	51.0%	28.8%	35.9%	48.2%	27.7%	30.1%
2000/01	18.6%	21.3%	47.7%	16.9%	37.1%	85.6%	14.1%	17.6%
2001/02	34.7%	26.6%	59.9%	21.4%	69.7%	81.9%	15.2%	23.3%
2002/03	29.3%	26.2%	37.8%	32.1%	46.5%	24.9%	16.5%	18.8%
2003/04	27.1%	25.6%	44.0%	20.6%	69.2%	16.2%	21.1%	23.7%
2004/05	31.0%	34.8%	46.6%	37.4%	30.3%	49.4%	40.9%	31.0%
2005/06	25.9%	25.9%	35.8%	25.4%	31.3%	36.9%	26.3%	25.8%
2006/07	19.7%	21.7%	29.2%	49.7%	10.1%	20.2%	16.4%	17.6%
2007/08	16.3%	21.8%	27.4%	35.8%	15.9%	44.0%	19.5%	19.6%
2008/09	16.8%	36.6%	25.1%	47.3%	28.2%	24.0%	16.6%	19.1%
2009/10	11.7%	22.3%	29.7%	77.9%	17.1%	31.7%	10.7%	17.3%
2010/11	8.1%	16.9%	8.8%		17.7%	24.2%	15.2%	21.6%

VOLATILITY INDEX OF PRICE PAID TO COFFEE GROWERS (CALCULATED FROM NATIONAL CURRENCY)

	Brazil (BRL/60kg : G)	Colombia (COP/125kg : P)	El Salvador (CES/SQ : G)	Ethiopia (ETB/17kg : G)	Guatemala (GTQ/SQ : G)	Honduras (HNL/SQ : G)	India (INR/50kg : G)
1980/81		4.9%	18.7%	25.5%	21.3%	41.9%	0.0%
1981/82		6.9%	13.0%	19.8%	43.3%	28.9%	0.0%
1982/83		6.8%	12.2%	40.6%	28.5%	33.6%	0.0%
1983/84		4.5%	16.0%	21.4%	22.6%	25.6%	0.0%
1984/85		9.8%	3.9%	13.5%	9.1%	30.4%	0.0%
1985/86		23.0%	66.2%	29.9%	43.2%	67.7%	0.0%
1986/87		3.5%	0.0%	30.7%	51.8%	33.5%	0.0%
1987/88		5.8%	22.2%	12.1%	42.9%	25.5%	0.0%
1988/89		12.9%	1.4%	53.0%	90.8%	38.2%	0.0%
1989/90		12.7%	29.6%	41.3%	30.6%	39.8%	0.0%
1990/91		7.8%	17.7%	39.6%	24.1%	19.5%	0.0%
1991/92		8.2%	50.2%	59.1%	24.3%	17.2%	0.0%
1992/93		14.8%	54.7%	47.1%	31.7%	43.9%	0.0%
1993/94		31.5%	67.4%	61.5%	27.5%	74.8%	0.0%
1994/95		6.5%	29.1%	54.1%	44.9%	24.9%	26.2%
1995/96	39.2%	18.7%	46.7%	63.9%	12.3%	35.0%	0.0%
1996/97	43.5%	51.7%	58.4%	47.5%	55.1%	55.0%	34.2%
1997/98	35.5%	19.5%	28.4%	50.8%	54.8%	35.5%	28.3%
1998/99	35.4%	7.5%	33.8%	45.4%	16.7%	50.8%	23.9%
1999/00	38.9%	20.3%	51.0%	36.2%	34.5%	48.2%	27.6%
2000/01	18.8%	23.7%	47.7%	16.9%	35.9%	85.5%	14.4%
2001/02	27.1%	23.2%	59.9%	21.4%	71.3%	82.1%	15.5%
2002/03	24.4%	25.4%	37.8%	32.1%	47.4%	24.9%	16.9%
2003/04	27.9%	26.7%	44.0%	20.6%	69.8%	16.2%	19.9%
2004/05	31.9%	33.0%	46.6%	37.3%	30.0%	49.7%	38.5%
2005/06	23.9%	23.4%	35.8%	25.4%	32.1%	36.9%	23.3%
2006/07	22.1%	21.9%	29.2%	49.6%	10.2%	20.2%	16.5%
2007/08	15.5%	23.5%	27.4%	35.3%	16.2%	44.0%	19.7%
2008/09	9.0%	37.1%	25.1%	48.0%	28.6%		13.9%
2009/10	8.0%	20.1%	29.7%	71.6%	17.7%	24.1%	10.2%
2010/11	25.1%	18.8%	20.1%	42.4%	21.4%	22.9%	19.6%