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# Mauritius and Jamaica as Case Studies of the Lomé Sugar Protocol

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# Contents

<b>Executive Summary.....</b>	<b>1</b>
<b>1 Introduction .....</b>	<b>3</b>
<b>2 Lomé Sugar Protocol and the EU sugar market .....</b>	<b>4</b>
<b>3 Case Mauritius.....</b>	<b>11</b>
3.1 A brief history of Mauritius.....	11
3.2 Economic development .....	11
3.3 Sugar as the basis of economic development .....	13
3.4 Stages of the growth policy .....	15
3.5 Structural change of the economy .....	16
3.6 The role of the sugar boom and the role of the preferences in the structural change.....	18
3.7 Adjustment to the period after the sugar boom .....	20
3.8 Concluding remarks.....	21
<b>4 Case Jamaica.....</b>	<b>22</b>
4.1 A brief review of Jamaican economy .....	22
4.2 Economic development .....	23
4.3 Role of sugar in the economy .....	23
4.4 Sugar Industry .....	25
4.5 Sugar exports .....	26
4.6 Concluding remarks.....	28
<b>5 Empirical evidence of the effect of net gain from preferential sugar export on the the economies of preference receiving countries .....</b>	<b>29</b>
5.1 Introduction .....	29
5.2 Literature review .....	30
5.3 Modelling the effect of net gain on investments .....	31
5.3.1 Model and Data .....	31
5.3.2 Estimation and results.....	33
<b>6 Conclusions .....</b>	<b>36</b>
<b>References .....</b>	<b>37</b>

## List of Figures

- Figure 1. Sugar Cane Production of the ACP Sugar Group
- Figure 2. Sugar Exports of Mauritius, Jamaica and the ACP Sugar Group, Total in 1975 – 2004
- Figure 3. Share of the ACP Sugar Group in World Sugar Exports
- Figure 4. World Sugar Price Index 1960 – 2004, 2000 = 100
- Figure 5. Growth Rates of the GDP of Mauritius in 1981 – 2005
- Figure 6. World Market Price and Intervention Prices for White Sugar in the EU, 1981/82 – 2004/05
- Figure 7. Shares of Sugar and Agriculture in the Mauritius GDP at Current Prices in 1976 – 1998
- Figure 8. Employment by Sugar Estates and Large Sugarcane Planters, 1981 – 2004
- Figure 9. GDP Growth of Jamaica in 1970 – 2004
- Figure 10. Export Shares of Primary Commodities of Jamaica in 1980 – 2000
- Figure 11. Shares of Merchandise and Services Exports in Jamaican Foreign Trade in 1980 – 2000
- Figure 12. Sugar Exports, Imports and Lomé Quota of Jamaica in 1970 – 2004
- Figure 13. Sugar Trade of Jamaica in 1970 – 2004
- Figure 14. Benefit of the Sugar Protocol for the Sugar Protocol Countries Compared to GDP Growth 1990-2000.
- Figure 15. Net Gain of the Sugar Protocol and the Share of Investment of the GDP. 1990-2000

## **List of Tables**

- Table 1. Countrys Quotas for ACP Sugar Protocol countries
- Table 2. Estimates of Income Transfer under the Sugar Protocol
- Table 3. Exports of Mauritius Sugar in 1973 – 1980
- Table 4. Shares of the Main Export Product Groups of Mauritius in 1973 – 1980
- Table 5. Shares of the Main Export Product Groups of Mauritius in 1994 – 2000
- Table 6. Contribution of Sugar to the Economy in Mauritius
- Table 7. Results of the Estimation

## **Executive Summary**

This report will discuss the effect of the Sugar Protocol on two countries as case studies. The countries are Mauritius and Jamaica. The economy of both countries has historically been driven by one basic commodity, namely sugar. The Sugar Protocol, which was appended to the first Lomé Convention, prescribed export quotas for sugar for the nineteen (19) accepted ACP countries. The EEC/EU committed itself to import from the countries in question quantities of sugar determined by the quota at the price payable on the internal market. The Mauritian quota was the largest, about 38% of the total quota granted by the EEC/EU, which was 1.3 million tonnes of sugar. The quota acquired by Jamaica was the fourth largest, approximately 9% of the total quota.

The export quota guaranteed by the EEC/EU meant extra export revenue for the ACP countries in question because the internal market price of sugar had normally been higher than the world market price. The quota also meant a guaranteed market, irrespective of the competitiveness of the exporting country.

Estimates of the extra export revenue attributable to the Sugar Protocol vary from around \$400 to \$600 million at the beginning of the 21st century. At its highest the extra revenue brought by the quota has been about 10% of the GDP and 11% of exports (Guyana). Estimates concerning the additional export revenue acquired by Mauritius vary from around \$180 to \$200 million. For Jamaica, the corresponding figure has varied from around \$40 to \$50 million.

Among the countries under review, Mauritius and Jamaica, Mauritius was able to use its export revenue from the sugar quota, for example, to bring about a structural change in the economy in the years . The focus of the economy shifted from agriculture and sugar production to the textile and clothing industry and tourism. Economic growth was good on average and the living standard improved significantly.

In Jamaica, the role of the Sugar Protocol and the entire sugar sector was a considerably less important than in Mauritius. Sugar had already lost some of its importance prior to the entry into force of the Lomé Convention. The Jamaican economy was dominated by mineral extraction, metal refinement and tourism. In fact, the development of the sugar sector was neglected to the point where it lost its international competitiveness. Jamaica exports sugar within the quotas provided by the EU and the USA, and the country's own production does not meet its own consumption needs, so that imports of sugar have taken an upward turn over the same period.

The role of the Sugar Protocol in the Lomé trade preference has been very significant. According to some estimates, no less than half of the preference benefits received by the

ACP countries consisted of exports generated by the sugar quotas. As the EU internal market price decreases, this advantage will certainly diminish considerably.

# 1 Introduction

The Sugar Protocol of the Lomé Convention has been of crucial importance. According to some estimates about half of the preferential benefits ACP countries have received are attributable to the very profitable sugar exports based on the EU's internal market price and export quotas.

The main goal of the Lomé Convention has been to promote economic growth and help the integration of the preference receiving countries into the world market. The effects of the Sugar Protocol therefore need more attention. This is especially important when we keep in mind that the positive effects of the Lomé Convention are at least arguable. In addition, some preference receiving countries are historically very dependent on sugar exports.

One might easily expect the positive effects of Lomé be greatest in these sugar dependent countries, and for this reason, we have chosen to take a more precise look at two of these countries, namely Mauritius and Jamaica. The purpose of this study is to find out how the Sugar Protocol has affected the economic development of the chosen case countries. Case studies will clarify whether the increased export incomes (net gain) have had an impact on general economic development, economic growth and employment.

The study is organised as follows. We firstly give a brief description of the Sugar Protocol (chapter 2) and then move on to qualitative case analyses of both countries (chapters 3 and 4). Finally, in chapter 5 we construct an econometric model in order to find out whether the net gains have had a positive effect on investments and thus on the economy in general. The conclusions are presented in chapter 6.



## 2 The Lomé Sugar Protocol and the EU sugar market

Sugar was a valuable product when it was first imported from the Caribbean countries to Europe in the 16th century. Many tropical countries became important sugar cane producers, catering to the needs of their mother countries.

As a result of the long colonial history, the Lomé Convention was complemented in 1975 by appending import quotas for sugar, bananas, meat and rum in protocols which allowed the countries in question to continue to export these products to the markets of the European Community under the existing terms.

**Table 1 Country Quotas for ACP Sugar Protocol Countries**

	ACP Sugar Protocol Quotas <sup>1</sup>		SPS* (av. 2000-2002) <sup>2</sup>
	Tonnes, raw weight eq.	%	Tonnes
Barbados	50 312	3.9	-
Belize	40 349	3.1	6 391
Congo, Rep. Of	10 186	0.8	2 809
Cote d'Ivoire	10 186	0.8	11 147
Fiji	165 438	12.8	24 297
Guyana	159 410	12.3	27 090
Jamaica	118 696	9.2	23 898
Kenya			8 557
Madagascar	10 760	0.8	973
Malawi	20 824	1.6	10 918
Mauritius	491 031	37.9	26 128
St. Kitts and Nevis	15 591	1.2	-
Suriname			-
Swaziland	117 845	9.1	38 908
Tanzania	10 186	0.8	2 734
Trinidad and Tobago	43 751	3.4	8 011
Uganda			-
Zambia			13 264
Zimbabwe	30 225	2.3	26 463
<b>Total ACP Sugar Protocol</b>	<b>1 294 700</b>	<b>100.0</b>	<b>231 589</b>

\*Special Preferential Sugar

Source: Garside et al, (2005)

<sup>1</sup> Under Sugar Protocol fixed quotas nineteen ACP countries are allocated guaranteed-price quotas for the import of cane sugar annually, currently amounting to 1.3 million metric tonnes.

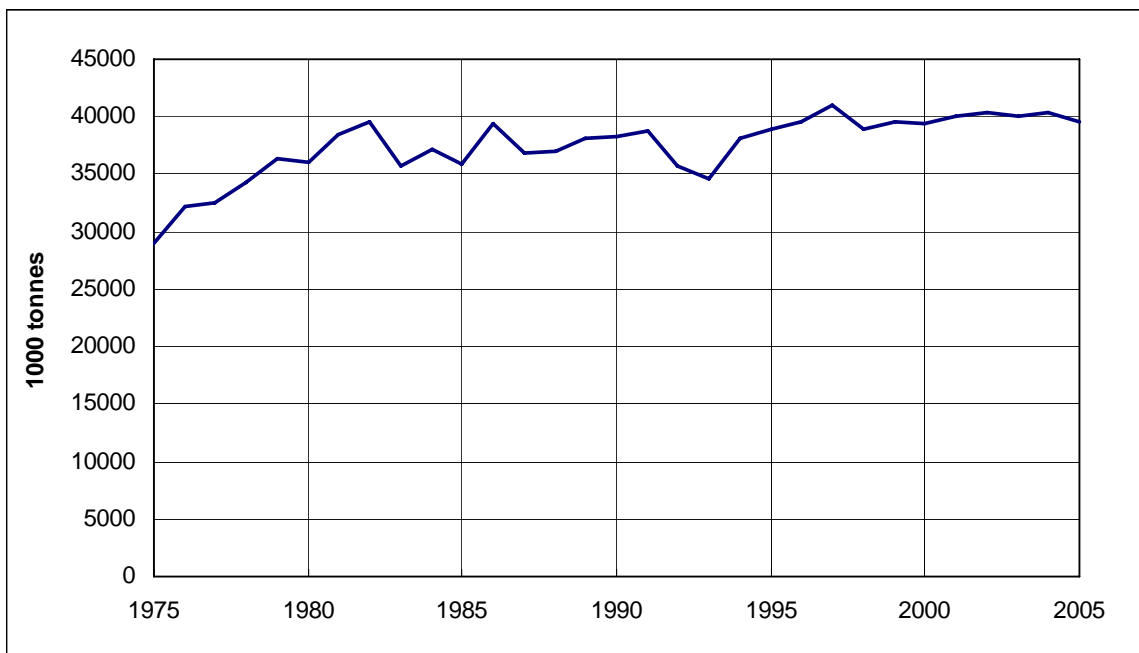
<sup>2</sup> In addition to the Protocol quotas, most ACP countries benefit from annually allocated "Special Preferential Sugar" quotas, under which raw cane sugar is imported at 85 % of the Protocol price.

The commercial arrangements for providing the developing countries with various preferences have been a key feature of EU import policy. In particular, sugar trade arrangements between certain EU countries and their former colonies have had a long history.<sup>3</sup> From 1975 on, the special arrangements for sugar imports have been taken up in the so-called Sugar Protocol. In the Sugar Protocol, the EU commits itself to buy and to import 1.3 million tonnes of sugar (Table 1) at the guaranteed price from the countries in question and, conversely, the countries commit themselves to supply the agreed amounts. The Sugar Protocol has been one of the most influential instruments within the Lomé Conventions signed with the ACP countries.

Approximately 40% of the amount of the sugar produced by the Sugar Protocol countries is exported to the European Union. Since these exports are priced at the EU's internal market price, which has been two to three times higher than the world market price, the value of EU-bound exports within the framework of the Protocol has amounted to as much as 70% of the value of the sugar produced by the Protocol countries.

The production of cane sugar by the Sugar Protocol countries has risen slightly during the Lomé Convention period (Figure 1). In the years 1975 – 2005, the total sugar cane production by the 19 ACP countries (see Table 1, page 4) varied within narrow margins, between 35 and 40 million tonnes.

**Figure 1 Sugar Cane Production of the ACP Sugar Group**



Source: FAO Statistics

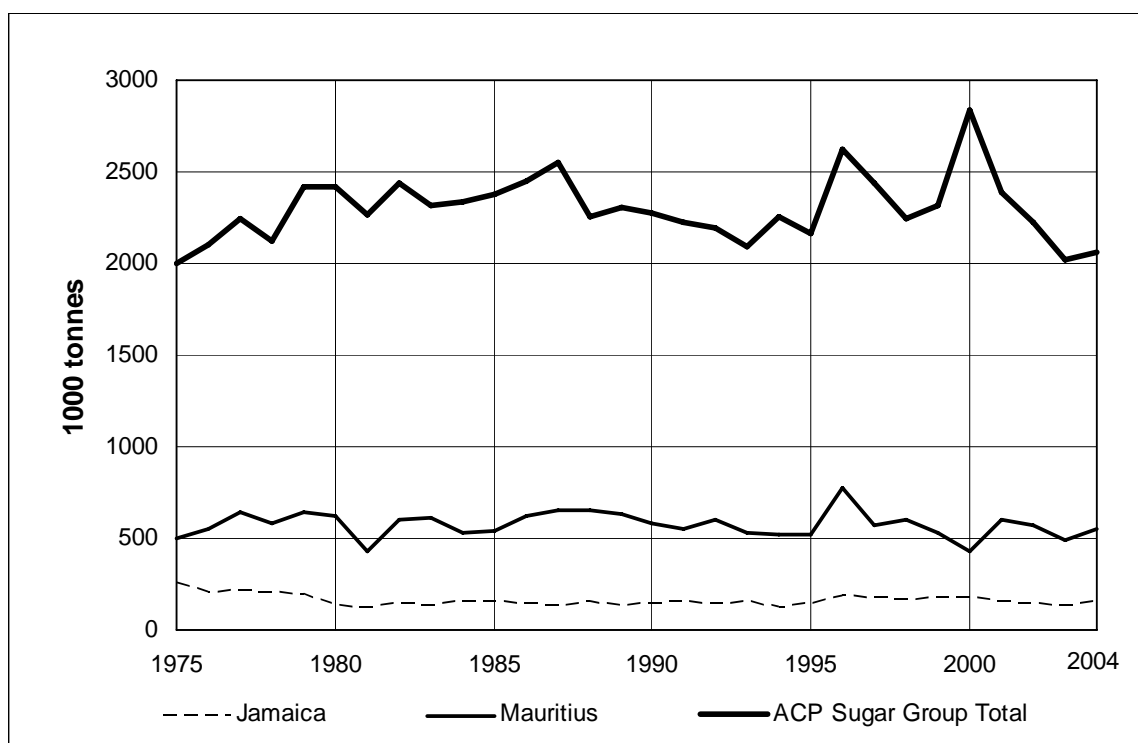
<sup>3</sup> Including the 1951 Commonwealth Sugar Agreement

Apart from the Sugar Protocol quotas, the imports of so-called SPS sugar (special preference sugar) are negotiated annually. The ACP Protocol countries' sugar imports to the European Union within the framework of these Conventions have totalled 1.5 to 1.6 million tonnes (Table 1).

When the total sugar exports by the Protocol countries in 1975 – 2004 are reviewed, the total sugar exports have ranged between 2 and 2.5 million tonnes (Figure 2). Thus 65 to 80% of the total exports of the sugar group went to the EU countries. The European Union consequently has crucial relevance for ACP sugar export revenues. Since ACP exports to the EU have been priced at the internal market price for the protocol quota, and the SPS exports have also been priced higher than the world market price, the share of EU-bound exports in the value of total sugar exports vastly exceeds their share in terms of quantity.

Total ACP sugar exports have not risen appreciably during the review period (Figure 2). EU-bound exports have thus guaranteed the continuity of ACP sugar exports.

**Figure 2 Sugar Exports of Mauritius, Jamaica and the ACP Sugar Group, Total in 1975 – 2004**

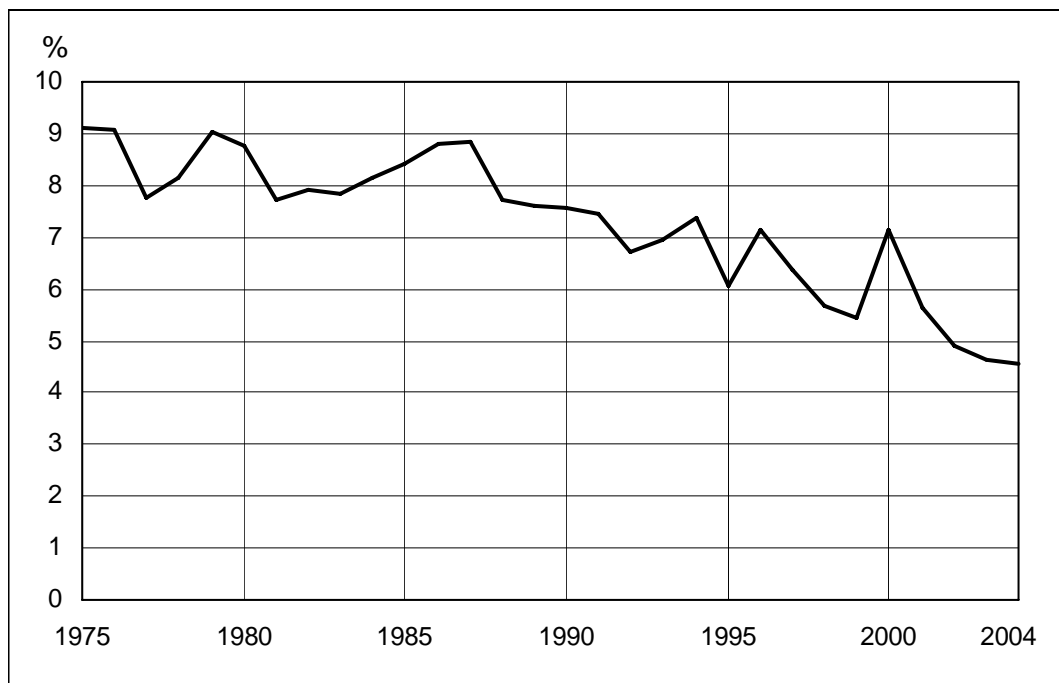


Source: FAO Statistics

While the volume of ACP sugar exports has remained relatively stable, the share accounted for by this group of countries in sugar exports worldwide has continued to

decline (Figure 3). Global sugar exports more than doubled in the years 1975 – 2004, from about 21.9 million tonnes in 1975 to about 45.1 million tonnes in 2004.

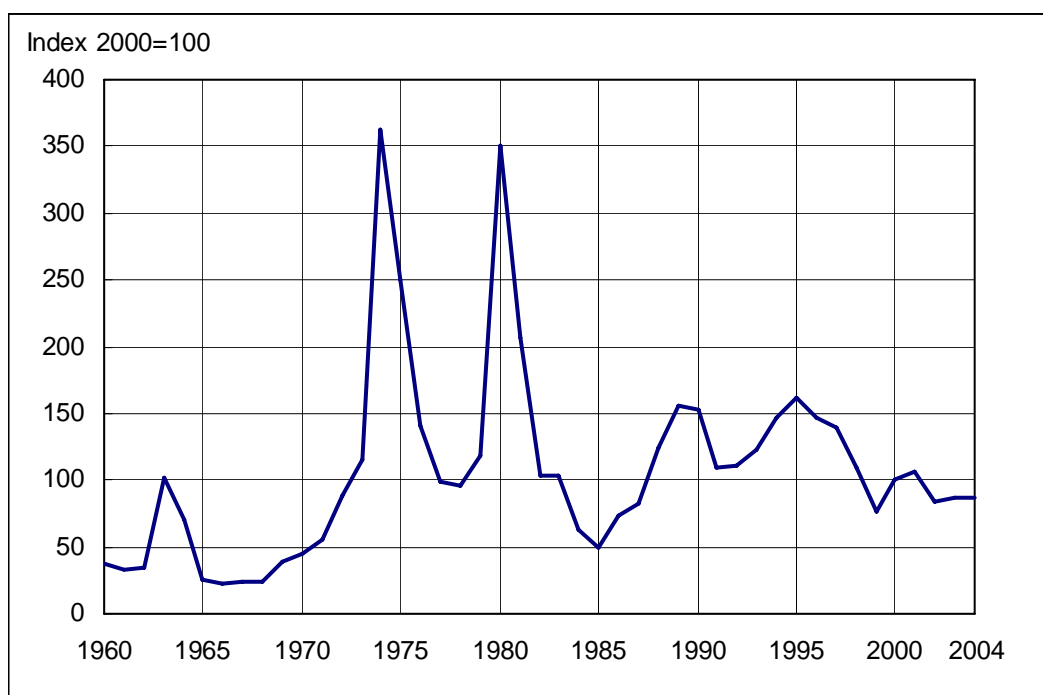
**Figure 3 Share of the ACP Sugar Group in the World Sugar Exports**



Source: FAO Statistics

The world market price for sugar has been one of the most volatile primary commodity prices in history. This was the case especially in the 1970's and in the early 1980's. Even later, the sugar price has continued to fluctuate on the markets but to a considerably lesser extent (Figure 4). The dramatic upswing of prices in the mid-1970's and at the end of the decade contributed dramatically to the export revenues of the sugar exporting countries.

**Figure 4 World Sugar Price Index 1960 – 2004, 2000 = 100**



Source: UNCTAD, Sugar in bulk average of I.S.A. daily prices, FOB Caribbean Ports

Below, the effect of the Sugar Protocol on the economies of the countries in question will be explored in greater detail. The export quotas allowed in the Sugar Protocol are spread quite unevenly among the countries entitled to the quotas (Table 1, page 4). Mauritius has the largest quota (37.9%). Fiji (12.8%), Guyana (12.3%), Jamaica (9.2%) and Swaziland (9.1%) have the other significant quotas. The remaining Sugar Protocol countries account for 18.7% of the quotas in all.

The sugar quotas have provided the countries in question with guaranteed access to the EU market and with extra revenue for the sugar exports to the EU countries. When we evaluate the role of the added revenue in the national economy, the resulting extra revenue can be seen in proportion either to the total exports or to the GDP of the countries in question.

According to Table 2 (page 10), the estimates bear out that the average export revenue for these countries has ranged from 0.1% for some countries to more than 10% for Guyana in proportion to the total exports, depending on the country and the estimate.

Similarly, the resulting extra export revenue ranged from nearly 0% to almost 10% in proportion to the GDP.

At the beginning of the 21st century, the share of total exports accounted for by the extra export revenue gained within the framework of the Sugar Protocol was 8.9 to 11.4% for Guyana, depending on the estimate, 6.5 to 8.0% for Mauritius, 5.0 to 8.6% for Swaziland and 4.9 to 7.3% for Fiji. For the exports of Belize, the estimates ranged between 3.3% and 4.9%, while for Jamaica, say, the share of the exports was no more than 1.4 to 1.8%.

Below two countries from this group have been selected for closer examination, namely Jamaica and Mauritius. Mauritius accounted for the largest share of Convention imports of sugar to the EU at the beginning of the 21st century, i.e. approximately 34%. The Protocol quota has been 491,031 tonnes, which in turn has been about 38% of the total 1.3 million quota. Jamaica's share of Convention imports to the EU has been somewhat more than 9%.

**Table 2 Estimates of Income Transfer under the Sugar Protocol**

Sugar Prot. Countr.	Quotas Tonnes	McDonald(1996) 1/ Shares Transfer			Milner et al. (2003) 2/ Transfer			LMC/OPM (2004) 3/ Transfer			EC dev. Aid 2004	
		% US\$ mill.	% of GDP	% of exp.	US\$ mill.	% of GDP	% of exp.	US\$ mill.	% of GDP	% of exp.	€million	
Barbados	50 312	3.9	<b>7.7</b>	0.4	0.6	<b>16.2</b>	0.6	1.2	<b>24.7</b>	1.1	2.3	1.99
Belize	40 349	3.1	<b>6.2</b>	1.0	2.0	<b>14.8</b>	1.9	3.3	<b>17.1</b>	2.5	4.9	0.30
Congo	10 186	0.8	<b>1.6</b>	0.0	0.1	<b>0.7</b>	0.0	0.1	<b>5.4</b>	0.2	0.3	10.44
Cote d'Ivoire	10 186	0.8	<b>1.6</b>	0.0	0.0	<b>3.3</b>	0.0	0.1	<b>7.7</b>	0.1	0.2	20.17
Fiji	165 438	12.8	<b>25.4</b>	1.2	2.0	<b>48.8</b>	2.9	4.9	<b>69.5</b>	4.7	7.3	12.62
<b>Guyana</b>	<b>159 410</b>	<b>12.3</b>	<b>24.5</b>	<b>3.5</b>	<b>3.4</b>	<b>60.9</b>	<b>8.7</b>	<b>8.9</b>	<b>61.3</b>	<b>10.1</b>	<b>11.4</b>	<b>8.21</b>
<b>Jamaica</b>	<b>118 696</b>	<b>9.2</b>	<b>18.2</b>	<b>0.3</b>	<b>0.6</b>	<b>46.4</b>	<b>0.6</b>	<b>1.4</b>	<b>53.2</b>	<b>0.8</b>	<b>1.8</b>	<b>50.52</b>
Madagascar	10 760	0.8	<b>1.7</b>	0.0	n.a.	<b>4.9</b>	0.1	0.4	<b>10.3</b>	0.3	0.8	105.54
Malawi	20 824	1.6	<b>3.2</b>	0.1	0.6	<b>12.2</b>	0.7	2.7	<b>13.8</b>	1.1	4.0	53.27
<b>Mauritius</b>	<b>491 031</b>	<b>37.9</b>	<b>75.3</b>	<b>1.8</b>	<b>2.9</b>	<b>180.7</b>	<b>4.0</b>	<b>6.5</b>	<b>205.6</b>	<b>5.2</b>	<b>8.0</b>	<b>14.72</b>
St. Kitts and Nevis	15 591	1.2	<b>2.4</b>	1.0	2.0	<b>0</b>	0.0	0.0	<b>7.3</b>	2.4	5.4	0.35
<b>Swaziland</b>	<b>117 845</b>	<b>9.1</b>	<b>18.1</b>	<b>1.4</b>	<b>n.a.</b>	<b>56.4</b>	<b>4.3</b>	<b>5.0</b>	<b>57.4</b>	<b>5.3</b>	<b>8.6</b>	<b>11.42</b>
Tanzania	10 186	0.8	<b>1.6</b>	0.0	0.1	<b>4.5</b>	0.0	0.3	<b>4.3</b>	0.1	0.9	131.41
Trinidad&Tobago	43 751	3.4	<b>6.7</b>	0.1	0.2	<b>14.7</b>	0.2	0.3	<b>20.1</b>	0.3	0.5	1.90
Zimbabwe	30 225	2.3	<b>4.6</b>	0.1	0.1	<b>19.9</b>	0.2	0.9	<b>20.9</b>	0.3	1.3	30.45
<b>Total Sugar Protocol</b>	<b>1 294 700</b>	<b>100.0</b>	<b>198.6</b>			<b>490.1</b>			<b>584.2</b>			<b>453.31</b>
<b>ACP Total</b>												<b>2 528</b>

1/ Constant 1987 prices, predicted 2000 transfer

2/ Constant 2001 prices. Uganda, St. Kitts and Suriname did not export sugar to the EU in 2001

3/ Average 2000 - 2002 prices

Source: Ian Gillson, Adrian Hewitt&Sheila Page (2005), Forthcoming Changes in the EU Banana/Sugar Markets: A Menu of Options for an Effective EU Transitional Package, ODI, Overseas Development Institute, European Commission.

### **3 Case Mauritius**

#### **3.1 Brief history of Mauritius**

Mauritius is a small island in the Indian Ocean, more than 800 km to the east of the island of Madagascar. Even if the island is counted as part of the African continent, it differs greatly from the rest of Africa in terms of its location and history as well as its ethnic makeup and culture. The climate of the island is tropical, which has had an impact on the island's production throughout its history and continues to have an impact, for instance, in the form of tropical cyclones. Especially in the past, the destruction caused by cyclones to the agricultural production of Mauritius was clearly visible in the island's total production.

Arabic and Malay navigators knew Mauritius as early as the early 11th century, and Portuguese navigators used to stop there from the 16th century on. The colonial period of Mauritius began in 1638, when the Dutch annexed it to their colonies. The island came under French control in 1715, until the country was transferred to the British Empire in 1810 in the aftermath of the Napoleonic wars. Mauritius finally became independent in 1968.

As a result of its rich history, the population of Mauritius is descended from several population groups. The population of 1.2 million falls into different groups, the group of Indian extraction being the largest with approximately 68% of the whole population, the Creoles with about 27%, those of Chinese extraction with 3% and those of French descent accounting for 2%. The fact that the population falls into different ethnic groups has had a profound effect on both the country's post-independence politics and its economic structures.

As a result of its colonial history, the Mauritian economy was exceedingly one-sided well into the 1960's and the early 1970's. Production hinged on one product, as in many colonies of the British Empire, for instance Jamaica in the Caribbean. Even in the late 1960's more than 95% of Mauritian export revenue was generated by sugar production. The bulk of the raw sugar produced and exported went to Britain for refining.

#### **3.2 Economic development**

Mauritius is a significant case, because its economic development has been markedly more positive than the rest of Africa, with the exception of Botswana. While the Mauritian per capita GDP was only \$680 per head in 1976 (World Bank 1978), the corresponding figure in 2004, 28 years later, was no less than \$4640 per head and



corrected by the purchase power parity it reached \$11,870 (World Bank 2006). The per capita domestic product has consequently multiplied many times over between the years 1976 and 2004. The Mauritian living standard is now one of the highest in Africa. Traditionally, Mauritian economic growth has been driven by sugar, the textiles industry and tourism. During the past few years, the Mauritian economy has also veered towards the financing sector and information technology.

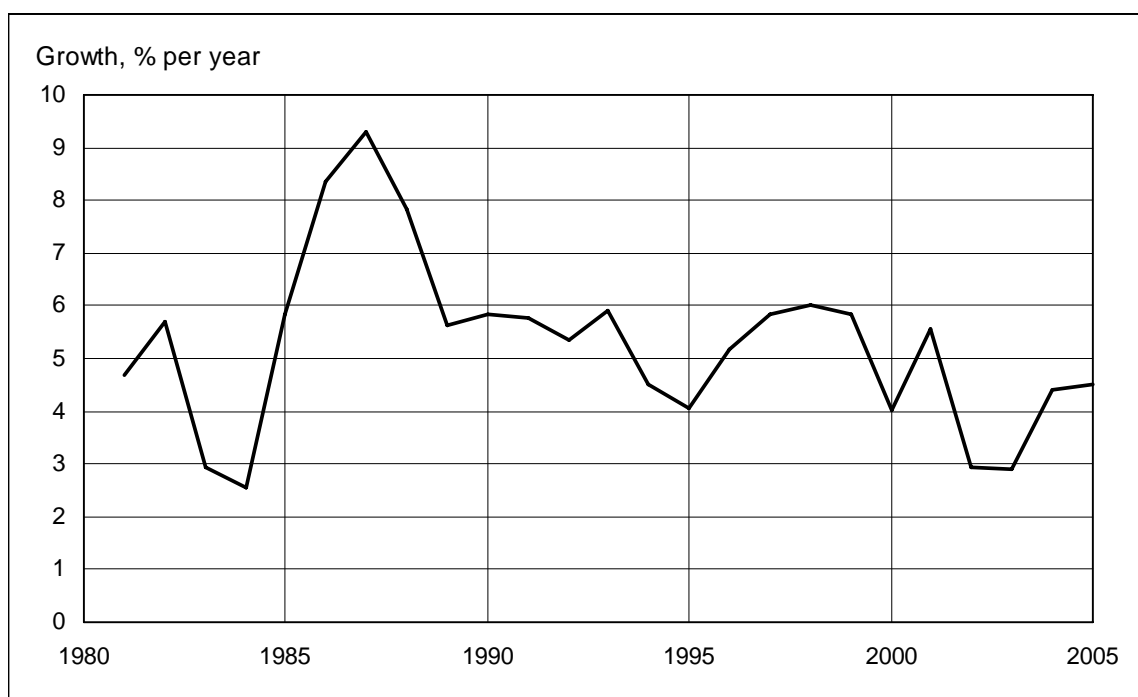
In the years 1973 – 1999, the Mauritian real GDP increased on average by 5.9% year, while the average African growth was only 2.4% over the same period. The corresponding average per capita growth figures were 3.25% and 0.7% (Subramanian and Devish 2001). Mauritian economic growth thus deviates radically from the average African economic growth. The economic growth of Mauritius is more akin to that of Southeast and Eastern Asia.

However, the success of Mauritius is not something that can be taken for granted. As late as 1961, the Nobel prize-winner for economics in 1977, James Meade, regarded the Mauritian prospects as discouraging. In his report for the Mauritian government, “The Economic and Social Structure of Mauritius”, Meade wrote:

“Heavy population pressure must inevitable reduce real income per head below what it might otherwise be. That surely is bad enough in a community that is full of political conflict. But if in addition, in the absence of other remedies, it must lead either to unemployment (exacerbating the scramble for jobs between Indians and Creoles) or to even greater inequalities (stocking up still more envy felt by the Indian and Creole underdog for the Franco-Mauritanian top dog), the outlook for peaceful development is poor”.

Meade’s projections did not come true, and the country entered a period of positive economic growth. In fact, the Meade report (1961) recommended not only diversification of production and reduction of the excessive dependence on sugar but also industrialisation, to enable Mauritius to respond to the needs of its growing population and labour force. On the other hand, we can ask to what extent the realisation of economic growth was attributable to sugar production, which for historical reasons had been a key production sector up to the independence of the island. Was it influenced by the Lomé Convention, concluded in 1975, and the accompanying Sugar Protocol?

**Figure 5 Growth Rates of the GDP of Mauritius in 1981 – 2005**



Source: UN Data bases

### **3.3 Sugar as the basis of economic development**

For historical reasons, sugar has always been a key pillar and a key sector of the Mauritian economy. Sugar became particularly important as an engine of economic development when the EU Sugar Protocol allotted Mauritius the largest export quota, more than a third of the entire quota, and high preferential prices. This was the starting point at the time when the Lomé Convention was signed in the mid-70's, but the success of the economy has been primarily due to the fact that Mauritius has been able to benefit from the preference it was given for the development of the entire economy.

This sugar-based economic development and growth has not, however, been uncomplicated. GDP growth underwent dramatic swings in the mid-1970's and in 1980. In 1975, the cyclone Gervaise reduced the sugar crop by about 30% and in 1980 the cyclone Claudette showed that the economy was at that point still too dependent on one product, sugar. The GDP dropped by a record 10% in 1980.

However, the growth impetus provided by sugar production and the price boom made itself felt in the economic growth of the mid-1970's (see Figures 4 and 5). The increase in sugar export revenues catapulted the whole national economy into vigorous growth.

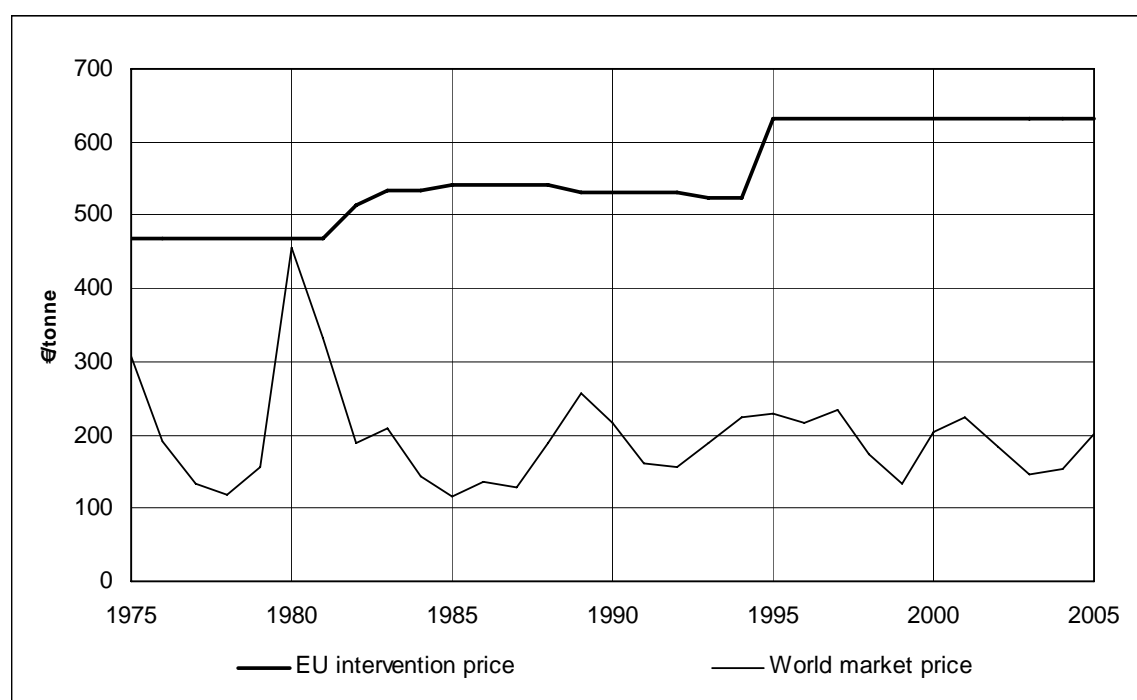
**Table 3. Exports of Mauritius Sugar in 1973 – 1980**

	1973	1974	1975	1976	1977	1978	1979	1980
Sugar exports, million rupees	608	1537	1549	1322	1429	1305	1590	2165

Source: Nath and Madhoo (2004)

In the mid-1970's and in the late 1970's, when the price boom had passed, Mauritius benefited from the advantage provided by the Sugar Protocol. About 80 to 90% of Mauritian sugar exports consisted of EU-bound exports backed by the Protocol quota. Since the Lomé Convention guaranteed a high and stable price, this meant secure export revenues in the 1980's and 1990's. The EU intervention price remained at a stable level throughout the review period (Figure 6).

**Figure 6. World Market Price and Intervention Prices for White Sugar in the EU, 1981/82 – 2004/05**



Source: Data from DG Agriculture, Official Journal

### 3.4 Stages of the growth policy <sup>4</sup>

In the decade that led up to independence, in the 1960's, the Mauritian economy was characterised by slow growth and increasing unemployment. The real economic growth was only about 0.7% a year.

The period can be regarded as a time of transition, in terms of both politics and the economy. Economic policy sought to reduce the country's dependence on traditional agricultural production, in particular on sugar. Small-scale industry, such as the manufacture of foodstuffs, drinks and cosmetics, as well as shoe and furniture manufacture were targeted mainly at the domestic market. The motive for industrialisation was to replace imports.

In 1971 – 1977, the Mauritian economic policy underwent a reorientation. At that point, the private sector and foreign investments were allocated a more important role than before. Foreign investments were attracted by setting up special economic areas, the Mauritius Export Processing Zones (MEPZ), with a view to stimulating export production. Also, Mauritius was the first Anglophone country to join the Yaoundé Convention in 1972.

The establishment of special economic areas and their partial financing by means of sugar export revenues and taxes was a conscious effort by Mauritius to diversify its economy and free itself from dependence on a single product. The rise of the textile industry became the key ingredient of the economic turnabout in Mauritius. The special economic areas were given tax, customs and other concessions, which attracted foreign enterprises and investors to the country, for instance, from Asia. Tourism became a growth sector in the 1980's, and investments continue to be made in its development and growth. Tourism is favoured by the suitable climate and beaches as well as by the fact that Mauritius is not subject to risks of the illnesses and diseases that are typical of Africa.

The Mauritian economy was provided with a strong positive impulse when the world market prices for sugar rose exponentially in the years 1972 – 1975 (see Figure 4). The average price for sugar on the world market in 1974 was six to seven times higher than in 1971.

The investment of revenue from these sugar exports in the export companies of the special economic areas and in tourism also boosted the development of the rest of the economy. In addition, the Lomé Convention concluded in 1975, which provided

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<sup>4</sup> Mainly based on Nath and Madhoo (2004)

Mauritius with a higher sugar quota than the other Protocol countries, guaranteed that sugar export revenues would continue at a high level even after the world market price boom had ended in .

Simultaneous support for production intended to replace imports and export strategy did produce the expected results. Part of the suddenly increased sugar revenues were squandered on wasteful public projects. The economic growth did not last, and when the boom had passed, real growth of the economy was only 1.7% a year in the period 1978 – 1983.

As a consequence of corrective economic policy mechanisms, for instance the devaluation of the rupee by 30% in 1979, the export-driven growth regained momentum. Foreign investments grew and the number of companies began to rise. Economic growth averaged 7% a year in the period 1984 – 1988. Over a couple of decades, the Mauritian economy overcame its dependence on one primary commodity, sugar, and evolved into an economy driven by a diverse industrial base and services, in particular tourism. The World Economic Forum designated Mauritius the most competitive African economy.

Apart from the positive economic growth and the increasing living standard, Mauritian development has also been adequate in light of the UNDP's Human Development Index. In 1990, the country ranked 47th out of the total of 160 countries that were reviewed. In 2000, Mauritius ranked 67th among a total of 173 countries, and then again in 2003, when the list included a total of 177 countries, the ranking was 65th. Among the ACP countries, Mauritius is one of the most developed countries, ranking 10<sup>th</sup> to 15<sup>th</sup> in this index.

### **3.5 Structural change of the economy**

In the years of the Lomé Conventions, from 1975 to 2000, the Mauritian economy and in particular foreign trade underwent a dramatic structural change. The change was part of the positive economic growth that made Mauritius the most competitive country in Africa and raised the living standard of the population markedly. Over a quarter of a century, the Mauritian economy freed itself from dependence on a single product in its exports and production and evolved into an economy driven by the textiles and clothing industry, tourism and international financial services in addition to traditional agriculture, in particular sugar production. In the year 2000, three quarters of the gross domestic product was generated by services, in particular tourism and financial services. Nearly a quarter of the GDP was generated by industry, and the share accounted for by agriculture was no more than 6%.

The structural change in the national economy also made itself felt in the structure of foreign trade. In the 1970's, the share of sugar already at that point on the decline was still predominant. During the first sugar boom in 1973 – 1975, sugar accounted for 81% to 86% of export revenue. As a result of the price boom, sugar export revenues more than doubled from approximately 600 million rupees to 1550 million rupees in 1975.

**Table 4 Shares of the Main Export Product Groups of Mauritius in 1973 - 1980**

	Sugar export %	Clothing %	Textiles %
1973	81.3	2.8	0.0
1974	86.0	3.4	0.1
1975	84.2	6.4	0.1
1976	74.7	11.6	1.0
1977	70.0	13.4	2.7
1978	65.7	15.7	1.9
1979	65.4	16.3	2.0
1980	64.9	17.0	1.7

Source: Shyam Nath and Yeti Nisha Madhoo, page 15

The structure of Mauritian foreign trade was quite different in the late 1990's, when the Lomé period came to an end. In 2000 the share of the value of exports of goods accounted for by sugar was no more than 14.1% (Table 5). The share of agricultural products and foodstuffs in total goods exports was no more than a fifth. The exports of foodstuffs consisted primarily of sugar and fish products. The share accounted for by industrial products has also risen to 80%, with textiles and clothing accounting for two thirds.

**Table 5 Shares of the Main Export Product Groups of Mauritius in 1994 - 2000**

	Total exports US \$ million	Agriculture		Manufactures		
		Sugar		Clothing	Textiles	
		%	%	%	%	%
1994	1 348	<b>29.5</b>	23.8	<b>70.3</b>	54.2	4.0
1995	1 538	<b>29.6</b>	23.6	<b>70.2</b>	52.5	5.0
1996	1 699	<b>31.8</b>	26.3	<b>67.9</b>	54.1	5.2
1997	1 600	<b>28.5</b>	22.7	<b>71.0</b>	55.8	5.0
1998	1 700	<b>26.9</b>	21.7	<b>72.6</b>	57.1	4.7
1999	1 562	<b>24.8</b>	20.3	<b>74.7</b>	58.9	5.2
2000	1 493	<b>19.0</b>	14.1	<b>80.8</b>	63.6	5.4

Source: WTO, Trade Policy Review Mauritius, November 2001

### 3.6 The role of the sugar boom and preferences in the structural change

After the mid-1970's, the increase in world market prices more than doubled Mauritian export revenues. The Sugar Protocol of the Lomé Convention, concluded in 1975, kept Mauritian sugar export revenues at a high and stable level. The bulk of the sugar production and exports were destined for the EU market.

The increase in export revenues did not translate only into increased profits in the sugar sector, but it also brought about a dramatic growth of investment in the other sectors of the economy.

Some of the revenues from the sugar sector were transferred to other areas of the economy with the implementation of an export tax. Some of the growth in sugar export revenues were transferred to finance investments and development in the public sector.

As exports of capital from the country were also regulated and the export tax curbed any desire to invest in the sugar sector, some of the profits were invested in other export sectors, which led to the diversification of export production. The fiscal policy of the Mauritian government speeded up the diversification of production, while the growth of production shifted from agriculture to the industry.<sup>5</sup>

**Table 6 Contribution of Sugar to the Economy in Mauritius**

	1968	1975	1980	1985	1990	1995	2000
Contribution to GDP,%	27.6	23.2*	10.5	14.2	10.7	7.6	4.4
Percentage of Exports, %	96.0	86.5	69.7	45.2	30.8	25.0	14.9
Percentage of Employment, %	45.3	33.5	25.9	21.6	14.1	12.2	9.5

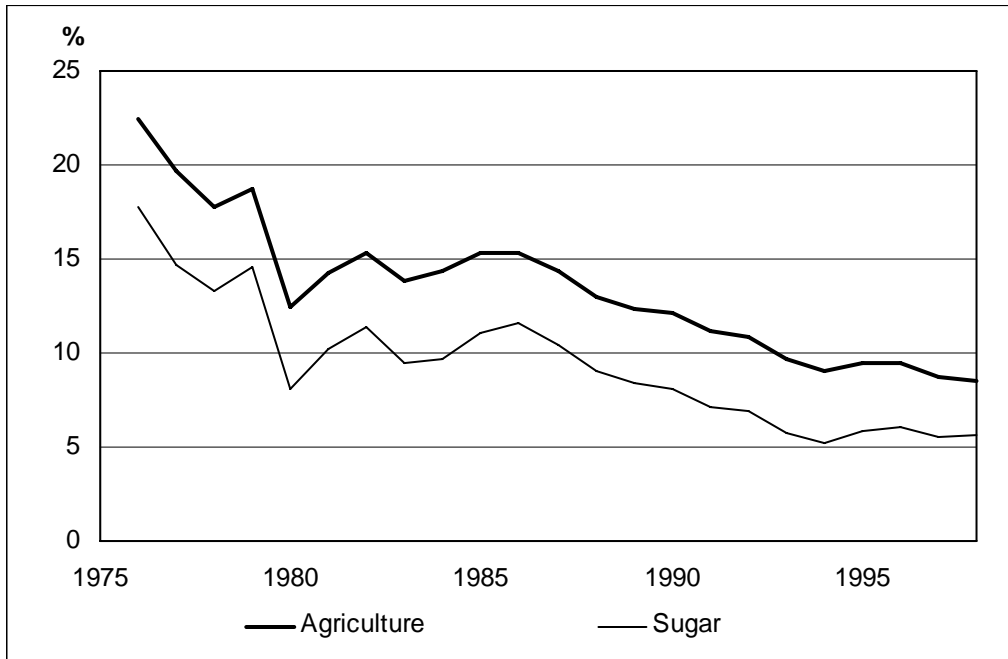
\* Year 1976

Source: Dinan (2004)

Table 6 shows clearly how dramatically the structure of the Mauritian post-independence economy and trade changed in the latter years of the 20th century. Sugar had completely dominated exports, employment and the national economy. By the turn of the millennium, the contribution of sugar to the GDP was less than a fifth, its share in exports was a sixth and its share in employment was less than a third in comparison to 1975.

<sup>5</sup> Shyam Nath and Yeti Nisha Madhoo, pages 13-14

**Figure 7 Shares of Sugar and Agriculture in the Mauritius GDP at Current Prices, 1976 – 1998**



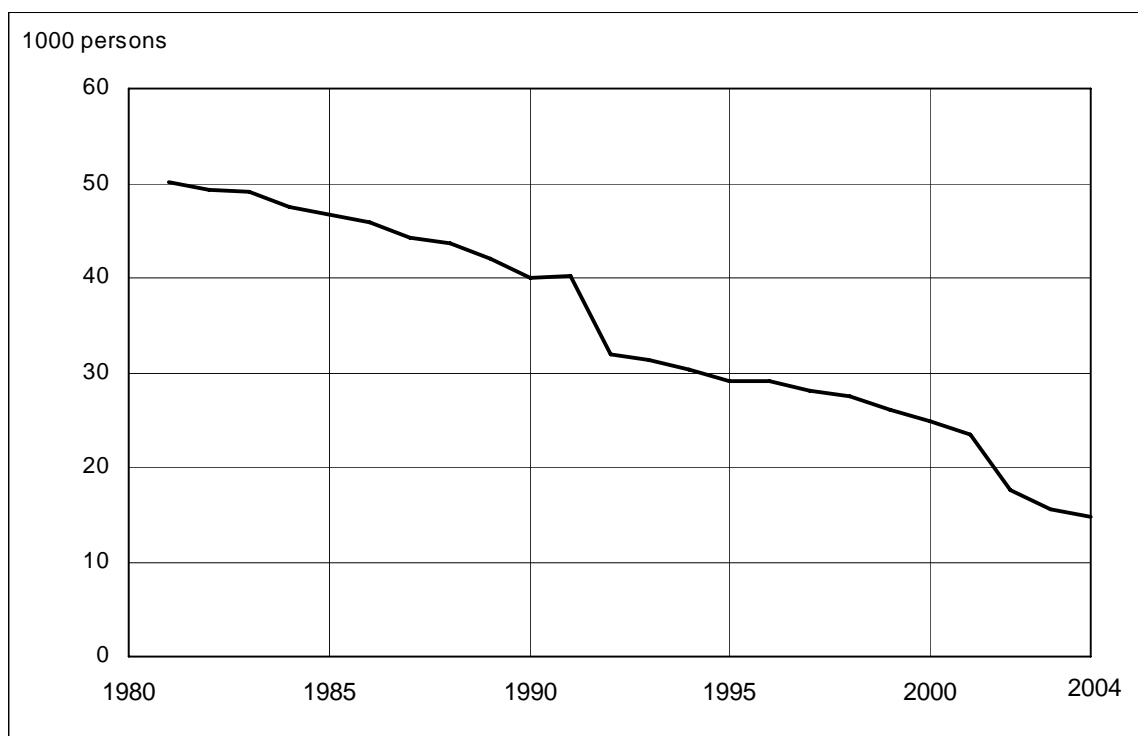
Source: Central Statistics Office, Republic of Mauritius

The share of sugar production and agriculture in the national economy declined steadily throughout the review period. Thus the role of sugar production in the Mauritian economy decreased considerably during the Lomé Convention period. In the late 1990's, Mauritius was no longer reliant on the production and export of one primary commodity. The structure of the economy had been diversified successfully.

Along with the share accounted for by sugar in the domestic product in the 1980's and 1990's, employment in the sector also fell steadily (Figure 8).



**Figure 8 Employment by Sugar Estates and Large Sugarcane Planters, 1981 – 2004**



Note: Data for 1981 – 1991 include factory workers and for 1992 onwards they relate to sugar cane plantations only

Source: Central Statistics Office, Republic of Mauritius

### 3.7 Adjustment to the period after the sugar boom

Sugar has been as noted above of the utmost importance for the Mauritian economy, and the country would not have been able to reach its current high level of development and living standard without a dynamic sugar sector. The trade preferences offered by the EU have played a significant role in this respect.

Even though the Mauritian economy has diversified rapidly, sugar production still has a role to play. However, the 21st century brings Mauritius tougher challenges than ever before. It will have to rise to the first challenge from 2006 on, when the EU scales down the sugar intervention price of €32 paid in the years 2006 – 2009 for Protocol imports by altogether 36%, to about \$400. If the EU internal market price remains at double the world market price, the intervention price will foreseeably have to be lowered, too, in the future.

The problem Mauritius faces on the sugar market is the fact that its production costs are among the highest among the developing countries. Mauritian sugar exports are not competitive in comparison with, say, the Brazilian sugar sector.

Mauritius has responded to the foreseeable changes by introducing drastic reforms. The first sugar strategy was drawn up for 2001 – 2005 (Sugar Sector Strategy Plan for 2001 – 2005) (Stoler 2005). The strategy aimed at lowering the production costs, for instance by closing unprofitable sugar factories. Mauritius is also contemplating redirecting sugar production into special sugar qualities and using the waste from sugar production for manufacturing ethanol.

Due to the faltering competitiveness of the sugar sector, sugar production and its economic significance will inevitably continue to decline in Mauritius. Increased efficiency of production and the new production sectors will, however, help to ensure that the sugar industry continues to exist.

### **3.8 Concluding remarks**

Mauritian economic development was exceptionally positive in comparison to other African countries in the years 1975 – 2000. The country's annual economic growth was more akin to that of the emerging Asian economies than to those of the other African countries. In the 1960's, however, the situation for Mauritius was not very promising. The country is an island state with a small area, and its location is remote from the markets. The country's production and imports were also driven almost exclusively by one primary commodity, namely sugar.

From the 1970's on, Mauritius changed its economy and foreign trade policy, making them more open and export-driven. The import policy, however, continued to be restrictive for a long time, which was due to the trade policy aimed at replacing imports, which had been in place since the 1960's.

To promote exports, Mauritius established a special area for export production, The Mauritius Export Processing Zone. As a result of foreign investments and the policy of investing sugar sector surpluses in export companies, textile and clothing exports rapidly became the largest export sector.

Sugar continued to dominate the Mauritian economy well into the last decades of the 20th century. Mauritian sugar exports have had guaranteed markets and their exports have received preference prices through different international Conventions from the Commonwealth sugar agreement through the Lomé Convention to the Sugar Protocol,

which continued up to 2000 under Lomé and continued as part of the Cotonou Convention later on.

Although the stable export revenue guaranteed by the Sugar Protocol has been a significant ingredient in the positive socio-economic development of Mauritius, the share accounted for by sugar exports and its role in the economy have declined considerably over the decades.

## **4 Case Jamaica**

### **4.1 A brief review of Jamaican economy**

Jamaica is the third largest island in the Caribbean, with an area of about 11 000 square kilometers. In 2004, the population of the island was about 2.6 million people. Ethnically, the majority of the population is of African extraction. The official language is English. The Jamaican climate is tropical, with only slight changes in temperature depending on the season or the time of day.

Services, for instance tourism, nowadays rank as the predominant sector in the Jamaican economy, accounting for about 65% of the GDP in 2004. Industrial production accounted for less than 30%. The key industries were linked with mineral extraction exploiting the abundant bauxite resources. The raw material of aluminium is refined in Jamaica, primarily into alumina, an aluminium oxide, which is one of the foremost export products.

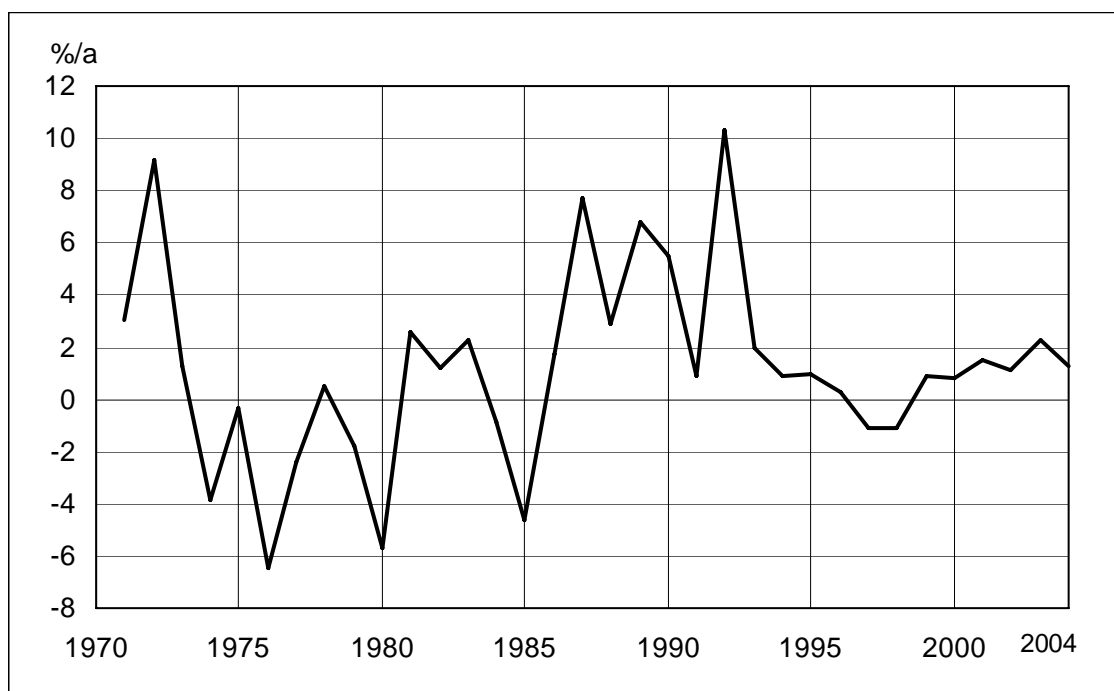
In terms of income, Jamaica is a middle-income country. In 1975, per capita GDP was \$1420 (PPP). By 2000, per capita GDP had climbed to \$3670 (PPP) and by 2004 to about \$4300 (PPP). During the Lomé Convention period, per capita GDP had increased about two and a half times over. However, economic growth was not particularly rapid in the course of the review period compared to that of many emerging economies. Especially towards the end of the period, in the 1990's, growth was extremely slow.

Apart from the fact that the development of the economy has been sluggish, the more general Human Development Index of the UNDP also shows that Jamaican development is flagging. Jamaica's ranking was 59th in the 1990 Index, which included a total of 160 countries. In 2000, when a total of 173 countries were reviewed in terms of their development, Jamaica was only 86th. In the 2003 Index, Jamaica ranked 98th among a total of 177 countries. Thus Jamaica's ranking in terms of the Development Index has dropped by 20 to 30 places.

## 4.2 Economic development

In the years 1975 – 2003, Jamaican per capita economic growth averaged 0.4% a year (UNDP 2005). In the years 1975 – 2000, the growth per capita was about 0.2% a year, meaning that economic growth was slow. Per capita GDP declined by as much as –0.5% a year in the period 1990 – 2001. Thus the living standard fell in the 1990's .

**Figure 9 GDP Growth of Jamaica in 1970 – 2004, % per year**



Source: UN Database

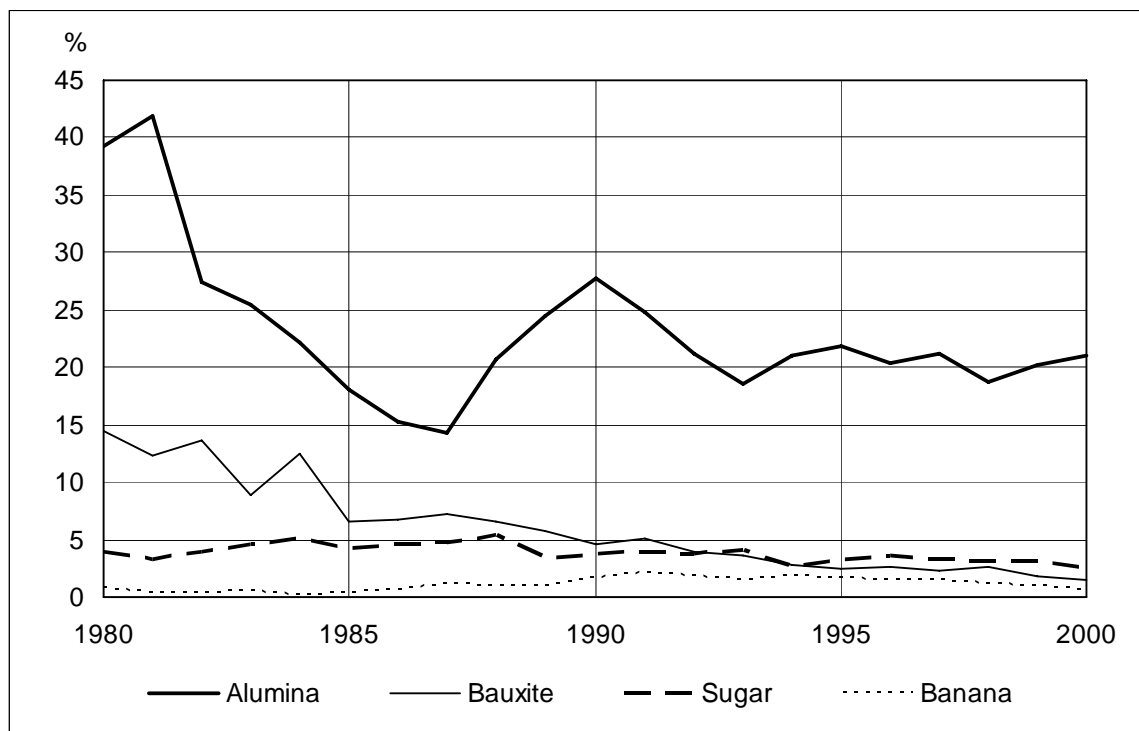
## 4.3 Role of sugar in the economy

The Jamaican economy developed into a monoculture in the 16th and 17th centuries. When the island became a British possession in 1655, the country's main production line was the cultivation of sugar on plantations, for which Britain imported labour from Africa. The role of sugar in the production structure of the island thus dates from the colonial period.

From the end of the 18th century, sugar began to lose its importance when Europe began to cultivate sugar beet and production costs in Jamaica started to rise. In the 19th century, sugar was eclipsed by exports of timber, coffee and in particular bananas.

In the 20th century, the Jamaican economy began to diversify towards mineral extraction and mineral refinement. The most important export group consisted of bauxite and aluminium oxide, alumina. At the time when the Lomé Convention was signed, no less than half of the Jamaican exports consisted of bauxite and alumina (Figure 10.).

**Figure 10. Export Shares of Primary Commodities of Jamaica in 1980 – 2000**

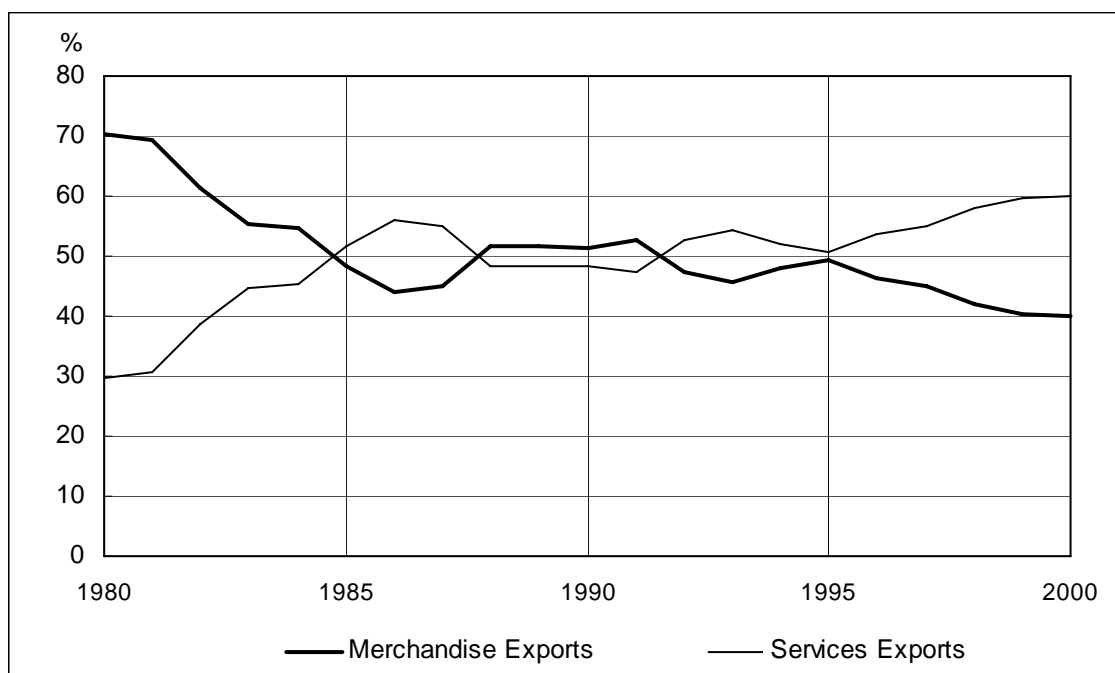


Source: STATIN

Exports of the traditional agricultural products, bananas and sugar, continued, but they accounted for a very small share of Jamaica's total exports in the 1980's and 1990's, less than 5% for both commodities.

Tourism has been a growing industry in the Jamaican economy along with mineral extraction. This is also borne out by the division exports during the Lomé Convention period, the share of services rising dramatically in the years 1980 – 2000. While the share of services in total exports was no more than about 30% in 1980, the corresponding share doubled to 60% in 2000 (Figure 11).

**Figure 11. Shares of Merchandise and Services Exports in Jamaican Foreign Trade in 1980 – 2000**



Source: STATIN

During the last decades of the 20th century, the Jamaican economy relied on tourism, mineral extraction and mineral refinement and agriculture.

#### 4.4 Sugar Industry

When the Lomé Convention came to an end in 2000, sugar production was still an important industry. The role of sugar production had declined significantly over the decades, but the sector still had considerable economic significance, particularly in the rural area and locally at the beginning of the 21st century.

Over the decades, Jamaican sugar production has declined dramatically. In 1965, sugar production was about 523,000 tonnes. Since 1992, the production objective has been 300,000 tonnes, but in practice the crop has fallen short of that. In 1998, production amounted to 187,000 tonnes, in 1999 to about 204,600 tonnes, and in 2000 to less than 217,000 tonnes. In consequence, Jamaican sugar production is now no more than a third compared to the period of peak production, prior to the Lomé Convention.

By the turn of the millennium, some of the indicators of the sugar sector were. (Report of Parliamentary Enquiry into the Future of the Jamaican Sugar Industry, 2001).

- share of GDP 1.5 – 2%,

- annual export revenue approximately US \$80 million dollars,
- accounted for 18% of agricultural employment and 4% of total employment,
- The livelihood of about 150,000 people relied on sugar production and
- it was a key industry in terms of regional economy.

Jamaican sugar production had a market of about 280,000 tonnes at the beginning of the 21<sup>st</sup> century, the shares being as follows:

- Exports to the EU market                      about 142,000 tonnes
  - Protocol Sugar                                      about 118,000 tonnes
  - SPS Sugar    about 24,000 tonnes
- US quota    about 12,000 tonnes
- Domestic market                                      about 125,000 tonnes

After meeting the export quota, Jamaican production of sugar is not sufficient to satisfy the country's own consumption demand, but the domestic demand is met supplied by imports.

A key problem in the development of the Jamaican sugar sector has been high production costs. According to some estimates (SIRI)<sup>6</sup> the costs of sugar production including financing, storage and transportation costs, were nearly 40 UScent/lb in the late 1990's. This meant that Jamaican production costs were three to four times higher than those of the most efficient producers in the world market. Consequently, Jamaican sugar production was not competitive on the world market when the Lomé Convention ended. Production and exports can be sustained primarily with the help of the export quotas granted by the EU and the EU's high intervention price.

#### **4.5 Sugar exports**

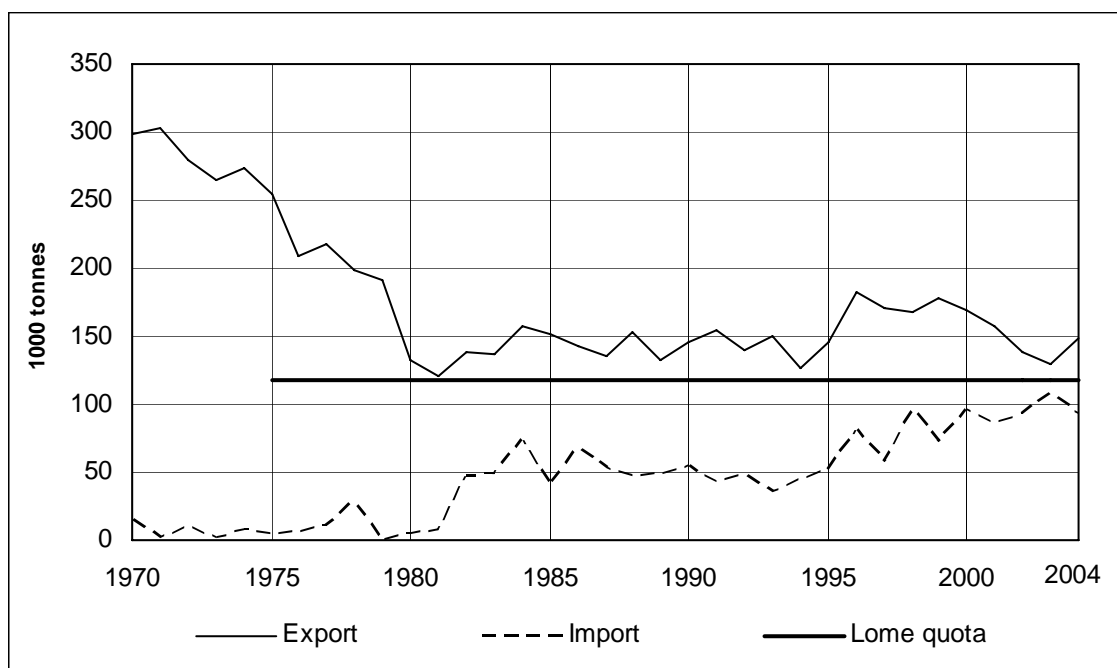
Historically speaking, sugar has been Jamaica's foremost export product. In the early 1960's, total sugar exports were about 400,000 tonnes. However, sugar exports dropped from the late 1960's on. By 1980, the exports had plummeted to less than 150,000 thousand tonnes, which was a third of the level 10 years before.

Since the 1970's, the quantity of Jamaica's sugar exports have remained almost unchanged, conforming more or less with the quota of the the Lomé Conventions' Sugar Protocol, plus the SPS quota. In the years 2000 – 2002, these quotas totalled (Table 1) about 142 500 tonnes for Jamaica.

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<sup>6</sup> SIRI = the Sugar Industry Research Institute

**Figure 12. Sugar Exports, Imports and Lomé Quota of Jamaica in 1970 – 2004, 1000 tonnes**



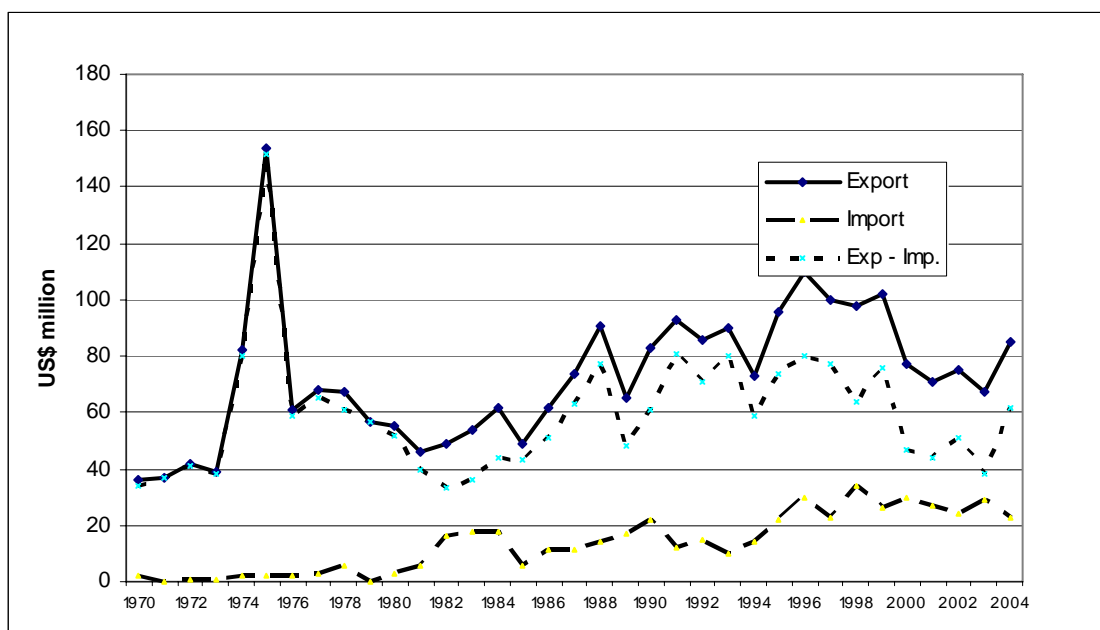
FAO Statistics

The production costs of Jamaican sugar sector have shot up. According to some estimates (Leena Kerkelä, Ellen Huan-Niemi (2005)) the production costs of the Jamaican sugar sector are the second highest among the ACP producers. Jamaica lost its export markets very rapidly in the 1970's. Domestic sugar production was unable to meet both the growing domestic demand and the exports guaranteed by the quotas. From the early 1980's, sugar imports to Jamaica grew so much that in 2003 the imports exceeded 100,000 tonnes. Imports thus amounted to 60 to 70% of the volume of exports at the beginning of the year 2000.

The development of sugar export revenue shows the price received on the EU market, which is higher than world market prices. Jamaican export revenues have continued to be three to four times higher than the value of their sugar imports. Net export revenues from the foreign trade in sugar ranged between 40 and \$80 million in the years 1985 – 2000. Since 1997, however, the trend in net export revenues has been declining (Figure 13).



**Figure 13 Sugar Trade of Jamaica in 1970 – 2004, US\$ million**



FAO Statistics

#### **4.6 Concluding Remarks**

Sugar has historically been a typical product for Jamaica. The natural conditions the tropical climate create adequate conditions for the production of cane sugar. In the 18th century, the Jamaican economy was based almost entirely on sugar.

Over the centuries and decades, the structure of the Jamaican economy has changed dramatically. The key role of sugar has remained primarily in those regions where production continued. In the first half of the 1970's, regardless of the price boom on the world market in the period 1974 – 1975, Jamaican sugar exports fell rapidly. Jamaican sugar production lost its international competitiveness.

Since the signing of the Lomé Convention in 1975, Jamaican sugar exports have been determined primarily by the import quotas granted by the EU and the USA. The Lomé Convention's Sugar Protocol has played a completely dominant role. More than two thirds of the imports have been based on the Sugar Protocol quota.

While the Lomé Convention guarantees the EU internal market price for exports determined by the quota, Jamaica has found it profitable to import sugar from the world market for its increasing domestic consumption, since domestic production costs are

high. Consequently, the quantity of imports continued to grow during the Lomé Convention period. Since the beginning of the 21st century, Jamaican sugar imports have amounted to two thirds of the corresponding exports.

Despite the decline in Jamaican net exports, net sugar export revenues have remained at a moderate level during the Lomé Convention period from 1975 to 2000. With the exception of the years 1975 – 1976, when the boom in world market prices pushed Jamaican sugar export revenues up to an exceptionally high level, net export revenues have ranged between \$40 and \$80 million.

The fact that sugar export revenues have remained close to \$100 million has in fact been a form of development aid financing provided by the EU to Jamaica. The development aid channelled into Jamaica through the sugar quota has sustained production, which has played a role in the livelihood of about 150,000 people, and in the economy of those regions where Jamaica's sugar production is located.

The revenue from the sugar quota has provided no notable boost for the national economy. The growth of the Jamaican national economy has been relatively slow over the entire Lomé Convention period, and it has lacked vigour especially in the 1990's, when the living standard per capita declined. Despite the sugar export revenues, the development of the sugar sector was not made a priority, and Jamaican sugar production lost its competitiveness due to the high production costs. In fact, it is safe to say that the secure export revenues and revenue generation from the export quotas of the Sugar Protocol have undermined any drive to reform the sector. Thus the revenue generated by the Sugar Protocol has slowed down the renewal of the sugar sector and in this respect the development of the national economic structure has also been adversely affected.

## **5 Empirical evidence of the effect of net gain from preferential sugar export on the economies of the preference receiving countries**

### **5.1 Introduction**

The main goal of the trade preferences, and also of development aid, for example, is to promote the receiving countries' economic development, i.e. to increase investments, promote economic growth, and consequently, to improve people's welfare. The trade preferences are aimed at increasing exports from developing countries to the developed countries by allocating them quotas, tariff reductions and guaranteed prices that are above world market prices.

Empirical analysis (Agostino et al 2006, see also the previous part of the PTT TradeAg project) has shown that the preferences have had a positive effect on exports. The effects of the preferences and the increased exports on economic development have more seldom been analysed. There is an urgent need to analyse this since the descriptive analyses show that, in spite of the considerable trade preferences, the Lomé countries have not developed very well compared, for example the Far East countries with much fewer preferences.

Our aim is therefore to estimate econometrically the effect of trade preferences on economic growth by investigating how the preferences affect investments. We have chosen to analyse the Sugar Protocol of the Lomé Convention in a more detailed manner. The reason for this is that the sugar preferences are the most important ones in the Convention.

Since econometric analyses using this approach are very rare (as far as we know), we use the obvious analogy to models investigating the effects of development aid on the economies of aid receiving countries' as a theoretical background. Consequently, the following very brief literature review concentrates on these analyses.

## **5.2 Literature review<sup>8</sup>**

Hansen and Tarp (2000) divide the empirical literature into three generations. The first generation studies relied on the classical Harrod-Domar growth model, in which the causal chain runs from aid to savings and from savings, to growth. In the early literature, foreign aid was perceived only as an exogenous net increment to the capital stock of the recipient country. It was assumed that each dollar of aid would result in an increase of one dollar in total savings, and thus in investments. In their survey, Hansen and Tarp (2000) found that in contrast to the assumption, only in one of the surveyed 41 studies had the researchers found the aid to have had positive and significant effects on savings. This suggests that aid cannot be assumed to increase savings on a one-to-one basis. However, if the assumption is restated so that the coefficient is allowed to be negative (but less than one), which means that aid has a positive impact on investments, the situation changes. According to Hansen's and Tarp's (2000) re-calculation, 18 of the surveyed 41 studies now show a positive impact and only one significantly negative impact (compared to the 25 original regressions).

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<sup>8</sup> The literature review is largely based on the works by Hansen and Tarp (2000) and Haaparanta (2006).

Since the macroeconomic impact of aid on savings is an indirect way of trying to establish the aid-growth relationship, the next step was to try to find out more direct links between aid and growth. Some estimates were made by explaining investments by aid and some by explaining growth (in reduced form) by aid. These studies are called the second-generation studies. This is still consistent with the Harrod-Domar or simple Solow neoclassical growth model. In most of the second-generation studies, a positive and also significant relationship was found between aid and investments or growth. From 90 surveyed studies, Hansen and Tarp (2000) found a negative and significant relationship in only one study, whereas a positive and significant relationship was found in 57 studies.

The most recent studies represent a third generation of studies. Compared to earlier research, there are four distinctions. Firstly, they apply panel data. Secondly, new growth theory has provided the empirical research. Thus the policy and economic environment variables have been included in the models. Thirdly, the endogeneity of the variables has been considered more thoroughly. Finally, the aid-growth relationship has been seen as non-linear.

Hansen and Tarp (2000) make an exact comparison of four third-generation estimates (Hadjimichael et al. 1995, Durbarry et al. 1998, Burnside and Dollar 1997, and Hansen and Tarp 1999). In all of these studies a positive relationship is found between aid and growth. However, the results are conditional on a reasonable aid-GDP ratio and a good policy environment. Haaparanta (2006) also points out the increased aid may reduce the efficiency of investments if the country is heavily indebted.

### **5.3 Modelling the effect of net gain on investments**

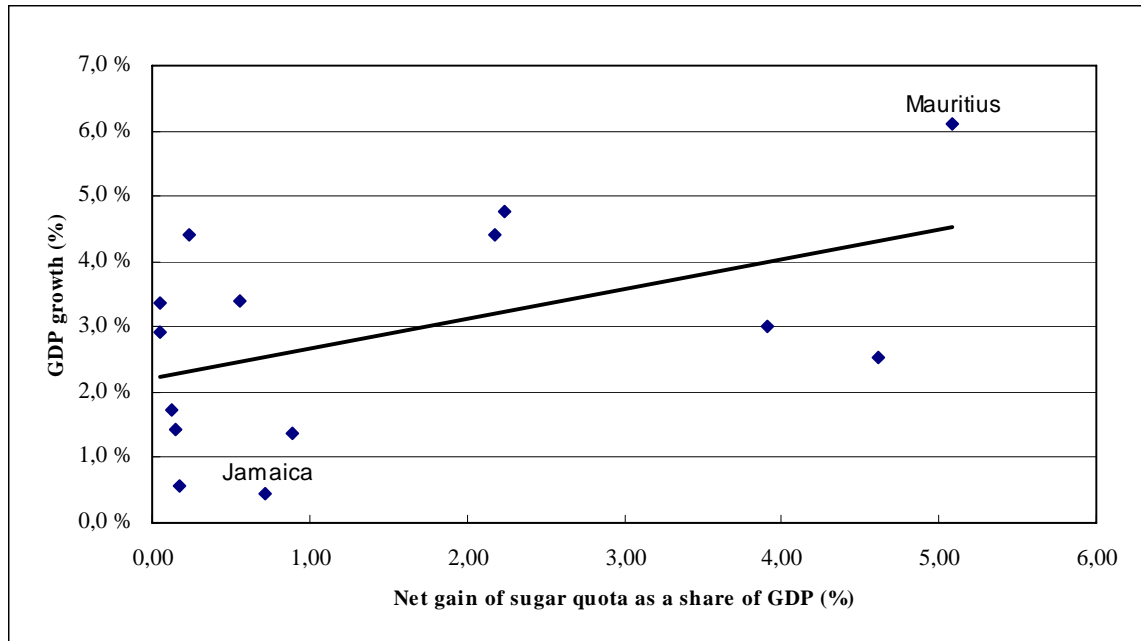
#### **5.3.1 Model and Data**

The aim of our model is to econometrically estimate the effect of trade preferences on the economic growth via investigating how the preferences affect investments. Our model basically represents second generation modelling. However, we apply many properties more familiar to the third generation studies. Among these are the use of panel data and the proper handling of endogeneity by estimating the model also using the Arellano-Bond estimator.

Since the key issue in our model is the net gain received via higher prices we firstly show the descriptive figures of the net gain compared to the GDP and investments (Figure 5.1 and 5.2). The Figure 14 below describes whether the sugar protocol quota has had an influence for the GNP growth in the ACP countries. GNP growth of sugar

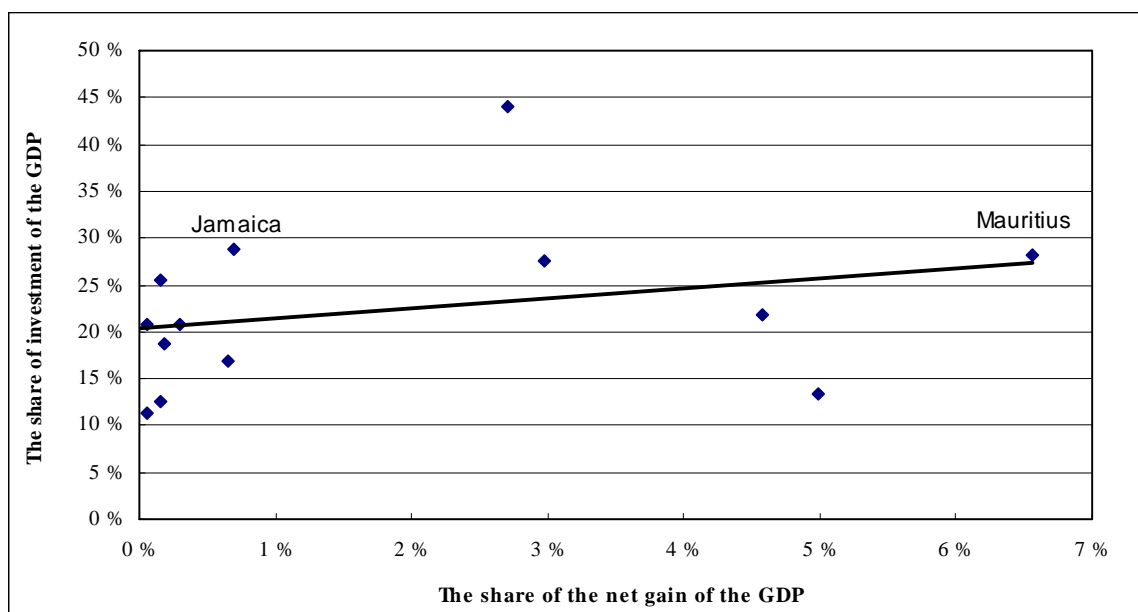
protocol countries is explained by net benefit of ACP sugar quota in 2000. The net benefit was calculated as the product of the quota and the difference between the EU price and the world market price. This value of exports was divided by GNP in year 2000. The Figure 14 suggests that the sugar protocol may have had a positive influence on GDP growth, but the estimation produces more liable results.

**Figure 14. Benefit of the Sugar Protocol for the Sugar Protocol Countries Compared to GDP Growth 1990-2000.**



Importance of the sugar protocol for the investment accumulation for the Lomé -countries is described in Figure 15, where x-axis shows the share of net gain of the GDP and y-axis shows the share of investment of the GDP. It seems that the net gain of sugar protocol has been relatively low in most countries, but when comparing share of investment of the GDP, significance of net gain rises.

**Figure 15. Net Gain of Sugar Protocol and the Share of Investment of the GDP. 1990-2000**



The data were unbalanced panel data, consisting of time series of investment/GDP – ratios, real interest rates, real GDP:s and the measures for the gains from the trade preference, for totally 14 countries<sup>9</sup>. The data was collected from different sources, data for real GDP, investments and real interest rates are combined from World Development Indicator database and IMP database. The time span of the data ranged between 1975-2000.

### 5.3.2 Estimation and results

Three alternative estimation methods were used to estimate how the gains from Lome trade preferences for sugar exports have affected investment activity in the selected Lome countries. As a benchmark model, we use ordinary least squares (OLS) regression. Fixed effect models were estimated to control for the likely problems due to the heterogeneity of the Lome countries in our panel data. As the country specific means are removed from the model variables before estimating the fixed effect model, it should take into account for the heterogeneity between the countries.

The potential two-way interactions between investment, GDP growth and gains from trade preferences, as well as the dynamic nature of the model, result in endogeneity problems in our model specification. The endogeneity problem is solved using Arellano-

<sup>9</sup> Barbados, Belize, Congo (Rep.), Cote d’Ivoire, Fiji, Jamaica, Madagascar, Malawi, Mauritius, St. Kitts and Nevis, Swaziland, Tanzania, Trinidad and Tobago, and Zimbabwe.

Bond estimator. Arellano-Bond estimator is based on estimating the model in differenced form, instrumenting the dependent variable by its own lags. The Arellano-Bond model assumes that the differences in the error terms between the countries is a random variable.

The model specification represents “the canonical investment equation”. Theoretical foundations of our empirical model lie in the accelerator model for investments, in which the desired level of capital stock of the economy is proportional, firstly, to the level of GDP of the economy, secondly, a variable measuring the opportunity cost of capital and, finally, a set of variables capturing the possible other determinants of investment activity. The model takes the form:

$$Invshare_{it} = cons_i + \beta_1 Invshare_{it-1} + \beta_2 realrate_{it} + \beta_3 \Delta GDP_{it} + \beta_4 Netgain_{it} + \varepsilon_{it}$$

Thus, as a dependent variable of the model, we use the share of fixed capital formation of the GDP of the countries. As explanatory variables we use the lagged level of the investment share (capturing the persistence in the capital formation), the growth rate of GDP, the real rate of interest and the net gain for the countries from the trade preferences. The net gain is calculated as a product of the in-quota trade of sugar and the difference between the price for sugar guaranteed by the Lomé agreement and the world market price. All explanatory variables are in log levels, except the share of investment that is included in the model as log differences, when the model was estimated using Arellano-Bond estimator.

Theoretical motivation for including the gains from the trade agreement into the investment equation can be found e.g. from the literature that stresses the importance of capital market imperfections in developing countries. The lack of operationally and/or informatively efficient capital markets constrain the availability of capital for funding even profitable investment opportunities. The predictable, stable cash flows running from the trade under export quotas may be used to finance investments in sugar production.

**Table 7. Results of the Estimation**

Investment equation	FE	Arellano-Bond	OLS
invshare(t-1)	0.711***	0.651***	0.807***
	15.23	8.77	22.18
realrate	-0.005	-0.014	-0.005
	-0.10	-1.01	-0.15
diffrealgdp	15.313***	-4.212	14.352***
	2.83	-0.85	2.81
lnetgain	.0002	0.129*	0.410**
	0.00	1.92	2.09
_cons	5.346	-1.88*	-3.462
	0.67	-1.79	-1.08
R-squared	0.703		0.708
n	250	250	250
A-B test(1)		-5.71***	
A-B test(2)		0.68	

Invshare refers to the share of investment on the GDP, realrate to the short term market interest rate, diffrealgdp to the log difference of the GDP, and lnetgain to the log of the net gain (the product of the in-quota exports of sugar and the extra price paid by the EU over the world market price) from the trade preference. A-B tests report the values of the Arellano-Bond test for first and second-order autocorrelation in the first-differenced residuals.

Regarding the estimation results, the lagged dependent variable gets a statistically significant estimate (at 1 % level) in all three models. The share of investment of GDP seems to be fairly persistent, since the coefficient of the lagged investment share ranges between 0.65 and 0.81.

The sign of log difference of the GDP is significant and positive, as expected, in the OLS and the ordinary fixed effect models. In the equation estimated using the dynamic Arellano-Bond method, the GDP gets a negative sign, which is not significant, however.

The parameter of most importance for us, the log of the net gain, gets a positive sign in all three models. The parameter estimates are significant in both the statistical and economic sense in the models based on OLS or Arellano-bond estimator. According to our estimated OLS model, an 1% increase of the net gain from trade preferences increases the investment share by 0.41 per cent. The Arellano-Bond model, in turn, suggests that the 1% increase in the net gain increases the growth rate of the investment share by 0.13 %.

The table also reports the statistics of the Arellano-Bond test for first and second-order autocorrelation in first-differenced residuals. Although the tests suggest the presence of first-order autocorrelation in the differenced residuals, the estimates are still consistent, since the hypothesis of second-order autocorrelation is clearly rejected<sup>10</sup>.

<sup>10</sup> See Arellano and Bond (1991), pp 281-282.



## 6 Conclusions

The aim of this study was to examine importance and magnitude of the Lomé Sugar Protocol quota for the protocol countries. Moreover, Mauritius and Jamaica were under particular interest, because sugar sector has a great deal of importance for both countries, but economic performance of the countries has been strikingly different during the Lomé convention scheme. The study is based on descriptive analysis of the selected sugar protocol countries. A Special emphasis is placed on Mauritius and Jamaica, which are the case study countries. Moreover, an econometric analysis about the net gain of the Sugar Protocol for the economic performance was also carried out. The aim of our model was to econometrically estimate the effect of trade preferences on the economic growth via investigating how the preferences affect investments.

This study confirms that the Sugar Protocol has been, in principle, a useful instrument to enhance standard of living and accelerate structural change of economy in the Lomé countries. However, the practical benefit of the protocol has been highly depended on the receiving country. Mauritius used the extra gain of the export revenues as an investment to other sector in the economy. In fact, focus of the economy removed from the agricultural sector and sugar production to textile and clothing industry and to tourism. As a result of this gross domestic product grew fast and standard of living also considerably enhanced. Jamaica, by contrast, was not able to turn the extra gain of export revenues to investment activities. Renewal and development of sugar sector was neglected, which led to collapse of competitiveness. Finally, domestic sugar production did not satisfy domestic production, and started increasingly to import sugar.

We also made some econometric analysis regarding the effect of trade preferences on the economic growth of the Lomé countries. The additional incomes from the sugar exports due to the higher price under the preference, may stimulate the long-term growth prospects of the countries. The money could be spent, for instance, to finance profitable investment opportunities that would have otherwise been rejected because of the lack of funding in the often highly imperfect capital markets of the developing countries. Our estimation exercise suggested that the extra gain of sugar export revenues affected positively on investment activity.

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