Jamaica's Foreign Exchange Black Market

ROBERT GROSSE

As in many other less developed nations, the imposition of foreign exchange controls promoted the growth of a foreign exchange black market in Jamaica. This article explains the structure and functioning of the market in recent years. Under controls initially imposed in 1954, this market grew to about US$1.7 billion of transaction value per year by 1990. During the 1980s the main participants in the market seeking to buy foreign exchange were Jamaican importers and savers who either were restricted from obtaining foreign exchange in the official market or chose to evade taxes and other rules by using the black market. On the supply side were Jamaican expatriates living abroad, foreign tourists, ganja exporters, and traders using false invoices. Thousands of black market exchangers provided the market-making service, sometimes adding the service of funds transfer overseas. A black market exchange rate model supported this interview-based, institutional description of the market. The foreign exchange black market contributed importantly to the operation of Jamaica's underground economy during the 1980s. The liberalising of the foreign exchange market and elimination of capital controls in 1991–2 undermined the economic logic favouring black markets. These changes may induce the transfer of a large part of previously underground financial activities into the legally-recorded economy.

1. INTRODUCTION

Foreign exchange black markets have existed as long as there have been government controls on access to foreign currency in legal markets. In addition, such black markets have flourished in countries where large and dynamic underground economies operate, as a means of connecting them to foreign countries. Most studies of these black markets have used

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macroeconomic data to focus on welfare implications (often hypothe-
sising a government-controlled, commercial bank-operated market as
the only alternative to the black market), or on the relation of the black
market exchange rate to inflation and to the official, controlled rate (to
explore the issues of market efficiency and purchasing power parity).
This study presents a micro analysis of the structure and functioning of
the Jamaican black market, exploring the motivations of the participants
and explaining the exchange rate as an outcome of their activities.

A black, as opposed to a parallel market, is a market for foreign
exchange transactions that operates outside the law in a given country.
Parallel markets are any foreign exchange markets other than the ones
operated through a country’s commercial banking system. The legal,
parallel markets in Chile, Ecuador, Mexico, and several other Latin
American countries in the 1980s and 1990s have offered legal access to
foreign exchange in those countries through intermediation of cambistas
or casas de cambio, who are licensed dealers in foreign exchange. Even
in countries such as Argentina and Colombia, licensed cambistas do
carry out legal, parallel market foreign exchange transactions. However,
in these latter countries the parallel market is accompanied by a huge,
unrecorded market for foreign exchange, the black market. Black
market dealers in foreign exchange also may be licensed cambistas,
stockbroker firms, travel agencies, or street vendors; their business is
‘black’ because the transactions are not recorded legally, no taxes are
paid, no government permissions are obtained, and in short they oper-
ate outside the legal financial system of the country.

II. OVERVIEW OF FOREIGN EXCHANGE MARKETS IN JAMAICA

The history of foreign exchange markets in Jamaica can be divided quite
readily into three periods during this century. First, the colonial period
during which Jamaica used the British pound as its currency. This
period, from 1866 to 1962, was characterised by the same kinds of
economic swings as in more recent decades, but the foreign exchange
market was largely controlled by UK policy dictates. Undoubtedly black
market transactions occurred, but the policy regime was controlled by
an outside regulator. Nevertheless, the main Jamaican foreign exchange
rules that applied for the period under study were imposed during this
period – via the Foreign Exchange Control Act of 1954.1

The second period, from 1962 to 1972, was the time during which
Jamaica belonged to the sterling area, but as an independent country
with its own currency (the Jamaican pound). The currency was main-
tained at par with the British pound, but the Bank of Jamaica was able
to carry out its own independent monetary policy. During this period the official foreign exchange market was largely able to handle the demand for foreign exchange, due to the relatively stable economic conditions, and particularly due to the favourable balance of payments situation. That is, Jamaica was running a small trade deficit in most of this decade and a positive official reserve transaction balance, meaning that net inflows of official reserves were being generated from incoming investment that overshadowed the trade deficit. About US$10–20 million per year accrued to the Jamaican monetary authorities during the period.

In 1969, Jamaica changed its currency unit to the Jamaican dollar, at an exchange of 1 Jamaican dollar for every 1 Jamaican pound. At the same time, a new parity with the US dollar was established at 1 Jamaican dollar per US$1.20. This resulted in a de facto devaluation of 50 per cent, since the previous parity had been 1 Jamaican pound per US$2.40. Even with the new currency, Jamaica remained in the sterling area. This meant primarily that the Jamaican dollar remained fixed to the UK pound (at J$2 per UK pound). Also, Jamaica continued to receive the monetary benefits of being in the sterling area, such as access to lending from the Bank of England and assistance in dealing with balance of payments difficulties.

The third period of recent foreign exchange regimes in Jamaica began with the dissolving of the sterling area in 1972. At first, Jamaica’s central bank maintained the link to sterling, and thus allowed the US dollar value of Jamaica’s currency to change with the several changes in pound/$ parities during 1972. Ultimately, in January 1973, the Bank of Jamaica decided to fix the Jamaican dollar to the US dollar, and to drop the link to sterling. These events began the principal period of interest here.

III. THE JAMAICAN BLACK MARKET

Jamaica was one of the last countries in the Latin America/Caribbean region to liberalise its foreign exchange market by eliminating capital controls and the limits on access to foreign exchange by local residents. It was only in September 1991 that the Jamaican government established a new regulatory policy that essentially opened up the foreign exchange market to non-bank intermediaries and to transactions in both directions (buy/sell). This policy was followed by a period of strong speculation against the Jamaican dollar in the black market, where the rate dropped to almost J$30 per US dollar in March 1992, (versus J$20 per US dollar in the official market) before implementing regulations
were enacted in April 1992. After that, the two rates converged at about J$22 per US dollar. The discussion below focuses on the period from 1970 to 1990, before the liberalisation was undertaken.

Jamaica experienced generally stagnant growth of the recorded economy through both the 1970s and 1980s. Real GDP growth was approximately zero during the 1970s and only about 1.4 per cent per year during the 1980s. The trade balance was in deficit during most of the two decades, with surpluses only in the late 1970s. The Manley government imposed severe exchange controls in 1974; and some form of such controls remained in place throughout the period, with occasional devaluations of the official exchange rate and limits on the extent of permission to use the official market. With increasing difficulties in generating foreign exchange to meet international debt service beginning in 1982, Jamaica’s government imposed increasingly more onerous restrictions on the official exchange market and on imports. These steps produced a surge in growth of the black market and in the sophistication of the market’s functioning.

As in other countries of the Latin America/Caribbean region (for example, Argentina, Brazil, Colombia, Peru), the principal foreign currency in Jamaica’s black market is the US dollar. Until the early 1970s, Jamaica had much stronger ties with the United Kingdom than with the United States in monetary affairs, so British pounds have also been an important currency in both the official and the black markets for foreign exchange. Jamaica belonged to the sterling area, as a former colony of the UK, and therefore received privileged access to the British financial market and Bank of England financial services until the sterling area was disbanded in 1972. After that time the Jamaican foreign exchange markets shifted predominantly to dealing in US dollars.

Another feature of the link to Great Britain is the large expatriate Jamaican community that lives there. Due to the fact that almost half of Jamaicans live overseas (mainly in the United States and the United Kingdom), the local financial market is characterised by numerous transactions between family members in the expatriate community with their relatives in Jamaica. The large number of Jamaicans living in Great Britain has led to numerous transfers of funds back to Jamaica, through both the official and black markets, to relatives and friends at home. The transfers from the United Kingdom are largely in pounds, so this currency remains more important in Jamaica than in most of the other countries in Latin America. Finally, the cultural ties to Great Britain—from language to education system to social structure (and even to traffic patterns, where drivers occupy the left-hand side of the road)—remain quite marked and different from most other countries of the region.
As in most of the Andean countries, but different from the rest of Latin America and the Caribbean, the production and export of narcotics has played an important role in the development of Jamaica's foreign exchange black market during the past two decades. In this case it is domestically-grown marijuana (ganja) that produced the massive foreign exchange earnings that entered the underground economy. As in the Andean countries, some of the earnings of the drug exporters find their way back into the domestic economy through the black market, while much of these earnings remain held outside of Jamaica. In this case the boom in exports began in the mid-1970s, so most of the period under study here was affected by this important factor on the supply side of foreign exchange into the black market.

Broad Characteristics of the Market
The retail part of the foreign exchange black market in Jamaica, basically from independence in 1962 until 1991, was characterised by many small-scale participants who would buy and sell US dollars for Jamaican dollars on the streets of the main cities and tourist centers of the country. Kingston, Montego Bay, Ocho Rios, and several additional locations supported active businesses of this retail trade, especially during the 1980s. With the Jamaican economy so tied to international tourism – about 25 per cent of national income is so derived – it was logical for the retail black market to flourish in tourist centers.

The retail market can be understood easily by considering the respective participants on the supply and demand sides. On the supply side of US dollars were those people who had US dollars and wanted to spend them in Jamaica. These were principally tourists and Jamaicans living abroad. Tourists in Jamaica were able to buy local currency on the black market for a significant mark-up over the official exchange rate, and the government generally turned a blind eye to the transactions, so that this part of the picture was quite understandable. Jamaicans living abroad often sent remittances back to family members, but this process often involved more than simple cash exchanges, as is discussed later.

On the demand side for US dollars were many Jamaicans who wanted to safeguard their wealth against inflation and devaluation. The Jamaican economy has been subject to fairly severe swings based on shifts in prices of the main commodity export (bauxite/alumina) and on variations in tourist arrivals. Savers often would look to US dollars as a safe haven for their wealth, even if the dollars had to be held outside of banks (thus earning no interest) in Jamaica. An important second group of buyers of US dollars were importers whose efforts to obtain products from abroad were thwarted by prohibitions, slow licensing procedures,
high tariffs, and/or inability of the Central Bank to deliver the foreign exchange when purchases were desired. Both of these groups would often resort to buying dollars from the street vendors because of easy access and the lack of government intervention.

The market thus functioned at the retail level as a fairly simple mechanism, connecting several groups of buyers and sellers of US dollars via thousands of small-scale street vendors. At the wholesale level, the situation was somewhat more complex. Two basic goals were achieved in this instance. Both the conversion of currencies and the transfer of funds between Jamaica and offshore sites such as the United States or Great Britain were accomplished in the wholesale market. These processes are discussed below.

**Distinguishing Features of Jamaica’s Black Market**

At the broad, overall level of examining reasons for the market’s existence, categories of market participants, and kinds of macroeconomic impacts of the market, Jamaica’s foreign exchange black market has more similarities than differences with respect to other black markets in the hemisphere. At the micro level, the market was quite differentiated, for example, by the large segment of British pound business that it transacted. This led to much greater use of Britain-Jamaica funds transfers than in the other countries. It also led to movements of funds within the Caribbean region between Jamaica and other members of the sterling area such as the Cayman Islands, Trinidad and Barbados. The UK axis is a part of Jamaica’s black market not seen elsewhere in the region.

Further, Jamaica is very different from the South American countries because it has a significantly tourism-based economy— which presents an obvious potential major supply of foreign exchange into the black market. As exchange controls were tightened over the years, the benefit to foreign tourists from using the black market to sell their US dollars often exceeded 25 per cent of the value being exchanged, as compared with exchanging the funds in the official market.

The fact that the population is English-speaking draws Jamaica’s market much more strongly into links with the United States than with other Latin American countries, particularly Panama, where black market dealings have flourished in the past two decades. Jamaica is geographically much closer to the United States than most of the Latin American countries, so again stronger ties are to be expected.

The Jamaican foreign exchange black market was characterised by numerous intermediaries at both the retail and wholesale levels. While the main locations for cross-border movements of funds were just the two main cities (Kingston and Montego Bay), nevertheless the number
of dealers in large transactions was much larger than in South American countries that have been studied [e.g., Grosse, 1992; Coutely, 1990]. This may be due to the diffuse nature of the Jamaican market, or perhaps to the ease of operating between Jamaica and financial centers such as Miami, Grand Cayman, and Panama, all of which lie within one-and-a-half hours of air travel and simple ocean travel as well.

In sum, the Jamaican foreign exchange black market has many broad similarities to those in Argentina, Colombia, and so on, but its idiosyncrasies are quite notable, and the market has developed a number of unique features as a result.

IV. INSTITUTIONAL DESCRIPTION OF THE BLACK MARKET, 1987-91

The Rules

The rules on foreign exchange activities in Jamaica during the late 1980s were highly restrictive. Under the Exchange Control Act of 1954, Jamaican residents were not permitted to hold foreign currency accounts in Jamaica. In addition, foreign exchange earnings from exports or tourism activities were required to be sold to the Central Bank within three months of receipt. Thus, foreign currency instruments were essentially forbidden in Jamaica during this period, except for limited use by the tourism industry.

Jamaican residents also were not permitted to move funds out of the country during this period. The Exchange Control Act of 1954 (Section 14) prohibited residents from transferring funds overseas except for prescribed uses (for example, for medical treatment or for carrying out export shipments or paying for approved imports). This rule essentially prohibited Jamaican residents from holding their wealth overseas (unless it was earned and held overseas to begin with).

Commercial banks that received foreign exchange as export receipts, tourism receipts, incoming transfers of funds, and so on, were required to surrender 30 per cent of their foreign funds to the Bank of Jamaica automatically, to assist in the Central Bank's accumulation of foreign exchange to meet official needs such as foreign debt servicing. In addition, when the Central Bank's needs exceeded this level, commercial banks were required to surrender incremental funds (on a pro rata basis, to share the burden among banks) to achieve that goal. During 1990, the total Bank of Jamaica purchases of foreign exchange from the commercial banks was approximately 50 per cent of the banks' total foreign exchange receipts.

Foreign exchange earnings from traditional sources, namely exports of bauxite, alumina, sugar, and bananas, as well as tourism receipts, had
to be surrendered directly to the Bank of Jamaica. All other foreign exchange receipts were required to be sold to the commercial banks, which in turn would sell those funds to the Central Bank as required.

Imports into Jamaica were restricted mainly by licensing requirements that covered most products earlier in the 1980s, but by 1990 these limits had been reduced only to foods, motor vehicles, chemicals, wood, and a few other categories of products. Nevertheless, bureaucratic delays contributed to making these requirements onerous, such that imports were not easily passed through the official channels.

The net result of these several restrictive policies was to stimulate the growth of the black market in foreign exchange, as a means of escaping the costs and delays, and often even the prohibition, of access to foreign exchange faced by those using the official market.

THE INTERMEDIARIES

The most important intermediaries in the foreign exchange black market in Jamaica during the 1980s were black market dealers who traded both in wholesale, large-size transactions that often involved overseas delivery of US dollars and in retail buy/sell business through their runners who would operate on the streets of Jamaican cities and other tourist destinations. These dealers were quite numerous in comparison with their counterparts in other countries of the region – while they provided similar services to clients.

A ‘typical’ dealer would operate a travel agency, an export/import firm, or other foreign exchange-related business officially, while running the black market business from a back room. The backroom business would involve the dealer handling transactions for a relatively small number of known or recommended clients on the demand side (for example, family members, importers whose trust was established, and some other businesspeople who sought to hold their wealth in US dollars). The supply of dollars would come from tourists and Jamaicans living abroad, who would use the black market to obtain a better exchange rate than that available in the official market. This supply generally arrived in small quantities of US dollars from the tourists and expatriates, and then the consolidated amounts were sold to businesspeople and savers.

The tourist supply of black market US dollars generally was received through the dealer’s runners operating on the streets, selling Jamaican dollars in exchange for the foreign currency. By offering a 10–25 per cent mark-up on the official exchange rate, and with inadequate enforcement by the authorities, the black marketeers were able to attract a booming
business through the years. The runners for their part were employees of the black market dealers, working with a small amount of capital (that is, Jamaican dollars) from the dealer and selling for cut-throat competitive prices against other street-sellers of J$. The runners would be given instructions to produce specific minimum returns on the capital (by reselling the US dollars to retail purchasers on the street), or they would be instructed simply to continue to sell J$ and build up US dollar stocks, for sale to a wholesale client later on.

The wholesale dealers also provided the service of international funds transfer, moving US dollars overseas for clients and/or carrying out swaps of funds overseas to serve clients. For instance, a Jamaican expatriate living abroad might ask to send US dollars to be converted and delivered to a family member in Jamaica in Jamaican dollars. At the same time, a domestic client might request the conversion and overseas transfer of some Jamaican dollars. These two requests could be consolidated, so that the US dollars remained abroad and moved from one account to another, while the Jamaican dollars were exchanged from the Jamaican saver/client to the Jamaican expatriate's family member. Figure 1 sketches some of the kinds of transactions involved in the Jamaican black market, including this swap arrangement.

The wholesale business also used physical shipments of US dollar cash from Jamaica to foreign destinations such as Miami, Grand Cayman and Nassau. When tourist cash and other small cash receipts were received by the black market dealer, he would physically carry the cash to Miami – until narcotics trafficking led to a virtual refusal by banks there to accept large quantities of cash – or to the nearby Cayman Islands or to Nassau for deposit in bank accounts. These dealer accounts then would be used to transfer funds to Jamaican clients seeking to place their US dollar funds in their own offshore accounts.

In addition to the wholesale dealers, a large number of retail intermediaries also operated in the black market, primarily at the street level. These entrepreneurs would buy and sell US dollars on the street, essentially intermediating between tourists and Jamaican savers, and profiting from the price spread that they could obtain between buying and selling. With high unemployment (16 per cent of the labor force in 1989) in Jamaica, and with the low cost of entering this business (namely, the retail dealer needed simply a handful of dollars to sell), street selling of black market dollars was quite attractive to thousands of people.
FIGURE 1
JAMAICA'S FOREIGN EXCHANGE BLACK MARKET
Suppliers and Demanders

On the supply side of the foreign exchange black market, a handful of major groups of participants can be identified. They included:

(1) foreign tourists visiting Jamaica
(2) Jamaican expatriates remitting funds
(3) Jamaican exporters underinvoicing their shipments
(4) Jamaican marijuana exporters and cocaine re-exporters

Foreign tourists traditionally were the single largest source of dollars into the retail black market, in which cash is transacted in relatively small quantities but in very numerous transactions. The attraction of this market to the tourist is mainly the 10–25 per cent better exchange rate than that offered in the official market at commercial banks or licensed hotels.

Jamaican expatriates remitting funds present a double entry into the supply of black market dollars. First, when they travel to Jamaica or send cash through the mail or through a courier service, they are supplying cash into the retail market. Second, when they arrange with a black market dealer to transfer funds from a foreign bank account to a Jamaican one, then the process may become more complex. In this case the dealer may create a swap of funds with a Jamaican client in Jamaica who wants funds to be delivered outside the country. The expatriate places funds in the domestic client's overseas account, directly or through the dealer's overseas account, and the domestic client places funds in the expatriate’s Jamaican account, directly or through the dealer’s local account. Note that this process avoids international, inter-bank transfers (which would be part of the legal foreign exchange process) and replaces them with parallel domestic bank transactions in Jamaica and in the foreign country. The net result is to transfer offshore US dollars from one owner to another, and the reverse in Jamaica with Jamaican dollars. Figure 1 depicts this kind of transaction.

Jamaican expatriates have been very important suppliers of dollars into the black market, not only for remitting funds to family members in Jamaica, but also for their own use. It has been very common for Jamaicans who work abroad to retire to Jamaica and to buy their retirement houses/apartments with funds brought in through the black market. With about 2.5 million Jamaicans living overseas (compared with 2.5 million in Jamaica), this phenomenon may play a large role in the real estate business in Jamaica, as well as in fuelling the black market.

Jamaican exporters can evade taxes by underinvoicing their sales, and thus leaving part of their receipts overseas out of the range of Jamaican
authorities. This process works the same as in any other black market, with the Jamaican exporter reporting a below-actual value for sales, and then repatriating only the reported value through the official exchange market. The remaining earnings stay offshore in some form, usually a bank account, which may then be used to bring back funds through the black market. The overseas client of the exporter pays the true amount to the exporter's overseas sales office or representative, but the exporter declares to the Jamaican government only a portion of that value, and thus evades Jamaican taxes and the foreign exchange surrender policy on the remainder of the funds.

Marijuana exporters obviously need a means of disguising their financial dealings, since their underlying business is illegal. One means of accomplishing this is to sell US dollars earned from marijuana exports into the black market, taking Jamaican dollars in return. These funds can then be used in Jamaica without further complications (except perhaps for the difficulty in explaining the sources of large quantities of money without obvious means of producing them!) Because marijuana trafficking has produced earnings that would put a severe strain on the black market if they were exchanged in this context, and because the traffickers choose not to hold much of their earnings in Jamaica in any event, this source of US dollars has caused less of an impact on the black market than might be expected.

The marijuana business boomed in the late 1970s, when some estimates showed Jamaican exports approaching US$1 billion per year. Subsequently, due to law enforcement efforts, especially those pressed by the US Drug Enforcement Administration, a major effort was made to eradicate crops and to interdict shipments of marijuana, particularly to Florida. This effort, coupled with a major shift in US consumption of narcotics away from marijuana to cocaine, led to a decline in the export earnings of the Jamaican traffickers beginning in the mid-1980s. Table 1 shows the estimated volume of marijuana shipments from Jamaica over the 1977–90 period.

Because of unavailability of some data for some years, the full series is not comparable. It is clear that the quantities of marijuana successfully produced and shipped from Jamaica showed an upward trend in the late 1970s and early 1980s, then a downward trend since 1985. Although the price data were not available for early years, it appears that total earnings of the ganja exporters did not decline after the initial large-scale interdiction efforts in 1983–84, primarily as a result of rising marijuana prices after 1986. Perhaps most notable is the volatility of both production yields and earnings through the period.

On the demand side for foreign exchange in the black market, the main categories of participants are:
TABLE 1
JAMAICA MARIJUANA EXPORTS

<table>
<thead>
<tr>
<th>year</th>
<th>cultivation (in metric tons)</th>
<th>net yield* (in m. tons)</th>
<th>Miami price (US $/mt)</th>
<th>total US dollar earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>580</td>
<td></td>
<td></td>
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<td>1979</td>
<td>870</td>
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<td>1982</td>
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<td>1983</td>
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<td>1984</td>
<td>1740</td>
<td>1565</td>
<td>0.91</td>
<td>1,424</td>
</tr>
<tr>
<td>1985</td>
<td>1595</td>
<td>950</td>
<td>1.00</td>
<td>950</td>
</tr>
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<td>1986</td>
<td>2910</td>
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<td>1.15</td>
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</tr>
<tr>
<td>1987</td>
<td>900</td>
<td>460</td>
<td>1.95</td>
<td>897</td>
</tr>
<tr>
<td>1988</td>
<td>830</td>
<td>405</td>
<td>2.37</td>
<td>960</td>
</tr>
<tr>
<td>1989</td>
<td>1208</td>
<td>189</td>
<td>2.25</td>
<td>425</td>
</tr>
<tr>
<td>1990</td>
<td>1519</td>
<td>825</td>
<td>2.95</td>
<td>2,434</td>
</tr>
<tr>
<td>1991</td>
<td>1012</td>
<td>641</td>
<td>2.28</td>
<td>1,461</td>
</tr>
</tbody>
</table>

* - cannabis production net of domestic consumption, crop eradication, and seizures.
Values are midpoints of range estimated by USDEA.
# = Cannabis prices calculated using an average price per pound, found in NNICC, International Narcotics Control Strategy Report for years since 1986. Values are recorded as prices per pound. Adjustment was x 2202 to convert into kilograms and x 1000 to convert into tons.


(1) Jamaican savers
(2) Jamaican importers
(3) 'higgiers' who work in underground exports of traditional Jamaican agricultural products9 and in smuggling of foreign consumer goods into Jamaica.

Jamaican savers constitute a major group of demanders of black market foreign exchange, as in other black markets, because they wish to diversify their wealth into foreign assets and are prohibited from so doing in the official exchange market. The black market permits them to buy the foreign exchange that they wish to use to avoid devaluation of the Jamaican currency. The black market also permits them to transfer funds
overseas (that is, to create flight capital) to safe locations such as in the United States. These two functions are not necessarily provided together, since many savers are content to hold the US dollars in Jamaica. However, for those who wish to hold their savings offshore in US dollars, this service also has been provided by the black market dealers.

Jamaican importers constitute the second major group of demanders of black market foreign exchange, again similar to the situation in other Latin American countries. Importers encountered restrictions on their ability to carry out transactions because of licensing limitations, and/or bureaucratic delays, and/or unavailability of foreign exchange in the Central Bank to make payment, and/or high tariffs. To circumvent these problems, some importers chose to enter the forex black market to obtain their dollars. This strategy enables them to buy the imports without a delay in obtaining the foreign currency that they need. Also, if the importer provided the US dollars for payment, then official import channels could be used for their shipments, if so desired. Alternatively, the full set of transactions from obtaining US dollars to bringing in the goods could be carried out through underground channels, thus evading tariffs and taxes and other customs constraints. In both instances the foreign exchange black market provides a vehicle to reduce the difficulties in importing into Jamaica, despite government efforts to hinder such imports.

One category of importers, the 'higgles', deserve special mention in this context. These participants in the underground economy acted as smugglers of imported products, which they sold more or less openly at the retail level [Katzin, 1980; Witter and Kirton, 1990]. In this context they are the analogue of the San Andresitos in Colombia and street vendors in general in other countries.

In addition, some of the higgles shipped Jamaican agricultural goods through unreported means (that is, smuggled) to neighbouring islands such as the Cayman Islands and sold them for US dollars. They then used these US dollars to buy importable goods, which were transported back to Jamaica for resale in the underground economy for Jamaican dollars, thus starting the process again. Higgles dealt in bananas, sugar, rum and other agricultural products. Just as with the street vendors of foreign currency, the higgles used the underground economy to deal in otherwise legal products. But in this case they evaded taxes and created a whole market structure by effectively bartering Jamaican goods for American ones through offshore transactions. The higgles joined the foreign exchange black market when they purchased US dollars in the black market to pay for imports of goods to be sold in the Jamaican underground economy.
Relation to the Official Market

The black market was linked closely to the official market for several logical reasons. First, the official exchange rate set the base for black market premia; the black market rate was never below (that is, fewer J$ per US$) the official rate, as long as a shortage of US dollars existed. In addition, the official market set the basis for growth of the black market by making purchase of foreign exchange more or less accessible to demanders. When the Central Bank ran low on foreign exchange reserves, or decided for other policy reasons to restrict US dollar outflows, these restrictions pushed savers and importers into the black market. Figure 2 shows the relationship between the two exchange rates over the period 1980–91.

Note that the black market premium varied from less than ten per cent of the official rate to upwards of 60 per cent of that rate during the period. For the years of greatest policy restrictiveness on the black market in the early 1980s, the premium was largest. Once the central bank
began a process of auctioning US dollars on a bi-weekly basis in 1983, the premium dropped sharply.

Another phenomenon that linked the two markets was arbitrage between official and black dollars. The larger the spread between the two exchange rates, the more potentially profitable the strategy of 'round-tripping'. This strategy required the ability to obtain US dollars at the official rate, such as for purchasing permitted imports, or for financing exporting costs. By creating false documentation, the arbitrageur could buy US dollars at the official rate, then take them into the black market and exchange them back for Jamaican dollars. Of course, since this practice was illegal, the arbitrage was not simple or explicit in its transactions. This arbitrage was necessarily less than that in Argentina, where a legal, parallel market operated and permitted direct arbitrage with the official market.

Relation to the Underground Economy

The foreign exchange black market was a logical offshoot of the underground economy in Jamaica, as elsewhere. The market grew and flourished under conditions of more severe exchange controls and greater activity in the underground economy. These conditions occurred both through the 1970s and 1980s, particularly in the early 1980s during the first years of the external debt crisis and the boom of the marijuana business.

The street market of the huggers provided an especially important link between the underground economy involving imported goods and the foreign exchange black market, which was used to obtain the means for buying these imports. This link should not be overstated, however, since a part of the huggers' US dollars were generated from smuggled exports of Jamaican goods to neighbouring islands.

Additional parts of the underground economy include the process of tax evasion through underinvoicing exports and overinvoicing imports. These practices produced undeclared US dollars that could be moved into the black market, as well as reduced tax payments to the Jamaican authorities.

Of course the drug trade constituted another key part of the underground economy that used the black market to facilitate its operation, largely through the sale of drug export earnings into the market. This business became more complex in the mid-1980s, when the US Drug Enforcement Administration (DEA) carried out an apparently highly successful effort to eradicate marijuana crops in Jamaica. One of the offshoots of this policy was to help entice Jamaican narcotics traffickers into the business of distributing Colombian cocaine to the United States.
A significant amount of transshipment of cocaine through Jamaica was discovered by the DEA as a result of its interdiction efforts in the late 1980s. Thus, Jamaican traffickers were active in both marijuana production and export as well as cocaine transportation to the US market in the mid and late 1980s.

**Market Size**

Estimates of black market size were obtained primarily from compiling measures of the previously-noted sources of dollars into the black market. First, the supply-side estimates are presented, as summarised in Table 2.

Tourist earnings were assumed to be diverted partially to the black market. While the exact percentage remains unknown, an unofficial estimate of 15 per cent of foreign tourist expenditures in Jamaica is used (based on the assumption used in Witter and Kirton [1990]). Tourist expenditure data were obtained from the Jamaica Tourist Board.

**Table 2**

**Estimates of Black Market Size Based on Supply of Forex**

<table>
<thead>
<tr>
<th>Year</th>
<th>Tourism Receipts (in millions of current US dollars)</th>
<th>Remittances from Expatriates</th>
<th>Over-invoicing</th>
<th>Under-invoicing</th>
<th>Barter Exports</th>
<th>Total Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>15.68</td>
<td>13.36</td>
<td>133.36</td>
<td>87.73</td>
<td></td>
<td>261</td>
</tr>
<tr>
<td>1978</td>
<td>22.23</td>
<td>11.78</td>
<td>150.02</td>
<td>88.53</td>
<td></td>
<td>349</td>
</tr>
<tr>
<td>1979</td>
<td>29.15</td>
<td>23.40</td>
<td>176.50</td>
<td>85.95</td>
<td></td>
<td>530</td>
</tr>
<tr>
<td>1980</td>
<td>36.96</td>
<td>42.12</td>
<td>207.64</td>
<td>122.48</td>
<td></td>
<td>741</td>
</tr>
<tr>
<td>1981</td>
<td>42.87</td>
<td>32.13</td>
<td>259.34</td>
<td>13.33</td>
<td></td>
<td>812</td>
</tr>
<tr>
<td>1982</td>
<td>52.38</td>
<td>36.14</td>
<td>241.78</td>
<td>19.30</td>
<td></td>
<td>1263</td>
</tr>
<tr>
<td>1983</td>
<td>59.88</td>
<td>25.70</td>
<td>224.84</td>
<td>19.90</td>
<td></td>
<td>1201</td>
</tr>
<tr>
<td>1984</td>
<td>60.99</td>
<td>21.84</td>
<td>206.80</td>
<td>18.54</td>
<td>712.08</td>
<td>1020</td>
</tr>
<tr>
<td>1985</td>
<td>61.04</td>
<td>38.28</td>
<td>200.84</td>
<td>21.27</td>
<td>475.00</td>
<td>796</td>
</tr>
<tr>
<td>1986</td>
<td>77.75</td>
<td>28.26</td>
<td>167.48</td>
<td>22.44</td>
<td>1020.13</td>
<td>1305</td>
</tr>
<tr>
<td>1987</td>
<td>89.37</td>
<td>27.84</td>
<td>213.02</td>
<td>35.32</td>
<td>448.50</td>
<td>812</td>
</tr>
<tr>
<td>1988</td>
<td>78.89</td>
<td>92.14</td>
<td>248.06</td>
<td>36.62</td>
<td>479.93</td>
<td>936</td>
</tr>
<tr>
<td>1989</td>
<td>88.95</td>
<td>65.44</td>
<td>321.28</td>
<td>61.46</td>
<td>212.63</td>
<td>730</td>
</tr>
<tr>
<td>1990</td>
<td>111.00</td>
<td>36.84</td>
<td>335.92</td>
<td>46.05</td>
<td>1216.88</td>
<td>1757</td>
</tr>
<tr>
<td>1991</td>
<td>116.60</td>
<td>39.56</td>
<td>310.24</td>
<td>48.03</td>
<td>730.76</td>
<td>1263</td>
</tr>
</tbody>
</table>

*Sources: As stated in text.

Remittances of Jamaicans living abroad were carried out through both the official market and the black market. It was assumed, following Witter and Kirton [1990], that approximately 20 per cent of officially-recorded foreign remittances were additionally brought into Jamaica through the black market. The official remittance data were obtained from the IMF *Balance of Payments Statistics*.

Under invoicing of exports (and over invoicing of imports) was considered as another source of black market dollars. In this instance the assumption of Witter and Kirton [1990] was again followed, arguing that about 20 per cent of registered imports and about 20 per cent of non-traditional exports were produced as dollars that were brought into the black market. Import and export data were obtained from the Bank of Jamaica *Balance of Payments*.

Finally, narcotics export earnings were taken from the NNICC data shown in Table 2. In this case, 50 per cent of the earnings of Jamaican narcotraffickers were assumed to be brought into the Jamaican black market. This estimate is consistent with measures obtained in Peru and Colombia [Gomez, 1990; Grosse, 1990].

The total black market size, according to these measures is quite large, at more than US$1 billion per year, and clearly exceeds the amount of foreign exchange produced by legal exports. Indeed, these data indicate that the foreign exchange black market is a more important contributor to the supply of foreign exchange in Jamaica than in any of the other countries where estimates have been made.

Interviews with black market dealers tend to confirm these estimates. That is, the black market dealers interviewed suggested the sources of black market dollars as listed above, and the purchasers as also described above. The dealers did not offer independent measures of the size of the market except to confirm the categories of activities in the market and their relative importance.

V. COSTS AND RISKS IN THE BLACK MARKET

*Exchange Rate*

The basic cost of operation for the buyers and sellers of foreign exchange in the black market is the exchange rate. The black market rate is influenced by many factors, as discussed in the next section. The implicit cost for users of the market is the difference between the black rate and the official rate. That is, by using the black market, a US dollar purchaser had to pay a premium of about ten per cent over the official market rate in 1990. Assuming that this user had access to the official exchange market, and was using the black market by choice, then the
cost of doing so was the difference between rates. Since the black marketeers charge no explicit fees for the exchange, then the rate itself is the appropriate measure of cost.\textsuperscript{12}

\textit{Fees}

By quoting a margin between buy and sell rates, the black market dealer can earn the difference as profit for bringing together the two parties in a cash transaction. When the foreign currency in transported abroad, then a higher exchange rate (more J$ per US$) is charged and more profits are earned by the dealer. This profit accrues in addition to the profit from (possibly) obtaining dollars in the official market, where the cost is much lower, and then selling them to black market clients, who pay the premium rate. Because of the illegal nature of the black market, it is logical that dealers would look for outside sources of foreign exchange (that is, in addition to tourists and Jamaican expatriates living abroad), such as false export or import documentation, that present additional US dollars.

The implicit fees (that is, the higher exchange rate) charged in 1989–90 for transfer of funds to the United States were of the order of one to two per cent of the value transferred. A higher charge was made for transfer of funds into an overseas account via wire transfer as compared with cash or check deposits.

To the black market dealer, the costs of doing business include the cost of operating and securing the clandestine office from which dealing is done, and the cost of avoiding getting caught. The obvious risks that exist include the risk of getting caught and prosecuted, as well as the risk of dealing in often large quantities of cash.

\textit{Risk of Sanctions}

The principal risk associated with using the black market is that of incurring government sanctions. That is, if Jamaican law enforcement efforts resulted in uncovering the black market transaction, then the participants were liable for fines up to twice the amount of funds involved and jail penalties for failing to comply with these fines. The level of enforcement activity in Jamaica in the late 1980s was relatively significant in comparison with other countries in Latin America. Nevertheless, the risk of getting caught was low, and few dealers or other participants in the market were penalized.

\textit{Risk of Contract Non-Compliance}

The risk of non-delivery of funds or other kinds of contract non-compliance are a real risk in the black market. As in other black markets,
the primary means of enforcing contracts are the simple facts that cash exchanges are simultaneous, and so they cannot easily be abrogated (except by counterfeiting), and that black market dealers can only operate with complete faith of their clients – so that non-compliance would quickly force the culprit out of the market.

V. DETERMINATION OF THE EXCHANGE RATE

The Fundamental Determinants

One important check on the accuracy of the market description presented above is the ability of the characteristics that have been identified to affect the black market's key indicator, the exchange rate. That is, if the main participants in the market have been identified properly, and the structure of the market presented accurately as well, then the market's functioning should be observable to some degree through the impact of these factors on the price of foreign exchange. The model laid out below attempts to demonstrate that this is indeed true.

As in other countries where black market exchange rate studies have been undertaken [e.g., Aggarwal, 1990; Culbertson, 1989; Grosse, 1992; Koveos and Siebert, 1985], the broad driving forces that determined the black market exchange rate during the 1980s were expected to be differences in inflation between Jamaica and the United States and the supply of US dollars into this market from major export activities. Other factors such as the interest rate differential and the possibility of arbitrage between the black and official markets were postulated as important determinants; however, their insignificance in models of the black markets in other countries left doubt about their importance in Jamaica.

The supply-side influences on the black market exchange rate were hypothesized to be the availability of US dollars to Jamaicans from activities such as tourist spending, under invoicing of exports and over invoicing of imports that pass through the official forex market,13 and marijuana exports. In each case a greater value of the activity should lead to greater supply of US dollars into the black market. The wealth of Jamaican expatriates also should contribute positively to the supply of US dollars into the black market. These expatriates and other potential foreign investors may supply more US dollars into the Jamaican black market when they find interest rates in Jamaica to be more attractive relative to those elsewhere. And finally, the possibility of profitable arbitrage between black and official markets would lead to greater supply of US dollars into the black market when the rate differential was larger. These factors can be expressed in shorthand form as:
JAMAICA'S FOREIGN EXCHANGE BLACK MARKET

\[ S_{US\, bn} = s(\text{tourism}; \text{trade balance}; \text{marijuana}; \text{expatriate wealth}; \text{interest rates}; \text{arbitrage}) \]

These factors all have a positive relationship to the black market supply of dollars, which (except for arbitrage) implies a negative relationship to the exchange rate. That is, as greater supply of US dollars enters the market, the price should decline in Jamaican dollars. Arbitrage implies increased US dollar supply when the black market vs. official market rate differential is high; this arbitrage itself should lead to a subsequent reduction in the black market premium. However, the contemporaneous relationship is expected to be that of large black market premia associated with high (J$/US$) exchange rates.\(^{14}\)

On the demand side, conditions were expected to parallel those in other countries. Greater local inflation relative to US inflation should produce greater demand for foreign exchange. A greater positive interest differential between local-currency deposits and US dollar deposits should lead to less demand for US dollars. Greater domestic wealth does not have a clear unidirectional relationship to the black market rate. From one perspective, greater wealth implies greater economic stability and probably greater confidence in the local economy, leading to less demand for foreign exchange. From a second perspective, greater wealth should lead to greater demand for US dollars along with greater demand for Jamaican dollar assets, as wealthholders diversify their portfolios.

These three relationships can be expressed in equation form as:

\[ D_{US\, bn} = d(\text{inflation}; \text{interest rates}; \text{wealth}) \]

These influences translate directly into the expected impact on the exchange rate. That is, the signs of each independent variable will remain the same in the exchange rate equation, for the reasons discussed above.

In sum the two structural equations can be presented in reduced form as:

\[ XR_{bn} = f(\text{tourism}; \text{trade balance}; \text{marijuana}; \text{expatriate wealth}; \text{arbitrage}; \text{inflation}; \text{interest rates}; \text{domestic wealth}) \]
Empirical Results
The basic model was tested using ordinary least squares regression on time series data from December 1983 through December 1991. The black market exchange rate was not available on a monthly basis until 1984. Table 3 presents the results. All of the unambiguous independent variables had the expected signs, and all variables except the trade balance were highly significant (at the 95 per cent confidence level or more). The model explained 98 per cent of the variation in the black market rate during this period of time.

Table 3
RESULTS OF MODEL SPECIFICATION: DETERMINANTS OF BLACK MARKET EXCHANGE RATE

| dependent variable: black market exchange rate, Jamaican dollars per US dollar, as listed in World Currency Yearbook. |
|---|---|---|
| independent variables | simple OLS with all variables | best equation, using Prais-Winsten adjustment for autocorrelation |
| constant | -1.00 | 0.13 |
| term | (-1.83)** | (0.15) |
| interest differential | -0.94 | -0.05 |
| inflation differential | 5.73 | 5.01 |
| | (5.23)*** | (18.80)*** |
| domestic wealth | -0.01 | -0.02 |
| | (-12.55)*** | (-7.75)*** |
| foreign assets | 0.01 | -0.01 |
| | (0.25) | (-1.69)* |
| arbitrage opportunity | 6.50 | 6.92 |
| | (12.44)*** | (10.30)*** |
| tourism receipts | -0.00 | -0.01 |
| | (-0.88) | (-1.70)** |
| net imports exports | -0.01 | -0.01 |
| | (-2.10)** | (-2.10)** |
| trade balance | -0.04 | |
| | (-3.06)*** | |

number of observations | 96 | 95 |
adjusted R² | 0.99 | 0.98 |
Durbin-Watson | 1.56 | 2.10 |

* = All independent variables are unspecified in the text. Inflation is specified as Jamaican Consumer Price Index/United States Consumer Price Index.
* = significant at .10 level, two-tailed test
** = significant at .05 level, two-tailed test
*** = significant at .01 level, two-tailed test
These rather remarkable results lend substantial support to the market description presented earlier in the paper. It appears that, just as anticipated, the Jamaica/US inflation differential explains most of the variation in the black market rate over time. As well, larger black market premia over the official rate were strongly associated with devaluation of the Jamaican dollar. The strong significance of domestic wealth as a negative contributor to black market devaluation implies that the hypothesis of greater wealth contributing to greater confidence in the local economy is supported. An alternative possibility is that domestic bank deposits may actually be a proxy for total Jamaican wealth, in domestic and foreign holdings, and thus higher wealth produces less demand for black market dollars.

Interestingly, two factors which have been consistently hypothesized to influence the black market, but which were often insignificant in studies of other countries,16 proved important here. The trade balance was negatively associated with the black market rate (though not always significant) – implying that over invoicing of imports and under invoicing of exports likely contribute to the supply of US dollars into the black market. Also, the interest differential showed that relatively higher rates in Jamaica, and thus higher returns, correlated with less demand for black market US dollars, that is, with less demand for holding wealth in currencies other than Jamaican dollars. This measure of the international Fisher effect was not found in several other studies of other LDCs, probably because interest rates tended to be government-controlled in many of those cases.

The specific idiosyncrasies of the Jamaican market were corroborated by the statistical evidence. Tourism spending (a source of US dollars into the black market) was associated negatively with the black market rate, although the coefficient did not attain significance in all specifications. Estimates of marijuana exports did indeed show a negative correlation with the black market rate; when more US dollars were earned by the narcotraffickers, the value of the Jamaican dollar strengthened.

Because of the probability of autocorrelation of the error terms due to interpolation of quarterly and annual data for some of the independent variables, a Prais-Winsten transformation of each model was estimated. These resulted in the model shown in column 2 of Table 3. In the best-fitting equation (with the trade balance left out), all variables were significant. In all, the regression results provide powerful support for the view of the Jamaican black market presented in the paper.
VII. CONCLUSIONS

The foreign exchange black market in Jamaica demonstrates a non-surprising number of similarities to others in Latin America. The links to Great Britain and the more direct ties the United States do not overshadow these parallels. The statistical models demonstrated a very strong relationship between the black market exchange rate and the inflation differential between Jamaica and the United States. This purchasing power link seems to drive the black market as in other countries that have been studied.

At the same time, the very diffuse nature of the Jamaican market does stand in contrast to other countries. Since many Jamaicans were able to travel readily and inexpensively to the United States or the Cayman Islands, it was relatively easy for them to transfer funds and to operate ‘wholesale’ foreign exchange activities in contrast with the more distant and Spanish-speaking South American countries. With no concentration of transactions in the hands of a few major dealers, the market may be more ‘efficient’ in this sense. Perhaps this is one reason for the very impressive performance of the economic model of exchange rate determinants.

The strong dependence of Jamaica’s economy on tourism may produce seasonal fluctuations in the black market exchange rate. Clearly, the market favours sellers of US dollars in the summer and fall months, when Jamaican tourism is at its low point during the year. And equally clearly, the market favours the buyers of US dollars during the tourist season, when supply increases substantially. Nevertheless, it appears that other factors contributed more importantly to variations in the black market exchange rate.

In terms of the impact on Jamaica’s economy, the foreign exchange black market seems to play a large role in supplying US dollars in comparison to legal sources of those dollars. The estimates of black market size suggest that this market greatly alleviated a large excess demand for US dollars in the period studied.

Specific implications for exchange rate policy are that a parallel forex market or fully open official market is needed to avoid the loss of monetary control when transactions move into the black market. If the official exchange rate and access to foreign exchange are controlled, as in many LDCs, business will move into a parallel market, whether legal or not. The use of exchange market controls enabled Jamaica’s government to avoid official devaluations, but it did not avoid black market devaluations and movement of business into the underground economy as a result.17
The forex black market contributed importantly to the operation of Jamaica's underground economy during the 1980s. By enabling expatriates and narcotics traffickers, and also traders who use false invoices to place US dollars offshore, to bring dollars into Jamaica unreported, the black market facilitated these activities. By enabling Jamaican savers and importers to obtain otherwise prohibited US dollars, the market enticed these people into the underground economy. The net result is to place more of total economic activity out of the view and possible control of the authorities.

The opening of the foreign exchange market and elimination of capital controls in 1991–2 undermined the economic logic that favours black markets as a release valve for excess demand for foreign exchange. The legalised parallel market and the less-restricted bank market provide most of the access to foreign exchange and foreign investment that were previously blocked. At this time the black market represents one facet of the underground economy that Jamaica's government needs to deal with to create an economic system that can operate efficiently and competitively. The legal changes clearly reduce incentives to use the black market for otherwise-legal business, and should contribute to bringing above ground an important part of the underground economy.

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NOTES

1. There were no restrictions on transfers of funds between Jamaica and the United Kingdom, since Jamaica was a colony and also had no separate currency during this period.
2. Even under this system Jamaican monetary policy was not completely independent from that of the United Kingdom. Exchange rates with currencies other than the British pound were determined by UK policy, which then translated directly to the Jamaican pound that was fixed to the UK pound. Although exchange controls did exist in Jamaica at this time, they were not enforced significantly, since the economy was not facing serious balance of payments problems.
6. See, for example, Witter and Kirton (1990: 23–5).
7. This information was obtained in interviews with several black market dealers in Kingston and corroborated to a large degree by interviews with purchasers of US dollars in the black market.
8. These categories of black market foreign currency are identified in interviews with Jamaican businesspeople and black market dealers. The categories are consistent with Witter and Kirton (1990).

9. The higglers may appear on both sides of the foreign exchange black market, since one phase of their business is sale of imported black market goods, which are generally purchased for US dollars. This underground import business requires the higglers to obtain US dollars, potentially on the black market. They also obtain US dollars, as discussed below, from underground sales of Jamaican goods to neighbouring islands.


11. The portion of tourist receipts sold into the black market, as well as other sources of foreign exchange sold there, would be expected to vary as the black market premium varied over time. This issue is ignored in the crude estimates of market size presented here.

12. This measure ignores the fees that are charged in the official market by the commercial banks, which make that source of foreign exchange more expensive than just the exchange rate itself.

13. The indicator used to represent these phenomena of false invoicing was the simple trade balance. Assuming that the percentage of trade that was under-invoiced remained fairly constant over time, then the officially-recorded trade balance should demonstrate the variations in those flows of funds, but not the total volumes.

14. This phenomenon could be explored in more detail, since the switch between positive and negative relationship is quite interesting. It is not discussed in the text, to avoid complicating the presentation.

15. The reduced form equation stated above was tested using monthly data from the following sources:

- **Black market exchange rate**: taken from Pick’s World Currency Yearbook for 1985-89, and from World Currency Analysis, World Currency Yearbook subsequently. The help of Mr. Philip Cowitt of World Currency Analysis Inc. is gratefully acknowledged. He was able to obtain and provide data on the black market rate for all months in 1984 and for 1991, neither of which had been published at the time of this writing.

- **Tourism expenditures**: monthly tourist arrival data and annual tourist expenditure data provided in xerox from the Jamaica Tourist Board.

- **Trade balance**: monthly data interpolated from quarterly data presented in International Financial Statistics.

- **Marijuana**: monthly data interpolated from annual data provided by the US National Narcotics Intelligence Coordinating Committee (NNICC) annual reports, 1985-92.

- **Expatriate wealth**: measured alternatively as foreign assets of Jamaican residents, reported in International Financial Statistics, or as Jamaican non-official, non-bank claims on US financial institutions as reported in the US Treasury Bulletin.

- **Arbitrage**: measured as (black market rate minus official rate) divided by official rate. Black market rates obtained as stated above.

- **Inflation**: consumer prices indices for Jamaica and United States, as recorded in International Financial Statistics. Initial specification was $\frac{CPI_{JAMAICA}}{CPI_{US}}$.

- **Domestic wealth**: bank deposits held by Jamaican residents in International Financial Statistics.

- **Interest rates**: three-month deposit interest rates, as reported in International Financial Statistics.
16. The trade balance was found to be insignificantly correlated with the black market rate in Argentina, Brazil, Colombia, and Peru in studies similar to this one. The interest rate differential was significant in Colombia and in Brazil, but not Argentina or in Peru. See, for example, Grosse [1990, 1992]; Pechman [1984].

17. In fact, one could argue that the operation of the black market outside of the control of the monetary authorities may have positive welfare implications for a country. This would occur if the government could be expected to misuse the tax revenues that would be generated by 'legitimate' business that utilized the official forex market and/or if the mispricing of foreign currency in the official market caused incorrect allocation decisions in the economy.

REFERENCES


