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EXCHANGE RATE POLICY IN THE EASTERN CARIBBEAN

by

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Bridgetown, Barbados

Under Contract: 538-0000-C-00-6012 -

March 10, 1986

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EXECUTIVE SUMMARY

This research was designed to determine whether or not the Eastern Caribbean dollar (EC dollar) is overvalued and whether AID should be advocating a devaluation of the EC dollar. A secondary concern was with the alternative forms that the exchange regime for the EC dollar could take. The EC dollar has been pegged to the U.S. dollar since 1976 at the rate of EC\$ 2.70 = US\$ 1.00. Alternatives include devaluation of that peg, pegging to some other standard or allowing the EC dollar to float.

The assessment of overvaluation of the EC dollar examined the following variables:

- Real Effective Exchange Rates (REER)
- black markets for EC dollars
- exchange controls
- exchange rationing by the Eastern Caribbean Central Bank (ECCB)
- International reserves of the ECCB

A properly aligned exchange rate balances the supply and demand for foreign exchange so that there are no long run excesses in either supply or demand. When a pegged currency, such as the EC dollar, is overvalued, there is excess demand for foreign exchange. This leads to black market activity, exchange controls and rationing, and reserve loss. Also REER show real appreciation.

None of the indicators of an overvaluation problem can be observed in significant amounts in the OECS. There is no black market and little effective exchange control or rationing. There has not been a persistent tendency to lose reserves. REER

calculations show that there has been no significant appreciation of the EC dollar over the 1980-1985 period. In addition to this one would have expected these problem signs to appear following the devaluation of the Trinidad and Tobago dollar. If holders of EC dollars felt that EC dollars were overvalued they would have reacted to devaluation of the TT dollar by forming expectations that the EC dollar would be next to devalue. No such reaction has been evident. Finally, the EC dollar continues to be the currency of Anguilla, which is not a member of the OECS and can choose whatever currency it wishes for its monetary base.

We do not recommend a devaluation of the EC dollar at this time due to the lack of indication of an overvaluation problem.

Alternative exchange regime arrangements were considered in addition to devaluation. These included pegging the value of the EC dollar to a standard other than the US dollar, such as to the U.K. pound sterling, to a basket of currencies as well as floating. In none of these cases could a convincing argument be built that a change would be preferable to the current arrangement. Thus, we recommend that the EC dollar continue to be pegged to the US dollar.

Due to depreciation of the US dollar against major currencies over the past year, there has also been a depreciation of the EC dollar. Further depreciation of the US dollar is expected. Additional depreciation of the US dollar of about ten percent will remove all of the slight tendency toward appreciation of the EC dollar that has been observable since 1980. Devaluation of the Trinidad and Tobago dollar in December,

1985, did little to affect the long run value of the EC dollar. The TT dollar had appreciated over the period 1980-85, and the devaluation simply brought its real value back to approximately its 1981 value visa-vis the EC dollar.

We have found that the institution of a monetary union in the OECS has been to their benefit. The union provides a mechanism for monetary discipline that is often missing in other developing countries. We recommend that AID encourage the maintenance of the existing union. Countries should be discouraged from establishing their own, independent, exchange rate and monetary institutions.

Despite the general finding that there has been insignificant appreciation of the EC dollar in the OECS, there are indications that the EC dollar has become overvalued from the point of view of Grenada and to a lesser extent Dominica. Grenada is the only OECS state to experience inflation which is higher than it is in her main trade partners. Both Grenada and Dominica trade heavily with the U.K. Therefore they have been adversely affected by the appreciation of the US dollar against sterling. Both countries should receive special attention to help them achieve sustainable external payments balances.

SECTION 1: INTRODUCTION

U.S. AID RDO/C has asked Loehr and Associates, Inc. to assess the current exchange rate regime in the states comprising the Organization of Eastern Caribbean States (OECS). OECS states are members of a currency union, and all use the Eastern Caribbean dollar (EC dollar) which has been pegged to the U.S. dollar since 1976 (EC\$ 2.70 = US\$ 1.00) AID is concerned that the EC dollar has become overvalued and that devaluation and/or changes in the way the EC dollar's value is determined may be called for. Thus, the research and recommendations requested by AID RDO/C are:

1. Calculations of real effective exchange rates for the EC dollar.
2. Assessment of the advisability of an exchange rate devaluation for the EC dollar.
3. Assessment of the advisability of switching from an EC dollar peg to the U.S. dollar to some other standard.
4. Assessment of the alternative policies that could be pursued toward the management of the EC dollar and maintenance of a sustainable external balance.

The research oriented toward these questions was brief. Two weeks in early February were spent in Barbados, mostly working with economists at RDO/C. Two days were spent in Washington D.C. before visiting Barbados, and one day of meetings were held with Eastern Caribbean Central Bank personnel in St. Kitts. AID's intention was to try to assess the exchange rate issues without engaging in extensive interviews with government officials or with persons in private business in the OECS region. All data

inputs to this study came from the ECCB, IMF, AID or World Bank sources.

The report is divided into six sections. Section two describes the conditions that are generally associated with an exchange rate overvaluation problem and determines whether or not those conditions exist in the OECS region. One of the conditions that accompanies an overvaluation problem is usually an appreciation of the real exchange rate. Since calculations of Real Effective Exchange Rates (REER) are rather tedious, all calculations are described in Section three, though the outcome of REER calculations is referred to and used in Section two. The reader who does not wish to read about the details of REER calculations can skip Section three in its entirety. Section four discusses the question of devaluation of the EC dollar, as well as the major alternative forms the exchange rate regime might take in the OECS. Since we are not recommending a devaluation of the EC dollar, nor other changes in the exchange regime, Section five provides a brief discussion of other policies that might be considered to seek a sustainable external balance in the region. Section six summarizes our major findings and recommendations.

SECTION 2: AN ASSESSMENT OF OVERVALUATION OF THE EC DOLLAR

2.1 CONCEPTS:

It is not possible to determine exactly what the "correct" value for an exchange rate should be. Conceptually it is that rate at which the supply of and demand for the currency in question are equal. Even under the best of circumstances, estimating the demand for and supply of a currency is all but impossible. One quickly becomes mired in questions of supply and demand of what types, over what periods and under what conditions, let alone questions of pure data availability.

Though we cannot say what the current value of a currency is we can describe the conditions that occur when the currency is over, or under-valued. Economic theory and experience have shown us that when currencies become overvalued, specific conditions and problems begin to arise. These conditions amount to something akin to a syndrome of overvaluation, and when they exist together, and in sufficient amounts, they indicate that a problem is likely to exist with the exchange rate per se. An examination of these conditions can lead us to make statements about the "likelihood" of having an overvaluation problem and enable us to specify some of the problems that would be alleviated by a devaluation, should one seem called for.

An overvaluation problem exists when the demand for the currency in question persistently falls short of the supply of that currency. Under these circumstances, if the currency were simply another commodity, its price (the exchange rate) would fall. Devaluation would occur automatically, as it does with currencies that freely float. Devaluation occurs until demand and supply are equal.

But currencies such as the EC\$ do not float. Their price is fixed, in this case at EC\$2.70=US\$1.00. When the price is fixed and the supply of the currency exceeds the demand for it, the supply/demand imbalance is allowed to persist. People residing in an OECS state may supply EC\$ and demand foreign exchange in order to buy imports, to make investments denominated in currencies other than EC\$ or to transfer purchasing power to someone outside the OECS. Thus, when we speak of an over supply of a currency such as the EC\$ we might alternatively be speaking of an excess demand for foreign exchange. If there is an over supply of a currency, the "price" (i.e. the exchange rate) would normally fall (i.e. there would be a depreciation).

With overvaluation, where a currency's value is pegged to some specific value, the supply of that currency is allowed to continually exceed demand. Alternatively, an excess demand for foreign exchange persists. This is not necessarily a problem if the condition is thought to be temporary and if the central bank has sufficient reserves of foreign exchange to meet the

excess demand. However, if the condition is not temporary, the central bank must eventually run out of foreign exchange (and/or the ability to borrow it). When that occurs, supply and demand take over and devaluation occurs whether or not the central bank wishes it to.

An overvaluation "problem" occurs where there is excess demand for foreign exchange at the set exchange rate and where the condition has persisted for long enough that the reserves of the central bank are reduced to the point that they are concerned about not being able to meet the gap between demand and supply of foreign exchange. Under these circumstances, monetary authorities will usually begin to take steps to make existing exchange reserves go further. Through administrative controls they begin to make it more difficult to obtain foreign exchange and attempt to ration existing foreign exchange among priority uses. Exchange controls and/or licensing are used. In short, people wanting foreign exchange begin to have difficulty getting it. They face exchange restrictions, delays in obtaining licenses to buy foreign exchange and may turn increasingly to black markets. Indeed, wherever currencies are overvalued, exchange restrictions and black markets exist.

The signs of overvaluation mentioned above were described as being caused by a supply/demand imbalance. This can be caused by anything that raises the supply of a currency, relative to the demand for it. Usually this occurs where price relationships have shifted such that goods and services of the

country in question can no longer compete with those abroad and/or where foreigners no longer wish to invest as heavily or transfer purchasing power to people in the country in question. Indices of relative price performance can be used to examine whether or not the country in question has maintained its price competitiveness in goods and services. Below, we will be calculating so called real effective exchange rate (REER) indices to be used for this purpose. Their construction will be explained at that time. We want to emphasize at the outset, however, that REER indices are only narrow indicators of a specific kind of change. (See Maciejewski, 1983 or Rhomberg 1976) REER indices may indicate changing price relationships, but alone they do not indicate an exchange rate problem.

To summarize: Conditions which are normally associated with an overvaluation problem are the following:

- Black markets exist where there are substantial discounts on local currency; furthermore, there is some breadth to black markets. The number of transactions is large and business requiring foreign exchange must rely upon the black market in the normal course of business.
- Foreign exchange transactions are subject to licensing and there is a delay in delivery of foreign exchange after a license is issued. In many countries the monetary authority slows down approval of licenses as

well as delivery of foreign exchange as a matter of policy.

- Exchange controls exist where one may be denied access to foreign exchange for what would otherwise be a "normal" commercial transaction.

- The monetary authority persistently loses international reserves in its effort to bring the supply of foreign exchange up to meet the demand for it.

- Real Exchange Rates have appreciated.

The reader should note that the existence of a deficit in the current account of the balance of payments is not one of our indicators of an overvaluation problem. The balance of payments is not designed to balance account-by-account. A current account deficit can be consistent with exchange rate equilibrium if deficits are financed from the flow of private investment, grants or loans. In economies that are as small as those in the OECS almost any major investment project implies imports in excess of exports during the time the project occurs. Financing an investment through private equity capital presents no problem, though loan financing presents a fixed obligation for repayment at some future date. In any event, where financing is autonomous, a current account imbalance is

no indicator of currency overvaluation. Only where a current account deficit is financed through loss of official reserves (and/or borrowing to maintain reserves) might there be some problem with overvaluation. Usually, the other indications of an overvaluation problem will be found as well.

2.2 Findings: Exchange Market Conditions

In the OECS there is no discernible black market for EC\$. What exchange controls exist, vary from country to country, but they are generally not binding. Grenada and St. Kitts had exchange controls until a few years ago, but have since liberalized them considerably. In general in the OECS, people qualify easily for foreign exchange, and in most places are permitted to own bank accounts denominated in either EC\$ or foreign currencies (Grenada is an exception, where people must be foreign exchange earners to own accounts denominated in foreign exchange). Investors have no problem whatsoever in maintaining accounts denominated in foreign exchange or in assuring that their profits and capital can be repatriated. In short, there are few, or almost no signs that in markets in the OECS, there is excess demand for foreign exchange.

Foreign exchange reserves of the Eastern Caribbean Central Bank (ECCB) over the past six years are shown in Table 2.1. The table only shows reserves from 1980 since before that date, data become scarce on either reserves or some of the other data in the table. Note that there had been a reduction in reserves

in about 1982-1983, but that in the past two years reserves have been on an upward path. The dip in reserves does not appear to be associated with an overvaluation problem. There had been little change in the real exchange rate by that time and several outside factors seem to have been to blame for shortages of foreign exchange. During 1979 and 1980, most countries were devastated by hurricanes which damaged traditional crop exports as well as tourist facilities. Tourist arrivals were down in 1981 and 1982, in part due to storm damaged facilities but also due to the recessions plaguing the countries from which the OECS draw the majority of its tourists (U.S., U.K., Canada). Given the drop in foreign exchange earnings that one would expect from these natural and outside economic factors, and given that this is not well correlated with adverse changes in the real exchange rate, one would have little basis for concluding that the loss of reserves in 1982-83 was due to an overvaluation problem.

It is also interesting to note that when reserves dropped, imports did as well, keeping the ratio of reserves to imports fairly constant. As reserves peaked and began to fall in 1981, imports did the same. Thus, the ratio of reserves to imports dropped from .11 (5.7 weeks of imports) in 1980 to only .10 (5.2 weeks of imports) in 1982. In 1983, though reserves had not yet recovered much, the reserves/imports ratio improved because imports were cut back further. Since 1983 the situation has improved and the reserves/imports ratio is now

higher than in most earlier periods (over 7 weeks of imports). Money supply behavior did not match that of reserves. Money (M1) continued to rise throughout the period, though the pace of expansion slowed in 1982-83. The ratio of reserves to money dropped, then recovered after 1983*. Overall, reserves behaved as one would expect during a difficult period and some monetary tightening and import restraint allowed the OECS to get through the period without permanent harm.

*The monetary rules governing the ECCB require that international reserves be at least 60% of the money supply. The reserves that form this base, however, include certain liabilities of the OECS states. Reserves appearing in Table 2.1 are not international reserves and do not include liabilities of OECS states.

TABLE 2.1
IMPORTS, RESERVES AND MONEY IN THE OECS

	IMPORTS OECS	INTERNATIONAL RESERVES ECCB	RATIO RESERVES/IMPORTS	MONEY SUPPLY M1	RATIO RESERVES/MONEY
1980	1209.6	137.6	0.11	256.1	0.53
1981	1337.2	146.3	0.11	287.3	0.51
1982	1303.3	132.4	0.10	293.5	0.45
1983	1247.3	133.6	0.11	315.1	0.42
1984	1409.5	208.5	0.15	362	0.58
1985	1624.3	226.9	0.14	373.9	0.61

SOURCES: IMF: ECCB RESERVES; IMPORTS FOR ANTIGUA, DOMINICA AND ST VINCENT 1976-82; GRENADA AND ST LUCIA 1976-83
 WORLD BANK GREY COVERS: MONTSERRAT IMPORTS, 1977-82 AND ESTIMATES FOR 1985
 KEN BEASLEY: IMPORTS FOR ALL FOR 1983-84 AND 1985 ESTIMATES (EXCEPT MONTSERRAT; ST KITTS IMPORTS 1980-82;
 ECCB: MONEY SUPPLY

2.3 Findings: Real Exchange Rates

Several kinds of real exchange rate calculations have been made for the EC\$. The results of these calculations are described in this section. The details of real exchange rate calculations can add considerable clutter to a report like this, but little insight. Thus, the method and calculations are described separately in Section 3. That section may be skipped entirely by readers uninterested in those details. In the end, two general kinds of exchange rate calculations are made. Most simple are bilateral real exchange rates between the EC\$ and currencies of major trade partners. The second is real effective exchange rates which aggregate the currencies of trade partners. Both adjust for relative differences in inflation rates. The latter adjusts for each country's trade pattern.

Real exchange rate indices (RER) have been calculated for each OECS country individually and these appear in Tables 2.2 a-g. Figures in Table 2.2 are bilateral real exchange rate indices. They are indices of the purchasing power of the EC\$ in terms of its ability to buy goods in each of the trade partners shown. The numbers are stated as indices with 1980 as the base year, so that comparisons can be made across trade partners. For example, the 1985 index for Antigua and Barbuda for the U.S. is 1.127. This means that in 1985 it took a resident of Antigua and Barbuda 1.127 times as many EC\$ to buy

a given U.S. dollar's worth of goods as it did in 1980. Since the exchange rate with the US\$ has not changed over that period, the change in purchasing power of the EC\$ is due exclusively to relative inflation rates in Antigua and Barbuda compared to inflation in the U.S. Since it now (i.e. end 1985) takes 1.127 times as many EC\$ to buy a given US\$ quantity of goods as it did in 1980, there has been an effective depreciation of the EC\$ in Antigua and Barbuda of 12.7%. Thus a rise in the index indicates a depreciation of the EC\$. The depreciation of the EC\$ in Antigua and Barbuda is due to the lower rate of inflation there than in the U.S. For the U.K., the index stands at .76, indicating that it now takes .76 times as many EC\$ to buy a given pound sterling's worth of goods in the U.K. Thus, there has been an appreciation of the EC\$ with the pound sterling amounting to 24% (i.e., $1 - .76 = .24$). A drop in the index indicates appreciation. In the case of the U.K., the appreciation is due largely to the appreciation of the U.S. \$ to which the EC\$ is tied, and is partially offset by lower rates of inflation in Antigua and Barbuda than in the UK.

The general observations that can be made on the OECS as a group are:

- All have appreciated greatly against the pound sterling. This is not surprising given the appreciation of the U.S. dollar.

- All have appreciated against Jamaica since 1980, but 1980 is a particularly bad year for comparisons with Jamaica. Inflation in Jamaica in the late '70s was very high (around 30%) but the exchange rate remained fixed between 1979 and 1983. Thus, the Jamaican dollar had appreciated extremely against most currencies, including the EC\$. Devaluations in Jamaica beginning in 1983 have caused an appreciation of all other currencies against the Jamaican dollar. In 1985, Jamaica lost ground, experiencing inflation at about 40% but devaluing by only about 12%. Thus, all RER indices for OECS states rose in 1985, reflecting Jamaica's inability to prevent real appreciation of its currency.

- Only Grenada, and to some extent Montserrat, show general appreciations against the other currencies shown. Montserrat's appreciations are small and may be due to errors in the data. Grenada's appreciations are larger and probably are general indicators of a loss of competitiveness there.

- All OECS states except Grenada show depreciations against the U.S. dollar, Canadian dollar and Barbados dollar. All but Grenada and Montserrat depreciated against the Trinidad and Tabago dollar despite devaluations of that currency at the end of 1985.

- The effect of the late 1985 devaluation in Trinidad and Tabago, of about 50%, was not quite enough to make up for appreciation of the Trinidad and Tabago dollar over the 1980-85 period. All RER indices against the T & T dollar rose from 1980-84 indicating appreciation of the T & T dollar against the EC\$, on the order of 30-45%* depending upon the country of comparison.

*Removing the high-St. Lucia and the low, Grenada.

TABLE 2.2.A
 ANTIGUA AND BARBUDA
 BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.133	0.695	1.365	0.987	1.067	1.302
1977	1.112	0.833	1.259	1.017	1.065	1.335
1978	1.115	0.893	1.171	1.044	1.086	0.903
1979	1.041	0.930	1.090	1.005	1.031	0.927
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.032	0.836	1.050	1.068	1.071	1.053
1982	1.074	0.751	1.106	1.168	1.159	1.101
1983	1.070	0.683	1.120	1.316	1.177	0.644
1984	1.088	0.559	1.070	1.455	1.201	0.534
1985	1.127	0.760	1.064	1.063	1.246	0.812

TABLE 2.2.B
DOMINICA
BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.259	0.772	1.517	1.097	1.186	1.447
1977	1.244	0.932	1.408	1.138	1.192	1.493
1978	1.135	0.910	1.193	1.064	1.107	0.920
1979	1.070	0.956	1.120	1.033	1.060	0.953
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.021	0.827	1.040	1.057	1.060	1.043
1982	1.041	0.728	1.072	1.133	1.124	1.068
1983	1.047	0.668	1.095	1.288	1.152	0.630
1984	1.072	0.551	1.054	1.434	1.184	0.526
1985	1.095	0.738	1.035	1.033	1.211	0.789

TABLE 2.2.C
 GRENADA
 BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.364	0.837	1.644	1.186	1.285	1.56E
1977	1.292	0.968	1.462	1.181	1.237	1.55C
1978	1.226	0.982	1.286	1.148	1.195	0.993
1979	1.200	1.073	1.256	1.159	1.189	1.069
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	0.929	0.753	0.946	0.962	0.965	0.949
1982	0.915	0.639	0.941	0.995	0.987	0.93E
1983	0.890	0.567	0.931	1.094	0.979	0.535
1984	0.879	0.451	0.864	1.175	0.970	0.431
1985	0.902	0.608	0.852	0.851	0.997	0.650

TABLE 2.2.D
 MONTSERRAT
 BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.315	0.807	1.585	1.145	1.239	1.511
1977	1.179	0.884	1.335	1.078	1.130	1.415
1978	1.163	0.932	1.222	1.090	1.134	0.942
1979	1.037	0.928	1.086	1.002	1.028	0.924
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.031	0.835	1.050	1.067	1.070	1.053
1982	1.009	0.705	1.038	1.097	1.089	1.034
1983	0.973	0.621	1.018	1.197	1.070	0.585
1984	0.958	0.492	0.942	1.281	1.058	0.470
1985	1.001	0.675	0.945	0.944	1.107	0.721

TABLE 2.2.E
 ST KITTS
 BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.212	0.744	1.461	1.056	1.142	1.393
1977	1.081	0.810	1.224	0.989	1.036	1.298
1978	1.037	0.831	1.090	0.972	1.011	0.840
1979	1.008	0.901	1.055	0.973	0.999	0.898
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.017	0.824	1.035	1.053	1.056	1.038
1982	1.047	0.732	1.077	1.139	1.130	1.073
1983	1.049	0.669	1.098	1.291	1.154	0.631
1984	1.073	0.551	1.055	1.435	1.185	0.526
1985	1.113	0.751	1.052	1.050	1.231	0.802

TABLE 2.2.F
 ST LUCIA
 BILATERAL REAL EXCHANGE RATE INDICES .

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.141	0.700	1.375	0.994	1.075	1.312
1977	1.118	0.837	1.265	1.022	1.070	1.341
1978	1.107	0.887	1.163	1.037	1.079	0.897
1979	1.067	0.954	1.117	1.031	1.058	0.951
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.009	0.817	1.027	1.044	1.047	1.030
1982	1.064	0.744	1.095	1.157	1.148	1.091
1983	1.084	0.691	1.134	1.333	1.193	0.652
1984	1.117	0.574	1.098	1.494	1.233	0.548
1985	1.162	0.784	1.098	1.096	1.286	0.837

TABLE 2.2.6
ST VINCENT
BILATERAL REAL EXCHANGE RATE INDICES ·

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.151	0.706	1.388	1.003	1.085	1.324
1977	1.142	0.856	1.292	1.044	1.094	1.370
1978	1.106	0.886	1.162	1.036	1.078	0.896
1979	1.047	0.936	1.097	1.012	1.038	0.933
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.015	0.822	1.033	1.050	1.053	1.036
1982	1.027	0.718	1.057	1.117	1.108	1.053
1983	1.008	0.643	1.055	1.240	1.109	0.606
1984	1.035	0.531	1.017	1.383	1.142	0.507
1985	1.073	0.723	1.014	1.012	1.187	0.773

Bilateral RERs have limited use. They speak only to relative purchasing power between pairs of countries. Aggregate measures of competitiveness take into account changes in RERs but also consider the relative importance of each trade partner in each OECS country's trade pattern. Real effective exchange rates (REER) aggregate each country's RER by the relative size of trade with each major trade partner. Compared to some base period, in this case 1980, an REER index shows the relative expenditure required in EC\$ to buy a given bundle of goods, from a fixed set of trade partners. It takes into account differences in inflation rates between the OECS country and each trade partner, as well as any nominal exchange rate changes that might occur.

Table 2.3 shows REER calculations for each OECS country, except for Montserrat where data were inadequate for this calculation. In the tables shown here all weighting of trade partners currencies was done on the basis of participation in total trade. Several alternative weighting schemes were "tried on" in the course of the research, but results presented here seem to be general ones. details on the optional weights considered are given in the technical discussion in Section 3.

In table 2.3 the following observations can be made:

- Given the nature of the data, changes of $\pm .03$ or $.04$ cannot be considered of great significance.

- For all countries but Dominica and Grenada, no significant changes in REER indices are evident. Antigua and St. Lucia show a slight tendency toward depreciation; St. Kitts and St. Vincent toward appreciation.

- If Trinidad and Tobago had not devalued at the end of 1985 all but Grenada would have shown a significant tendency toward depreciation. We have included as a memo item, what the REER would have been had Trinidad and Tobago not devalued.

- Dominica shows appreciation of about 15% 1980-84; then depreciation of about 7% in 1985. This reflects the heavy weight placed upon the U.K. in Dominica's trade and the appreciation (1980-84); then depreciation in 1985 of the US\$ against the pound. It also reflects a fairly heavy weight on Trinidad and Tobago and the devaluation there at the end of 1985.

- Grenada shows considerable REER appreciation 1980-85, amounting to about 22% over that period. This reflects Grenada's much higher inflation rates than other OECS states, and heavy weights on the UK and Trinidad in the aggregate.

- One cannot make statements about the EC\$ being generally over or under-valued since experience varies across countries.

TABLE 2.3
REAL EFFECTIVE EXCHANGE RATES (REER) FOR DECS STATES

	ANTIGUA	DOMINICA	GRENADA	ST KITTS	ST LUCIA	ST VINCENT
1976	1.041	0.989	1.133	1.031	0.967	0.986
1977	1.057	1.076	1.153	0.981	1.011	1.039
1978	1.067	1.012	1.119	0.959	1.021	1.025
1979	1.019	1.009	1.146	0.969	1.025	1.008
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	0.999	0.930	0.883	0.960	0.951	0.972
1982	1.024	0.897	0.851	0.960	0.972	0.966
1983	1.022	0.885	0.845	0.961	0.988	0.965
1984	1.015	0.845	0.814	0.947	0.979	0.969
1985	1.046	0.907	0.779	0.982	1.023	0.953
^MEMO: IF TRINIDAD AND TOBAGO HAD NOT DEVALUED IN DECEMBER 1985, REER WOULD HAVE BEEN						
1985	1.089	0.96	0.902	1.05	1.091	1.07

BASED UPON CONSUMER OR RETAIL PRICE INDICES AND
TOTAL TRADE WEIGHTS

One should take great caution in interpreting the data in Table 2.4, represented as an aggregate REER for the OECS area. Indeed, adequate data do not exist to properly calculate an area-wide REER. For that we would need an area-wide price index and one does not exist. Nevertheless, to give the reader an overall "feel" for the data, we have aggregated across the six OECS states for which individual REERs have been calculated, weighting each by the relative participation of each country in merchandise trade. The index so constructed, shown an appreciation of about 5.5% 1980-84, and about a 1.7% depreciation in 1985, due largely to depreciation of the U.S. dollar against the pound sterling. Overall appreciation by this measure is about 4% since 1980. Changes of this magnitude are probably of little significance.

2.4 An Assessment

It is unlikely that a general overvaluation problem exists within the OECS countries. There are no black markets and no binding controls on foreign exchange. Foreign exchange is readily available to those in need of it. International reserves have not dwindled persistently. Rather, after reserves fell following hurricane damage in reconstruction in the early 1980s, they have recovered, and have kept pace with the need for reserves. Monetary policy has been very restrictive and inflation rates are low. Real exchange rate calculations for the EC\$ indicate that in general there has

TABLE 2.4
REER FOR DECS COMBINED

1976	1.011
1977	1.046
1978	1.033
1979	1.025
1980	1.000
1981	0.955
1982	0.955
1983	0.956
1984	0.945
1985	0.961

INDIVIDUAL REER WEIGHTED BY PROPORTIONS
OF TRADE 1982-1983

been little tendency to systematically appreciate or depreciate. In the cases of Grenada, and to a lesser extent Dominica, price relationships and trade patterns have not been as favorable as they have been elsewhere. In both cases there is a tendency toward REER appreciation.

In addition to these rather standard signs of overvaluation, there are other signs in the region that there is no serious misalignment of the EC\$. First, the EC\$ is used as the currency of Anguilla, along with US\$. Anguilla is not a member of the OECS. If there was a general feeling that EC\$ were overvalued, no one in Anguilla would want them or would only accept them at a discount. Nevertheless, in Anguilla, EC\$ exchange at EC\$ 2.70 = U.S. \$1.00 as they do within the OECS. Secondly, if people in the OECS states had been uneasy about the value of the EC\$ that they hold, there probably would have been some adverse reaction to the devaluation in Trinidad and Tobago in mid-December of 1985. If people felt that EC\$ were overvalued, the action in Trinidad would have raised expectations of a devaluation of the EC\$ too. If this were the case, one would have been able to notice a flight from EC\$ in about late December 1985 or January 1986. A significant flight from the EC\$ would probably have caused a black market to have arisen. No action of this sort whatsoever has been observed. In the end we must conclude that there is no problem of overvaluation of the EC dollar.

SECTION 3: REAL EXCHANGE RATES IN THE OECS

This section provides the technical materials and methodological backup for the real exchange rate calculations summarized in Section 2. This section can be skipped by readers wanting only the results of these calculations. In what follows we introduce the various real exchange rate measures used and discuss some of the methodological choices that had to be made along the way. Also, several different formulations were used to check the sensitivity of our results to varying assumptions. Those too are discussed here.

3.1 Real Exchange Rates

Calculations of "Real Exchange Rates" (RER) are often used to help evaluate changes in the international competitiveness of countries. There are a number of concepts that are used to determine "the" real exchange rate, and the concept of the RER is only one. The essential idea behind RER calculations is to adjust the nominal exchange rate for relative movements in domestic and foreign prices. The objective of the calculations is to obtain an idea about changes in the international purchasing power of a currency, given:

- (1) the nominal exchange rate for the currency, and

- (2) differences between price level changes in the country issuing the currency (the "home country") and the outside world.

Real exchange rates (RER) between two currencies (e.g., between the U.S. and Eastern Caribbean dollars) are determined as follows:

Let E denote the nominal (spot) exchange rate defined as the domestic currency price of the foreign currency, P the domestic price (an index) of a bundle of domestic goods and P^* the foreign price (index) of a bundle of foreign goods. The real exchange rate is defined as $RER = (EP^*/P)$, or the price of the foreign bundle of goods expressed in domestic currency relative to the price of the domestic bundle of goods. Thus, suppose that the domestic currency price of the U.S. dollar is equal to 2, the price of a U.S. bundle is \$15, and the domestic price of the domestic bundle is 30, then the real exchange rate is $(EP^*/P) = (2 \times 15/30) = 1.0$. Now suppose the nominal exchange is devalued to 2.7 domestic currency units per dollar while prices are unchanged. Then the real exchange rate becomes $RER = (2.7 \times 15/30) = 1.35$. The RER has gone up, and the price of the U.S. bundle of goods has increased by 35% compared to the home bundle of goods. Typically, rather than prices, we use index numbers, with given base years. So in our example, the domestic and U.S. price bundles might be (on a base, say, of

1980 = 100), $P^* = 100$ and $P = 200$, so the real exchange would be $RER = (2 \times 100/200) = 1.0$. The important thing to recall is that an increase in the RER means an increase in the relative price of foreign goods (a "depreciation"), while a fall in the RER means a decline in the relative price of foreign goods (an "appreciation").

With rigidly fixed nominal exchange rates, movements in the RER are entirely due to movements in the domestic and foreign price levels. The RER for the domestic economy would fall (appreciate) or rise (depreciate) according to whether the inflation rate at home is higher or lower than the inflation rate in foreign countries. With floating exchange rates or adjustable nominal exchange rates, changes in the RER are attributable to both nominal exchange rate fluctuations and to movements in relative prices.

For the OECS, which has maintained a fixed exchange rate with the U.S. dollar (EC\$ 2.7 = U.S. \$1) it is clear that the Real Exchange Rate with the U.S. dollar will be affected only by relative differences in price changes in the U.S. and OECS countries. The fact that the E.C. dollar is tied to the U.S. dollar, and that the U.S. dollar is freely floating against other currencies, means that the E.C. dollar also floats against those other currencies. Thus, if we consider the RER between the E.C. dollar and the pound sterling (or marks, yen, etc.) we will see that changes in the RER are affected by both nominal exchange rate differences and by changes in relative prices.

Measures of RER's obviously depend on a choice of measures of prices. It is well known that published price indexes (whether consumer price index, CPI, wholesale prices, WPI, or implicit GDP price deflators, PGDP) are typically, though not strictly, comparable across countries. The non-comparability arises for a variety of reasons, including differences in the coverage of goods and services, the frequency of observation and collection, differences in weighting patterns across countries and over time, price controls and taxes, public sector goods, etc. For the purposes of this study the price measures used were dictated by measures that were readily available. In OECS states the only routinely calculated and published price index is the consumer price index, and therefore it was the one used here. In the U.S. and the U.K., the OECS states' main trade partners, a variety of price indices are available. Preferable among them is a wholesale price index, since it represents price movements among traded commodities better than the CPI. Unfortunately, since no price index comparable to the WPI exists for the OECS states nor for other major OECS trade partners, CPIs were used throughout this project.

In Table 3.1 we show price index information for each of the OECS states and in Table 3.2 the same sort of information for major OECS trade partners. Originally, the price index information we were able to obtain had a number of different base years for each country. All were converted to a 1980

TABLE 3.1
 CONSUMER PRICE INDICES FOR OECS STATES
 ALL CONVERTED TO 1980 BASE

	ANTIGUA	DOMINICA	GRENADA	MONTERRAT	ST KITTS	ST LUCIA	ST VINCENT
1976	0.610	0.549	0.507	0.526	0.570	0.606	0.600
1977	0.662	0.592	0.570	0.624	0.681	0.659	0.645
1978	0.711	0.698	0.646	0.681	0.764	0.715	0.716
1979	0.847	0.824	0.734	0.849	0.874	0.826	0.841
1980	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.070	1.081	1.188	1.071	1.086	1.095	1.088
1982	1.090	1.125	1.280	1.161	1.119	1.101	1.141
1983	1.130	1.155	1.359	1.243	1.152	1.115	1.199
1984	1.159	1.176	1.435	1.316	1.175	1.129	1.219
1985	1.181	1.215	1.476	1.330	1.196	1.145	1.240

TABLE 3.2
CONSUMER PRICE INDICES FOR MAJOR TRADE PARTNERS OF OECs STATES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	0.691	0.596	0.707	0.602	0.651	0.4057
1977	0.736	0.69	0.763	0.673	0.705	0.4511
1978	0.792	0.747	0.832	0.742	0.772	0.609
1979	0.881	0.848	0.907	0.851	0.873	0.785
1980	1	1	1	1	1	1
1981	1.104	1.119	1.124	1.143	1.146	1.127
1982	1.171	1.215	1.246	1.274	1.264	1.201
1983	1.209	1.271	1.318	1.487	1.33	1.34
1984	1.261	1.334	1.375	1.686	1.392	1.713
1985	1.331	1.449	1.458	1.883	1.472	2.413

base. The eastern Caribbean Central Bank (ECCB) provided estimates of price increases in each state for 1984 and 1985 and each series was extrapolated using those rates. Consumer price indices for the trade partners came from various issues of the IMF's International Financial Statistics (IFS). Since IFS data were only through September or October 1985, they were simply extrapolated to give an estimate of year-end 1985.

One thing to note about inflation in OECS states is that it has been much less than it has in trade partners. During the early half of the 1980's inflation in the OECS states averaged somewhat less than in the U.S., Canada and the U.K. and considerably less than in Trinidad, Barbados and Jamaica. Thus, against currencies whose values are fixed to the EC\$ (by way of their tie to the U.S. dollar) one would expect a depreciation of the EC\$, since over time the EC\$ buys relatively more at home than it does abroad. One would expect depreciation against the U.S. dollar, Barbados dollar and against the Trinidad and Tobago dollar, up to the point where the latter devalued in December of 1985.

Table 3.3 has seven parts labeled a-g, one for each OECS state. Each table shows bilateral RERs between an OECS state and a major trade partner. The RERs are expressed as series of index numbers, with 1980 as the base.

To interpret the index numbers, compare the index for any year to the figure for 1980 (i.e., 1.00). If the index rises (a depreciation) then the proportional depreciation is the

TABLE 3.3.A
ANTIGUA AND BARBUDA
BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.133	0.695	1.365	0.987	1.067	1.302
1977	1.112	0.833	1.259	1.017	1.065	1.335
1978	1.115	0.893	1.171	1.044	1.086	0.903
1979	1.041	0.930	1.090	1.005	1.031	0.927
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.032	0.836	1.050	1.068	1.071	1.053
1982	1.074	0.751	1.106	1.168	1.159	1.101
1983	1.070	0.683	1.120	1.316	1.177	0.644
1984	1.088	0.559	1.070	1.455	1.201	0.534
1985	1.127	0.760	1.064	1.063	1.246	0.812

TABLE 3.3.B
DOMINICA
BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.259	0.772	1.517	1.097	1.186	1.447
1977	1.244	0.932	1.408	1.138	1.192	1.493
1978	1.135	0.910	1.193	1.064	1.107	0.920
1979	1.070	0.956	1.120	1.033	1.060	0.953
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.021	0.827	1.040	1.057	1.060	1.043
1982	1.041	0.728	1.072	1.133	1.124	1.068
1983	1.047	0.668	1.095	1.288	1.152	0.630
1984	1.072	0.551	1.054	1.434	1.184	0.526
1985	1.095	0.738	1.035	1.033	1.211	0.789

TABLE 3.3.C
GRENADA
BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.364	0.837	1.644	1.188	1.285	1.568
1977	1.292	0.968	1.462	1.181	1.237	1.550
1978	1.226	0.982	1.288	1.148	1.195	0.793
1979	1.200	1.073	1.256	1.159	1.189	1.069
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	0.929	0.753	0.946	0.962	0.965	0.949
1982	0.915	0.639	0.941	0.995	0.987	0.938
1983	0.890	0.567	0.931	1.094	0.979	0.335
1984	0.879	0.451	0.864	1.175	0.970	0.431
1985	0.902	0.608	0.852	0.851	0.997	0.650

TABLE 3.3.D
 MONTSERRAT
 BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.315	0.807	1.585	1.145	1.239	1.511
1977	1.179	0.884	1.335	1.078	1.130	1.415
1978	1.163	0.932	1.222	1.090	1.134	0.942
1979	1.037	0.928	1.086	1.002	1.028	0.924
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.031	0.835	1.050	1.067	1.070	1.053
1982	1.009	0.705	1.038	1.097	1.089	1.034
1983	0.973	0.621	1.018	1.197	1.070	0.585
1984	0.958	0.492	0.942	1.281	1.058	0.470
1985	1.001	0.675	0.945	0.944	1.107	0.721

TABLE 3.3.E
ST KITTS
BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.212	0.744	1.461	1.056	1.142	1.393
1977	1.081	0.810	1.224	0.989	1.036	1.298
1978	1.037	0.831	1.090	0.972	1.011	0.840
1979	1.008	0.901	1.055	0.973	0.999	0.898
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.017	0.824	1.035	1.053	1.056	1.038
1982	1.047	0.732	1.077	1.139	1.130	1.073
1983	1.049	0.669	1.098	1.291	1.154	0.631
1984	1.073	0.551	1.055	1.435	1.185	0.526
1985	1.113	0.751	1.052	1.050	1.231	0.802

TABLE 3.3.F
ST LUCIA
BILATERAL REAL EXCHANGE RATE INDICES

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.141	0.700	1.375	0.994	1.075	1.312
1977	1.118	0.837	1.265	1.022	1.070	1.341
1978	1.107	0.887	1.163	1.037	1.075	0.897
1979	1.067	0.954	1.117	1.031	1.058	0.951
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.009	0.817	1.027	1.044	1.047	1.030
1982	1.064	0.744	1.095	1.157	1.148	1.091
1983	1.084	0.691	1.134	1.333	1.193	0.652
1984	1.117	0.574	1.098	1.494	1.233	0.548
1985	1.162	0.784	1.098	1.096	1.286	0.837

TABLE 3.3.6
ST VINCENT
BILATERAL REAL EXCHANGE RATE INDICES .

	US	UK	CANADA	TRINIDAD	BARBADOS	JAMAICA
1976	1.151	0.706	1.388	1.003	1.085	1.324
1977	1.142	0.856	1.292	1.044	1.094	1.370
1978	1.106	0.886	1.162	1.036	1.078	0.896
1979	1.047	0.936	1.097	1.012	1.038	0.933
1980	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.015	0.822	1.033	1.050	1.053	1.036
1982	1.027	0.718	1.057	1.117	1.108	1.053
1983	1.008	0.643	1.055	1.240	1.109	0.606
1984	1.035	0.531	1.017	1.383	1.142	0.507
1985	1.073	0.723	1.014	1.012	1.187	0.773

difference between 1.0 and the specific index in question. Similarly, if the number is less than 1.0, an appreciation is indicated, and the difference between the number shown and 1.0 indicates the proportional appreciation. For example, in the second column of Table 3.3a for Antique and Barbuda, the index for 1985 is 1.127 indicating a 12.7% depreciation of the EC dollar against the U.S. dollar between 1980 and 1985.

The observation that can be made about these RERs have already been elaborated upon in Section 2.

3.2 Nominal and Real Effective Exchange Rates: Methods

The discussion above has focused on the time path of bilateral nominal and real exchange rates. It is also useful to consider the evidence from multilateral nominal and real exchange rates. These are referred to as nominal effective exchange rates and real effective exchange rates or, NEER and REER respectively. Essentially, the nominal effective exchange rate is the price in domestic currency of a relevant basket of foreign currencies, just like a price index is the price of a basket of goods and services. The NEER does not account for changes in relative price levels. The REER accounts for both nominal changes in the price of the basket of currencies, and the changes in relative prices that have occurred between the "home country" and its trade partners.

Considering the price of a basket of currencies avoids possible pitfalls or hasty conclusions based merely on the price of a single bilateral exchange rate. One does not want to conclude that the price inflation rate is, say, 50% per year merely because the price of one particular good has risen by 50%. Similarly, one does not want to conclude that the domestic currency is heavily overvalued in the foreign exchange market merely because it appears overvalued relative to one specific currency. Thus, in the case of the EC dollar one has to be careful in concluding that the currency is generally overvalued merely because it appears overvalued relative to the U.S. dollar or U.K. pound. It is for this reason that effective exchange rates are useful indicators.

Further, the NEER and REER have to be "relevant" prices of baskets of currencies. Obviously what the price of the Fiji dollar is doing on the foreign exchange market is irrelevant to the OECS if there is no trade in goods, services or assets with the Fiji Islands. This raises two methodological issues. Which currencies enter the basket of relevant currencies, and what weight should be attached to the chosen currencies? These questions are identical to those that arise when one is constructing, say, the Consumer Price Index, and deciding on the coverage of goods and services and the weighting pattern.

For most purposes we have chosen to weight currencies in proportion to their share in each OECS country's: total trade. Hence, if the U.S. represents 50% of total trade (exports plus

imports) with say, Antigua and Barbuda, then the weight of the U.S. dollar in Antigua and Barbuda's NEER or REER is .5, and so on for other currencies.

The choice of which weights to use in the case of OECS countries is a critical one. Export patterns are much different from import patterns, so one would get significantly different results if only export weights were used on the one hand and import weights on the other. For most countries, merchandise exports go predominantly to the U.K. or in some cases, Trinidad. However, imports are largely from the U.S. Thus, if export weights were applied, the pound sterling would be heavily weighted and a tendency to show REER appreciation would occur. This would be entirely due to the appreciation of the U.S. dollar vis-a-vis sterling. Alternatively, import weights would reflect the U.S. dollar and would tend to show much less appreciation than otherwise.

Another problem arises in choosing weights for the OECS states. Tourism is a large part of trade for all states. Tourism should be treated as an export and if export weights are used, tourism should be included. Most tourists come from the U.S., through in some cases tourists from Europe, particularly from the U.K. are important. Tourism from Canada is also in the rise.

Issues relating to what weights to use were resolved by generally using proportions of total trade (exports plus imports) occurring with major trade partners. In other parts of

this report when we discuss changes in REER, it is the one calculated with total trade weights that we are discussing. Since our main concern throughout this report is the broad question of over or undervaluation, and since a currency's value is determined by the simultaneous demand for exports from the countries using the currency and the demand by those countries for imports, total trade weights make intuitive sense. However, to check on the general direction of our findings we also "tried on" weights determined by (1) exports, (2) exports plus tourism, and (3) total trade plus tourism. Results of each of these is presented toward the end of this section.

A choice had to be made as to which trade partner currencies would be included in REER calculations. One would normally want to include all "major" trade partners. Also, since we want to compare the OECS states, we might also want to ensure that the same trade partners' currencies are used for each OECS state. Unfortunately, our data do not allow the use of all trade partners that we might want to use. When trade with a partner is small, it is aggregated with data on other countries. For example, trade between Dominica and Barbados is small and it is lumped under the heading "rest of CARICOM" in the accounts for Dominica. Thus, . . . Dominica's trade with Barbados cannot be used even if it is significant for another OECS state (e.g., Antigua or St. Lucia). No data at all were available on Montserrat's trade partners so no calculations would be made for that state.

We defined a "significant" trade partner, as any partner having 5% or more of either exports or imports in 1982 or 1983. In all cases the U.S., U.K., Canada and Trinidad and Tobago are significant and data exist on them for all OECS countries. In addition some OECS states have significant trade with Barbados and Jamaica, for which data are available. All other trade partners occupy a very small proportion of total trade. For consistency we have used the U.S., U.K., Canada, and Trinidad and Tobago as trade partners in calculating REER indices for all OECS states (except Montserrat). In the tables that follow, we refer to these as "standard REER." We have also calculated what we call an "extra REER" which includes trade weights for Jamaica and Barbados in addition to weights for the standard set of four countries. One will note that our general calculations are little affected by the addition of trade with these "extra" trade partners.

Finally a choice has to be made whether to use fixed weights or variable weights over time. Variable weights have the advantage of being more representative of evolving trade patterns, just as changing weights in the CPI would generally represent a more accurate representation of expenditure shares. The disadvantage is that export shares may randomly change from year to year because of exogenous events totally unrelated to competitiveness, such as natural catastrophes, strikes, etc. Also, we are very limited in data availability. Trade share information varies by country but generally falls in the time

period 1979-83. Weights, including the 1979-1981 period would be a poor choice because of two factors. Many of the islands had been struck by destructive hurricanes in 1979 and 1980, and exports were down because of them. Imports during this period were in part for reconstruction. Secondly, the EC dollar had been pegged to the U.S. dollar in 1976 and the latter depreciated sharply to a low in the third quarter of 1980. If there had been a price response to that depreciation, and trade shares had adjusted accordingly, we would not want to use trade shares from that period to represent a "normal" situation. Thus, we used fixed weights which are average trade shares for 1982 and 1983. These have the advantage of being between the low for the U.S. dollar (end 1980) and it's peak (March '85). A disadvantage is that the U.S. had begun its recovery from recession (1981) while the U.K. and Europe had not. Ultimately, our choice was a pragmatic one--little other data on trade shares were available.

The formula for the Nominal Effective Exchange Rate (NEER), for each time period, t , is:

$$NEER_t = \sum_j W_j * R_{jt} * E_{jt}$$

Where:

W_j = the weight assigned to the currency of country j , where j is a trade partner.

R_t = value of one unit of a numeraire currency (in this case the U.S. dollar) in terms of domestic currency at time t (in the case of OECS states this is a fixed amount, EC\$ 2.7 = \$1)

E_{jt} = value of a unit of the currency of trading partner j at time t , expressed in units of the numeraire currency

The result of this calculation is the EC dollar price of a fixed bundle of currencies. We will express this figure as an index number where 1980 = 1.00.

The formula for the Real Effective Exchange Rate (REER) adjusts the NEER for changes in relative prices. The formula is:

$$REER_t = \frac{NEER_t}{P_t}$$

Where:

$$P_t = \sum_j W_j (P_{it} / P_{jt})$$

P_{it} = Price index for the home country (i.e. each
and: P_{it} OECS state) at time t

P_{jt} = Price index for trading partner j at time t

The result of the calculation is the EC dollar cost of a given bundle of goods in the trade partners. Again, we express this as an index number with the base 1980 = 1.00.

3.3 Real effective Exchange Rates (REER): Results

Results of REER calculations begin in Table 3.4 which has 6 parts (a-e), one for each country for which REER calculations have been made. In interpreting these tables, and any others dealing with NEER or REER, one must read the indices as gross approximations to changes that are occurring. Changing years from which trade weights are taken, changing the basis for weights (import, export, total trade, etc.) and other methodological or data changes could alter our results. Changes of 3-5% in these numbers could probably occur through chance.

The first thing that is striking about the REER calculations is that the record is mixed across OECS states. There is a slight tendency toward depreciation in Antigua and St. Lucia, and a tendency toward appreciation in St. Kitts and St. Vincent. In Antigua and St. Lucia the standard REER index has risen to 1.046 and 1.023, respectively, between 1980 and 1985. In St. Kitts and St. Vincent the same index stood at .982 and

.953, respectively in 1985. These tendencies are so small that one would have difficulty making any strong statements about trends in any of these countries. Appreciation does appear to have occurred in Dominica (about 10%) but especially in Grenada where appreciation is on the order of 22%.

A second observation is that whatever we weight by only the U.S., U.K., Canada and Trinidad or add to those weights for Barbados and Jamaica, there is little difference in the indices. For example, when we compare the "extra REER" for Antigua with the "standard REER" for 1985, the values are 1.056 and 1.046, respectively, indicating greater depreciation of the EC\$ for Antigua when Jamaica and Trinidad are considered than when only the standard four trade partners are considered. This difference is extremely small. The same general result is true for the other OECS countries as well. Adding trade partners in addition to these would involve such small weights that the net effect would be negligible.

In each table we have included a memo item which shows what REER indices would have been had Trinidad and Tobago not devalued its currency in December 1985. All countries would have shown relative depreciation without that devaluation. Even with that devaluation of the T & T dollar, all OECS states except Grenada and St. Vincent depreciated between 1984 and 1985, reflecting largely the softening of the U.S. dollar against the pound sterling. St. Vincent's appreciation 1984-85 is of very little significance. Grenada's appreciation on the other hand was about 4% 1984-85, instead of a 10% depreciation

TABLE 3.4.A
ANTIGUA AND BARBUDA
REAL EFFECTIVE EXCHANGE RATE INDICES

	NEER STANDARD	REER STANDARD	NEER EXTRA	REER EXTRA
1976	0.961	1.041	1.009	1.062
1977	0.970	1.057	1.017	1.078
1978	0.971	1.067	0.977	1.059
1979	0.988	1.019	0.989	1.015
1980	1.000	1.000	1.000	1.000
1981	0.961	0.999	0.966	1.007
1982	0.933	1.024	0.942	1.038
1983	0.919	1.022	0.909	1.018
1984	0.890	1.015	0.876	1.013
1985	0.877	1.046	0.866	1.056

TABLE 3.4.B
DOMINICA
REAL EFFECTIVE EXCHANGE RATE INDICES

	NCER STANDARD	REER STANDARD	NEER EXTRA	REER EXTRA
1976	0.863	0.989	1.050	1.100
1977	0.903	1.076	1.083	1.178
1978	0.924	1.012	0.946	0.993
1979	0.965	1.009	0.971	0.999
1980	1.000	1.000	1.000	1.000
1981	0.899	0.930	0.916	0.949
1982	0.835	0.897	0.863	0.927
1983	0.801	0.885	0.757	0.844
1984	0.737	0.845	0.674	0.801
1985	0.758	0.907	0.697	0.894

TABLE 3.4.C
GRENADA
REAL EFFECTIVE EXCHANGE RATE INDICES

	NEER STANDARD	REER STANDARD	NEER EXTRA	REER EXTRA
1976	0.917	1.133	0.921	1.140
1977	0.940	1.153	0.943	1.157
1978	0.950	1.119	0.952	1.123
1979	0.978	1.146	0.979	1.148
1980	1.000	1.000	1.000	1.000
1981	0.933	0.883	0.937	0.887
1982	0.889	0.851	0.895	0.858
1983	0.866	0.845	0.873	0.852
1984	0.822	0.814	0.831	0.822
1985	0.746	0.779	0.759	0.791

TABLE 3.4.D
ST KITTS AND NEVIS
REAL EFFECTIVE EXCHANGE RATE INDICES

	NEER STANDARD	REER STANDARD	
1976	0.915	1.031	
1977	0.939	0.981	NO SIGNIFICANT
1978	0.950	0.959	TRADE WITH OTHER
1979	0.978	0.969	COUNTRIES
1980	1.000	1.000	
1981	0.934	0.960	
1982	0.891	0.960	
1983	0.868	0.961	
1984	0.825	0.947	
1985	0.811	0.982	

TABLE 3.4.F
ST VINCENT AND THE GRENADINES
REAL EFFECTIVE EXCHANGE RATE INDICES

	NEER STANDARD	REER STANDARD	NEER EXTRA	REER EXTRA
1976	0.930	0.986	0.950	0.999
1977	0.949	1.039	0.968	1.050
1978	0.958	1.025	0.961	1.025
1979	0.981	1.008	0.982	1.008
1980	1.000	1.000	1.000	1.000
1981	0.944	0.972	0.947	0.977
1982	0.906	0.966	0.912	0.974
1983	0.887	0.965	0.867	0.966
1984	0.849	0.969	0.849	0.972
1985	0.788	0.953	0.792	0.963

TABLE 3.4.E
ST LUCIA
REAL EFFECTIVE EXCHANGE RATE INDICES

	NEER STANDARD	REER STANDARD	NEER EXTRA	REER EXTRA
1976	0.912	0.967	0.975	1.001
1977	0.937	1.011	0.997	1.042
1978	0.949	1.021	0.957	1.016
1979	0.977	1.025	0.979	1.022
1980	1.000	1.000	1.000	1.000
1981	0.932	0.951	0.939	0.960
1982	0.888	0.972	0.900	0.988
1983	0.865	0.988	0.854	0.980
1984	0.821	0.979	0.804	0.973
1985	0.810	1.023	0.796	1.030

that would have occurred had Trinidad and Tobago not devalued. Even Dominica experienced a net depreciation in 1984-85 of about 7% despite the Trinidad and Tobago devaluation. As one would have expected, those countries that trade heavily with Trinidad and Tobago will have a more difficult time competing in that market assuming that quantitative restrictions are not the main determinants of transactions. Overall however, the Trinidad and Tobago devaluation should have little effect on the OECS overall.

At the outset, we mentioned that the choice of weights would affect the outcome of REER calculations. We have, therefore, run several different formulations to see how the REERs would look given different, though reasonable weights. Since the "Standard REERs" are so similar to the the "extra REERs", alternative weighting schemes were only tried on the standard formulation.

Tourists weights were added to the total trade weights used originally. This was done by adding to total trade the estimated value of tourist revenue attributable to visitors from the U.S., U.K. and Canada. It was assumed that tourist revenue was proportional to tourist arrivals.**

**The Caribbean Tourist Research Development Center (CTRC) in Bridgetown has considerable data on tourist arrivals and some on tourist expenditures per day and length of stay by country of origin. Given the latter, one can calculate an expected value of a visit. As it turns out, U.S. visitors spend more per day, but spend fewer days than Europeans. The expected value of a visit, however, is about the same.

Table 3.5 gives summary results for several of the alternative experiments run with the data. The table shows only the 1985 value for the REER index, which can be easily compared with the base year, 1980. The second column shows the 1985 values of the REER using combined trade and tourism weights. There is little difference between that column and the one displaying the standard REER.

A second alternative was to weight by merchandise exports only. This is a very narrow basis for choosing weights. Merchandise exports are only a small part of total trade, often being only 30 to 50% of merchandise imports. Furthermore, tourism, which is a service export, is large compared to merchandise exports. Tourism is much greater than merchandise exports in Antigua and about the same in Grenada and St. Lucia. Tourism is smallest in Dominica (less than 1/5 exports) and about half the size of exports in St. Kitts and St. Vincent.

Export weights, when used alone, do make a difference. The REER index results for 1985 are shown in Table 3.5 in Column 3. There is a shift toward showing appreciation for all countries but Antigua. The reason for this is simple. Antigua exports almost no merchandise to either the U.S., U.K. or Canada. Thus, the REER for Antigua is almost entirely determined by its trade with Trinidad. Indeed, the export-weighted REER for Antigua is almost the same as the RER between Antigua and Trinidad (1.07

Table 3.4

	REER Standard Index <u>by 1985</u>	Tourist Plus Trade <u>Weight</u>	Export Tourist Export <u>Weight</u>	Export Plus Tourist <u>Weight</u>
Antigua	1.05	1.05	1.07	1.05
Dominica	.91	.91	.78	.79
Grenada	.78	.78	.66	.75
St. Kitts	.98	.99	.95	.99
St. Lucia	1.02	1.02	.88	.93
St. Vincent	.95	.95	.89	.87

REER export weighted; 1.06 RER in 1985). All the other OECS states export merchandise to the UK but little to the U.S. Thus, their REERs reflect largely their bilateral RERs with the U.K.

It is doubtful that the merchandise export-weighted REER says much about the export competitiveness of the OECS states. Tourism is an important export item and is not dealt with by the index. Indeed it is true that most OECS goods have risen in price in the U.K. However, most OECS exports to the U.K. are under quotas and the quantities exported are likely to be little affected by the exchange rate. Prices for bananas and sugar, exported under quotas to the U.K. (or EEC) are quoted in pounds sterling. The latter are unaffected by REER shifts. The range of goods to which the REER calculations might be applied as an indicator of competitiveness is dwarfed by exports of bananas and sugar. Also, it is not likely that these alternative goods would be sold as predominantly in the U.K. as bananas, and to a lesser extent sugar, are. Unfortunately, given the resources available to this study, further breakdown is not possible at this time.

Finally, an REER is calculated using a combination of merchandise and tourism weights. These results too are shown in Table 3.4, Column 4. Results are about the same as they are using only merchandise export weights.

3.4 Summary

This section was designated to give the Technical details surrounding calculations of real effective exchange rates (REER). Interpretation of results of those calculations was conducted in Section 2. In general, little appreciation of the EC dollar can be found with two major exceptions.

- (1) Grenada and to a lesser extent Dominica show some appreciation no matter what combinations of weights are used in REER calculations.
- (2) If only merchandise export weights are used then some appreciation of the EC dollar is evident in all OECS states except Antigua.

SECTION 4:
EXCHANGE MARKET OPTIONS

4.1 INTRODUCTION

In this section we will discuss options that are open to the OECS states as regards their exchange regime. These options are placed in three categories. First we discuss the devaluation option, which of course can be considered independently from the second set of options related to the kind of peg for the EC dollar or whether or not there should be a peg at all. Third, we discuss other policy measures which may be substitutes for either changes in the way in which the value of the EC dollar is maintained or for devaluation.

Before discussing optional exchange regime arrangements it may be useful to briefly review the objectives that one might have in pursuing any specific exchange policy. In this context it would be useful to separate exchange policy into two major parts. First is establishment of a level for the value of the currency in question (ie. the EC dollar) and second is determining the mechanism by which that value is to be maintained. That element of policy related to the level of the value of a currency can run the gamut from establishing a rigid peg to some external factor such as the US dollar (or gold, SDR, etc.) to allowing the value to adjust freely to market conditions. The mechanism for maintaining value refers to the institutional arrangements set up to allow adjustments to occur whenever the value of a currency differs from the market-clearing value. Thus, in the case of the

OECS we can discuss separately the advisability of the specific value for the EC dollar of EC\$2.7 = US\$1.00, and the advisability of establishing that value by retaining a peg to the U.S. dollar or switching to a different peg, or to no peg at all.

The objective in setting the level of the value of a currency is to enable the country to achieve an external payments position which is both sustainable and in keeping with reasonable economic growth. A sustainable external payments position is one where the demand for and supply of foreign exchange are in reasonable balance. (This was discussed in Section 2) This may occur through purely market transactions where no public sector intervention is necessary to sustain whatever the balance is that results. Often however, the public sector does intervene so that the external balance is more compatible with economic growth objectives. Public sector intervention is sustainable (and therefore the balance is sustainable) as long as there is the means to intervene. This requires either accumulated reserves from past transactions, or an ability to borrow foreign exchange.

One should note that the establishment of a specific value for a currency is not simply to stimulate exports. Maintaining export competitiveness is an important part of maintaining a sustainable external balance but it is not the only factor involved. Focussing upon competitiveness of merchandise exports is particularly narrow, since they are only a part of the external balance picture. One must consider the balance among

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all transactions that affect the external balance. These include all exports of goods, services and transfers as well as imports of all kinds and all transactions on capital account.

Along with export competitiveness, several additional considerations are important in assessing the sustainability of the external balance. In the case of the OECS it is particularly important to keep in mind the important role of tourism as a foreign exchange earner. It is equally important to keep in mind the high levels of investment occurring in the area, financed by capital flows from abroad. Whenever investment is financed with capital flows from abroad a current account deficit is almost automatic in the case of the OECS. (see footnote 1) Almost all investment goods are imported in the OECS. Therefore investment is associated with positive figures in the capital account, balancing negative figures in the current account. Thus the fact of large imbalances on current account in the OECS should not be taken as evidence of a balance of payments "crisis". Rather, that imbalance is required to facilitate the investments being made in the area. Indeed, assessing the sustainability of the external balance in the OECS states is made very difficult by the large amount of foreign aid flowing into the region. This inflow causes the current account to be in deficit. Without the inflow of aid imports would be much smaller and therefore the current account imbalance would be smaller as well. Currently, one cannot separate the effect of foreign aid on the current account balance from the other demands for imports. Thus, one has difficulty

assessing the sustainability of the external balance unless one assumes that foreign aid will continue.

Choice of the mechanism by which the value of a currency is maintained is usually done with several objectives in mind. First, the so called "exchange regime" is usually chosen to minimize risk to persons involved in international transactions, be they importers, exporters or investors. Secondly, the exchange regime is normally chosen to provide a mechanism for adjusting internal/external price relationships in ways consistent with medium term expectations for growth, productivity shifts and trade patterns. Finally, the exchange regime is chosen to be compatible with the macroeconomic policy matrix to be used by the countries in question.

There is a practical issue to consider when discussing changes in the exchange regime in the OECS. Any decision to devalue the EC dollar or to change the way in which the value of the EC dollar is maintained, requires a unanimous vote by the Eastern Caribbean Monetary Council. The council is composed of one representative from each OECS state. Thus, each state has veto power. Also, discussions with knowledgeable people in the region reveal great resistance by some of the states to devaluation. Representatives of Antigua and St. Lucia have stated that they in no way would consider favorably a vote for devaluation. Thus, it is very unlikely that at this time a vote to devalue, or substantially change the exchange regime would receive the unanimous vote required.

4.1 THE DEVALUATION OPTION

Sections 2 and 3 of this report reached the conclusion that there is currently no significant overvaluation problem for the EC dollar. On the basis of recent changes in real purchasing power therefore, there is no grounds for a recommendation that the EC dollar be devalued. However, one should not take only a backward-looking approach as is done with analyses of real effective exchange rate changes. One should be forward-looking, and try to analyse changes that may be brought about by an exchange rate change. If changes in the exchange rate could be expected to improve upon the foreign balance and/or its sustainability in the future, then one might still opt for a devaluation even though past performance would not indicate a need for one.

We do not believe that there are grounds for devaluation of the EC dollar on the grounds that it would improve upon the future external balance. This judgement is based upon the following points:

- there is little evidence that relative prices are the main determinants of OECS trade performance,
- timing is not good since the US dollar is expected to depreciate,
- little shift in OECS supply and demand of tradeable items could be expected in the medium term,
- wage and price changes would quickly offset exchange rate changes,

-risk would be introduced where it does not now exist.
We will deal with each of these points in turn.

4.2.1 Relative Prices and Trade Performance.

There is very little evidence in the data on trade patterns over the past few years that changes in relative prices have been important determinants of trade. We have already noted that in general among the OECS states there has been an appreciation in the bilateral exchange rate between the EC dollar and the pound sterling. The general appreciation has been due to the appreciation of the US dollar to which the EC dollar is tied. At the end of 1980 the nominal exchange rate was \$EC5.05 per pound sterling; at the end of 1984 it was EC\$3.19. This is a nominal appreciation of about 37%. Appreciation of the real bilateral exchange rate depends upon the internal inflation in each OECS state. Appreciation against the pound sterling ranges from 39% for Grenada to 24% for Antigua.

One would expect that if changes in relative prices were important determinants of trade then the pattern of trade between OECS states and the UK would have changed along with the nominal and real exchange rates. In general there should be a smaller proportion of exports going to the UK from each OECS state and a greater proportion of imports coming from the UK. These proportional changes should be greatest for those OECS states experiencing the greatest real appreciation against sterling.

Table 4.1 shows proportions of trade between five OECS states and the UK for the two years 1980 and as near to 1984 as

we can obtain. Those two years represent respectively a trough and a peak for the value of the U.S. dollar. Data were not available for trade patterns in St. Kitts or Montserrat. Trade proportions are also shown for trade with the U.S. If trade patterns with the U.K. are changing as expected due to devaluation then trade proportions with the U.S. should be moving in opposite directions since the U.S. and U.K. are the main trade partners for the OECS states.

Trade patterns for Grenada are the only ones that at first glance seem to conform to what we would expect to have happened as the EC dollar appreciated against sterling. Grenada's share of exports to the U.K. declined (from 43.9% to 34.7%) and her share of imports rose (from 17.9% to 19.5%). However, 1980 is perhaps a bad year by which to judge Grenada, since in that year exports to the U.K. were particularly high. In 1979 the percentage of Grenada's exports going to the U.K. was only 38.6% and in 1981 it was 35.6%. Thus, the change in export share to the U.K. for Grenada from "around 1980" to "around 1984" must be slight.

In two cases, those of Dominica and St. Lucia, shares of both imports and exports moved in directions opposite what would be expected should changes in relative prices be dominating the data. This is a particularly important observation for Dominica since that country has had the second greatest appreciation against sterling (after Grenada) of all OECS states

TABLE 4.1
TRADE SHARES FOR OECS

Shares in Merchandise Exports	UK		US	
	1980	1984	1980	1984
Antigua	3.2	0*	10.6	.9*
Dominica	34.5	46.9	1.6	1.6
Grenada	43.9	34.7	3.1	6.4
St. Lucia	33.0	57.6	23.1	16.0
St. Vincent	50.4	32.3**	4.0	9.5

Shares in Merchandise Imports	UK		US	
	1980	1984	1980	1984
Antigua	12.9	13.2	38.5	39.4
Dominica	23.1	12.8	22.4	26.6
Grenada	17.9	19.5*	19.4	17.4
St. Lucia	15.6	13.1	31.3	36.9
St. Vincent	18.4	10.5**	26.1	33.4**

* 1983

** Jan-June 1983

Antigua and St. Vincent seem to have the changes in trade patterns that one would expect, though data for Antigua are only from 1983 and those for St. Vincent are only the first half of 1983. Antigua's exports to the U.K are extremely small however. In the case of St. Vincent exports to the U.K. were rising in absolute terms between 1980 and 1983. The reason for the decline in the share of exports going to the U.K. is that St. Vincent's exports to Trinidad and Tobago were rising rapidly, thereby raising the share of Trinidad and Tobago and decreasing the share elsewhere.

Trade shares appearing in table 4.1 refer only to merchandise trade. Important too, as a foreign exchange earner is tourism. Table 4.2 shows the proportion of tourists in four OECS states for the years 1980 and 1984. As in the case of merchandise trade, if prices were the determining factor in trade patterns, the proportion of tourists from the U.K. or other places in Europe would have declined over the four years. Furthermore, the proportions from the U.K. and Europe would have declined most for those OECS states where overvaluation has been greatest. This is not the case. Tourist arrivals from the U.K. have dropped proportionally only for Antigua, and Antigua is the country of the OECS where appreciation has been least. Indeed, the numbers of tourists arriving in Antigua from the U.K. and Europe has risen in absolute numbers, but tourist arrivals from the U.S. have expanded so greatly that the proportional shift has been in favor of tourists from the U.S. Tourist visits from other places in Europe are of significance only for Dominica where, as expected, a drop has occurred.

TABLE 4.2
TOURIST ARRIVALS BY NATIONAL ORIGIN

1980

	UK	Other Europe	US
Antigua	-----23.5-----		39.7
Dominica	8.4	32.9	10.9
St. Kitts	7.1	2.5	36.7
St. Lucia	18.7	N/A	16.0

1984

Antigua	-----17.7-----		52.9
Dominica	9.5	11.3	15.0
St. Kitts (1983)	8.3	1.3	27.3
St. Lucia	20.7	N/A	24.6

TABLE 4.3

TOURIST REVENUE AND GROWTH, 1978-84

	1978	1979	1980	1981	1982	1983	1984
ANTIGUA	29.5	38.7	42.5	46.6	48	60	76
DOMINICA	2.5	3	3.8	2.6	2.9	3.2	5.1
GRENADA	14.6	19.5	20.1	17.3	17.3	14.7	17.3
ST KITTS	5.2	6.8	8	9.9	11	11.1	13.3
ST LUCIA	24.3	33.4	32.9	29.4	32.4	39.7	42.4
ST VINCENT	11.1	12.8	16.7	17.8	17.2	18.2	20
TOTAL	87.2	114.2	124	123.6	128.8	146.9	174.1
IN 1980 \$	110.1	129.6	124.0	112.0	110.0	121.5	138.1
REAL GROWTH IN %		17.7	-4.3	-9.7	-1.8	10.5	13.6
REAL GROWTH							
IND. COUNTRIES	4	3.3	1.3	1.6	-0.2	2.5	4.4
U.S.	4.9	2.4	-0.3	2.6	-2	3.8	7.1

Interviews with analysts from the Caribbean Tourism Research and Development Center (CTRC) indicate that rather than price per se, tourist facilities and the state of the economies in the countries of tourist origin are more important in determining tourist arrivals. They point out that the limiting factor in several countries is hotel accommodations, and that when accommodations have become available, tourist arrivals have increased too. Occupancy rates during peak season run at around 85-90%. Dominica seems to be somewhat of an exception. There the tourist industry is small (indeed the smallest in the OECS) and occupancy rates run much lower, even in peak season.

Table 4.3 shows estimates of revenue associated with tourism in six OECS states since 1978. We show total tourist revenue in nominal terms and in real US dollars of 1980 in rows 7 and 8 of the table. Row 9 provides information on real growth rates in tourist revenue for the OECS overall. Also shown are the real annual growth rates in GDP at constant prices for the U.S. and for the industrialized countries as a group.

One can easily see that tourist revenue seems to follow the general course of the business cycle in the industrialized countries. Most of the 1980-82 period was characterized by recession in both the U.S. and in Europe, though there was a short-lived and weak rebound in 1981. This period was marked by sharp reductions in real tourist revenue in the OECS states. (see footnote 2) Growth periods in the U.S. or the industrialized countries occurred in 1978 and 79 as well as 1983 and after. During those periods, real growth in tourist revenue was high.

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Researchers at CTRC estimate that tourist revenue in 1985 will be up substantially again in 1985, and they attribute that to continued growth in the countries from which OECS visitors come.

It is unlikely that even in tourism, prices don't matter. Surely there is some price that will drive tourists away. Tourism is a competitive business and tour promoters "shop around" for places where they can send their clients at a reasonable price. It does not appear however, that the OECS states have priced themselves out of the market. Tourist numbers and expenditures are rising, in some cases very rapidly. In many of the countries that may compete with the OECS states there has been considerable appreciation of currencies (eg Jamaica, Trinidad and Tobago, Netherlands Antilles) or political conditions are not conducive to tourism (eg. Jamaica, Haiti) Some countries do offer competition for the OECS states (eg. Mexico, Dominican Republic) and so one should not be complacent. Yet, in the medium term, there are few if any indications that prices in the OECS are dampening the demand for tourist services in the area. Similarly, many investments are currently being made in the tourist industry, indication that adequate incentives exist at current exchange rates to bring forth the expanding supply of facilities that will permit continued growth in the tourist sector.

4.2.2 TIMING

Now (March 1986) is not the time to devalue the peg to the U.S. dollar. The U.S. dollar appreciated greatly vis-a-vis all major currencies during the period stretching from the end of 1980 to March 1985. Of course, the EC dollar appreciated along

with it. The U.S. dollar has depreciated considerable since a year ago and it is expected that it will depreciate further. Table 4.4 shows rates of exchange between the U.S. dollar at the end of 1984, which was near its peak, and February 28, 1986. Depreciation of the U.S. dollar has been on the order of 20-40 % depending upon the currency of reference. (The only exception has been the Canadian dollar where the US dollar continues to appreciate. Initial appreciation against the Canadian dollar was much less than it was against most other major currencies.) The EC dollar has also experienced the same depreciation because of its tie to the U.S. dollar. Many of the data that support this report are not recent enough to detect any changes in trade due to this depreciation. A depreciation of 20-40 percent is considerable, and if there is any price response to it one would only expect that response to begin to become visible in about the next year.

Further weakening of the U.S. dollar is expected. If the Gramm-Rudman expenditure cuts actually take place, monetary policy must offset the deflationary impact of the expenditure cuts in order to avoid a recession. Wharton Econometric Forecast Service is reported to have predicted (Wall Street Journal, January 27, 1986) that cutting the federal deficit to zero by 1991, with no offsetting policy measures would push unemployment in the U.S. to 17%. Given this magnitude it is unlikely that no offsetting monetary measures will be used, and these offsetting measures imply a declining dollar. Marris (1985) has reasoned, through detailed examination of trade and investment cycles, that

TABLE 4.4
EXCHANGE RATES WITH THE U.S. DOLLAR
(U.S. Dollars per Unit of Foreign Currency)

<u>Date</u>	<u>U.K. Pound</u>	<u>German Mark</u>	<u>Japan Yen</u>	<u>France Franc</u>	<u>Canada Dollar</u>
2/28/86	1.44	.448	.00552	.148	.70
End '84	1.16	.317	.00407	.104	.76
1985-3/86					
Depreciation					
of U.S. \$ in %	24	41	37	42	-8
Memo:					
end 1980	2.39	.55	.00493	.221	.84
Depreciation of U.S. \$ from 1984 required to return to 1980 nominal rate (%)					
	106	73	21	112	11

Sources: L.A. Times 3/1/86

I.F.S. Yearbook, 1985

a further depreciation of the U.S. dollar from late 1985 levels, by up to 40% may be expected. As a memo item in Table 4.4 we show what the nominal exchange rate was between the US dollar and major currencies at the end of 1980. Also noted is the nominal depreciation of the dollar required from 1984 levels, to return to 1980 levels. With the exception of the Japanese Yen, the depreciation that occurred in 1985 through February 1986 is still far less than what is required to return to 1980 values. Thus, considerable room for further dollar depreciation exists.

One might ask what level of depreciation of the U.S. dollar would be needed to remove whatever appreciation was found in the OECS states. Recall that in Section 3 we found that there had been no significant appreciation from the point of view of all states except Grenada and Dominica. Furthermore, the appreciation found was due almost exclusively to changes between the U.S. dollar and the pound sterling, and not to excessive inflation in the OECS states. Grenada is an exception in that there, inflation has been far above the average for the OECS and for its trade partners. We have simulated what it would take to remove all appreciation for the E.C. dollar, by calculating what the REER would be should the U.S. dollar depreciate against the pound sterling and Canadian dollar by ten and twenty percent. Note in the table that a ten percent devaluation of the U.S. dollar raises the REER index to .99, indicating that almost all appreciation since 1980 has been removed. Only Dominica and Grenada would show appreciation of any size, but Dominica's is

reduced to close to an insignificant level. A depreciation of 20% for the U.S. dollar removes all appreciation for the OECS overall, though Grenada remains considerably overvalued. The problem of adjustment for the group therefore is in large part determined by the results for Grenada. If Grenada were not part of the OECS, a 10% depreciation of the U.S. dollar would be more than enough to remove any calculated appreciation in the REER. Grenada is different from the other OECS states in that it alone has had internal inflation considerable in excess of what it is in the rest of the OECS, and in its trade partner countries.

For these reasons, a devaluation of the EC dollar is particularly untimely. The EC dollar has, in effect, devalued over the past year and is expected to continue to do so in the next year or so. This form of devaluation is particularly riskless since no announcement of a devaluation is required. Furthermore, the appreciation of concern, ie appreciation against the pound sterling is particularly well tended to by this form of "devaluation" since the U.S. dollar is depreciating against the pound. Also, The U.S. dollar is depreciating faster against other currencies than it is against the pound, This should bode well for exporters from the OECS attempting to enter markets other than those in the U.S. and the U.K.

TABLE 4.5
 REER CHANGES ASSUMING U.S. DOLLAR DEPRECIATION
 (1980 = 1.0)

	REER End 1985	REER 10% Depreciation of U.S. \$	REER 20% Depreciation of U.S. \$
Antigua	1.05	1.07	1.10
Dominica	.91	.95	.99
Grenada	.78	.80	.84
St. Kitts	.98	1.01	1.04
St. Lucia	1.02	1.06	1.09
St. Vincent	.95	.98	1.01
OECS Overall	.96	.99	1.02

4.2.3 SHIFTS IN SUPPLY AND DEMAND

During the course of this study we were continually frustrated in attempts to gain access to a study being conducted by the ECCB on the issue of the economic response to potential devaluation. That study is being conducted with the help of the IMF and is reported to contain some estimates of elasticities of demand and supply of tradeable goods in the OECS states. These elasticities would be useful in assessing the likely impact of a devaluation. (see footnote 3) Unfortunately, though the study had been more or less completed, it had not yet been cleared for release by all the officials in each OECS state and was therefore not available to us. Compared to this report, the ECCB study has had much greater access to data, to well informed people and much more time has been spent in its preparation. When available, its contents should be studied carefully for insights into the specific ways in which each OECS state functions.

A response to a devaluation would be a favorable one if exports expanded relative to imports and if that change were relatively permanent. Thus, one should examine the microeconomic characteristics of each major activity in the OECS which gives rise to either export earnings or affects expenditure on imports. A micro view of this type would require a research effort far beyond what was allocated to this study. However, in general a favorable response to devaluation would improve upon the external balance if:

- foreigners demand more exports given the lower prices that they now perceive in their own currency,

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-local suppliers increase supplies of export goods to satisfy demands which now yield higher prices in domestic currency (ie, in EC\$)

-local consumers spend less on imported goods in response to higher prices,

-local consumers switch purchases from imported items to domestically produced import-competing items.

If both the demand for and supply of exports are elastic and if there is high elasticity of demand for locally produced goods as substitutes for imports, then a devaluation will tend to improve upon the external balance. The less elastic these factors, the less the impact on the external balance.

While no estimates have been made of these elasticities, several statements about them can be made. First, a large proportion of OECS merchandise exports are in categories where devaluation is not likely to induce increased demand. Sugar and Bananas are sold under quotas where price alone is not the determining factor in "demand". Several OECS states export considerable amounts of goods to other CARICOM countries, but mainly to Trinidad and Tobago and Jamaica. These two countries have been having payments difficulties of late that have led both to impose quantitative restrictions on the goods that they import. These quantitative restrictions are not likely to be removed until improvements occur in those countries, and so the demand for exports from them is not likely to be affected by devaluation in the OECS. (see footnote 4) Tourism demand is unlikely to be affected by a devaluation. As mentioned above it is not particularly responsive to price. Also, most investors in

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tourism have incurred liabilities specified in U.S. dollars and in turn, specify tourist rates in U.S. dollars as well. Other than Bananas, sugar, exports to CARICOM countries and tourism, there are very few other things exported by OECS countries. Even if there were a substantial demand response to changed price relationships in these remaining activities, the absolute amount of goods involved would be small.

Second, Export supply responses in the OECS countries is likely to be small. Evaluation of a supply response should take into account the specific characteristics of the countries involved. But, in general the speed and size of a supply response depends on the extent to which:

- .-idle resources can be put to use
- resources can be more intensively used
- resources can be reallocated from production of non-tradeables to tradeables,
- resources can be reallocated from protected import production to production for exports.

A supply response is quicker where the first two conditions prevail since reallocation takes time. It is also quicker in economies where resource mobility is high, which usually depends upon market flexibility and adequate infrastructure. In the OECS infrastructure is not particularly good and there is no indication that markets are very flexible. Since almost everything in the OECS is tradeable little resource reallocation from non-tradeables can occur. Movement of resources from protected markets (ie. within CARICOM) to production of goods in

non-protected markets outside CARICOM is not likely. (see footnote 5) Thus, a supply response depends almost exclusively on using currently idle resources and/or using them more intensively.

Of the major export industries , sugar and bananas, limited supply response could be expected from devaluation . Sugar is a declining industry. It is unlikely that sugar prices will ever recover to former levels and it is not advisable to recommend and encourage countries to expand their involvement in the production of sugar. Banana production could be expanded. Quotas in the U.K. allow 300,000 tons to be imported from the West Indies, but current imports are running at only about half that. Furthermore, the response time to increase banana production is fairly short, something on the order of eighteen months. Thus, islands like Dominica probably could expand production and find a market for their output. Increasing the supply of goods other than these is possible, but to try to estimate what could be expected would require much more time and a somewhat different research thrust than this study has had.

Third, internal demand in the OECS states is not able to significantly switch from imported goods to domestically produced import-competing goods. There are simply very few import-competing productive activities. It is not possible to predict by how much demand for imported commodities will be cut back, but since in "normal" situations one of the main sources of reduced demand for imports is the expenditure switching that occurs, from imports to domestically produced items, and since this avenue is closed to the OECS states, one would not expect the demand for

imports to be as elastic as it is elsewhere.

In summary, given the unique characteristics of the OECS states, it is not likely that much reduction in expenditures on imports can be expected. Indeed, there is the chance that expenditures on imports might increase (in EC\$) due to devaluation if overall demand for imports is inelastic. Also there is only limited room for export expansion. Importers of OECS goods who are also sensitive to price currently import very little, so any favorable response on this dimension would be small and only occur over time. Similarly, while a supply response from resource reallocation may be forthcoming, we do not now know enough about the characteristics of idle resources and productive capabilities to be able to place much faith in estimates of a supply response to devaluation. In short, advocates of devaluation would be taking on faith the expectation that there would be a favorable supply/demand response. Little evidence exists to present a convincing case in either direction, and some signs are that little favorable result can be expected.

4.2.4 WAGE AND PRICE CHANGES.

Devaluation has little or no real effect on balance of payments equilibrium if prices of non-tradeable goods are flexible and the price system is neutral (ie. wages and prices rise by the same proportion as the devaluation). (see Mansur, 1983) In the OECS, non-tradables are a relatively small part of total economic activity and there is no reason to believe that they are inflexible in price. Prices largely reflect

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international prices and changes in prices are likely to reflect changes in exchange rates. Due to the openness of the economies in the OECS, workers are not likely to suffer from a "money illusion" and demand that wages keep up with prices. Indeed, during the inflation of the early 1980's, wages of all types were quickly adjusted upward by more than enough to keep up with inflation. For these reasons, a devaluation may bring transitory improvements in the trade balance, but lasting effects will only be achieved through appropriate monetary and fiscal policies.

A major difficulty for the OECS states is the escalation of real wages. Information on wages is sketchy. No comprehensive wage indices exist and the information that is available tends to come in rather ad hoc observations about specific kinds of wage earners. In Table 4.6 we have made general summarizations of wage behavior at approximate dates. Information was gleaned from a number of IMF and World Bank documents and should be taken as only rough indications of wage performance. The years shown associated with wages should be read as "around 1980", etc.

TABLE 4.6

	Inflation Rates			Wage Increases (%) around The Years shown		
	1976-81	1981-84	est. 1985	1980	1982	1984
Antigua	11.9	2.7	N/A	20%	9-13	11
Dominica	14.5	2.8	3.4	30+	10	10
Grenada	N/A	6.5	2.8			11*
St. Kitts	13.7	2.7	1.9	27-32	10-12	8
St. Lucia	12.5	1.03	1.4	13-26*		7-9*

Source: Wage information came from various statements in World Bank, "^{Cover}Grey Career" reports and from IMF country memos.

* Public sector

+ Unionized private sector

The general point of these observations on wages is easily made. Wage increases greatly exceed general price increases in all cases. Around 1980 there may have been some "catching up" to do, since OECS inflation in the 1976-81 period averaged about 12-15%. Nevertheless, as inflation abated in the early 1980's, wage increases have continued to be far above price increases. Currently, inflation has fallen to the 1-3% range, but wage increases of around 10% per annum are still common. Clearly, wage behavior of this kind threatens any export-led growth plans. Also, it indicates a willingness on the part of employers, many of whom are governments, to advance wages even when prices are rather stable. Given this background, one must assume that should the EC Dollar be devalued, the price increases that are a result will be quickly translated into higher wages.

Lack of knowledge about labor markets in the OECS states is one of the main deterrents to understanding growth potential of the region. Many political leaders had their careers begin and prosper from labor's support. Their power base is labor and one cannot expect them to deny wage increases to their primary constituents. Also, reports of extremely high unemployment rates in the OECS states probably overstate greatly the amount of truly unemployed labor that is available for work. Definitions of "unemployed" in the region are not comparable to what is used in the U.S. Also, discussions with knowledgeable people in the region about the interpretation of what the unemployment figures mean reveals that many people are considered unemployed even when jobs are available but are not taken up by the

"unemployed" because the jobs do not meet their employment expectations. In most cases no unemployment surveys are taken in any event, and statements about the extent of unemployment, however defined, are merely impressions. -11

4.2.5 RISK

Finally, devaluation is risky. Expectations play an important role in determining the functioning of foreign exchange markets. Currently there are few indications that expectations are harmful to the EC dollar. Devaluation can lead to expectations of further devaluation and loss of confidence in the EC dollar. This could set in motion a series of events where an excess demand for foreign exchange is created. In short, a problem could be created where one does not now exist.

4.3 ALTERNATIVE EXCHANGE REGIME ARRANGEMENTS

Discussion of alternative exchange regimes should keep in mind the objectives that are normally sought when choosing an exchange regime. These normally include short to medium term stability in the exchange rate, risk reduction, market clearing and compatibility with other monetary and fiscal policies. In discussing possible exchange regime changes for the OECS one must also keep in mind that there is nothing obviously wrong with the exchange regime that currently exists. The normal objectives of an exchange regime are being adequately met.

There is one tremendous advantage inherent in the current exchange regime, and that is the restraint that is placed on monetary policy. Under the current arrangement a unanimous vote is required of the Eastern Caribbean Monetary Council (one vote

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for each OECS state) to change the exchange rate currently set at EC\$2.70 = US\$1.00. Within the OECS the money supply is then strictly tied to foreign reserves. In effect, these constraints eliminate independent monetary policy in the OECS.

Inappropriate monetary policies have plagued many developing countries, especially in the past few decades. Attempts to expand public expenditures without the ability to raise adequate revenue have too often resulted in an expansion of central bank credit to the public sector and inflationary spirals have resulted. This has not occurred in the OECS states because of the limits on money and credit, despite a tendency for the public sector to expand. This limit on money and credit is a great advantage for OECS states since attempts to pursue inflationary fiscal policies have an automatic constraint placed on them.

In considering changes in the exchange regime we should not consider options that threaten the monetary discipline involved in the current currency union. If one were to attempt to change the tie to the U.S. dollar one should only do so if whatever new institutions evolve offer the same monetary restraint as the current arrangement. There is a danger that if the OECS countries are asked to reorganize their foreign exchange and monetary arrangements, they may do so in ways which weaken current restraint. (see footnote 6) Since this research did not include conversations with the people who would be involved in any institutional changes, no comment can be made on the political sentiment behind changing or retaining the restraints on monetary policy.

The discussion that follows focusses on four exchange regime options. These are:

- changing the EC dollar peg from the U.S. dollar to another currency or basket of currencies,
- pegging the EC dollar to a REER,
- floating the EC dollar,
- independent currencies for OECS states.

4.3.1 CHANGING THE EC DOLLAR PEG

Changing the standard to which the EC dollar is pegged involves two options. The EC dollar might be pegged to the pound sterling or it may be pegged to a basket of currencies. In either event, if a peg to some external standard is to be maintained, that standard should be the currency, or basket of currencies, of countries with which the OECS states have major transactions. If the peg is to any other standard, it becomes entirely arbitrary.

Almost all transactions between OECS states and other countries involve the US, UK, other CARICOM countries or Canada. Furthermore, transactions with countries other than these are normally specified in U.S. dollars. Currencies of other CARICOM countries would not be an appropriate standard to which to peg the EC dollar since these currencies tend to be unstable and in most cases non-convertable. Transactions with Canada are few, amounting to less than five percent of total trade in most cases. For these reasons the only other single currency to which the EC dollar might be tied is the pound sterling.

Several important points speak against pegging the EC dollar to the pound sterling. First trade is increasingly with the US

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and the share of the UK has been in decline. To peg to the pound instead of the US dollar would therefore be to peg to a standard of increasingly less relevance to the trade of OECS states. secondly, most contracts for international transactions are specified in US dollars. Pegging to the pound instead of to US dollars would introduce an element of uncertainty into those transactions since the value of a US dollar-denominated contract would change as the exchange rate between the US dollar and the pound changed. Third the US dollar is expected to depreciate against major currencies, as it has over the past year. In the medium term therefore, retaining the peg to the US dollar will result in depreciation against the pound, whereas pegging to the pound would bring appreciation against the US dollar. Since the US is the major trade partner for OECS states, the latter event should be carefully avoided. Finally, we should not forget that appreciation against the pound in the 1980-85 period followed depreciation against the pound in the 1977-80 years. Depreciation against the pound is now under way again.

If the EC dollar were to be pegged to a basket of currencies the only reasonable basket would be one composed of only US dollars and pounds sterling. Few transactions occur with other countries issuing convertible currencies. The SDR seems particularly inappropriate since there are few transactions involving the countries whose currencies make up the SDR's value. If the EC dollar were pegged to a basket composed of pounds and US dollars, there would be a question as to how to weight them. If weights were reflective of importance in transactions then the

US dollar would be most heavily weighted. In that case the value of the EC dollar would be set in a way which is almost the same as is the case now. All of the disadvantages of pegging exclusively to the pound would be present, though to a lesser degree. A further disadvantage would arise in the future however. As trade patterns change, as they have recently, management of the exchange rate peg would involve two questions instead of only one. Now the only question is what should be the value of the EC dollar in terms of US dollars. Pegging to a basket one would have to resolve what is the value of the EC dollar in terms of US dollars and what weights should be applied to dollars and pounds. (see footnote 7) The only advantage of pegging to a basket is that as currencies in the basket vary against each other, variance in the value of the EC dollar against any one of the basket's currencies will be reduced.

4.3.2 PEGGING THE EC DOLLAR TO A REER

Pegging the value of the EC dollar to a real exchange rate (RER) if a single standard is used or to a real effective exchange rate (REER) if a basket of currencies is used present similar problems and advantages. Pegging to a REER would have as an objective the maintenance of some specific purchasing power of the EC dollar. It would require use of a crawling peg based upon some relative inflation indicator.

The first problem with pegging to an REER is that price data are only available with considerable lag and so adjustments in exchange rates would not normally be able to keep up with actual relative price movements. Exchange rate managers could probably

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rely upon the serial correlation that exists in inflation rates to come up with estimates of current rates, and apply retrospective adjustments for errors in past estimates. These procedures would require some analytical skill and judgement that may be in short supply in the OECS.

A second problem has to do with the price indices that are available in the OECS. The only routinely collected price series for each state is the consumer or retail price index. The CPI is not designed to reflect competitiveness in international markets, coverage is limited and it is affected by price controls and subsidies. Surely, changes in the CPI should be used as a partial guide when changes in the EC dollar peg are considered, but along with that should also be considerations of structural change, expectations, investment demand, etc. In short, pegging to a REER introduces a overly mechanical means of adjustment into a decision where some judgement should be applied. Such a means of determining a peg would also introduce a need for data and analytical procedures not now readily available.

Finally, adverse relative movements in the CPI in the OECS states has not been a problem (with the exception of Grenada). Inflation has generally been below what it is in OECS trade partners. Any REER appreciation is due almost exclusively to appreciation of the U.S. dollar against the pound sterling, combined with the weight of trade with the UK. To focus upon relative price changes seems misguided. (see footnote 8)

4.3.3 FLOATING THE EC DOLLAR

Conditions for successfully floating a currency are well known. For exchange rates to be reasonably stable under floating exchange rates asset markets should be integrated into the international financial system. There should be some depth to domestic financial markets and domestic and foreign currency assets should be substitutes in private portfolios. Exchange controls are incompatible with a floating exchange rate.

If there is little financial integration into international markets then the exchange rate is determined largely by current account transactions. Since goods markets adjust to disturbances slowly compared to financial markets, there is likely to be greater short run instability where financial integration is least.

In the OECS there is considerable integration with international capital markets. Exchange controls exist but they are managed country by country. Some countries have very slight exchange control. As long as the OECS operates as a currency union, and as long as at least one member has little or no exchange control, there is in effect no exchange control for the group. This is a very favorable situation. As a matter of policy AID should encourage any loosening of exchange controls in each OECS state. Furthermore, attempts to consolidate exchange controls in the ECCB or elsewhere should be discouraged. Currently, citizens of OECS states residing there can have assets demonimated in foreign currency and can move assets from one location to another (This ability varies from state to state, but as long as a currency union exists, some ability to do this

exists for everyone). Interest rates pretty much reflect international interest rates, and foreigners are encouraged to invest and given guarantees on capital and profit repatriation. Financial markets are probably rather thin in the OECS however, since financial institutions are few and transactions costs high. If it were not for these latter conditions, floating the EC Dollar would probably be the best alternative to retaining the peg with the US dollar.

4.3.4 INDEPENDENT EXCHANGE ARRANGEMENTS FOR OECS STATES

OECS states could pursue their own independent exchange rate policy. This would be a great mistake for two main reasons. First, Independent exchange rate policy requires maintenance of a central bank, issuance of currency and establishment and management of independent monetary policy. All these require public resources. OECS states are already burdened with public sectors that are disproportionately large compared to other states. In part this is due to the high overhead costs of public institutions compared to the small size of the economies involved. The resources required to conduct an independent exchange rate regime would simply add to the high overhead of the public sector.

Secondly, and most importantly, removal of individual states from the OECS monetary union would weaken the union for remaining members. As currently constituted, the union acts as an effective monetary restraint on all OECS state. While the region is certainly not problem-free, it is not plagued by the same

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monetary problems as other developing countries. This lack of monetary problems must be directly attributable to the existence of the monetary union. Weakening the union by the withdrawal of members would threaten the continued existence of the monetary restraint. This should be carefully avoided.

Finally, on a case by case basis, there is no evident need for an independent exchange regime. All countries, with the exception of Grenada, have experienced low inflation and little or no real exchange rate appreciation. Grenada's inflation was much higher than the OECS average. However, in the case of Grenada, without the monetary restraint of the currency union, one could probably build the case that inflation would have been much higher in the early 1980's. Also, the fact that Grenada has had a different inflation experience than the other OECS states and has had a real appreciation of the EC dollar, does not argue for Grenada pursuing an independent monetary path. On the contrary. Grenada may need the constraints of the monetary union more than the other states. Also, the conditions that allowed inflation to occur in Grenada in the late 1970's and early 1980's no longer prevail. In short, there is no indication in any OECS state that an independent exchange regime is needed.

4.4 SUMMARY

This section has surveyed the exchange market options open to the OECS states. Since there is in general no overvaluation problem in the OECS, and current monetary arrangements seem to serve the region well, one would not want to recommend major institutional changes unless overriding reasons for them

presented themselves. We have considered devaluation of the EC dollar while retaining the peg to the US dollar. Also we have considered alternative exchange regime arrangements such as pegging the EC dollar to the pound sterling or other currencies, pegging to a REER or freely floating the EC dollar. Finally we have considered whether it would benefit individual states and/or the OECS for states to pursue independent exchange rate policies. In each case we have found no overriding reason why the current system should be changed at this time.

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FOOTNOTES TO SECTION 4

1. In other countries, capital inflow could be associated with an increase in reserves, but that presumes that some investments are purely financial and/or that investment goods are available locally.
2. Tourist revenue was also somewhat depressed in these years by hurricane damage to tourist facilities which occurred in 1979 and 1980.
3. Any current estimates of demand and supply elasticities in the OECS must be considered as coming almost from guesswork. No econometric work of the type required to estimate elasticities has been done, nor can it be done given data availability. Furthermore when ECCB personnel described how the elasticity estimates were obtained it reinforced the impression that they were not dealing as much with "estimates" as they were with guesses at very rough orders of magnitude. When the ECCB study becomes available, results flowing from it should be carefully considered in light of the inputs into it.
4. If anything, devaluation of the EC dollar might result in tighter quantitative restrictions within CARICOM. Jamaica is struggling with an external payments imbalance that has been going on for quite some time. It is not likely to end soon and Jamaica has been tightening restrictions rather than loosening them. Trinidad and Tobago has imposed quantitative restrictions and have devalued the TT dollar. For the time being Trinidad and Tobago has set up a special dual exchange system for the OECS. OECS states exporting to Trinidad have transactions occur at the old rate of exchange rather than the devalued one. This retains a price advantage for the OECS states that would normally be lost when a major trade partner devalues. While the price advantage remains, quantitative restrictions have been imposed. On balance the OECS states would probably be better off without the quantitative restrictions even with the new exchange rate. If the EC dollar were devalued, Trinidad would most likely begin to impose the new devalued rate for the TT dollar on the OECS states and leave the quantitative restrictions in place. A better course for the OECS states would be to advocate application of the new value for the TT dollar and elimination of the quantitative restrictions.
5. Most production for the CARICOM market is inherently inefficient. The CARICOM common external tariff contains rates running up to about 50% ad valorem. Also, each country in CARICOM applies a more or less common set of "fiscal incentives" to producers which provides them with exemptions from import

duties on imported inputs. The combination of high import duties on final goods combined with duty exemptions on imported inputs, raises the effective level of protection to rates that are higher than nominal rates. The smaller the proportion of domestic value added in final goods, the higher the level of effective protection becomes. (see Balassa, et. al., 1971)

6.

One danger involves the evaluation of international reserves. Currently most reserve assets are denominated in US dollars. Suppose that the EC dollar peg were shifted from the US dollar to the pound sterling. Next suppose that the pound appreciates. The value of the dollar assets would be worth less in EC dollars and the money supply (specified in EC dollars) would have to be reduced to conform to the currently existing money/reserves ratio. Since most transactions are with the US or at least denominated in US dollars, it is unlikely that reserves would be denominated in anything but US dollars. The complication of reserves denominated in US dollars, but the peg specified in something else could lead the OECS states to have to redefine their money/reserve rules. Redefinition runs the risk of weakening those rules. Since monetary restraint is one of the main desirable features of the current arrangement, the danger of weakening it would be avoided.

7.

Since the US dollar and pound sterling float, establishing a value vis-a-vis one of them, also establishes a value vis-a-vis the other.

8.

Wickham (1985) notes that among the developed countries, whose currencies float against each other, there are major departures from rates that might be based on REER considerations. Investment demand, productivity changes and each countries relative point on its growth cycle are all important influences. It is probably naive to think that OECS states are not subject to similar forces.

SECTION 5:

NON-EXCHANGE MARKET OPTIONS

Other sections of this study have not found persuasive reasons for a devaluation of the EC dollar, nor for other changes in the exchange regime. This is not to say that there are no policies available to improve upon the external balance. Fiscal measures plus some supply-side options are open. It was not the original intent of this research to dwell on these matters. However, since little could be found "wrong" in the exchange rate area, we wished to point out that there are alternative ways to support movement toward a sustainable external balance.

5.1: NON-EXCHANGE MARKET POLICIES

By definition, national income (Y) is equal to the sum of expenditures on consumption (C), investment (I), government (G) and exports (X) minus imports (M). Or:

$$Y = C+I+G+X-M$$

which can be rearranged to emphasize the trade balance:

$$Y-(C+I+G) = X-M$$

Frequently the sum, C+I+G is referred to as "absorption", and the simple equation could be read as:

$$\text{National Income} - (\text{Absorption}) = \text{Trade Balance}$$

Whenever absorption (which is equivalent to domestic expenditure) exceeds national income (equivalent to total domestic supply) the trade balance must be negative. This relationship must hold ex post. In effect, the only way for domestic expenditures to exceed total domestic supply is for more

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goods to be imported than are exported. When devaluation is used as a tool it begins its work on the right side of the equation, by providing an incentive to export more and import less.

Devaluation will cause changes on the left side of the equation as well, but it starts by adjusting the trade balance. Indeed, a devaluation cannot work if there are not complementary changes on the left side too. For example, if the total supply of goods (Y) cannot increase in spite of the changing incentives presented by devaluation, or if absorption cannot be decreased relative to supply, then devaluation cannot work. In a very general sense, this is the conclusion reached in Section 4. That is, given the conditions existing in the OECS, it is unlikely that major changes in total supply or absorption would occur as a result of devaluation, and therefore devaluation would be to little effect.

As an alternative to devaluation one could work on the left side of the equation directly. If one can devise policies to decrease absorption relative to total domestic supply, then trade balance improvements will occur. Where improvements in the trade balance are an objective, policies aimed at absorption or total supply are at least partial substitutes for devaluation. A relative price adjustment via changes in the exchange rate may not be needed where a sustainable external position can be restored by reducing aggregate expenditure without incurring unacceptable short-term losses in output and employment.

Absorption-oriented policies in the OECS would be aimed at keeping government and/or private consumption expenditures in check. Over the recent past there has been a tendency for public expenditures in OECS states to grow disproportionately fast

compared to national income. Furthermore, public revenue has not always kept pace with public expenditure. This has caused a major element in absorption (G) to increase without a corresponding reduction in absorption elsewhere in response to taxation. Public expenditure and tax reforms are therefore two areas in which policies can be directed as means to improve the trade balance, let alone the other benefits that may flow from them.

Private consumption expenditures have probably increased disproportionately compared to national income, due to wage increases in excess of inflation. Indeed, the evidence presented in Section 4 is that wage increases far in excess of inflation have occurred in all OECS states. This behavior has existed for some time and persists today. Wage restraint is probably one of the areas where substantial impact can be felt. Wage restraint in the OECS is a balance of payments issue. Failure to restrain wages increases the relative share of national income accruing to labor, increases absorption through greater consumption, and thereby causing a deterioration in the trade balance.

Investment is one area of absorption which should not be curtailed unnecessarily. Investment in one period always implies a balance of trade deficit in that period that is larger than it would otherwise be. Unlike other kinds of absorption however investment allows greater supply in future periods. Assuming that investments are productive, (i.e. increases in income exceed debt service) the long-run external balance is improved. In the OECS states today large amounts of investment are occurring, financed by

official loans and grants. As with any other form of investment, these investments require a larger external deficit than would otherwise be the case. However, given the low debt service associated with official loans and grants, and presuming that investments are productive, a long-run improvement in the external balance is likely to occur. It would be useful to be able to divide investment into two types, that attributable to official loans and grants and that occurring autonomously. One could then determine the balance of payments impact of each. We could then look at that part of the trade balance which is due only to autonomous, "market-determined" investment and design policies that encourage that kind of investment and at the same time recognize their balance of trade impacts.

Discussions of investment leads naturally to consideration of "supply side" policies. These operate on the level of economic activity or "Y" in the above equations. Increases in domestic supply, all else equal, reduce the trade deficit. Other than by investing, domestic supply can be expanded by making production more profitable. Profitability of production in the various OECS states was not studied as part of preparing this report. To do that, microeconomic analysis would have to be done of specific economic activities in each country. Nevertheless, several supply-side policies to improve the trade balance came to mind in the course of this study. These include:

- Wage restraint. Again we mention wage restraint to emphasize the importance of this variable. Over the years, as wages exceed inflation, the share of total production accruing to labor increases. Thus, the share of production

accruing to other factors of production decreases. As the share of production available as a return to entrepreneurship and/or to capital decreases, so does the incentive for production. Thus, there are two main effects of wage restraint. First, it holds consumption in check, reducing absorption directly. Second, it provides greater incentives for supply expansion.

-Removal of price controls. Most OECS states have some form of price control. It is not evident what their effect is on production incentives, but in other countries price control effects have usually been shown to be negative.

-Tax reform. Tax systems can affect production incentives. Any tax reform policies should be oriented toward efficiency considerations in addition to concerns about raising revenue.

-Tariffs and "fiscal incentives" should be examined for their effect on efficiency and incentives. As members of CARICOM, OECS states impose fairly high tariffs and subscribe to a common set of fiscal incentives offered to potential producers. Over the years these tariffs and incentives have been modified and eroded by bilateral action on the part of many CARICOM members. How these affect OECS states, and what the OECS attitude toward CARICOM trade is should be clearly understood.

5.2: PROBLEM COUNTRIES

Grenada and Dominica are the only two OECS states to have

experienced significant appreciation of the exchange rate. Since we are not recommending devaluation for the EC dollar, nor that individual countries pursue independent exchange rate policies, it is doubly important to recognize that there are probably non-exchange market options open to these countries.

5.2.1: GRENADA

Grenada is the only OECS state to experience significant appreciation of the EC dollar. This is due to high inflation combined with a large proportion of trade with the U.K. Grenada's largest trade share is with Trinidad and Tobago. The recent devaluation of the TT dollar will eventually remove some of Grenada's price advantage there. Currently, Trinidad and Tobago apply a dual exchange rate system whereby their trade with Grenada still occurs at the old rate of exchange. Eventually, Grenada too will face the new, devalued TT dollar and at that time it must expect the bilateral trade balance with Trinidad and Tobago to shift against it. Grenada should now be developing a strategy for coping with the devalued tt dollar and/or for shifting exports from Trinidad to other markets.

Most of the trade data on Grenada that were made available to this study were current through 1983. Since the end of 1983, with greater U.S. involvement and a change in government in Grenada, it is unlikely that pre-1984 data reflect current conditions. U.S. aid to Grenada is stressing many of the non-exchange rate options identified above. Also, no resources were available to this study for a complete review of Grenada's trade problems per se. For these reasons we did not consider it useful at this point to enter into a prolonged (and perhaps misinformed)

discussion of options open to Grenzda.

5.2.2: DOMINICA

Dominica has had a real effective exchange rate appreciation of about 10-20% depending upon the kind of calculation performed. Relative to other OECS states, Dominica has disproportionately more trade with the U.K. and a large share of trade with Trinidad and Jamaica. Thus, the REER appreciation is due largely to the appreciation of the U.S. dollar against sterling, and when the Trinidad devaluation is added to that, the overall appreciation looks greater than it is in the other OECS states (except in Grenada). Unlike Grenada, appreciation for Dominica is not due to excess inflation.

Appreciation in Dominica has been almost constant since 1976, with the exception of 1985. The U.S. dollar depreciation in 1985 caused the REER for Dominica to depreciate by about 13.6%, but this was partially offset by devaluation in Trinidad. The latter, combined with the U.S. dollar effect, yielded a net 7.3% depreciation for Dominica in 1985. Thus, some improvement has occurred and more can be expected as the US dollar depreciates further. We have noted elsewhere that a 10% further depreciation of the U.S. dollar will just about remove any overall appreciation for Dominica, despite the heavy weight on trade with the U.K.

Dominica's main export markets are in the U.K., Trinidad and Jamaica. It's tourist trade is the smallest in the OECS whether measured by tourist arrivals (except Montserrat) or in tourism earnings as a percentage of exports of goods and services. Most

imports are from the U.S. For these reasons, Dominica may benefit more than other OECS states as the U.S. dollar weakens. Since most exports are to the U.K., dollar depreciation will cause exports to look more attractive in their main market. At the same time, since most of Dominica's imports are from the U.S., as the dollar weakens there should be little discernable increase in import prices. Thus, wage demands that are often associated with increased import costs, should not be great.

The importance of trade with the U.K. is not clear. Most exports to the U.K. are bananas which are under quotas. Since banana prices are set in sterling there will appear to be no change in price to British consumers, though there should be a favorable improvement in incentives for producers in Dominica as the U.S. dollar depreciates. The importance of other goods exports to the U.K. is not clear. The data available do not allow separation by export items and countries of destination. It would be useful to perform this separation. If bananas are the only export to the U.K. (or the only one of significance) then we may be dealing with more of a "banana market problem" rather than an exchange market problem.

Trade with Trinidad and Jamaica will continue to be a problem. Dominica is hurt by the quantitative restrictions in both places more than by any adverse price relationship. Both Jamaica and Trinidad have been high-inflation countries (compared to Dominica) and their recent devaluations have been attempts to bring their price structures back into line. In fact, their devaluations have only been sufficient to bring the real purchasing power of their currencies back to where they were only

a few years ago. The big problem for Dominica's trade with these two countries is the quantitative controls imposed by both as their own external payments positions deteriorated leading up to devaluations. Jamaica does not seem to have the situation in hand and continuation of quantitative restrictions can be expected. Trinidad's experience with devaluation has gone smoothly so far, though we only have two months to look back on. Thus, Dominica may look forward to relaxation of the quantitative restrictions by Trinidad, though eventually the full force of the devaluation there will be felt in Dominica.

Some of the medium-term things that might be done for Dominica include:

-export diversification. Export markets should be sought outside the UK and especially outside of CARICOM. Tourism promotion is a form of export diversification, and since Dominica's tourism trade is relatively small, this sector should be promoted.

-Production should be reoriented away from trade with CARICOM. Trade with CARICOM is inherently inefficient if the common external tariff is required to allow the trade to occur. Problems with Trinidad and Jamaica illustrate the difficulties associated with depending on a highly protected market. Attempts should be made to reorient production toward non-CARICOM markets, especially toward those markets where the U.S. dollar is likely to depreciate.

-Wages should be restrained. The IMF puts wage increases "on the order of 10%" over the past year and a half. Meanwhile

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inflation has been only about two percent.

-The IMF and the World Bank have expressed concern with the disincentives associated with price controls and with poorly functioning marketing boards. The effects of these should be clearly understood.

5.3: SUMMARY

Failure to recommend exchange regime changes does not preclude policies oriented toward improving upon the external balance. Policies which can affect the trade balance include:

-fiscal reform

-wage restraint

-supply side improvements in incentives

Only Grenada and Dominica have experienced real exchange rate appreciation and both call for non-exchange rate policies. Grenada is probably getting the attention that it needs due to the changes occurring there after 1983. Dominica too should receive similar attention.

SECTION 6

CONCLUSIONS AND RECOMMENDATIONS

This study has searched for problems associated with overvaluation of the Eastern Caribbean dollar. We have examined real effective exchange rates for each of the OECS states and for the region overall. We then considered the question of devaluation and whether a change in the exchange regime was appropriate for the OECS.

6.1 CONCLUSIONS

Details on the conclusions of this study are discussed in some detail in various parts of this study. In summary those conclusions are:

- No general and significant appreciation of the real effective exchange rate can be found for the EC dollar.
- Exceptions among the OECS states are Grenada and to a lesser extent Dominica, where appreciation of the real exchange rate has occurred.
- Appreciation of the EC dollar has occurred vis-a-vis the pound sterling.
- Grenada is the only OECS state where inflation has contributed to a general overvaluation of the EC dollar.
- No general "overvaluation problem" can be found for the EC dollar.
- Depreciation of the US dollar over the past year has reversed much of the slight tendency that there was toward appreciation of the EC dollar. Furthermore, continued

depreciation of the US dollar which is expected should provide an almost automatic real depreciation of the EC dollar.

-The currency union formed by the OECS states is a very effective institution in controlling the supply of money in the OECS.

-No alternative exchange regime arrangements appear to be preferable to maintaining the peg to the US dollar.

-Trade with CARICOM is a problem for some OECS countries. CARICOM countries have imposed quantitative restrictions on trade which affect exports from the OECS. Also, due to the combination of common tariffs, fiscal incentives and small scale in CARICOM, production for that market is likely to be very inefficient.

-Devaluation of the Trinidad and Tobago dollar does not fully make up for appreciation of the TT dollar that occurred over the past five years.

-The Eastern Caribbean Central Bank is an effective institution for carrying out the exchange rate management required by the OECS.

6.2: RECOMMENDATIONS

-No devaluation for the EC dollar should be advocated at this time.

-No major changes in the exchange regime should be advocated at this time.

-AID should do all in its power to keep the monetary union together. Countries should not be encouraged to pursue

independent monetary arrangements.

-Exchange controls, which are currently weak to none at all, should remain so. Centralization of exchange controls with the ECCB should be discouraged.

-AID should view wage control and medium term demand restraint as policies useful for achieving a sustainable external balance.

-Supply side options should be developed which encourage the expansion of domestic output. Any disincentives associated with price controls, taxation, inefficient marketing boards, etc. should be identified and if possible removed.

-Grenada and Dominica should receive special attention on supply side policies and wage restraint.

-Overly expanding trade with CARICOM is probably not sustainable and efficient over the long run and therefore output expansion should be oriented toward non-CARICOM markets.

Finally, and generally, if AID is concerned with the expansion of OECS exports, much more must be learned about the relative profitability of specific activities which may be developed into export activities. Without this knowledge one cannot very well analyse the response that can be expected to come from general policies such as devaluation, tax reform, etc. When dealing with exchange rate issues, AID must keep in mind that the exchange rate is the main mechanism for adjusting the external balance. The external balance is the result of a number of kinds of transactions. Exporting merchandise is only one of

those transactions. Also included are import, tourist, investment, transfer and government activities. Thus, policy on exchange rates should be formed only in part by considerations related to exports. In the words of Johnson, et. al. (1985, p.11):

"It is particularly important to guard against the temptation to resort to piecemeal adaptations of policies with respect to specific commodities rather than to aim at comprehensive adjustment of price and exchange rate policies."

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