POLICY BIASES AGAINST AGRICULTURE IN TRINIDAD AND TOBAGO: THE IMPORTANCE OF ECONOMIC LIBERALISATION FOR AGRICULTURAL DEVELOPMENT

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1. INTRODUCTION

For some time now researchers have pointed out that a policy that emphasises the promotion of one sector of the economy usually results in the disprotection of others. Thus, among many developing countries in the post war era, it was found that policy that favoured the promotion of industry had negative effects on agriculture. It was not the case, however, that agriculture was to be considered of less importance. It was felt that this sector was important for providing employment, tax revenue and food security among other things. To the extent that the sector was supported in some countries in order to better achieve these objectives, policy makers have traditionally targeted direct sectoral issues. Insufficient attention has been paid, however, to broader macroeconomic policies and the way in which they impact the sector. It would appear as well that there was some neglect of the importance of relative incentives rather than absolute ones. It is now increasingly accepted that this was a mistake.

The intention of this paper is to examine the case of agriculture in Trinidad and Tobago, a small, open, petroleum-based economy. Section 2 will focus on the way in which macroeconomic policy influences agricultural prices. Section 3 will examine the performance of agriculture in Trinidad and Tobago over the period 1966-1993. The next section, Section 4 will present and discuss the methodology used in examining the relative impacts of direct and indirect intervention on the sector. The following section, Section 5, will present the results of the analysis. Section 6 of the paper is the conclusion.

2. THE INFLUENCE OF MACROECONOMIC POLICY ON THE AGRICULTURAL SECTOR

The major aspects of macroeconomic policy are trade and exchange rate issues and monetary and fiscal policy considerations. By definition, economy-wide macroeconomic policy is not directed at any particular sector of the economy. However, it is through influence on such variables as the wage rate, the real exchange rate, interest rates, profitability and prices in general, agricultural producers and consumers of agricultural products are affected.

This should not be interpreted to mean that influences other than macroeconomic ones

are not important in influencing agricultural activity. Indeed, the literature has established that institutional and structural factors are also important in influencing behavior in the sector. Nevertheless, the emphasis in this paper is on the macroeconomic influences. This emphasis is of relatively recent vintage and reflects an increasing awareness (and acceptance) that the effects of such influences on prices play a critical role in agricultural development.

It is reasonable to assume that the agricultural sector in Trinidad and Tobago, like that in other countries, is affected by (i) sectorally directed measures and (ii) more general and indirect macroeconomic policy measures. The literature clearly indicates that economy-wide macroeconomic policy is as important, if not more important than direct sectoral policy in influencing agricultural incentives and hence, output and consumption. Macroeconomic influences including fiscal and monetary impulses are transmitted to agricultural prices through trade and exchange rate policies in particular.

This section seeks to develop the theoretical relationships of the way in which macroeconomic policy impacted the agricultural sector over the 1966 to 1993 period in Trinidad and Tobago. It also considers the influences that the structure of the economy would have had on the sector. Hence the emphasis in the recent literature of these particular set of policies.

In line with contemporary models of international trade in open economies, the economy of Trinidad and Tobago is defined as comprising three (3) sectors (i) exportables, (ii) importables and (iii) non-tradables. The first two categories are also classified as tradables. The distinction is that for non-tradable supply, demand and prices are determined domestically. In the case of tradables, while domestic supply and demand conditions determine quantities produced and consumed, domestic prices are largely determined by international market conditions.

Agriculture in Trinidad and Tobago, like in most countries, is a tradable sector and the major export crops include sugar, cocoa and coffee that are classified as exportables. Commodities such as poultry and tomatoes are considered importables although import restrictions over the period of the study on these latter two commodities may suggest a certain degree of non-tradability.

Trade and Exchange Rate Policy

Trinidad and Tobago pursued a policy of import substitution industrialization (I.S.I.), though with some modification from the mid-seventies onwards as it then sought to exploit its reserves of crude oil and natural gas in the continuing process of industrialization. The pursuit of the policy of (I.S.I.) entailed the use of tariff and non-tariff barriers. The latter included negative listing which meant the imposition of import quotas on selected manufactured and agricultural imports.

Along with these measures, exchange controls were imposed in support of the fixed exchange rate regime. Several authors have highlighted the importance of trade and exchange rate policy in the transmission of the impact of economy-wide measures on agriculture. According to Oyejide (1986) for example, these policies influence the level and structure of production incentives and help in the determination of intra and inter-sectoral flow of resources and output.

Important for our task at hand is to point out that a tariff imposed as support for the development of the domestic manufacturing sector would have penalized exports including agricultural exports and thereby induce an anti-export bias across the economy. As is well known, protection of one sector is usually at the expense of other sectors of the economy.

Trade policies serve to increase the price of import competing industrial goods relative to the prices of import competing and export agriculture. Further, it would have resulted in higher costs of agricultural inputs. It is also well established that a protective trade policy induces overvaluation in the exchange rate. This outcome will be explored next.

In addition to its "direct" effects on the domestic prices of tradables vis-a-vis nontradables, trade policy also has an "induced" effect on various sectors of the economy through the exchange rate (Bautista, 1990). These effects in the past have largely been negative. Thus, the same author found that trade policy had indeed been "a dominant source of exchange rate distortion.... against agriculture." Diakosavvas and Kirkpatrick (1990) observe that "for many commentators, inappropriate exchange rate policies have been at the core of the performance of the agricultural sector."

It is customary to distinguish between the real and the nominal exchange rates. The former represents the nominal rate adjusted in some way for relative inflation between the particular country and its trading partners. The real exchange rate (as opposed to the nominal rate) is affected by macroeconomic policies and is the primary mechanism through which various aspects of policy affect agricultural incentives and output.

An overvalued currency has been shown to have several negative effects on the tradable sector of the economy, as it is the non-tradable sector that grows. To the extent that the domestic currency is overvalued, domestic prices of tradables are low compared to non-tradeables. This causes a shift in domestic demand towards importables and exportables but a shift in supply towards home goods or non-tradeables. Export production is discouraged, as the real, overvalued exchange rate provides a signal for the allocation of resources in favour of the non-tradable sector of the economy and against export production.

To the extent that agriculture is largely a tradeable sector, an overvalued exchange rate would induce investment flows away from it. While such currency "misalignment" discourages agricultural exports, at the same time it encourages imports thereby working against the production of domestic import substitutes.

It is to be noted that the extent to which the agricultural sector is protected by tariff or non-tariff barriers, the negative effects of overvaluation is likely to be weaker. Nevertheless, currency overvaluation decreases the effective protection provided by import restrictions. This point is often overlooked or underestimated by policy makers.

DUTCH DISEASE

The agricultural sector is not only affected by the kind of macroeconomic policies that are pursued but also by the very structure of the particular economy. In the case of a

mineral-based economy for example, boom conditions in the mineral export sector can have negative effects on the rest of the tradeable goods sector including agriculture. This is referred to as the Dutch disease syndrome.

There are two effects associated with this "disease": -

(i) the resource movement effect which draws factors of production into the booming sector and out of other activities, and

(ii) (ii) the spending effect which draws factors of production from tradeable to the non-tradeable or services sector of the economy.

While there can be some variation in the ultimate results of a boom depending on the assumptions made in respect of factor mobility, both effects tend to encourage an appreciation in the real exchange rate (Corden and Neary, 1982). The effect of a boom (E_o to E_1) on the exchange rate is illustrated in Figure 1 which shows an appreciation in the rate. The greater demand for foreign exchange (imports) at the lower (appreciated) rate, RER_1 is observed.

Both the spending and resource movement effects induce excess demand for services at the initial exchange rate. The result is a real appreciation in order to restore equilibrium. In other words, the price of non-tradables must rise relative to that of tradables.

Looked at another way, the export boom leads to increased demand for both tradables and non-tradables. Only the prices of non-tradables can increase, however, as those of tradables are set externally. A real appreciation of the domestic currency therefore results.

The negative effects of an export boom on the rest of the tradeable goods sector including agriculture are well documented. This is done for Indonesia (Bautista, 1990), Africa (Oyejide, 1990) and for Colombia (Garcia, 1990).

The experience of Trinidad and Tobago is not considered very different as the "oil boom" of the 1974 to 1982 period via the resource movement and spending effects would have served to contract growth in the agricultural sector, moreso agricultural exports (Hilaire, 1989). Further, relative price movements, presumably favourable to the non-tradeable sector of the economy would have, from a theoretical standpoint, induced some appreciation in the real exchange rate. This would also be investigated in the study.

3. AGRICULTURE IN THE TRINIDAD AND TOBAGO ECONOMY

This section seeks to describe the general macroeconomic framework within which agricultural development took place and to highlight the structure and performance of the sector itself over the period 1966 - 1993.

The Trinidad and Tobago economy is a petroleum-based economy with that sector contributing about 25 per cent of Gross Domestic Product (G.D.P) (current prices) until 1974 when its share rose to over 40 percent (Table 1). This share fell back into the twenty to thirty per cent range since 1982. Thus, it would seem that after some 28 years, the country has made little progress in reducing its dependence on oil, notwithstanding repeated commitments towards diversification into non-oil activities (see Gelb, 1988).

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Figure 1 Effect of an Export Shock

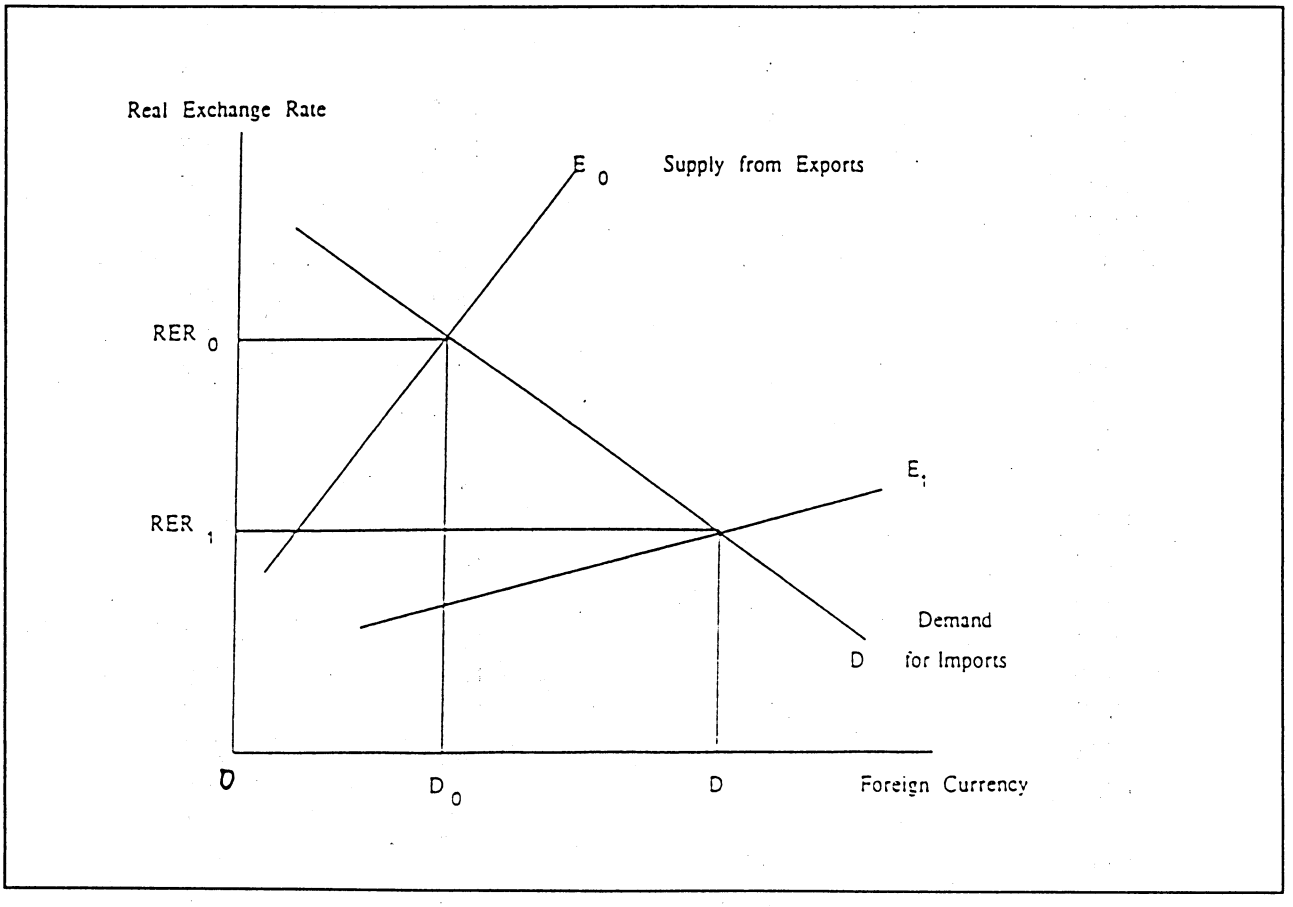

TABLE 1 TRINIDAD AND TOBAGO: PERCENT CONTRIBUTIONS TO GDP (CURRENT PRICES) 1966-1993

Year	Petroleum	Government	Agriculture
1966	27.4	8.9	6.5
1967	28.5	8.6	6.1
1968	30.5	8.2	6.5
1969	25.9	8.6	6.5
1970	23.0	8.9	6.4
1971	20.9	11.5	6.3
1972	21.2	12.1	6.8
1973	28.1	10.3	5.4
1974	44.7	7.8	4.6
1975	44.1	8.7	4.9
1976	43.1	8.4	4.8
1977	42.7	8.6	4.1
1978	35.8	9.0	3.8
1979	39.0	9.4	3.8
1980	42.9	7.5	3.2
1981	35.7	8.8	2.6
1982	26.1	14.7	2.4
1983	24.3	14.0	2.1
1984	27.2	14.9	1.3
1985	26.6	15.2	2.4
1986	22.7	16.0	2.8
1987	25.2	14.8	2.8
1988	24.1	14.1	2.7
1989	27.2	11.9	2.5
1990	25.5	9.2	2.2
1991	26.2	11.1	2.5
1992	23.6	11.8	2.5
1993	23.3	11.1	2.5

Source: Trinidad and Tobago Central Statistical Office, The National Income of Trinidad and Tobago, 1966 - 1985, 1983 - 1987-1993

The share of agriculture on the other hand (current prices) fell from over 6.0 per cent in the sixties and early seventies, to as low as 1.3 per cent in 1984. This has since risen to just under 3 per cent. The size of government as a sector however, doubled from 8.4 per cent to approximately 16.0 per cent in 1993 (Table 1). This is indicative of the significant role which government has played in the economy of Trinidad and Tobago. The economy has by and large been driven by government expenditure in the non-oil economy that rose steadily from

around 20 per cent of G.D.P. in 1965 to almost 50 per cent in the mid-eighties.

The country adopted a fixed exchange rate regime, complete with exchange controls since independence. Along with fixed exchange rate and exchange controls, the country also relied on a range of import tariffs and quota restrictions that are noted for fostering exchange rate overvaluation. In this sense, it was not very different from a host of other developing countries.

Not surprisingly however, the performance of the economy very much mirrored the fortunes of the petroleum sector. Consequently, the average annual percent overall growth that was achieved over the period 1966 to 1973 rose to 5.9 per cent over the period of the oil boom (1974 1982). With the fall in oil prices and domestic oil production in the eighties and nineties, real output contracted by almost 3 per cent annually, notwithstanding a temporary hiccup in 1990 and 1991 when real output rose somewhat following on the heels of higher oil prices

Consistent with the Dutch disease theory, the period of the boom witnessed a faster increase in the prices of non-tradeables compared with those of tradeables (Hilaire, 1989). Consequently, there was a corresponding increase in the size of the sector as the non-tradeable sector of the economy was the larger sector after 1977. Increases in relative wages and employment in the non-tradeable sector of the economy accompanied this pattern. There were, however, some reversals concomitant with the decline in oil prices in the eighties.

With the decline in the fortunes of the economy in the post 1982 period, the government sought to achieve what was called a 'soft-landing' as it embarked on a course of demand contraction. This meant that the high levels of subsidies and transfers which were given to producers and consumers in various forms and in certain sectors including agriculture during the boom years were only gradually reduced. The country entered into an IMF Programme in 1989.

By 1992, the country was out of the formal I.M.F. programme but well on its way, albeit following a change of government in 1991, along a path of structural adjustment which included trade liberalization, public sector reform, tight fiscal and monetary policy, removal of price controls and privatisation.

Trade policy was particularly influenced by "Government's commitment to firstly, the Caribbean Free Trade Area (CARIFTA) and then to the Caribbean Community (CARICOM). These arrangements required a common tariff and general trade restriction in respect of non-member countries. Quota restrictions were also an important element of trade policy. These restrictions applied to industry as well as to agriculture and were eased or tightened, depending on the availability of foreign exchange reserves.

Monetary and fiscal policies were far less expansionary in the post-boom period and served to prevent serious escalation of inflationary pressures characteristic of many developing countries. Nevertheless, rates were still high by developed countries' standards.

The agricultural sector, which is small by developing country standards, accounted for an average of 3.3 per cent of total output of the Trinidad and Tobago economy over the period 1966 to 1993. Its share declined from an average 4.7 per cent in the pre-oil boom

sub-period (1966 - 1973) and remained at under 3.0 per cent between 1978 and 1989. During the following four years, 1990 - 1993 however, the sector's share rose marginally to an annual average of 3.4 per cent.

Sugar cultivation and production constituted the largest single contributor to total agricultural output, notwithstanding its decline from more than half of agricultural output between 1966 and 1972 to an average share of 37.6 percent between 1988 and 1993. This sub-sector accounts for some 40.0 per cent of the country's arable land. Since the seventies, the bulk of sugar output was sold under quota arrangements under the Lome Convention. A much smaller amount is also sold to the U.S.A.

Total export agriculture, which includes mainly sugar, cocoa and coffee, as a share of total agricultural output also showed a secular decline, from over 60.0 per cent prior to 1973, to an average 39.4 per cent in the last five years, 1989 to 1993. This five-year average was however, an improvement from that of the previous five-year period when the average contribution of export agriculture was 33.7 per cent.

Figure 2 Contribution to Agriculture GDP

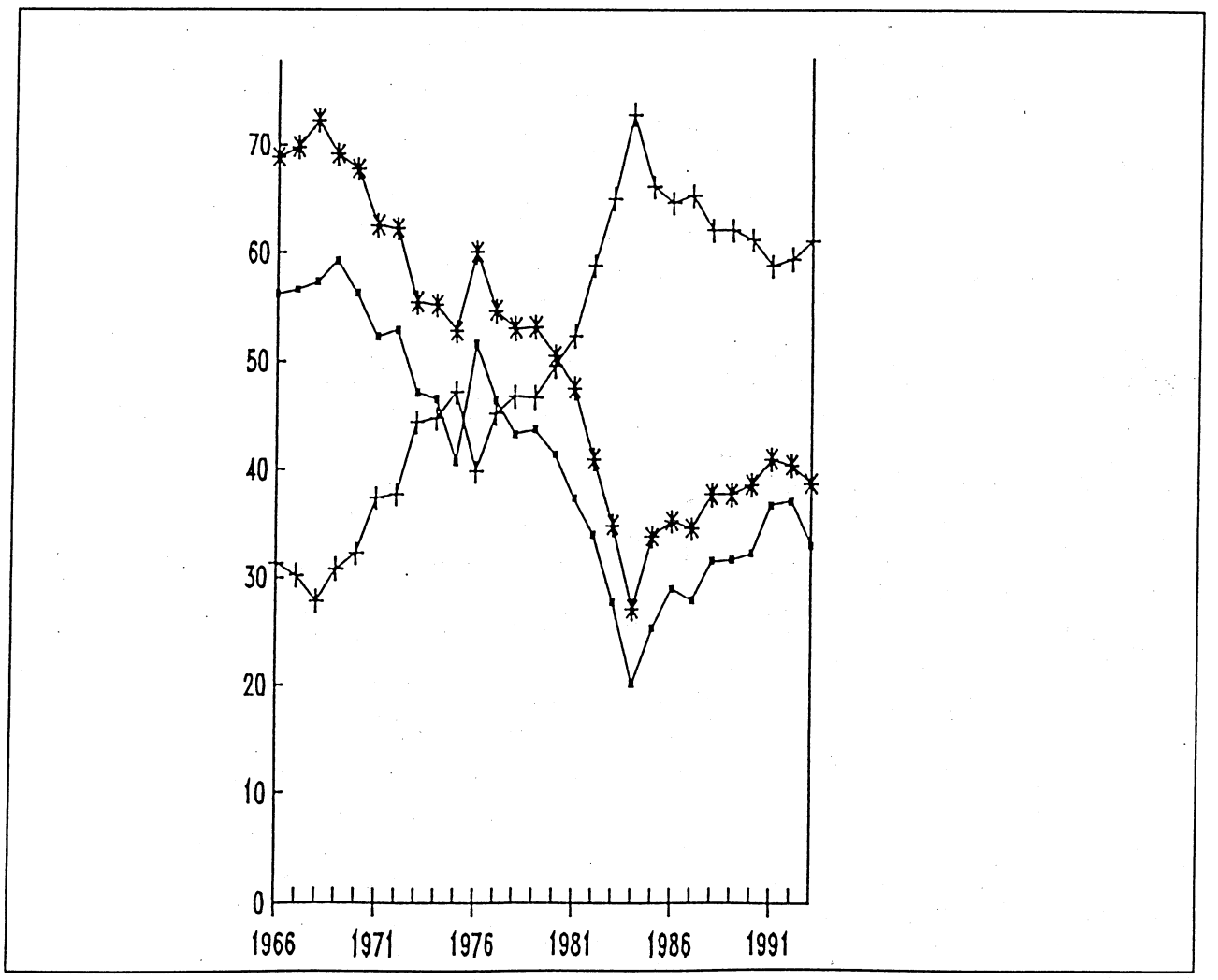

TABLE 2 TRINIDAD AND TOBAGO: SECTORAL CONTRIBUTION TO AGRICULTURAL GDP (%)

Year	Sugar	Domestic Agriculture	Total Export Agriculture [a]
1966	56.2	31.3	68.8
1967	56.6	30.2	69.8
1968	57.3	27.8	72.3
1969	59.3	30.8	69.2
1970	56.3	32.2	67.8
1971	52.3	37.4	62.6
1972	52.9	37.7	62.3
1973	47.2	44.5	*55.5*
1974	46.6	44.8	55.2
1975	40.8	47.2	52.8
1976	51.6	39.9	60.1
1977	46.5	45.3	54.7
1978	43.4	46.9	53.1
1979	43.8	46.8	53.2
1980	41.5	49.6	50.5
1981	37.4	52.4	47.6
1982	34.0	58.9	41.1
1983	27.7	65.1	34.9
1984	20.0	72.9	27.1
1985	25.3	66.2	33.8
1986	29.0	64.7	35.3
1987	27.9	65.4	34.6
1988	31.6	62.2	37.8
1989	31.7	62.2	37.8
1990	32.3	61.3	38.7
1991	36.8	58.9	41.1
1992	37.1	59.5	40.5
1993	33.0	61.2	38.8

[a] Includes sugar, cocoa, coffee and some citrus in the earlier years

Source: Trinidad and Tobago Central Statistical Office, The National Income of Trinidad and Tobago; Various Issues.

While export agriculture declined, the share of domestic agriculture (includes vegetables, livestock, fishing, etc.) rose from under 40.0 per cent during the first seven years of the period under study to over 60.0 per cent for most of the period 1983 to 1993. This increase is explained by such factors as significant price support and import

restrictions but as well by the reversal of the influence of the Dutch disease as illustrated in the decline in wage rates since 1982 when the oil boom ended.

This did not, however, prevent the overall share of agriculture from declining. Nevertheless, it is also evident that there were marginal improvements in overall agricultural output towards the end of the period under study.

An examination of growth rates within agriculture confirms some of these trends in sector share. Thus while the economy grew in real terms at an average annual rate of 5.9 per cent during the boom years 1974 to 1982, the agricultural sector contracted at a rate of 1.2 per cent annually and the export sub-sector by an even greater 4.3 per cent. The larger annual decline in export agriculture confirms the negative Dutch disease effect on the non-booming tradeable goods sector.

Figure 3 Changes in real GDP (%): Trinidad & Tobago 1986 - 1991

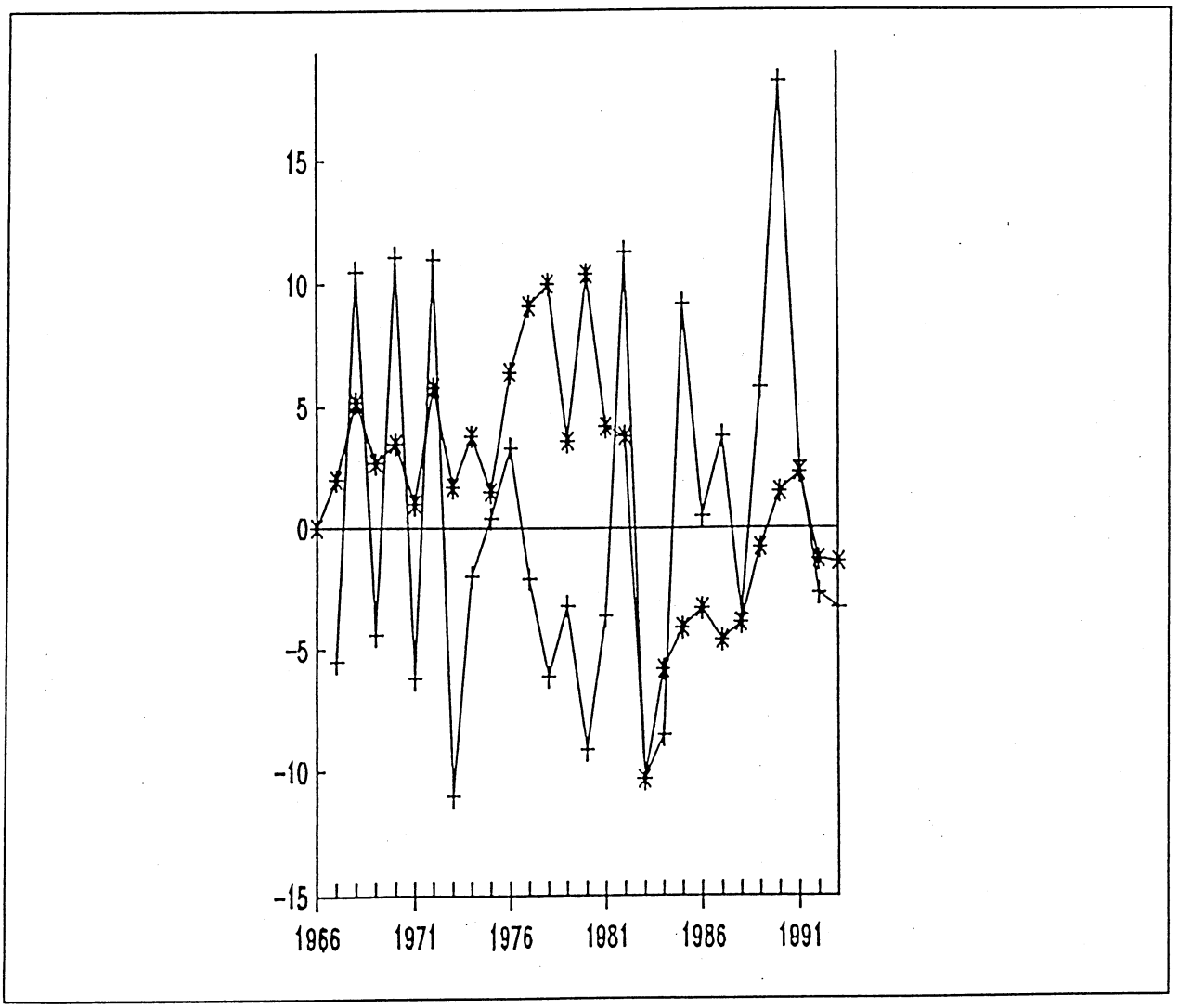

TABLE 3 TRINIDAD AND TOBAGO: RATE OF CHANGE IN REAL AGRICULTURAL GDP (%)

Year	Domestic Agriculture	Sugar	Total Export Agriculture [a]	Total Agriculture
1966	na	na	na	na
1967	-8.7	-4.8	-4.0	-5.5
1968	1.4	1.2	14.4	10.5
1969	6.0	0.0	-8.4	-4.4
1970	16.3	5.5	8.8	11.1
1971	8.9	-12.3	-13.4	-6.2
1972	11.8	12.3	10.4	11.0
1973	5.0	-10.9	-20.7	-11.0
1974	-1.3	-3.2	-2.5	-2.0
1975	5.6	-12.2	-3.9	0.4
1976	-12.7	30.0	17.5	3.3
1977	11.3	-11.7	-11.0	-2.1
1978	-2.9	-12.5	-8.8	-6.1
1979	-3.4	-2.3	-3.0	-3.2
1980	-3.8	-13.8	-13.8	-9.1
1981	2.0	-13.0	-9.1	-3.6
1982	24.9	1.2	-3.7	11.3
1983	-0.8	-27.0	-23.8	-10.3
1984	2.4	-34.0	-29.0	-8.5
1985	-0.9	38.1	36.1	9.2
1986	-1.9	15.1	5.0	0.5
1987	5.1	0.0	1.7	3.8
1988	-8.4	9.2	5.2	-3.6
1989	5.8	6.3	5.9	5.8
1990	16.6	20.5	20.9	18.2
1991	-1.3	17.0	9.1	2.7
1992	-1.8	-2.0	-4.0	-2.7
1993	-0.6	-14.2	-7.4	-3.3

[a] Includes sugar

Source: Trinidad and Tobago Central Statistical Office, The National Income of Trinidad and Tobago. (Various Issues)

It is also evident that while the effects of the boom subsided in the post-1982 period, most of agriculture started to grow again. This is particularly evident in export agriculture, which grew for seven years between 1985 and 1991.

The policy of intervention in agriculture and in industry as well, was not unique to Trinidad and Tobago but to developing countries generally and was reflected in the I.S.I. strategy enunciated in the Second Five-Year Plan, 1964 - 1968. The Plan noted that "we must seek to produce as far as possible

the commodities, whether food or manufacture, hitherto imported and financed from the earnings of the oil industry".

Intervention in the agricultural sector took many and varied forms. Whether or not that support was viewed as a way of offsetting any disincentives to the sector as in other developing economies is not very clear. What seems clear, however, is that the emphasis was on "food security" import substitution rather than on the generation of a surplus for the non-agricultural sector.

4. METHODOLOGY

As noted above, Trinidad and Tobago, as in many parts of the developing world, Government intervened in the agricultural sector and indeed in the economy as a whole, in the hope of achieving certain objectives. This intervention had both a direct and an indirect dimension. The former occurred through specific sectoral policies, directed in this case to the agricultural sector and the latter through economy-wide macroeconomic policies including trade and exchange rate policies.

Whether direct or indirect, it is argued that intervention served to distort agricultural and other prices, which in turn led to a particular allocation of resources within the economy. More often than not, this was found to be unfavourable to the agricultural sector and indeed to the tradable sector in general.

Basically, two broad approaches to the measurement of intervention have been taken in the literature. The first is a partial equilibrium approach in which, indicators of price distortions are calculated and then used to estimate the effects of intervention on production and consumption among other variables. The second approach is that which is captured in multimarket or computable general equilibrium (CGE) models.

But where the use of NPR's is standard practice for what is being attempted in this study, the particular approach to measurement and evaluation used in the studies by Krueger, Schiff and Valdes (1991) and more particularly by Schiff and Valdes (1992) is preferred. In addition, use of this method for Trinidad and Tobago will allow relevant comparisons to be made with the eighteen developing countries studied by the above named authors.

This study focuses on five major (5) commodities, three (3) exportables viz. sugar, cocoa and coffee and two (2) importables viz. tomato and poultry. These commodities are considered representative of the entire agricultural sector, as together they accounted for approximately 75.0 per cent of agricultural G.D.P. in the sixties k though falling to approximately 55.0 per cent in the nineties. All major traditional exports are included. Activities surrounding these commodities also employ the greater part of the agricultural labour force.

Prices are measured relative to non-agricultural prices, as it is relative prices that determine resource allocation not absolute prices. Prices are affected by interventions such as subsidies and tariffs that relate to the specific agricultural commodity (direct intervention) and also by other forms of intervention which are not directed towards any particular sector (indirect interventions). Measures taken to affect the exchange rate and trade policy are indirect mechanisms

The method for the calculation of direct and indirect measures is defined below. The methodology for total intervention is also

described. The exchange rate has a significant effect on all prices including agricultural prices. A distinction is however made between the official nominal exchange rate, which is used in the calculation of the direct effect and the equilibrium exchange rate that is the rate which would have obtained in the absence of exchange controls and trade and other interventions. The latter is estimated and used in the calculation of the indirect effect. The difference between these two rates can be substantial under a fixed exchange rate regime, which is what obtained in Trinidad and Tobago over the period of the study.

In the determination of the degree of intervention, one is evaluating the extent to which intervention by government in whatever form caused the actual prices to consumers and producers, in respect of specific commodities, to deviate from those which would have obtained in the absence of those interventions. Intervention would have resulted in either the protection of the producer or consumer, or in the taxation of him. It could also have been neutral. Put another way, intervention in the pricing of agricultural commodities provided incentives or disincentives to those who operated in the sector.

A review of trade and exchange rate policies in Trinidad and Tobago suggests a high level of intervention by government in influencing the prices of agricultural commodities. This would have in turn affected *inter alia* the behaviour of producers and consumers in respect of the various commodities.

Intervention is measured by nominal protection rates (NPRS). Agricultural prices or incentives are affected by both direct sector specific policies as well as by indirect economy-wide policies. Direct measures include those that penalize the sector such as export taxes and those like quantitative restriction and tariffs on agricultural imports that seek to enhance domestic production of particular commodities. The effect of such intervention is measured by a comparison of the domestic producer price and the price of the commodity, which would have obtained in the absence of intervention. Adjusted border prices are used to approximate the so-called non-intervention price of the particular commodity.

In the calculation of the direct effects of intervention, producer and border prices are compared at the nominal exchange rate and relative to non-agricultural prices. The non-agricultural deflator is computed as the ratio of non-agricultural GDP at current prices to non-agricultural GDP at constant prices, all calculated at a 1985 base. This deflator rose almost fourteen fold between 1966 and 1993 compared with approximately half this amount in respect of the agricultural deflator which was similarly computed. This pattern confirms a movement in the terms of trade against agriculture from the early eighties onwards although the pattern was already evident in the seventies.

Calculation of the indirect effects of intervention is much more complicated. This is largely because it involves adjustment border prices for the indirect effects of pricing policies. Calculation of these indirect effects on border prices depends on

(i) the free trade equilibrium exchange rate and
(ii) the adjusted non-agricultural price deflator.

The non-agricultural price deflator is adjusted for the effects of trade restrictions (via the implicit import tariff equivalent) and also for the divergence of the official nominal exchange rate from its equilibrium level. As

already noted there were no export taxes on agricultural commodities in Trinidad and Tobago.

To the extent that the ratio of the tradeable GDP deflator (PDT) to the average unit import value (PFT) was less than one for most of the period, then Trinidad and Tobago pursued a trade policy which reflected an anti-trade bias. This is as one would expect given the kinds of protectionist policies that were highlighted above. The temporary reversal during the period of the oil boom is understandable and is directly related to the significant rise in oil prices.

The implicit import tariff rates were largely binding as most of these rates form the basis of the implicit import tariff equivalent. The tariff rates averaged 121 per cent over the period reaching some of their highest levels between 1985 and 1990, when the balance of payments account was under greatest pressure at the height of the economic depression. The formula derived and used in this study is as follows:

5. EFFECTS OF INTERVENTION

The direct, indirect and total nominal protection rates were estimated over the period 1966 to 1993 for sugar, cocoa and coffee; 1970-1993 for poultry and 1986-1993 for tomato. With respect to the indirect economy-wide trade and exchange rate policies adopted, the impact of these on all five agricultural commodities was a negative 13.0 per cent on average. This result, which represents the effective "taxation" of agriculture via macroeconomic policies, is consistent with the comparative studies of Krueger, Schiff and Valdes in terms of the sign.

In other words, in the case of Trinidad and Tobago, trade and exchange rate policy worked against agriculture. However, indirect protection in Trinidad and Tobago was lower than the various region studied by these authors. In their study, regional indirect NPR's ranged from negative 13.6 percent to negative 28.6 percent.

The experience of total intervention on producer prices in Trinidad and Tobago as reflected in NPRS, was somewhat mixed and not quite as negative as was the case for the eighteen countries studied by Kruger, Schiff and Valdes (I 991, 1992).

Importantly however, and similar to the findings of Krueger, Schiff and Valdes (1988), the effect of economy-wide macroeconomic policy as reflected in trade and exchange rate policies (indirect effect) was negative on the agriculture sector of Trinidad and Tobago. Further, in the case of tomato and cocoa, the indirect effects were strong enough to offset the direct effects even when the latter was positive.

This was not the case however for poultry that benefited from a substantial degree of direct input and other subsidies that the dominant petroleum base of the economy could have afforded. But neither was the exchange rate and arguably, trade restrictions overly distortionary. As a consequence, in the case of poultry, total protection was positive for almost the entire period. The negative direct support for coffee over the period was reinforced by the negative economy-wide policies.

Economy-wide macroeconomic policy clearly served to tax agricultural producers in both instances. However, the negative effect at -12.6 percent in the case of Trinidad and Tobago was approximately half that of the

group of countries studied by Krueger, Schiff and Valdes (-22.5 percent). In other words, trade restrictions and exchange rate overvaluation in the case of Trinidad and Tobago, while biased against agriculture and more supportive of a strategy of I.S.I., appear not to have been as distortionary as in the case of the group of developing countries studied.

The positive direct effect for Trinidad and Tobago compared to the negative direct effect for the group of countries might be explained by

(i) the absence of an explicit tax on exports over the period in Trinidad and Tobago as opposed to what obtained in most other countries and

(ii) the relatively strong indirect support to agriculture in Trinidad and Tobago for fairly long periods.

In other words, the mineral base of the economy served both as a blessing and a curse as far as agriculture was concerned.

6. CONCLUSIONS

The results of this research, coupled with emerging global realities suggest certain specific areas for policy consideration in Trinidad and Tobago. Firstly, the study has found that macroeconomic policy through trade and exchange rate policy had a negative effect on the agricultural sector. Whether or not this was intentional, what this finding suggests is that if policy is directed towards the support of any particular sector of the economy, as it was towards industry or import substitution for example, then other sectors such as agriculture can suffer.

Policy, therefore, must seek to be as neutral as possible. To the extent however that there is the need to deal with externalities or correction of past weaknesses, then such intervention should be temporary and geared towards assisting or working with long run "market fundamentals" rather than replacing them. The importance of macroeconomic policy is that if not appropriate, it can serve to reverse any benefit of any direct support which government may give to a commodity, or to the sector as a whole. Put another way, if macroeconomic policy is generally supportive of an "equilibrium" exchange rate and eschews high levels of industrial or other protection, then direct support through subsidies may indeed be minimal or even unnecessary thereby providing relief to the government's fiscal account. To the extent that the current stance of trade and exchange rate policy is towards liberalisation, then agriculture stands to be a potential beneficiary. This is not automatic however, as institutional constraints would also have to be addressed.

Secondly, strong government support for agriculture historically, in both developed as well as developing countries is well established. Trinidad and Tobago is no exception. While there is indeed a shift in thinking and practice towards less direct government involvement in economic activity, there is no doubt that government remains integral in the process of agricultural development and economic development in general. In this regard, notwithstanding attempts at "liberalisation" under the Agreement on Agriculture included in GATT, domestic support, policies including price support, commodity subsidies, are allowed and summed under the Aggregate Measure of Support (AMS).

The third area that policy should address is prevention of the worst effects of the "Dutch disease" on the agricultural sector and on the tradeables sector of the economy in general.

A boom in one part of the tradeable goods sector tends to push up prices in the non-tradeable sector as supply conditions in this sector are domestically determined and might not keep pace with the demand arising from the "spending effect" of the boom. This constitutes an overvaluation in the exchange rate. An overvalued currency was shown to be dysfunctional to agricultural development.

In conclusion then, while in the past, macroeconomic policy in Trinidad and Tobago like in many developing countries, served in general to undermine the development of the agricultural sector, the environment is now in the process of change. In this environment policy makers would have to take on board the mistakes of past policies. While in the process of policy change towards a more market oriented economy, certain global and domestic trends would be facilitative of the process, others would most certainly be detrimental. One of the most important tasks it seems would be to know the difference if the agricultural sector is to make a more meaningful contribution to development.

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