INTRODUCTION

This is an updated version of our *Modelling* paper dated November, 2004. Data for 2004 have now been included. In addition we have reviewed the Vision 2020 Sub-committee Report on Macro-economy and Finance, and the Report of the Energy Sub-committee, as well as the Article IV Consultation Report of the IMF for 2004. Official policy, as stated in the 2004/2005 Budget Statement, has been appraised. While some parts of the text have been revised and extended the basic thrust of the work remains unchanged.

New information at hand suggests that, on current rates of utilisation, Trinidad and Tobago’s hydrocarbon resources could last about 40 years, compared to the 15 years thought likely a year ago. Because of this there appears to have been a major shift in the position of the IMF. Whereas in its 2003 Consultation the brunt of its policy recommendation was fiscal restraint, the Fund now emphasises effective management of the fiscal surplus and policies to foster international competitiveness. The longer period of plenty anticipated seems also to reinforce the policy stance of the authorities, which is to invest the nation’s surplus in the energy sector.

On our part, the longer time horizon has served also to give impetus to our preference for inshore transformation, which is, in our view, the only strategy likely to bring a lasting
solution to the Caribbean’s tradition of rapid expansion, contraction and stagnation. The failure of the Lewis/Demas strategy of industrialisation is now readily conceded. The Point Lisas strategy of expanding upstream and downstream into the energy value chain continues to be official policy.

Not only does this latter strategy of resource based industrialisation reinforce lop-sided growth; it actually militates against transformation. We are of the view that without tackling headlong and simultaneously the twin goals of production/supply enhancement and income equalisation, this strategy is likely once again to frustrate transformation onshore. This is so because of the very nature of the externally propelled economy. Growth offshore tends to stimulate mainly satellite activity onshore. Such onshore growth cannot sustain itself and must falter when the offshore sector wanes and foreign exchange dries up.

These are the critical insights emanating from our work. Growth offshore does not automatically translate itself into autonomous and self sustaining transformation inshore. Explicit policy measures are needed to ensure that surpluses harvested offshore are strategically deployed inshore in response to public sector spending as the decisive prerequisite.

**PREFACE**

This paper attempts to complement efforts at modelling the economy of Trinidad and Tobago. It consists of a series of notes we felt bound to assemble before we come to a
fully systematic interpretation. Its point of departure is one particular interpretation of the way the Caribbean Economy functions. The conceptual scheme it sets out requires - and to some extent permits - us to undertake quantification both in conducting historical analysis and in making projections and forecasts. Partial attempts at such measuring are contained in a later section of the paper.

A few caveats:

- First, the model in question is not an econometric model or a growth model in any of the accepted senses, though it can be translated into those terms.

- Second, the model is cast in a particular conjuncture where the economy is enjoying a golden age or age of plenty. That is to say, foreign investment, offshore export volumes, offshore export prices, offshore earnings, domestic product, national income and offshore injections of government revenue are all undergoing rapid expansion.

- Third, the focus of the model is on the transformation of the inshore economy made possible by government spending. Business spending intentions are not yet made explicit, not because they are regarded as insignificant, but because, under the conditions, government expenditure is decisive.
• Fourth, the model devotes attention to a series of funds, each meant to regulate and to facilitate the flow of government spending.
• Fifth, though we do not engage in any such exercise in our present offering, we anticipate a further paper in which to deal with the policy choices open to the economy under conditions of scarcity, recession and decline.

Our interpretation is premised on an economy comprised of two sectors: an offshore sector where government revenue is harvested; and two inshore sectors, Tobago and Trinidad into which the revenue is injected. The offshore sector is not the textbook “enclave” which is assumed to exercise only minimal influence on the macro economy. While it is functionally distinct for the most part, it nevertheless drives the economy. This it does through its influence on public policy and private expectations in addition to its direct impact on the government budget and on total national spending.

Spending combines with entrepreneurship and management to create, reproduce, expand and transform productive capacity. The key concepts are therefore those which bear on the level and composition of total expenditure. They include, first, the revenue multiplier, which measures the impact on total revenue denominated in domestic currency of the initial revenue collected offshore denominated in foreign exchange; Second, the expenditure multiplier which measures the effect of total government expenditure on inshore domestic product, national income, gross investment, employment, etc.
The process of spending is aided by a channelling of financial resources through a variety of funds, all subject to inflow and outflow regulations and each of which is effectively held as a separate financial account.

- The Heritage Fund withholds revenue at the point where it is injected from offshore to inshore. When it is drawn down its only purpose is to create capacity inshore for the purpose of enhancing the viability of the national economy.
- The Revenue Stabilization Fund also withholds revenue at the point of injection from offshore. However, its purpose is simply to even out the annual revenue flows caused by price fluctuations so that expenditure takes place in a stable revenue environment.
- The Provident Fund earmarks spending power for equipping and outfitting the economy with capital resources of every sort including plant and equipment; technology and software; infrastructure and utilities; health care and education services. Contributions are made from the budget revenue on an annual basis. Withdrawals are made for the purpose of bringing projects on stream.
- The Sterilization Fund is meant to store revenues, earmarked for one purpose or another, but which are barred from being spent either by limited absorptive capacity or by the rules under which funds would have been established.
The aim of public sector spending is to translate planning initiatives into operations, but not so much to foster growth, as to promote transformation. This implies the creation, at the earliest possible date, of an inshore economy capable of driving the mechanics of viability and of propelling the dynamics of reconstruction – ultimately, without reference to any surpluses generated offshore. However, it also implies the identification and pursuit of activity generated offshore so long as it promises to be viable on an enduring basis and poses no conflict with the requirements of inshore transformation.

The measure of progress would be a long run rate of inshore expansion and transformation that outpaces its offshore counterpart. In time, the latter would become the minor rather than the major of the two sectors. The management method is, *inter alia*, to establish and nurture autonomous inshore firms which exhibit the vigour to become self-sufficient in the scarce resource, particularly foreign exchange; and which display the vision to compete in the global order through import displacement and export penetration.

Trinidad and Tobago is currently enjoying an age of plenty. Fiscal revenue and foreign exchange are in abundant supply. The policy choice before the nation is how best to utilize these surpluses.

Both the Macro economy and Finance Sub-Committee and the Energy Sub-Committee of Vision 2020 have advocated that the surplus be deployed in the Energy Sector. In this
way, it is argued, economic growth would be maximized and resources generated to attack the problem of poverty and raise levels of living. It is further argued that, by extending both upstream and downstream into the value chain, and by developing internationally competitive supply services, an increasing share of the income produced offshore would be captured in the form of national income. Trinidad and Tobago would also develop an industry of supply services which could continue to export after the hydrocarbon reserves would have been exhausted.

The issue with this strategy, which is the one we pursued over the period 1974-82 during the last period of expansion, is if, this time round, it constitutes the optimum choice. Indeed, the related question is if it had been the best choice the first time round. This question is of a particular significance in that what we have described as the Point Lisas Model has already been endorsed by the present government in the 2004-05 Budget Statement.

On the face of it, there seems to be a strong case for retaining the Point Lisas Model. To begin with, the revenue stream is more assured. Unlike the 1970’s, export prices are far less instrumental than the levels of investment and the volumes of oil and gas we’re currently enjoying. Second, the extent of reserves makes for a much longer time horizon. According to the IMF, the time frame probably stands now at 40 years. Third, the energy sector possesses a much larger cadre of experts and skilled personnel on which to draw.

And yet, on our assessment, there remains considerable room for scepticism - on one
major ground. The premise of the Point Lisas Model is that growth is the primary goal and that, with high growth over a sustained period, transformation would automatically follow. This however, is valid only where the economy is internally propelled. By contrast, in the externally propelled economy of the Caribbean, there exists both historical and contemporary evidence to the effect that robust growth need not provoke any degree of transformation whatsoever. These are rough orders of magnitude; but in the year 2003 the inshore sector in Trinidad and Tobago grew 3.8 percent in the face of a 31.2 percent expansion offshore. This strongly suggests that the Point Lisas approach could defeat the ultimate goal of transformation which is twofold.

First, this goal is to see that the economy is fully driven from inside; and second, to sustain a cogent and internally consistent assault on the problems of production and income distribution at one and the same time. This is the policy of onshore transformation that this paper is advocating. In the current instance of Trinidad and Tobago, we propose that the abundant surpluses offshore accumulated over a long period of expansion be deployed to address what the people of the Caribbean have sought after since the middle of the 19th century and by a number of devices.

Since World War II, the region has attempted three models of which inshore transformation has been but one. First, there is the well known and highly influential proposal by Professor Arthur Lewis to develop manufacturing industry. This was later amplified by William Demas; but because both strategies overemphasized market access and never plumbed the depths of production and supply, neither version dealt effectively
with foreign exchange as the scarce resource and both in the end proved to be less than viable.

Second, is what we’ve described as the Point Lisas Model, aimed to emphasise the widening of the productive base of the offshore sector with a view to capturing a greater share of surplus. In the 1970s this approach clearly made a considerable contribution. However, its proponents never perceived the requirement nor did they acquire the means to launch any integrated programme of distribution or transformation. Once export prices and earnings collapsed, the economy reverted to short term maladjustment and long term stagnation. The essence of current thinking is that no such contraction is likely in the foreseeable future and that in the interim a whole offshore industry of high tech and service providing exporters will come into existence. We find it difficult to repose our faith in any scheme that does not, from the beginning, find a place for the huge multitude of the people if only because we expect the challenge of bringing productive employment up to a level compatible with welfare employment, to become quickly unmanageable.

**LONG-TERM PLANNING AND SHORT-RUN MANAGEMENT**

We begin with a description of the economy in 2003/2004 and propose a framework within which to project performance.

As background we take:

- A sketch of the economy in the second half of the twentieth century (Annex I)
- The natural gas driven export boom currently in train (Tables IA-C)
- The IMF Staff Reports for the 2003 and 2004 Article IV Consultations (Annex II)

The economy is taken to consist of two functionally distinct parts: the offshore sector and the inshore or onshore sector. The latter is separable, if necessary, into a Tobago onshore and a Trinidad onshore. Linking offshore with onshore is the state sector. At this stage we do not undertake any analyses for Tobago and Trinidad separately though we acknowledge an urgent need for constitutional and statistical reforms to reflect injections that might be made directly through the Tobago House of Assembly.

The offshore economy is largely foreign owned and financed. Production or plant management is undertaken by national service companies, but business management is retained by investors and owners. The sector is externally propelled and not simply export led. It exploits hydrocarbon resources for sale in world markets. Firms are classic transnational corporations (TNCs).

The Government is active in direct downstream investments and involved in production sharing joint ventures. National and regional conglomerates are eager to become investors and owners; but their share remains miniscule. The sector operates within the legal and policy framework set by the state, to which it pays royalties, taxes and dividends, along with the shares of output it contracts to pay. The sector also accounts for the great bulk of foreign exchange earned by the national economy.
The offshore economy makes its injections into the onshore economy through five main channels, viz

- payments to labour and to supervisory staff engaged in production management;
- purchases of goods and services;
- remuneration to service companies, mainly in construction;
- dividends to national and regional conglomerates which hold equity and
- transfers to the state as enumerated above – particularly taxes.

The firms in the offshore economy are largely self-contained corporations. We designate these as ‘total institutions’. They restrict to the barest minimum the mobility of such key productive resources as business visioning, strategic planning and technological design. Some argue that this is changing but, on the whole, the operations of firms offshore prohibit any extensive inter-dependence with the inshore economy.

For its part, the onshore economy is the cradle of the nation’s economic life. Virtually the entire population, with its economic institutions including its would-be markets, functions in this sphere. It is in this domain that national firms accumulate capital, organise production, source inputs and vent their outputs. In the process, to the extent permitted by the excessive export specialisation that is the central feature of Caribbean economies, they determine wage and interest rates, price levels and profit shares *inter alia*. It is here too that households are located, consumer and producer expectations formed and
decisions taken about consumption, savings and investment.

Except where they are branches of multi-nationals or transnationals, onshore firms are small to medium; they are nationally owned and internally financed though they may seek some debt or equity funding. Most importantly, it is in this trailer sector of the economy that employment levels are determined. This is the heart of the national economy. Through the interplay of social, political and business forces, the drama of production, distribution and consumption, is daily acted out.

The state sector stands between the offshore sector, which is the locomotive or engine of the economy, and the inshore sector, which is the carriage or trailer. It bears the responsibility for law, order and government. It raises revenue by taxing business and individuals in both sectors. It spends on current and capital account. It is responsible for ensuring that effective and acceptable policies are applied for the well-being of the nation.

It is important at the outset to draw attention to features peculiar to the Trinidad and Tobago state. First of all the state does not operate with integrated markets. The dominant theme is fragmentation. Secondly, taxable incomes do not accrue principally as national income in the hands of businesses and households. The dynamic element of domestic product accrues, as factor incomes going abroad on the account of foreign corporate investors. These factor incomes represent the country’s natural resources monetised by foreign investors whose global objectives are only incidentally the same as those of the
nation. If not taxed, such income would be lost to the income and expenditure streams of the national economy.

The national income which is monetised and harvested offshore is a component of the national patrimony to which all citizens enjoy an equal claim. Although it is often challenged, this is not an opinion but a fact. The result is to vest the state with the responsibility for equitable distribution. The only issue is by what ways and means. However we now have a perspective on revenues derived offshore which is totally different from revenues derived onshore.

The textbook case is premised on an economy where only an onshore sector exists, and taxes foregone by Government are meant to bear fruit in the hands of citizen spenders, whether in business or households. However, no such consideration applies in respect to an economy with an offshore sector created and sustained by foreign corporate investment. If the returns are not captured, they are irretrievably lost.

The management of injections from offshore raises unique policy considerations. The hydrocarbon resources, as already noted, are part of the national patrimony. Moreover, owing to a past of slavery, indentureship and colonialism, there is, among the population, a strong historical sense of material deprivation. This implies an intense pressure for an immediate and indiscriminate distribution of new wealth. The economy has developed a management culture geared principally to the maximisation and distribution of offshore gains rather than to wealth creation through the erection inshore of a sturdy and viable
Most Caribbean economies have for a long time settled for being what Karl Polyani has described as economies of redistribution. Some have called them *rentier* economies because they distribute uneearned income or income unrequited by work. What these terms seek to recognise is that these economies form part of the class of natural resource economies which derive the bulk of their incomes from God-made endowments - whether mineral (hydrocarbon, bauxite), marine (tourism), or agriculture (sugarcane, bananas) - and which are subject to wide fluctuations in levels of investment, real output and income, export prices and earnings.

The present government has embarked on an exercise in long term planning under the rubric of Vision 2020. This translates into two priority objectives which need to be carefully reconciled through an appropriate selection of policies. The claims of distribution, on the one hand, must be made compatible with those of transformation, on the other. There can be no question of promoting equitable distribution without satisfying the claims of transformation to viability. This would only make it impossible for the economy to make optimal use of its potentials and pay its way in the world. Nor can there be a question of promoting transformation while ignoring the imperatives of distribution. This latter is certainly possible as a technically feasible option. However, in today’s rapidly integrating world, poverty eradication has come close to the top of the policy agenda. There is therefore little option but to find ways and means to effect transformation and distribution at one and the same time.
This is precisely what public policy and management have consistently failed to achieve in the entire period since Trinidad and Tobago acceded to self government and Independence in the six decades following World War II. The reconciliation of policy choices was posed with particular force in the years 1974 to 1982 when the economy enjoyed a quadrupling followed by a trebling of energy prices. Here was the opportunity to break from the industrial strategy pursued since the turn into the nineteen-fifties, on which West Indian countries had embarked but which had so far borne no significant fruit. Trinidad and Tobago could adopt one of two new macro economic strategies. The first would deploy the huge gains from offshore operations to transform the (residiitary) inshore sector, twinned with an internally consistent policy of equitable distribution. The second would devote these same gains to an expansion of the productive base of offshore operations – in pursuit of what we have described as the *Point Lisas strategy.*

The essence of this *Point Lisas strategy* was fourfold:

- Securing and enhancing the inflow of national income from offshore activity. More than anything else, this meant the investment in the production of hydrocarbons of government owned surpluses. This translated into the creation of a new natural gas sector alongside the old crude petroleum.

- Employing the gains from offshore growth for raising the standard of living of the population.

- Expanding the infrastructure for both production and consumption
• Relying on the gains from growth to fuel transformation and to improve
distribution but without devising the macroeconomic policy context to reconcile contradictions.

THE ECONOMY IN 2003 AND 2004

We sketch briefly the economy in 2003 and trends into 2004. As Table I shows, in 2003 crude oil production was 2.7 percent above that in 2002, largely due to increased condensate output. Crude prices for West Texas International averaged 20.4 per cent above that for 2002. Natural gas output was 42 per cent up on 2002 and prices were 65 per cent higher. While there were no major changes in petrochemical volumes, methanol prices were up 57 per cent in 2003, ammonia prices 82 per cent and urea prices 35 per cent. Prices for iron and steel were also buoyant in 2003, approximately 25 per cent up on 2002. The result of all this was that GDP was 13.2 per cent higher in 2003, due largely to a 31.2 percent growth in energy sector output. Non-energy sector output grew by a modest 3.8 per cent illustrating how far inshore and offshore constitute markedly different worlds.

Government revenues reflected these changes. Current revenues were $16.75 billion in 2003 compared to $13.82 billion in 2002, a 21 percent increase. Current expenditures grew across the board and in total were 11 per cent higher than in 2002. This resulted in an overall surplus of $0.96 billion in 2003 or 1.4 per cent of GDP at current market prices. Energy sector revenues increased almost twofold from $3.93 billion to $6.87 billion and its contribution to current revenue from 23 per cent to 37 per cent. Revenue
collections from non-energy sources (onshore economy) were virtually stagnant, up only $3.4 million to $10.58 billion despite efforts to improve collections. The overall revenue surplus was $958.4 million resulting in Government balances at the Central Bank on September 30, 2003 of $5,444.2 million including holdings in the Revenue Stabilization Fund of $1,566.9 million.

Based on firm data to June 2004 and estimates to year end, the economy continued to grow in 2004, but at a slower rate. Energy sector growth was down to 10.5 percent from the high of 31.2 percent spurred mainly by the coming on stream of Atlantic LNG Train III in April, 2003. Non energy sector growth was down to 2.9 percent and total GDP growth to 6.2 percent. While LNG utilisation increased by 41.2 percent in 2004, crude oil and condensate production was down 3.8 percent, petrochemicals, iron and steel, all declined similarly except for ammonia output which grew by a modest 0.2 percent. Agricultural output declined further by 20 percent, compared to 18 percent in 2003, with sugar continuing its downward trend for a second year. Manufacturing, led by the food and assembly subsectors, grew by 6.6 percent compared to growth of 5 percent in 2003, and services led by construction, also grew, but by 2.9 percent compared to 4.2 percent in 2003.

The spike in crude oil prices, especially in the latter part of 2004, impacted positively on the government revenue position. Total revenue amounted to $20.19 billion, an increase of 13 percent over the previous year, and with total expenditure of $19.76 billion, yielded a current account surplus of $1.94 billion (2.8 percent of GDP) and an overall balance of
$0.44 billion (0.6 percent of GDP). The balance in the Revenue Stabilization Fund at September 30, 2004 stood at $2,853.7 million, some 84 percent higher than a year earlier.

On a conventional reading of “the fundamentals”, the macro-economic indicators currently show a favourable picture. As indicated, growth continues to be positive, the fiscal and payments accounts in surplus and net official reserves continue to grow, rising from US $1.91 billion in 2002 to US $2.24 billion in 2003 and to US $2.7 billion in 2004. Similarly indicators of inflation and unemployment have been favourable. Thus, retail prices which grew at 4.2 percent in 2002 had declined to 3.8 percent in 2003 and further to 3.3 percent in 2004. Unemployment which measured 12.5 percent in March 2000 and averaged 10.5 percent in 2003 declined to 10.2 percent in March 2004, and preliminary results indicate a further decline to 7.8 percent at June 2004.

These facts notwithstanding, but recalling the wide swings in output to which the economy has traditionally been subject, that domestic inflation largely mirrors international trends and that the unemployment rate had similarly declined to single digit in 1982, we offer a fresh planning and management perspective and a methodology for projections.

**PLANNING AND MANAGEMENT APPROACHES**

Trinidad and Tobago is a natural resource economy with a wasting asset certain to be depleted in a finite time horizon. Our hydrocarbon resources are being harvested offshore and injected onshore through the state. Historically, injections have been volatile.
However volume changes can be forecast from projects already on-stream or planned, and may be captured by a projected rate of growth. Price changes are less predictable and have been a source of great revenue fluctuation. Such widely fluctuating state revenues inflame popular expectations. In the absence of a nationally understood and agreed plan for their use, they can cause disruptive behaviour.

Expenditure swings determined by revenue flows do not make for efficient implementation which must include capacity building and long term investment planning. This requires that excessive inflows of revenue be sterilized to regulate the circulation of cash. It also requires that revenue fluctuations be stabilized and ironed out; and that machinery be devised for distributing revenues between present and future generations and between current consumption and capital formation. It further requires that the resources devoted to capital formation be appropriately allocated between viable self sustaining activities and activities capable of surviving the decline of the offshore sector, only if, and when, the economy discovers new sources of scarce foreign exchange.

All resources must be budgeted each year and securely assigned to their respective categories. It is in this sense that the budget statements between 1975 and 1980 sought to conclude that “total revenue equals total expenditure. No surplus is anticipated”.

Here then is a suggested method of modelling. On the basis of a rolling three, five or seven year plan, revenues from the offshore energy sector must be forecast by projecting volumes and prices. As noted, volumes derive from projects that are on stream or planned
while prices are the long run average anticipated. Currently a price of US $25 per barrel for oil and US $3.50 per Mbtu for gas suggest themselves. Together they yield a long run revenue line, given the taxation regime. Of course, in a natural resource economy such as this, the assumptions underlying any given forecast over the long run must be altered to reflect changes in context and conjuncture. We must be reminded that such an economy, typically passes through an initial phase of foundation and expansion, when output and earnings are high and rising, followed by phases of maturity and decline, when they are increasingly less buoyant, to the phase of depletion, exhaustion and collapse.

With this in view, short, medium and long term planning merge into one single exercise of the kind mooted by Vision 2020. Effective planning, whatever its horizon, must take as its point of departure some concrete interpretation of the way the economy is actually structured, how it evolves through time and where exactly it has reached in terms of a set of spending options. These are necessarily the options which involve appropriations of revenue for creating productive capacity, and for distributing income and welfare. From this point of view, the planning process cannot legitimately proceed by introducing models from some other historical experience for application to this context, in many ways unique.

**BUDGET OPERATIONS**

First, we must purge the actual current dollar revenues of the effects of short run price fluctuations. We must also take account of variations in volume. Let us assume, as is the case now, that the method is being implemented initially in a golden age of spiking prices
and expanding output. Volume changes apart, revenue surpluses are brought about by deviations of the actual price from the long run average price. It is these differences in earnings which must be netted out and placed in the Fund to stabilise the revenue flow. Were the actual price to fall below its long run average, revenues would then be made up from the Fund.

We now have the long run revenue from the offshore economy purged of random price effects. The long run planned use of these revenues can now begin. Because the hydrocarbon resources are a national patrimony and belong to this and future generations, we must allocate to a Heritage Fund that part which represents depletion and that part which represents degeneration of the environment, along with what is estimated to accrue to future generations as their rightful claim to past income. How much should this be? The nation could choose to leave its hydrocarbons in the ground and extract them as required to meet ongoing needs. It could alternatively choose to take them out of the ground, convert them into cash and invest the proceeds at the going rate of interest.

The next claim on revenue must be the allocation to the Provident Fund for building up the stock of social, economic and cultural capital, including improvements of human capability. Again the question arises as to how much should this be? The answer should rightly be decided by democratic consensus. It is only after these allocations have been made that the residual could be regarded as available for spending on current consumption and welfare.
Strictly speaking, we need to grapple with what, admittedly, might be, primitive assumptions about rights, before proceeding to rigorous technical analysis involving the quantum of non-renewable hydrocarbon resources in place, the long run rate of interest, and the prospects for technological change etc. In the meantime, we propose the following arbitrary allocations:

- Heritage Fund - 20 percent
- Provident Fund - 40 percent
- Current Consumption and Welfare - 40 percent

The objective of these Funds is not to limit Government spending but to redirect it away from excessive current consumption to planned long term investment in transformation. Focus on short term spending to create jobs, to relieve poverty or simply to win political support, should at one and the same time be building infrastructure and installing productive capacity onshore. Income re-distribution will become even more valid on account of being twinned with tangible and positive contributions to national income and welfare, equitably spread among citizens. With assured capital funds, it would be possible to plan and execute - on a sustained basis - systematic programmes for infrastructure development, housing provision, skill development, etc. Spending from these Funds would be regulated to a rate commensurate with physical capacity limits. Wasteful overheating, cost over-runs and critical shortages would be avoided, as would be disruptive stop-go endeavours bedevilled by uncertainties over the availability of funds to complete projects. Withholding work effort for fear of completing a project with no prospect of further employment would also be brought under control.
It follows that, while in a particular financial year all revenue will be budgeted, not all will be spent. The current budget is financed from revenues collected onshore as well as offshore. Fiscal revenues will exceed offshore injections in foreign exchange because of the *revenue multiplier*. The initial spending of foreign exchange by Government induces a much greater revenue return from inshore activity denominated in domestic currency. This *revenue multiplier* is crucial for making sense of the whole fiscal picture. An increase or decrease in the injection of foreign exchange provokes a corresponding movement in total fiscal revenue denominated in domestic currency - in greater or lesser proportion, depending on inshore patterns of income, expenditure and taxation.

Any such injection also has outcomes that go beyond government spending and its impact on the financial economy. Through the *expenditure multiplier*, government outlays further bears on production, consumption and distribution. It alters the size, scope and shape of arrangements for production etc. The window it opens is not only on the world of fiscal and financial activities, but above all on the real economy of business operations. The expenditure multiplier therefore subsumes a great number and variety of transactions the nature and significance of which are assumed away in this exercise.

None of this is affected by the programme of revenue stabilization. We have noted that when realised, offshore prices exceed the long run average, excess revenue will be siphoned off into the Revenue Stabilization Fund. When prices fall short of their long run average, the revenue shortfall will be drawn down. By this device, the annual inflow of
revenue into the Treasury will be a constant, except where fluctuations are due to variations in output rather than prices. However, the allocation of the excess or the shortfall between the current budget and the Revenue Stabilization Fund poses no issue of cash management (or stabilization). The effect of stabilization is to de-link expenditure in any given year from revenues collected in that year.

The matter of sterilisation is perhaps more problematic than that of stabilization. The objective is to regulate the flow of liquidity so that the volume of financial resources in circulation bears the desired relationship to the real resources available. In the typical Caribbean economy, productive capacity is chronically short; productive resources are immobile and unresponsive to expenditure. Spending typically fails to induce additional output. This is not simply a matter of conventional “overheating”, where rising prices signal scarcity but are able to trigger positive responses due to the presence of all factors of production and to the existence and/or the operation of efficient markets. The result of excess liquidity in the typical Caribbean economy is almost exclusively confined to excess demand for imported supply and imbalances in the external payments accounts.

Without significant increases in across the board investment (involving much more than plant and equipment) domestic output simply does not respond. It is almost impossible to convert an abundance of financial resources into the real resources needed for installing productive capacity. It is for this reason that, during a golden age, sterilization must be given a significant role in the planning and budgeting process. It is necessary to sterilise not only the flows that accrue to the Revenue Stabilization Fund but also those which
are generated by systematic budgeting in both the public and private sectors, which
ingender chronic excess liquidity and which cannot be converted into real resources in
the short to medium term.

By its nature, the Heritage Fund, with its accumulated interest, will be sterilized and held
in long-term safe investments. In order to secure the integrity of this part of the
patrimony, strict legislative safeguards should be entrenched. There should be no
drawings on this fund except for the purpose of establishing, for the benefit of later
generations, economic activity that would yield employment, income and welfare without
the help that would have come from the wasted natural resources.

For its part, the Provident Fund requires rather detailed analysis. As indicated, some 40
percent of offshore revenues each year would be allocated to this capital fund for the
comprehensive outfitting of the economy. In addition, contributions from the household
and business sectors could be made as deposits for funding education, pensions, housing
etc. Here too, sterilization of surpluses must be envisaged through placements in financial
assets of appropriate maturity at home, in the region and/or abroad. Interest accrued
would form part of the Fund. The sole purpose would be to finance capital expenditures,
as spelt out earlier, through investment in education and health, to equip the population
with capabilities for living and working and for taking its place as thoroughly competent
and confident citizens of the world and effective masters in its own land.

In working towards a capital budget to be funded over a rolling plan period, covering
twenty years, it would be necessary to identify individual projects and to chart their evolution over time. From these, a selection would be made for priority implementation and funding based on a meticulous estimation of cost.

Because of the constraints on physical capacity, and because there would be both public and private sector funded projects, the competition for real resources is certain to be intense. In order to facilitate decisions concerning priorities and sequences, a number of supporting institutions would have to be put in place. Perhaps the most important of these, is a Capital Issues Agency, mandated to monitor the whole field of business enterprise. The objective would be to judge the feasibility of investment projects as well as the investment rank of firms. For firms, especially those in their start-up phase, the requirement would be to identify entrepreneurial and managerial expertise, to document the structure of inputs and outputs, to select the most promising outputs and exports, and to foster conditions for successful market penetration.

Credit Rating Agencies have also been proposed to fill an obvious institutional gap. These could conceivably make an important contribution to the functioning of the financial sector, though inevitably their scope would be limited. The real sector stands in need of a series of technical secretariats (techretariats) charged with a far more ample mandate. Both offshore and inshore, there is much to be gained from the systematic identification and recording of business opportunities. Much has already been reported on the spin offs from investment and production activity offshore, some of which hold out the promise of being sustainable even after exhaustion of deposits of natural resources.
We acknowledge no ideological cleavage between public and private sector investments, only the need for an informed and sensible disposition of means among the entire range of projects.

In summary, the Provident Fund will be key to shifting the country away from a preoccupation with distribution and consumption towards accumulation and building of productive capacity inshore. Depending on projects being implemented, disbursements from the Provident Fund will be more or less than the allocations to it in any year. An orderly and even flow of capital works will result over the long run in a substantially enhanced number of completed projects with minimal dissipation of appropriated funds.

PROSPECTS FOR 2004 AND BEYOND

In spite of current favourable macro-economic indicators such as the high GDP growth rate, stable or declining rates of unemployment, moderate overall inflation and growing foreign reserves, the 2003 Article IV Consultation of the IMF still projected possible fiscal crises ahead. Their forecast is that, given current spending trends, the fiscal budget could be in deficit by 2005 or 2008; ditto for the balance of payments in 2007 and beyond. Given current and planned rates of extraction, proven reserves of hydrocarbons could be depleted by 2020.

The Fund’s predictive model was largely informed by the experience over the years 1973 to 1993. Superficially the IMF observed that economic policy had been overly expansionary in the seventies and eighties. When oil prices faltered in 1983 and collapsed
in 1986, disaster was inevitable, as adjustment was slow.

Here are the facts as the IMF itself records them. Of the petroleum windfall of 1974 – 1978, some 70 percent was saved abroad, 12 percent invested domestically and 18 percent consumed. International reserves grew from US$47 million in 1973 to US$1.8 billion in 1978. The device of earmarking development funds was used to channel 50 percent of the investments into economic infrastructure (transport, water and power), 20 percent into social infrastructure (health, housing and education) and 30 percent into gas-based industrialisation. By way of sharing the largesse with the population, of saving jobs and of softening the impact of global inflation, the authorities acquired a number of failing companies (e.g. Shell and Caroni); they expanded public sector employment and increased subsidies on basic foods, fuel and utilities. By 1978 subsidies accounted for 6 percent of non-energy GDP.

Just after the 1978 Bobb Report cautioned over the sustainability of excessive subsidies, came a tripling of petroleum prices in 1979/1980. The effect was to heighten expectations, to give a fillip to the resource based industrialisation programme and to promote the shift from an oil based economy to one based on natural gas. Of the windfall gains of 1979 to 1982 some 25 percent was consumed, 25 percent invested domestically and 50 percent saved abroad. Most of the investment funds were used as start-up requirements for large capital projects (iron and steel, petrochemicals) or to meet cash flow deficiencies of state owned firms. In the final analysis the fiscal stance was indeed expansionary. Irreversible commitments had been made to projects just when the world
economy went into depression and the bottom fell out of the petroleum and commodity markets.

In 1983 the overall fiscal deficit was estimated at 77 percent of oil revenues and the non-oil deficit at 42 percent of non-oil GDP. Initially these deficits were met from accumulated savings and a fall in the savings rate. In time they were also met from debt rescheduling, official borrowing and ultimately from sale of assets. The records show that between 1981 and 1992 per capita GDP fell by 33 percent, international reserves fell from US $3.35 billion to US $175 million, while unemployment rose from 10 percent to 19 percent. Genuine growth reversing these trends did not return until 1994 after a bottoming out and a dampening of expectations, followed by a re-tooling onshore, a gradual recovery of the world economy with new stimulus to the offshore sector through a revival of foreign direct investment.

While it would be foolhardy to ignore the warnings of the IMF Consultations, the brunt of its advice to curb public sector spending and to sterilize the current windfall in financial assets abroad hardly constitutes a strategy which by itself is likely to bring, long-term benefits to the nation. Its framework of analysis is clearly too aggregative, its horizon woefully short and its focus on the fiscal balance sadly misplaced. Moreover, the report is not premised on the Trinidad and Tobago economy as it operates in practice. It fails to recognise the distinct offshore and onshore components of the economy and does not seem to concede that, in an economy, traditionally predisposed to re-distribution, any increase in revenue from the monetization of collectively owned natural resources,
automatically implies an increase in welfare expenditure. The key issues would be the extent and the form of such re-distribution and their compatibility with other priority objectives. This constitutes one of the major challenges to planning.

In our view, the imperative is to devise strategies for investing the surplus from the offshore economy to transform the onshore economy and to render it internationally competitive, and ultimately viable for being self sufficient in foreign exchange. This requires an appropriate framework of historical interpretation and economic analysis that takes a strict account of experience including the most recent case of rapid expansion and steep contraction over the period 1974 to 1993. It is important to note that, whereas the boom and bust of those years resulted from oscillations in export prices and revenues, the current revival is due mainly to secular increases in investment and export volumes.

**SUMMARY**

Two critical issues arise in the management of the revenue injection from offshore. First, given that any increase in offshore revenue leads to legitimate demands by the public and compels higher levels of Government spending, how can there be both a just sharing of the fruits of the national patrimony at the same time as an adequate restraining of consumption spending? Second, given the long run rigidity of production and immobility of supply, how is it possible to expand capacity and raise efficiency inshore without putting undue pressure on scarce resources, without provoking excessive imports or without pursuing activity that is permanently dependent on foreign exchange?
In his book on Cuba, *Monetary Problems of an Export Economy (1944)*, Henry Wallich addressed this problem of financial plenty which it is somehow impossible to convert into productive capacity, even when it admits expansion of consumer imports. In economies which possess an abundance of all resources, an injection of purchasing power activates capacity in the short run to generate employment and income (Keynes). In the longer run it induces capacity creation (Harrod).

In the externally propelled economy, productive resources are excessively export specialised. The tremendous capacity for innovation, mobilization and market penetration possessed by MNCs and TNCs is invariably specific to the offshore sector. As “total institutions”, firms are largely self-contained. Their key resources are in essence not available inshore. No amount of spending leads to switching. A *liquidity trap* therefore needs to be redefined to suit the particular Caribbean case. It does not describe liquidity conditions where a fall in the rate of interest induces no new investment borrowing: what it describes are scales of public spending to which further revenue injection can call forth no new capacity inshore.

The flexibility associated with transformation must be planned and made to happen. The building of capacity can only proceed selectively and strategically through a calculated staging and phasing that also involves the promotion of clusters, to ensure mutual sustenance and support within the community of firms. If injected without such planning, financial resources in excess of absorptive capacity, would simply be wasted. This is the case for sterilization. It also argues for institutional arrangements so that the management
of national projects and programmes could proceed on the basis of integrated and internally consistent operations.

A major concern of the agency or agencies responsible for facilitating the allocation among projects, of capital and other scarce resources, is the character of proposed investments. The issue is neither the ideological one that seeks to specify the roles to be played by the public and the private sectors; nor yet is it one of determining how much power should be given to market forces. The aim is to judge what priorities are dictated by the planning context and the projects at hand. Import dependent investments can be sustained only when foreign exchange is plentiful. When it becomes scarce, the historic Caribbean tendency has been for firms to sit out the downturn until the revival, an option made feasible by the sterilization of super-profits and surpluses that would have taken place during the upturn. However, while such ostensible counter-cyclical strategies may have served the cause of individual firms at the micro level, knotty problems have been posed for the macro economy.

The history of long periods of contraction and of steep downward adjustment following on bouts of dizzy expansion confirms that the business risk is real; but it depends on calculations of the potential of the offshore economy to stay alive and recover. The favoured adjustment does not therefore envisage any structural transformation, though it may well involve some diversification to introduce one or more new export staples. Without national project planning and programming, the alternative risk of innovative investment in inshore activity is usually estimated to be very much greater - to the point
of being prohibitive. Diversification is not therefore to be confused with transformation which is required to make the decisive difference.

Some sort of intervention is called for, in order to reduce uncertainty and to alter firms’ comparative estimates of risk. Merely leaving them to proceed on their own without attention to the hostility or friendliness of the macro context, exercises a decided bias of adjustment in favour of the economy in its untransformed state. One reason is that most claims on foreign exchange made during the boom are in effect encumbrances that seek to pre-empt foreign exchange and crave fresh offshore prosperity by any means possible.

The decision taken during the 1970’s to accord priority to the development of the natural gas economy, rather than to proceed apace towards inshore transformation is probably better seen in the above light. Adding the natural resource of gas to that of petroleum was clearly an attempt to widen sources of foreign exchange. The problem of inevitable depletion was however only postponed. This has significance both for theory and practice. There is no case for making the same mistake twice. Moreover, the limitations of natural resource analysis undertaken out of specific historical context are clear. The theory of the Dutch Disease turns out to be an inadequate key to the process of adjustment. It is simply not enough to cite the negative influence on investment and output in the tradeables sector exercised by foreign exchange abundance, exchange rate appreciation, a change in relative prices and a shift in expectations. Here is essentially a short-run focus that fails to see the whole picture.
A more rewarding line of enquiry ought probably to highlight the Caribbean Epidemic which emphasises production patterns that reveal the effect of rapid expansion on public policy as well as long run business expectations. There exists a legacy of adjustment through conservation rather than transformation. We have suggested that risk aversion is perhaps here better explained and more light thrown on the responses of inshore business and on requirements for policy intervention.

The most compelling challenge to economic management is to consult with and inform the public so that the collective goals of policy are to the extent possible, made compatible with public sector programmes, as well as with the private behaviour of individuals and firms. If there is a boom, the public will want to share in it. In a golden age of plenty, industrial unrest will be rife as Labour and Management contend. Some part of the largesse must be used to raise the level of welfare in the short run, sometimes irrespective of the immediate effect on productivity and production.

We have argued that the imperative is to meet legitimate demands for equity while avoiding waste, while expanding capacity and also while promoting transformation towards viability. This is where financial assets could be crucial. The bonanza could be shared not only in cash but also in claims – equities, bonds and other interest bearing instruments - which could be cashed as physical resources become available. There is no reason why the Provident Fund could not include credits built up by households for expenditure on housing, pensions and education and equity investment, for example. Clearly the national politics needs to be able to count on an increasingly more mature
population while public policy puts in place an economic and financial system of sophistication and integrity.

The final requirement of policy, planning and management is to visualize just how the doing parts of the economy might work together to effect the transformation. First, there is the **Rest of the World** which is essentially exogenous or beyond our control. The challenge is to anticipate those conditions and project those factors that shape the global policy environment. These are the level of export earnings and remittances from nationals abroad, the terms of trade, the flow of foreign direct investment and re-investment as well as portfolio inflows, bilateral and multi-lateral loans and availabilities in the international capital market.

Second, there is **Government**, chief agent of intervention. Here, the challenge is to reach the best possible estimate of warranted and actual injections from offshore through established channels: dividends paid to national conglomerates which own equity; payments for service company activity mainly in construction; earnings of labour and for plant management services; compensation for inshore purchases of goods and services; revenue and dividends accruing to government from taxes and production sharing schemes. Institutional arrangements in the form of technical secretariats (techretariats) are required, first, to monitor regimes of exploration and exploitation; expensing, taxation, tax-holidays and other incentive schemes. Second, to devise appropriate new measures of offshore domestic product, factor income going abroad, national income, gross investment, net investment, etc.
Third, **Households**. The first task would be to estimate, on the assumption of no injections from offshore to fuel government spending, what would be the levels of domestic product, national income, private consumption, import spending, saving, tax liability and investment in productive assets including housing and household equipment. Such an exercise would yield a much more authentic measure than is now available of the size and scope of the national economy if and when it is no longer propelled by the offshore sector and before it would have undergone the desired transformation. The next task would be to factor in the effect of offshore injections, above all, on public sector spending. This exercise would also yield a measure of the economic and financial activity in the inshore business sector that is owed directly to Government spending. We will thus be in a position to hazard estimates of the real value added to the economy by offshore operations and to compare it with the figure of 25 to 40 percent contained in official calculations.

Finally, there is the inshore **Business sector**. A full description of structures, processes, operations, institutions, agencies and actors is indispensable to the transformation planning in this area. Production activities must be assiduously monitored to distinguish *satellite* firms, which have no future distinct from that of the wasting natural resource, from autonomous or *maroon* firms, that probably possess a capacity or a potential for import replacement, export competition, foreign exchange self-sufficiency and long run viability.
Here is where institutions and agencies are required to undertake the credit rating activity and to rank priorities for capital issue. Such bodies must enjoy extensive facilities for investigation and research. There is also need to mandate a techretariat to devise theoretical schema that translate the way the economy actually functions into national accounting categories and methods. For example, measures of spending need to take account of the institutional character of openness in the export-propelled economy while measures of investment need to be informed by fresh concepts of domestic capital (mostly software) as distinct from imported capital (mostly equipment and hardware).

**PROJECTIONS FOR THE ECONOMY**

**SUMMARY**

This section traces the growth anticipated in the level of activity in the Trinidad and Tobago economy for the period 2004 to 2008. Its focus is on choices to be exercised by Government in an age of abundance when both the foreign exchange and fiscal constraints on spending have been relaxed. If we do not also trace paths to be followed by the private sector, it is because we do not at present have any way of gauging even the short and medium term spending intentions of investors and firms.

We present projections of some key variables identified earlier in the paper. We anticipate that if all revenue harvested offshore is injected into the onshore economy, explosive growth in GDP at market prices will occur; that even more than normal of supply will have to be imported; and that bottlenecks in the domestic supply chain will result in substantial inflation.
We propose that energy revenue inflows be stabilised and purged of random price fluctuations thereby making expenditure more predictable over the medium term. We further propose that annually 20 percent of energy revenue be placed in a Heritage Fund held abroad, representing the share of future generations in the patrimony being depleted. Still further we urge that a minimum of 40 percent of total revenue net of stabilisation and heritage funding be spent on capital projects using the device of a Provident Fund. The objective of this fund is to ensure that while spending is taking place, the economy is being transformed by widening the infrastructure base and increasing directly, productive capacity. The higher import productivity of maroon firms operating inshore suggests that, in our quest for transformation and steady growth, they be given priority treatment in the allocation of capital within both public and private sectors.

The heritage allocations, if made, would endow the nation with a stock of long run financial assets projected over the five year period 2004 to 2008 at between TT $12 billion and TT $17 billion for oil prices in the range US $25 to US $45 per barrel. There will also be a reduction in the pressure on the domestic price level, the exchange rate and the balance of payments. Our projections also show growth in Gross Domestic Expenditure of the order of 5 percent to 8 percent per year depending on the price of energy exports. Beyond the age of plenty, there will also be the Heritage Fund from which drawings could be made to fund continuing transformation.
METHODOLOGY

Using the bare bones of our model we make skeletal projections of the economy over the period 2004 to 2008 to illustrate the possibilities which lie ahead and to demonstrate the methodology.

- We identify projects on stream and in the pipeline to derive a stream of output from the offshore energy sector (QE).
- We outline alternative scenarios for energy prices (PE).
- From these data, drawing on historical relationships for the period 1994 to 2003, we project the stream of Government revenue harvested offshore (RE)
- We next select a moving long run average price which is used to calculate contributions to the Revenue Stabilization. Fund by purging taxes of the effect of oscillations in the prices of both oil and gas.
- We estimate our revenue multiplier which relates energy revenue to total Government revenue (RT).
- We further estimate an expenditure multiplier relating total revenue to Gross Domestic Expenditure (GDE). By using total Government revenue rather than total Government expenditure we assume equality between them, implying that under golden age conditions Government borrowing is zero.
ENERGY OUTPUT

Energy sector output includes crude oil and condensates, natural gas and natural gas liquids as well as value added in oil refining, petrochemicals and iron and steel production. For the purposes of this exercise we use crude oil and condensates plus natural gas liquids as proxy to the volume of output notwithstanding the fact that this is likely to result in progressive under estimation as the share of natural gas in the total continues to rise. In 2002 these totalled 56.4 million barrels, of which oil accounted for 47.8 million barrels and natural gas liquids for 8.6 million barrels, while in 2003 the comparable quantities were 59.6, 49.1 and 10.5 million barrels respectively.

The 2003 Article IV Consultation of the IMF estimated that by 2006 daily output of oil would rise from 125,000 to 200,000 barrels. The one new ammonia and two new methanol plants would raise petrochemical output by 50 percent between 2004 and 2005, while the Atlantic LNG Train IV would raise output by 76 percent in 2006. Following these IMF projections, we assume a doubling of overall energy output between 2002 and 2006 implying a total of 112 million barrels of oil and oil equivalent in the latter year.

Interpolating between 2003 and 2006, output in 2004 is estimated at 78 million barrels and at 93 million barrels in 2005. We assume conservatively that the 2006 level of output will be maintained in 2007 and 2008. As an alternative we project output growth in the latter two years at a modest 4 percent.
ENERGY PRICES

International crude oil prices reached US$50 at the end of September 2004. While a long-run average price of US$25 seems to have recommended itself before recent developments bearing on supply, the question arises whether it might not now approximate the real levels attained towards the close of the nineteen seventies. This possibility is suggested by strategic considerations in the Middle East, by threats to production in Venezuela and Russia, by newly revealed medium run limitations on capacity in OPEC countries, as well as by strong demand pull in China and India. In our projections, we use a base line average price of US$25, an optimistic US$45 and a middling of US$35.

Again, this method is premised on a continuation of golden age conditions. It does not then allow for the very real possibility that the global economy could enter a phase, or even a stage, of contraction or stagnation precisely in response to mounting strategic uncertainties as well as emerging difficulties with the mechanism of global economic and business management.

GOVERNMENT ENERGY REVENUE

Injections from the offshore to the onshore economy include payments for labour, purchases of goods and services, dividends disbursed and fees paid to service contractors particularly in the construction industry. As inshore investment in the offshore sector expands over the longer term, the interdependence of the two sectors becomes increasingly more complex, requiring a commensurate widening of the financial accounting. That does not alter the fact that at the present time transfers through the state
are paramount. As a first approximation we therefore use revenue from the energy sector as a catch all proxy.

Over the period 1994 to 2003 a linear relationship was estimated between Government revenue from the energy sector (RE) as dependent variable and two independent variables. These are the volume of energy sector output measured as crude oil and natural gas liquids (QE) and the average realised price of West Texas International (PE).

Used with our projections of energy output and scenarios for prices, this equation forms the basis for projecting the energy revenue harvested after the impact of random price fluctuations had been ironed out.

**TOTAL GOVERNMENT REVENUE**

Energy revenue is denominated in foreign exchange. When injected into the economy through Government expenditure, it brings a revenue return via the stimulus to overall economic activity, depending on the effective rate of taxation. On the assumptions, and given some tax rate, total revenue denominated in domestic currency (RT) is a multiple of the initial Government expenditure in foreign exchange. This yields a measure of our *revenue multiplier* which translates energy revenue into total revenue. As a first approximation, this multiplier, which is a measure of the responsiveness of total revenue, was estimated over the sample period 1994 to 2003.

**GROSS DOMESTIC EXPENDITURE**

The budgeting process begins only where stabilization funding and heritage funding have
already been undertaken. So long as the golden age persists, zero Government borrowing can be assumed, even if there is a need to sustain a debt portfolio for the purpose of maintaining credit rating abroad and of accessing multilateral loans that link technical assistance to finance. We therefore proceed with a simple expenditure multiplier which translates Government revenue, and therefore Government expenditure, into gross domestic expenditure at market prices. This approach would seem to be vindicated by a correlation between total Government revenue and total Government expenditure of 0.98 over the period 1994 to 2003 when the average annual revenue amounted to $11.38 billion with a corresponding figure for expenditure of $11.29 billion.

In our initial estimation of the expenditure multiplier we were not able to ascertain whether strict rules for the stabilization fund or for sterilizing contributions to a heritage fund were ever applied. We also noted that debt operations were relatively minor in the period under review. We emerged with a fitted curve that accounted for 96 percent of the variation in GDE at market prices. This is the equation we use for projecting overall economic activity.

**EMPLOYMENT**

Because this exercise is premised on golden age conditions, we are not at this time primarily concerned with the level of employment. Depending on labour productivity, any given level of activity and output could be compatible with several levels of employment. Another consideration is the welfare component of expenditure which creates jobs and generates income but which does not add value to production. The
compelling requirement is for labour statistics to differentiate welfare expenditure that does not create output from productive expenditure which does.

In some ways the need to create jobs raises the issue of the equitable distribution of the national patrimony harvested offshore in the form of Government revenue denominated in foreign exchange. The valid claims of the citizens for equity could be met in a number of ways including enhanced job opportunity and increases in the level of real wages and salaries. Such measures of redistribution could also include Government subsidies on goods and services and changes in the incidence of different types of taxes as well as by distribution of equity holdings in business enterprise, public and/or private. The important consideration is the impact of the entire mix of policy measures.

The factor that tests the effectiveness of any given mix is the extent to which they survive the end of golden age conditions. Spending commitments entered into, in times of plenty could become encumbrances in times of scarcity, rendering the structural adjustment downwards clearly problematic. It is therefore during the structural adjustment upwards that the wisest choices of policy mix are to be exercised with a view to maximising the options later. This, at any rate, is the lesson to be drawn from the experience of the last cycle which covered the period 1974 to 1993. It was the earlier failure to settle the issue of distribution by adopting a sensible mix of policies with an emphasis on popular equity holdings which made it almost impossible to persuade the country to accept the measures of downward structural adjustment.
EXPANSION VS TRANSFORMATION

Our projections reflect the tremendous expansion which is in prospect and which rests on a basis even more secure than was the case in the nineteen seventies. In that decade the process was driven much more by export prices than by investment and output. The policy question is whether the economy will extricate itself this time round from its historical pattern of rapid expansion, steep contraction and enduring stagnation before the cycle is again revived by the onset of plenty. This poses the question, why the Caribbean type economy has failed to diversify and transform itself over the past two hundred years notwithstanding the huge periodic injections from offshore. The point is that mere injections and the associated multipliers have not by themselves served to effect change in the desired direction. Quite the contrary, periods of abundance have, if anything, subverted the opportunity to escape. The flood of foreign exchange has favoured the status quo implying an economy engaged in mere redistribution. Surpluses engendered in times of expansion have permitted the business sector to bridge the period between successive revivals offshore – whether the recovery is owed to a rejuvenation of traditional staple exports or to the introduction of entirely new commodities. However this sector’s engagement in mere diversification which continues to be foreign exchange dependent does not meet the requirement to relieve the economy of its reliance on offshore activity for the scarce resource.

The alternative to bridging the gap from one time of plenty to another is precisely to establish a viable, prosperous and enduring inshore economy. Any attempt to create such an economy however can be successful only if the urgent claims of equitable
redistribution are properly balanced against the requirements of creating capacity for the longer term. This conflict is most stark at the time that the inshore economy is being established and when firms are being invested with the capacity to innovate and to reinvent themselves, even as they learn to navigate the global order and as they begin to attain appropriate dimensions.

**PROVIDENT FUNDING**

It is the promotion of this new dynamic sector inshore which should be the priority of policy. The ultimate aim is to maximize the rates of growth and transformation of the inshore economy as a whole. What this implies, more than anything else, is a steep rise in Provident Fund or capital spending. The challenge is to promote clusters of maroon enterprises capable of being autonomous rather than prone to look offshore for one or other of the scarce productive resources. What seems to be required is reorientation of Government spending to favour the Public Sector Investment Programme (PSIP) and to spawn directly productive activity in the private sector along with the usual menu of public enterprises, public utilities and other infrastructure. Above all, such spending should provide the means by which the citizen body can equip itself through programmes of health and education.

To this end we project the share of provident funding in the total budget at 40 to 50 percent, leaving the residual 60 to 50 percent for consumption and welfare. Such proportions, it should be noted, would be downright prohibitive were it not assumed, first, that the equity holding distributed to the population as the required sharing of the
patrimony would make a significant difference to public expectations; and second, that much of the new capital spending on health and education as collective goods would be in lieu of individual spending on these items.

This approach does not target any warranted rate of growth for the inshore sector. So long as golden age conditions persist and systematic transformation is being achieved, it is unnecessary to specify any given growth rate of GDP within any time horizon. The actual rate of growth will in any case be governed by the internal dynamic of absorptive capacity — specifically by the extent to which scarce resources other than foreign exchange are brought on stream at accelerating rates. We anticipate that in the long run, rates of growth and transformation will keep on rising in the first place, until full employment has been reached, and thereafter, as new resources are activated. Ultimately, the inshore sector will outpace its offshore counterpart. It will become the engine rather than the trailer of the economy.

**STRATEGIC SPENDING**

The budget encompasses capital as well as current spending. The current budget is meant to cover current expenses. The capital budget is funded from the current surplus topped up by borrowing at home or abroad. All these transactions are recorded *above the line*. Where, on account of the level of expenditure projected, this balance is not achieved, exceptional funding must be arranged. Unscheduled loans or grants must be obtained or accommodation sought from the Central Bank. These transactions are recorded *below the line*. In this exercise, because we assume golden age conditions as a first approximation,
both the foreign exchange and fiscal constraints are no longer operative. The necessity for any Government borrowing, at home or abroad, is eliminated.

We now turn our attention to the capital budget where spending generates accumulation and creates capacity. However the outcome of this spending is not determinate. It depends on the productivity of such expenditure. The resulting levels of activity measured by Gross Domestic Expenditure (GDE), or by Gross Domestic Product (GDP), are not fixed. They vary with the shares of capital and current spending in total spending, as well as with the composition of each.

The purpose of Government spending is not simply to distribute welfare or to generate output, employment and income; it is to expand the production frontier, to diversify production possibilities and to lift the whole economy to higher levels of viability. The policy question is by what modalities, ways and means. The answer can only be provided by reference to historical experience. The performance of firms, clusters, branches and sectors must be studied. Institutions, agencies and actors must be assessed with a view to understanding the role they play in expansion, contraction, stagnation and adjustment. Perhaps the most important element of such study lies in being able to isolate the doing parts that make the difference.

We have all along suggested that the role for Government is dictated more by the spending options available and less by the exercise of any ideological preference or choice. Moreover, in the Caribbean case, households must be freed from those historical
constraints that have limited constructive involvement in productive life and in business organization. We need to get behind such aggregates as spending, saving and investment in order to weigh the factors responsible for their level, structure and orientation. Here again an enormous amount of work needs to be done to discover reasons for the prevailing lopsidedness in business involvement along lines of race, colour, class etc.

Perhaps the agency that requires the most urgent attention is the firm. Some inshore firms come into existence in close association with the offshore sector and share with offshore firms the characteristic of being self-contained and free of any structural interdependence. These are the firms that thrive on the foreign exchange which the offshore sector provides them. Because they can afford to specialise in imported finished goods, their existence implies an absence of any extensive chains of supply. Even when they are expanding in good times, there is unlikely to be much in the way of effective transformation.

By contrast, another tradition of the inshore economy refers to *maroon* firms. These are enterprises which subsist mostly on domestic inputs. They achieve their start up and sustain their operations largely on the basis of domestic capital. The domestic capital which they employ consists of a high proportion of software in the form of indigenous technology and organization as distinct from hardware in the form of imported plant and equipment. This permits them to operate and to improve their competitive advantage on the basis of a high value productivity of their imported inputs. They do not rely on the high value productivity of labour which translates into low labour costs and which have traditionally provided the underpinning to comparative advantage. By their very nature,
these maroon firms have the potential to drive the process of transformation and autonomous expansion. This they do through the displacement of imports and the supply of differentiated goods and services rather than through the mere replacement of imports and the supply of essentially undifferentiated foreign goods, locally produced but out of imported intermediate inputs, including software.

The goal of inshore predominance seems therefore to imply a strategic emphasis on these maroon firms rather than on the satellite firms that are closely linked to the fortunes of the offshore sector. One measure of the effectiveness of transformation policy is the share of investment spending devoted to those sectors where maroon firms are most likely to flourish and where their impact could be substantial.

Finally, we address the sector focus of policy. Experience has shown that old staples, both major and minor, almost inevitably phase themselves out, first, for being based on depleting natural resources, and second, for being especially susceptible to competition from firms emerging in new provinces free from the burdens of the pioneer investor. In any case, owing to the rhythm of expansion and contraction with which they are associated, these staples typically operate to subvert transformation inshore. So far as the quasi staples inspired by the Lewis programme of industrialization are concerned, these manufacturing industries seem not to have been able to fulfil their role as agents of transformation if only because of their dependence on foreign exchange generated offshore as we have seen.
By extension, the agricultural sector was never able to count on the stimulus it was meant to receive from the manufacturing industry whether on the side of supply or demand. Moreover the tourism sector has emerged selling services associated with cheap labour and abundant natural resources, mainly marine. It has been slow to produce those goods and services where the vast bulk of value is added. The pressure of competition however, has been creating openings in this sector for maroon firms, able to link their viability to the sale of creative services in the field of entertainment and the arts.

In the circumstances, we are less concerned to specify a focus on sectors than we are eager to suggest a focus on firms and to prescribe an emphasis on maroon firms in whatever sector. However this approach would seem to be biased towards services – intellectual and creative – though it in no way excludes specialized activity in the fields of manufacturing and agriculture.

PROJECTIONS

Tables 2A and 2B set out our initial results. These projections, it must be emphasized, are formulaic and indicative. Our model enables us to project energy sector revenue, total revenue and Gross Domestic Expenditure (GDE). These projections assume a doubling of energy output between 2002 and 2006 and a 4 percent per annum growth thereafter. We further employ three long run average prices for oil, viz., US $25, US $35 and US $45 per barrel.

On the assumptions, energy revenue will be 120 percent higher in 2008 than in 2003.
Total revenue will be 38 percent higher and GDE 43 percent higher, if oil prices averaged US $25 with tax and spending rates remained unchanged. This represents average annual growth rates of 24 percent, 7 percent and 9 percent for energy revenue, total revenue and GDE respectively. Should oil prices average US $45, energy revenue would be up 180 percent between 2003 and 2008, total revenue 50 percent, and GDE 60 percent with annual growth rates of 36, 10 and 15 percent respectively. An intermediate oil price of US $35 would result in growth rates in between.

If 20 percent of energy revenue is held abroad in a Heritage Fund, this will result in a lower growth of net total revenue and GDE. Thus net total revenue will grow 28 percent between 2003 and 2008 (compared to 38 percent with no Heritage Fund), and GDE by 21 percent (compared with 43 percent) when oil prices are assumed to be US $25.

At an oil price of US $35 the comparative growth in total revenue and in GDE with and without a Heritage Fund is: total revenue 36 percent compared to 43 percent and GDE 29 percent compared to 54 percent. At an oil price of US $45 placing 20 percent of energy revenue in the Heritage Fund results in absolute growth between 2003 and 2008 of 44 percent for net total revenue (a decline from 51 percent without Heritage funding) and absolute growth for GDE of 36 percent (a decline from 61 percent). The average annual growth rates for net total revenue and for GDE are similarly dampened, the former being 4.2, 5.7 and 7.3 percent, the latter 5.6, 7.2 and 8.8 percent for assumed oil prices of US $25, US $35 and US $45 respectively.
These projections are being undertaken in the context of a macro-economic model in which the effect of stabilization measures is to equalise the annual revenue contribution from offshore, so as to locate expenditure planning in a framework of certainty regarding the availability of financial resources. The method of stabilization is to assume a long run average price for energy exports. It implies an act of sterilisation whenever the actual price exceeds its long run average. In any given year therefore, the sum earmarked for sterilization would, in the first instance, be equal to the contribution to the Heritage Fund plus the amounts by which energy revenue exceeds its long run average.

Heritage funding and stabilization funding therefore both involve contributions to the sterilization fund. However, the heritage, stabilization and sterilization funds clearly serve three different purposes.

When calculated at 20 percent of energy revenue over the five year period 2004 to 2008, the Heritage Fund totalled TT $12.29 billion, TT $14.33 billion and TT $16.35 billion at the assumed oil prices of US $25, US $35 and US $45 respectively. These are the amounts to be held abroad in foreign exchange as earning assets. In these calculations we have not included amounts to be sterilized on account of price fluctuations.

**FISCAL MANAGEMENT**

When we come to the central issue of fiscal and budgetary management, we assume arrangements which take account of heritage, stabilization and sterilization requirements, beginning with the financial year 2004/5. The Government disposes of budget funding
for consumption and welfare on the one hand, for public investment and accumulation on the other. In any one year however, both these categories of spending may involve excess liquidity in the sense that available financial resources exceed the capacity of the economy to absorb expenditure without provoking excessive price inflation. We know from experience that there are bottlenecks in the supply of both consumption and capital goods.

Rapid increases in expenditure are in large part devoted to imports. They also promote an escalation of construction and real estate costs. The issue of sterilization again arises. By contrast, where available financial resources fall short of absorptive capacity, the issue is whether the sum of private and public expenditures is too low - implying deficient demand, an inordinately depressed level of activity and a real loss to the economy in terms of output, employment and income foregone.

The requirement then is to settle on the level of total spending, on the allocation between current and capital outlays and on the composition of each category. In this exercise, we have already specified a mandatory allocation of 40 to 50 percent to the Provident Fund or capital budget. It is by settling all of these requirements at one and the same time that the Treasury would arrive at a measure of the sterilization funding that is called for by the exercise of its choices among consumption and investment options.

This exercise would also bring to the fore whether drawdowns are to be made from funds previously sterilized for sundry purposes, including heritage funding. In the latter case
however, draw-downs are to be made only if one or other of two conditions is fulfilled. Where the shortfall of financing is not simply due to temporary depression of export prices below the long run average and is owed to a secular fall, the case for unblocking funds is legitimate. Where also offshore levels of output and income are due to the exhaustion of resource deposits; and where the economy threatens to pass from an age of plenty to one of chronic stringency. Here again drawdowns from accumulated surpluses are clearly in order. Since a major objective of heritage funding is to leave the national machinery of production in the best possible condition for coming generations, funds drawn down should be used exclusively for capital funding to equip the economy.

The projections of expenditure made here and the inferences drawn, are in essence rudimentary, pointing mainly to matters of method. On the expenditure side these projections ought properly to be anchored in the projects envisaged by the public sector, and the main projects it expects the private sector to undertake, in order to generate the level of activity warranted by total spending. The detailed study of individual projects and clusters of projects is indispensable for determining the real as well as the financial requirements for activating idle capacity and for installing capacity that is altogether new. Such study provides the basis for estimating what and how much the economy can produce for itself, in both the consumer and capital goods sectors, and of the extent to which it must rely on its capacity to import.

What such study also implies is that the macro-economic projections need to be complemented by in depth investigation into the micro-economics they imply, whether
relating to the project, the sector, the firm or any other doing part, above all Government. This points to the need for a range of institutions to ensure the flow of information for and from these studies. This piece of work therefore assumes that a number of technical secretariats will be put in place. More than anything else, we expect the establishment of an agency capable of monitoring the operations and activities of all the firms in the country.

ANNEX I

SOME KEY POST WAR DEVELOPMENTS – ACTIVE GOVERNMENT

In order to locate this work in its context, we briefly sketch highlights of the recent economic history of Trinidad and Tobago.

A major consequence of West Indian nationalism, reinforced by the post war ideology of self determination and prevailing ideas on the role of the state, is the view that Government has a responsibility for promoting welfare through its economic policies as well as by direct participation in the economy. The debates triggered by the Moyne Commission Report (1938), the writings mainly of W. Arthur Lewis, and the coming of ministerial government to Trinidad and Tobago in 1950 formed the background to the adoption by Government of a new role in the economy. Whereas the public sector had remained largely passive in the hundred years after emancipation, had neglected to service the new residiency sector, and had devoted most of its attention to the requirements of the traditional, “offshore” sugar-producing, staple export sector, it now acquired a new zeal in trying to transform the economy by promoting manufacturing
industry and modernising domestic agriculture.

The initial step in this new departure was the passing in Trinidad and Tobago of the Aid to Pioneer Industries Ordinance, 1950. By way of tax incentives, tariff barriers and the provision of industrial estates, Government began to promote industrial development in its attempt to expand the economy, raise employment and income levels, and draw labour from the land. An Industrial Development Corporation (1959) would later be charged with responsibility in this sphere.

Simultaneously, Government set about making structural reforms, actively planning the modernization of the society and economy from their colonial past. A number of five-year development plans, First Plan 1958-62, Second Plan 1964-68, Third Plan 1969-73, outlined the perspective and articulated the framework. The key element was a national capital expenditure programme.

The most important single reform was, of course, the change in the constitution to effect political independence on August 31, 1962. Other changes included the founding of the Central Bank (1964) and with it the adoption of an independent Trinidad and Tobago dollar as the national currency, and passing of the Finance Act (1966). The objective of bringing the commanding heights of the economy into national control was not articulated until the Third Plan. In 1970, the Bank of London and Montreal was purchased and formed the core of the new National Commercial Bank. There followed the purchase of the local assets of BP, Shell and the Texaco refinery in oil out of which
came Trinidad Tesoro and Trintoc. In sugar, the purchase of Orange Grove Sugar Estates and Forres Park and share holding in Caroni Ltd, acquired in stages, culminated in the emergence of the fully nationally owned Caroni (1975) Ltd.

The backdrop to all this was the substantial growth experienced during the fifties. Nominal GDP rose from TT $312 million in 1951 to TT $1006 million in 1962, an average annual rate of 8.5 percent. Real GDP grew at 8.2 percent, implying little or no inflation. Trinidad became a major oil refining centre when Texaco established its newest plant at Point a Pierre in 1956 while marine oil exploration started with the Soldado field in 1965. Manufacturing industry showed its greatest dynamism, foreign capital inflows playing a major role, though in most years factor income payments abroad would exceed inflows of foreign direct investment.

By comparison, the sixties experienced relative stagnation. Between 1962 and 1971 nominal GDP growth declined to 5.8 percent. Real output growth fell to 2.9 percent between 1967 and 1971, the years for which we have data. Open unemployment too, began to show itself problematic, having risen from 6.2 percent in 1946 to 10 percent in 1960, to average 14 to 15 percent during most of the later sixties and being as high as 17 percent in 1973. Open unrest in 1970 indicated widespread discontent. The Lewis strategy had not borne the expected fruit.

It is in this context that the price of crude oil more than quadrupled towards the end of 1973 and further trebled in 1979/80. This brought large inflows of revenue – total
revenue rose from $494 million in 1973 to $1,387 million in 1974 and from $3,126 million in 1978 to $6,496 million in 1980. This ushered in a period of great abundance that was not however underpinned by large levels of investment and output though it did create opportunity for the Government to expand infrastructure, embark on a massive housing programme and aggressively pursue its Point Lisas strategy of resource-based industrialization (RBI). As another period of prosperity ensued, unemployment fell to about 10 percent in 1980 while per capita national income was estimated at over US$7,000 in 1982. In 1983 oil prices began to falter before collapsing in 1986 leading to a contraction which was not finally halted until the current upturn began in 1994.

ANNEX II


The 2003 Article IV Consultation of the IMF offers fiscal restraint as its main policy recommendation. On the basis of projects in the energy sector, planned and in train, it forecast that real output of oil and gas, will double between 2002 and 2006. Assuming current policies continue, this will result in energy sector growth of 23.5 percent and 9.6 percent in 2005 and 2006, respectively followed by declines of 8.1 percent and 4.8 percent in 2007 and 2008. Overall real GDP growth in 2005 and 2006 will be 9.1 percent and 5.9 percent respectively followed by growth of 0.8 percent and 2.2 percent in 2007 and 2008.

Current trends in Government spending, they forecast, would lead to overall fiscal
deficits from 2005 onwards, reaching a peak deficit of 5.3 percent of GDP in 2008. After being in surplus in the years 2004 to 2006, their forecast is that the current account of the balance of payments will go into deficit to the extent of 2.2 percent of GDP in 2007 and 2.5 percent in 2008. They further forecast that, were there to be a 50 percent decline in the price of oil, the fiscal budget will be in deficit in every year 2004 to 2008, and the external account in every year from 2005 to 2008. Strict fiscal restraint is therefore the brunt of their recommendation.

Interestingly they also recommend that “the authorities should give priority to developing a well articulated macroeconomic framework underpinned by a three-year rolling budget”. This is the burden of our work. We are of the view that the model implicit in the work of the Fund does not fit the Trinidad and Tobago experience over the longer historical perspective. We have articulated a model in which Government spending, properly managed, transforms the economy, and by emphasis of spending on capital projects, creates productive capacity which enables the economy to escape from the stranglehold of the rhythms of the offshore (energy–producing) sector.

The 2004 Article IV Report showed a marked change in emphasis. The 2003 Report had anticipated that energy resources would last 15 years and so emphasized expenditure restraint to obviate imminent fiscal and balance of payments crises. The 2004 Report, on the other hand is projecting a forty year life span for the hydrocarbon resources. Noting that proven oil and gas reserves were estimated at around 4,500 million barrels of oil equivalent, with gas accounting for over 80 percent, and that with probable and possible
reserves included, reserves would total almost 9,000 million barrels, a whole new perspective emerges. At the current rates of production of 134,000 barrels of oil a day and 500,000 barrels of oil equivalent in gas per day, reserves could last 40 years.

The perspective now taken is that policy emphasis should be shifted to containing the “underlying pressures towards real appreciation of the currency” and “structural reforms aimed directly at enhancing competitiveness of the non-energy sector”. Now also, concern is voiced that “unemployment remains high”. The emphasis has now shifted to the proper long term management of the anticipated fiscal surpluses. In this regard it reports that the “authorities indicated that the fund (interim Revenue Stabilization. Fund) would be made more comprehensive in its formal version, through the inclusion of gas-related revenues”. The Report however noted that, to the authorities, the questions of inter-generational transfers of energy wealth and the garnering of surpluses for transforming the inshore economy seem to be subsidiary to smoothing out energy revenue in the budgeting exercise.

That the 2004 IMF Article IV Consultation Report could point to the need to accelerate non-energy investment to reduce high unemployment, and dependence of the Budget on energy based revenues, indicates a major shift in perspective.

ANNEX III

REVIEW OF VISION 2020 MACROECONOMY, ENERGY REPORTS AND IMF 2004 ARTICLE IV CONSULTATION REPORT

Our critique of the Vision 2020 Subcommittee Reports on Macro-economy and Finance
and Energy is not of the authors, whose integrity and technical competence we do not
question; neither is it of the content. In fact as text, they are of high quality. Rather, our
criticism is of historical perspective, planning method and scope, from which viewpoints
they are, in our view, flawed.

At the outset, the Macroeconomy and Finance Report asserts that “the ‘Development
Challenge’ for Trinidad and Tobago might be cast in terms of two fundamental
challenges”, namely, transformation of the economy to make it less dependent on the
energy sector, and fostering strong and balanced growth, accompanied by steady
improvement in the living standard of all citizens. The Report then states that focus is
deliberately narrowed to address the latter challenge, specifically the aggregate level of
investment required to produce a target rate of (balanced) growth.

We are not sure what this means. Nor can we see how any valid distinction can be drawn
between the two strategies. We find it hard to conceive how balanced growth can be
achieved in an economy that remains lop-sided, dependent on growth in the offshore
energy sector, and which does not address directly the problems of inshore
transformation.

Might it be that by accepting as the target “developed country status” by year 2020, and
further by interpreting “developed country status” to mean a per capita national income
comparable to that of average projected per capita national income in non-OECD
developed countries, the Sub Committee had painted itself into a corner? Starting from a
per capita national income of some US$7,700 in 2003, in order to attain a projected per
capita national income of US$37,000 by 2020 requires a 9 percent per annum rate of
growth. Having assumed that growth is driven by investment, and having relegated
transformation to a place subsidiary to growth, the question then remains into which of
the energy or non-energy sectors investment must be injected to attain the overall
targeted growth. This is how the problem was also posed in 1973 when the Point Lisas
strategy was initially pursued in earnest. It is also the perspective articulated in the

Since rapid monetisation of the gas reserves began in 1995, growth in the energy sector
has outdistanced growth in the non-energy sector by a factor of three to one, on average.
With growth as its main objective the Macroeconomy and Finance Sub Committee would
logically opt for investment being targeted to the dynamic energy sector. The target
having been set, the interpretation of the problem given, and the assumption of the
Trinidad and Tobago economy as an integrated whole, one is logically led to the strategy
to focus attention on the offshore energy sector.

To us however, the strategic question of best use of the offshore surpluses remains.
Should the surplus generated in the offshore energy sector be reinvested offshore to
ensure its continued buoyancy? Or should it be used to transform the inshore non-energy
sector seeking to free it from its historical dependence on income earned in foreign
exchange offshore? In other words should we seek to make onshore economy self
sufficient in foreign exchange and the other critical productive resources? These are
critical empirical questions answerable only by evaluation of their relative merits.

Yet another empirical question is whether the Trinidad and Tobago economy is to be treated as one integrated whole with linkages between the component parts simply needing to be strengthened? Or are there two institutionally distinct economies juxtaposed in a single geographic area? And if the latter, from which direction should one set out to forge coalescence? Should the approach be to grow and expand the offshore energy sector so that it absorbs all other sectors, expanding upstream and downstream, widening its influence by spawning a range of internationally competitive complementary service industries? Or should we instead equip the inshore economy to make it the dynamo of a nation in charge of its own affairs?

These questions take us to the Report of the Energy Sub Committee. The policy of using the local energy sector as a vehicle for application of value adding technology and organisation, capable of addressing the situation after reserves have been depleted, has always been the policy of the Government of Trinidad and Tobago. It is of course, the strategy of all multinational corporations (MNCs) that exploit natural resources in non-industrial countries. Perhaps the most important observation to make about this strategy is that it has not worked. This country is one of the earliest producers and exporters of hydrocarbons (since 1908). However the sector has remained consistently offshore in the strategic sense that the decisive resources of production, diversification and transformation have never been transferred inshore even when the industry was still land based. Neither the demand for intermediate supplies and services in Trinidad nor the
expenditure of final income in the form of surpluses and profits, has led to the multiplication of activity or of structural transformation a la Demas.

It needs to be recognised that two new factors have come into play in the current period of expansion dating from the mid nineteen nineties. First of all, the reserve position has been dramatically transformed, the latest information given in the Report of the Article IV Consultation of the IMF for 2004 speaks of a horizon of forty years. This means that for the first time Trinidad and Tobago is likely to enjoy more than periodic bouts of growth.

The country can now envisage fully four decades of sustained activity during which the spin off and transformative effects of offshore activity can be harvested. There is a real chance that this second opportunity to practise what we have described as the Point Lisas strategy, could lead to more spin offs, higher ratios of “local content” and more openings for national offshore investments. It is hard to dispute that if these openings could be realised, the gains would be substantial and a powerful case made for what the Energy Subcommittee is advocating. The current programme of activity, already elaborated, looks towards important investment projects which could, in theory, provide opportunities for the development and application of national resources and skills of a high level and the reaping correspondingly, of positive results.

The second factor which has come into play during the course of the current expansion of the energy sector is the availability of a national cadre which was only in its embryonic
stage during the nineteen seventies. There is no doubt that the national capacity for visioning, planning, strategising etc. has grown over the two to three decades. Moreover, a much larger number of energy professionals have been active offshore, though there are important caveats.

Much of the emphasis in training and preparation has been in the area of skills development. Production and plant management, have fallen almost exclusively into the hands of nationals. But we do not think that these are the decisive areas of employment, and we have profound doubts about the increased allocation of scarce University resources to the production of cadres at this level, as is proposed. We estimate that the professionals of which the economy of Trinidad and Tobago stands in need, and who are the ones to make the difference, will always be in relatively scarce supply. We have nevertheless looked for indicators of their availability and impact.

Our estimate of the *Point Lisas strategy*, both when it was first adopted in the nineteen seventies and when it was re-activated in the nineteen nineties and after, is that it showed little influence of high level strategic planning initiative. In particular, readers of the Vision 2020 Committee Reports would be disappointed that the first decade of the twenty first century is almost a mirror image of the eighth decade of the twentieth. The strategies set out for transformation, diversification and growth seemed only to have taken into account the prospect for the offshore sector with only minimal reference to the opportunity cost of such strategy. In neither case has there been enough of an attempt to measure the comparative merit of spending planning and investment dollars inshore,
rather than offshore. Even were all expectations to be fulfilled, the question would remain whether, in terms of overall long-term national goals, an alternative course would not have been better.

The 2004 Article IV Consultation of the IMF (see Annex II) showed a marked change in emphasis from that of the previous year. Whereas the 2003 Article IV Consultation, anticipating that energy resources would last about fifteen years, emphasised expenditure restraint to obviate imminent fiscal and balance of payments crises, the 2004 Report with a revised forty year life for energy resources, shifted emphasis to containing the “underlying pressures toward real appreciation of the currency” and “structural reforms aimed directly at enhancing competitiveness of the non energy sector”. Now also, concern is shown that “unemployment remains high”.

Emphasis has also been shifted to the proper long term management of the anticipated fiscal surpluses. In this regard the IMF team reports that the “authorities indicated that the fund (interim Revenue Stabilization Fund) would be made more comprehensive in its formal version, through the inclusion of gas-related revenues”. However it noted that the question of inter-generational transfers of energy wealth and the garnering of surpluses for transforming the inshore economy still seems subsidiary to smoothing out energy revenue in the budgeting process.

Gradually, it seems that alternative paths are beginning to be considered. That the 2004 IMF Report could point to the need to accelerate non-energy investment in order to
reduce high unemployment and dependence of the Budget on energy based revenues and a super technocrat could raise the question “what if the gas runs out”, should lead the nation to re-examine its strategic options. It might not be that because only 3 percent of labour employed is today absorbed in the energy sector, compared to 87 percent onshore - unemployment is approximately ten percent, or even that gas will one day be exhausted, that a case for onshore transformation can be made. It is that the logic of the evolution of the Caribbean demands that the onshore sector emerge as the dynamo of the economy and a necessary complement to nationhood.
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<td>8.3</td>
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<td>Liquidity/ Total Deposit Liabilities %</td>
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Table 1B- Prices and Production of Selected Commodities

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<tr>
<td>Ammonia - US $ tonne</td>
<td>169</td>
<td>199</td>
<td>188</td>
<td>161</td>
<td>118</td>
<td>92</td>
<td>145</td>
<td>137</td>
<td>111</td>
<td>201</td>
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<tr>
<td>Steel billets - US $ tonne</td>
<td>223</td>
<td>237</td>
<td>222</td>
<td>228</td>
<td>221</td>
<td>177</td>
<td>191</td>
<td>171</td>
<td>194</td>
<td>245</td>
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<td>Crude oil - mm bbls</td>
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<td>48.1</td>
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<td>44.9</td>
<td>45.7</td>
<td>43.7</td>
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<td>47.8</td>
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<td>45.5</td>
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<td>Natural Gas - mm bbls</td>
<td>3.48</td>
<td>3.75</td>
<td>4.46</td>
<td>4.11</td>
<td>4.15</td>
<td>5.75</td>
<td>6.99</td>
<td>7.53</td>
<td>8.61</td>
<td>10.5</td>
<td>13.7</td>
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<td>Fertilisers - mm tonnes</td>
<td>2.45</td>
<td>2.63</td>
<td>2.67</td>
<td>2.69</td>
<td>3.25</td>
<td>3.95</td>
<td>3.83</td>
<td>4.21</td>
<td>4.72</td>
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<td>Steel Products DRI mm tonne</td>
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<td>1048</td>
<td>954</td>
<td>1134</td>
<td>1023</td>
<td>1293</td>
<td>1525</td>
<td>2187</td>
<td>2316</td>
<td>2275</td>
<td>2340</td>
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<tr>
<td>Energy</td>
<td>1.9</td>
<td>2.54</td>
<td>3.06</td>
<td>2.07</td>
<td>1.71</td>
<td>2</td>
<td>4.48</td>
<td>3.68</td>
<td>3.93</td>
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<td>Non - Energy</td>
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<td>5.92</td>
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<td>7.06</td>
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<td>7.61</td>
<td>8.53</td>
<td>9.7</td>
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<td><strong>Expenditure</strong></td>
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<tr>
<td>Capital Exp.</td>
<td>0.401</td>
<td>0.62</td>
<td>0.58</td>
<td>1.142</td>
<td>0.86</td>
<td>0.527</td>
<td>1.224</td>
<td>0.861</td>
<td>0.672</td>
<td>0.844</td>
<td>1.55</td>
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<td>and Net Lending</td>
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**Table 2B**

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<th>Growth Rates 2003 to 2008 Without Heritage Funding</th>
<th>Growth Rates 2003 to 2008 With Heritage Funding</th>
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<tr>
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<td>Total Growth</td>
<td>Average Growth</td>
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<tr>
<td>Price of Oil</td>
<td>Re</td>
<td>Rt</td>
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<tr>
<td>US $25</td>
<td>120</td>
<td>38</td>
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<tr>
<td>US $35</td>
<td>149</td>
<td>43</td>
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<td>US $45</td>
<td>179</td>
<td>51</td>
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### TABLE 2A PROJECTIONS

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<tr>
<th>Year</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case 1a - Price of Oil US $25 - without Funding</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Oil Output - million barrels</td>
<td>78</td>
<td>93</td>
<td>112</td>
<td>116</td>
<td>121</td>
</tr>
<tr>
<td>Energy Revenue (Re) TT $b</td>
<td>8.01</td>
<td>10.48</td>
<td>13.61</td>
<td>14.27</td>
<td>15.1</td>
</tr>
<tr>
<td>Total Revenue (Rt) TT $b</td>
<td>17.78</td>
<td>20.21</td>
<td>22.89</td>
<td>23.41</td>
<td>24.06</td>
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<tr>
<td>Gross Domestic Expenditure (GDE)</td>
<td>70.74</td>
<td>80.77</td>
<td>91.89</td>
<td>93.11</td>
<td>96.76</td>
</tr>
</tbody>
</table>

**Case 1b - Price of Oil US $25 with Funding**

| Heritage Fund 0.2 Re   | 1.6   | 2.1   | 2.72  | 2.85  | 3.02  |
| Injection 0.8 Re       | 6.41  | 8.38  | 10.89 | 11.42 | 12.48 |
| Stabilization. Fund    | n a   | n a   | n a   | n a   | n a   |
| Provident Fund 0.4 Rt  | 6.39  | 7.27  | 8.24  | 8.42  | 8.65  |
| Current & Welfare spending 0.6 Rt | 9.59 | 10.9 | 12.35 | 12.64 | 12.98 |
| Total Revenue/Expenditure (Rt) TT $b | 15.98 | 18.17 | 20.59 | 21.06 | 21.63 |
| Gross Domestic Expenditure (GDE) | 63.34 | 72.36 | 82.35 | 84.29 | 86.66 |

**Case 2a - Price of Oil US $35 - without Funding**

| Oil output -- million barrels | 78   | 93   | 112  | 116  | 121  |
| Energy Revenue (Re) TT $b  | 10.03| 12.51| 15.64| 16.3 | 17.13|
| Total Revenue (Rt) TT $b   | 19.79| 21.99| 24.47| 24.95| 25.55|
| Gross Domestic Expenditure (GDE) | 79.03| 88.15| 98.46| 100.48| 103.95|

**Case 2b - Price of Oil US $35 with Funding**

| Heritage Fund 0.2 Re   | 2.01  | 2.5   | 3.13  | 3.26  | 3.43  |
| Injection 0.8 Re       | 8.02  | 10.01 | 12.51 | 13.04 | 13.7  |
| Stabilization. Fund    | n a   | n a   | n a   | n a   | n a   |
| Provident Fund 0.4 Rt  | 7.12  | 7.91  | 8.8   | 8.98  | 9.19  |
| Current & Welfare spending 0.6 Rt | 10.68| 11.86| 13.2  | 13.46 | 13.78 |
| Total Revenue/Expenditure (Rt) TT $b | 17.8 | 19.77| 22    | 22.44 | 22.97 |
| Gross Domestic Expenditure (GDE) | 70.83| 78.96| 88.19 | 90.02 | 92.22 |

**Case 3a - Price of Oil US $45 - without Funding**

| Oil output -- million barrels | 78   | 93   | 112  | 116  | 121  |
| Energy Revenue (Re) TT $b  | 12.06| 14.54| 17.67| 18.33| 19.16|
| Total Revenue (Rt) TT $b   | 21.61| 23.63| 25.93| 26.31| 26.95|
| Gross Domestic Expenditure (GDE) | 86.57| 94.97| 104.54| 106  | 108.78|
**TABLE 2A PROJECTIONS**

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 3b- Price of Oil US $45 with Funding</td>
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</tr>
<tr>
<td>Heritage Fund 0.2 Re</td>
<td>2.41</td>
<td>2.91</td>
<td>3.53</td>
<td>3.67</td>
<td>3.83</td>
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<tr>
<td>Injection 0.8 Re</td>
<td>10.65</td>
<td>11.63</td>
<td>14.14</td>
<td>14.66</td>
<td>15.33</td>
</tr>
<tr>
<td>Stabilization. Fund</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
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<tr>
<td>Provident Fund 0.4 Rt</td>
<td>7.73</td>
<td>8.54</td>
<td>9.33</td>
<td>9.49</td>
<td>9.7</td>
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<tr>
<td>Current &amp; Welfare spending 0.6 Rt</td>
<td>11.6</td>
<td>12.8</td>
<td>13.99</td>
<td>14.23</td>
<td>14.55</td>
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<tr>
<td>Total Revenue/Expenditure (Rt) TT $b</td>
<td>19.33</td>
<td>21.34</td>
<td>23.32</td>
<td>23.72</td>
<td>24.25</td>
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<tr>
<td>Gross Domestic Expenditure (GDE)</td>
<td>77.14</td>
<td>85.45</td>
<td>93.68</td>
<td>95.34</td>
<td>97.54</td>
</tr>
</tbody>
</table>

*This paper was first presented on Wednesday, August 4, 2004 to the Seminar for Professionals at the Development Finance Limited, 10, Cipriani Boulevard, Port of Spain, Trinidad and Tobago. That Seminar hosted the Sub-Committee on Macroeconomics and Finance of the Vision 2020 Multi-sectoral Core Group. A later paper was included in a special edition of the Trinidad and Tobago Review Volume 28, April 18, 2005. This paper is reprinted with the kind permission of the Trinidad and Tobago Institute of the West Indies.*
End Notes

1. The equation used was $Y_{2006} = Y_{2002} (1 + g)^t$ where $Y_{2006} = 112$, $Y_{2002} = 56$ and $g = 0.189$.

2. The fitted equation, which accounted for 92 percent of the variation in revenue, was $RE = -9.943 + 0.165 \ QE + 0.203 \ PE$ $R^2 = 0.92$.

3. The fitted relationship explains 70 per cent of the variations in total revenue and was as follows: $\ln \ RT = 1.8856 + 0.477 \ ln \ RE$ $r^2 = 0.70$.

4. The equation was as follows: $\ln \ GDE = 1.2803 + 1.035 \ ln \ RT$ $r^2 = 0.96$.

5. They also suffer from the fact that the national accounts data they employ refer to estimates made before the rebasing of the series to reflect constant 2000 rather than constant 1985 dollars.