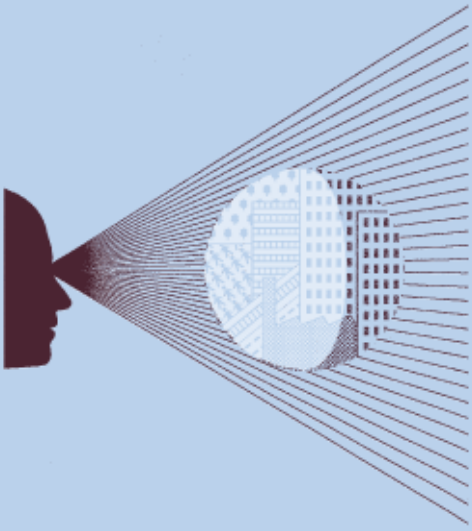
Oxera

What are the fiscal options for Guernsey after introducing the 0%/10% corporate tax regime?

An economic and distributional impact analysis of options to eliminate a structural deficit

April 2006



Executive summary

The purpose of this report is to provide the technical analysis underpinning the evaluation of the options available to the Guernsey government after the introduction of the 0%/10% corporate tax policy in 2008, and after the introduction of a number of other measures in 2008 to address in part the revenue shortfall that will result from the introduction of the 0%/10% policy.[1]

The period to 2008

The economy of Guernsey currently enjoys a high level of economic development per head of population—significantly higher than that of the UK. Average earnings are also higher, and the level of taxation of personal income and other taxes paid by residents are lower. This outcome is largely the result of the international financial services sector in Guernsey, and related sectors of the economy, which provide relatively high-paying employment and make a significant contribution to government revenues through tax paid on corporate profits.

In 2008, the proportion of tax revenues that can be raised from corporate profits will decline as a result of the introduction of the 0%/10% corporate tax policy. This decline is likely to be significant, with a net loss of revenue (before additional tax measures are put in place) in the order of £80m–£90m (in 2008 prices).[2] However, with the additional measures to be put in place, around £40m in will be raised from a combination of increased social security contributions, increased duties and other indirect taxes, reductions in the availability of tax relief on interest payments, and increases in fees paid to the government for some of its services.[3] The net loss of government revenue is therefore likely to be in the order of £45m per annum.

Despite 2008 being in the relatively near future, calculating a deficit figure for 2008 requires a number of assumptions about how the economy is likely to behave going forward, and how government expenditure will evolve in practice.

The Guernsey economy has been characterised in the past by real Gross Domestic Product (GDP) growth of, on average, 2.9% per year over the past ten years.[4] Over longer time periods, average growth has been slightly higher, but over the past five years, average growth has been lower. Recent annual growth rates have also been less volatile than in previous years. One of the drivers behind the growth in the Island's GDP has been the proportionate expansion of the financial services sector and the sectors related to this. Such proportionate expansion may be difficult to sustain since it implies increasing the proportion of the available resources, particularly labour resources, directed towards these activities.

Taking account of these factors, a central estimate of real GDP growth of 2.5% pa has been used to estimate the growth of the economy to 2008 (and beyond).

The other main element of the analysis involves estimating the growth of public expenditure. Current policy is to impose firm control on increases in nominal expenditure. However, recent history of public expenditure is that it has grown only slightly less than GDP—over the past

[1] An overview of the policy proposals by the Policy Council is available on the States website under www.gov.gg/ccm/general/online-reports/2006-reports/fiscal-and-economic-structure.en

[2] Source: Income Tax Office and Oxera calculations.

[3] Source: Guernsey Treasury and Oxera calculations.

[4] Source: Policy Council, Policy and Research Unit and Oxera calculations.

ten years by 2.5% pa, compared to GDP growth of 2.9% pa.[5] As a result, the historical wedge between expenditure growth and GDP growth has averaged 0.4% pa.

However, bearing in mind the Policy Council's proposed policy on expenditure growth, a central assumption has been made that expenditure growth is held down to inflation—ie, there is no real growth in public expenditure.

Using the assumption of no real increase in expenditure, combined with the central economic growth assumptions in this report, results in a wedge between GDP growth and expenditure growth of 2.5%.

The main tax revenues are driven from personal incomes (subject to personal income tax) and corporate profits (also subject to income tax). At the margin, both of these taxes are approximately 20%. These two elements also make up the majority of GDP. Although the government gains income from other sources—for example, duties on tobacco and alcohol—total government income (excluding social security contributions) is currently around 20% of GDP. No major additional government revenues appear to be planned beyond personal and corporate income tax. As a result, the real expansion of the economy can also be expected to provide a tax yield of approximately 20% of that expansion, and this has been taken as a central assumption of the growth of taxation arising from the growth of GDP.

As a result, in the central assumption, the real growth of the economy combined with no real growth in expenditure means that the increase in real government revenues can be used to mitigate the anticipated reduction in tax revenues from 0%/10% and, post-2008, reduce the ongoing deficit. However, failure to achieve either growth of 2.5% pa, or failure to limit expenditure growth to RPI growth rates, increases the deficit that will arise in 2008 and, post-2008, reduces the additional revenue available to mitigate that deficit.

Under these central assumptions, the deficit that is likely to arise in 2008 is around £38m. Sensitivities around the central estimate of +1% and –1% in expenditure growth, and +0.5% (ie, 3% real growth pa) and –1% (ie, 1.5% real growth pa) in GDP growth produce deficits of between £23m and £58m.

These estimates broadly correspond with estimates made by the Guernsey Treasury, based on direct estimates of both likely tax yields and likely expenditure patterns, which result iin deficits in the range of £12m–£40m in 2008.

[5] Source: Policy Council, Policy and Research Unit, Guernsey Government accounts, and Oxera calculations.

The period 2008 to 2011

The additional tax measures (and measures that are equivalent to tax changes—ie, changing the social security contributions) have been factored into the deficit estimates. However, these new taxes have the characteristics of an employer payroll tax (the increase in employer contributions from 5.5% to 6.5% and the raising of the ceiling to £60,000), a tax which in terms of its impact is relatively close to an increase in income tax (raising the ceiling to £60,000 for employee contributions, self-employed contributions and non-employed contributions). The increase in excise and other duties, and increases in fees, have the broad characteristics of consumption taxes. The increase in payroll taxes makes production in Guernsey slightly less competitive in both the export markets and the domestic market, which is subject to potential import substitution. The remaining taxes reduce domestic demand by reducing disposable income or by raising the price of consumption.

In addition, there is likely to be a slowdown in the actual spending on government capital projects at around the same time. This will also have the effect, at least in the short term, of reducing local domestic demand.

However, with sufficient external demand for international financial services, and assuming that Guernsey retains its relative international competitiveness, the central assumption on economic growth (2.5% real) can be assumed also to hold post-2008, and under such circumstances the central assumption of limiting expenditure growth to increases in line with inflation can also be made. The continued wedge between GDP growth and spending growth of 2.5% means that the expansion of the economy results in continued additional government revenue to reduce whatever deficit arises in 2008. However, as there is likely to be a deficit in 2008, the Contingency Reserve will need to be used to cover these deficits until economic growth has grown tax revenues to cover the projected level of spending. The same sensitivities as those of the scenario analysis up to 2008 in terms of variations in both economic growth and government spending are also applied to investigate the sensitivity of the outcomes to assumptions.

The table below summarises the outcome in 2011 under the central assumptions and under the assumption of optimistic growth from 2006 (3% real pa) combined with optimistic expenditure control (a 1% reduction in real expenditure pa); and pessimistic growth (1.5% pa) combined with pessimistic expenditure control (+1% real increase pa). Within these limits, other combinations of assumptions produce outcomes between these extremes.

Table 1 Summary of range of fiscal outcomes in 2011 (£m)

	Central assumption: growth (2.5%, RPI 2.5%), spending held constant in real terms (RPI)	Pessimistic assumption: Low growth (1.5% with 2% RPI), high spending (RPI + 1%)	Optimistic assumption: High growth (3% with 3% RPI), low spending (RPI – 1%)
Deficit in 2008	38	58	23
Deficit in 2011	17	48	Surplus of 15
Accumulated spending of the Contingency Reserve	112	214	19
Level of the Contingency Reserve in 2011	133	20	236

Within these assumption limits, the range of outcomes in 2011 is reasonably wide. However, unless the central assumption on expenditure growth is maintained—and by 2011 this will mean five years of no real growth in public expenditure—there is a distinct possibility that, by 2011, the deficit will still be significant and a considerable proportion of the Contingency Reserve will have been spent. A policy other than that of waiting for a high wedge between

GDP growth and expenditure growth to reduce the deficit may therefore be required. Should additional measures be required, it may also be efficient to implement some measures prior to 2011, or to at least have the measures readily available in 2011.

Post-2011

If the deficit in 2011 is small (eg, less than £10m) it is likely that a package of relatively small changes to existing taxes and charges or—notwithstanding the by then significant squeeze on public expenditure—relatively small downward adjustments to some expenditure categories could be used to bring the budget back into balance within the constraints on the Contingency Reserve and the Policy Council's proposed policy with regard to it (ie, spending up to half of the Contingency Reserve). However, if the deficit is greater than this, more concerted action is likely to be necessary.

For the scenarios that produce relatively small deficits in 2011, the period up to 2011 will have seen a significant squeeze on public expenditure. As a result, further efficiency gains may be difficult to achieve. This would then leave three main options to tackle the remaining deficit:

– further increases in the rate of economic growth without increasing expenditure;
– introduce new taxes or increasing the revenue from existing taxes; or
– reducing public expenditure in real terms by reducing government funded output.

Historically both total government income and public expenditure have moved rather closely in line with GDP, with a small (0.4%) wedge between them. If spending has been held down and 2.5% real growth has been achieved, this wedge will have been running at around 2.5 percentage points for five years or more. This may be difficult to sustain, in particular over extended periods. As a result, just growing the economy out of any remaining deficit may be increasingly difficult. One of the other two options may need to be adopted.

Options for increasing taxation

It is unlikely that a significant part of any increased burden of taxation can be transferred to non-Guernsey residents. As a result most, if not all, of any additional taxation will fall on residents of the Island. In choosing between any of the readily available tax options, the distribution of the tax burden and any differences in the economic impact of increasing taxation levels should be taken into account.

For a significant deficit, using a reasonably large tax base from which to levy the tax has the advantage of relative administrative efficiency, compared with a large number of individual tax increases that each raise a limited amount. The major tax bases that are available in practice are:

– payroll—employer;
– payroll—employee;
– income;
– consumption.

There are key differences in the distributional and economic consequences of using these different tax bases.

Key points of the distributional and economic consequences of the tax options
All main tax options discussed in this paper reduce the spending power of residents in Guernsey. Employer payroll taxes do so indirectly through a mixture of reduced wages and higher prices; others do so directly by reducing disposable income (employee payroll and income tax) or raising prices (GST, Goods and Services Tax).

The effective tax incidence only applies to individuals—taxes paid by companies are shifted either to shareholders in the form of lower dividends, to consumers in the form of higher prices, or employees via a reduction in real wages. It is likely to be difficult to shift a substantial proportion of any new tax onto those not resident in Guernsey.

Since all taxes lead to a reduction in disposable income, either through a reduction in earned and/or unearned income or an increase in prices, to the extent that employees seek to compensate for this by increasing their wage demands, a price–wage inflationary spiral may result.

In general, for a given amount of tax revenue, a reduction in tax on some groups of individuals or sectors leads to a higher tax burden on other individuals or sectors.

The administrative and compliance cost tends to be lowest for existing taxes for which tax collection systems are already in place. In Guernsey, set-up costs would therefore be lowest for income and payroll taxes (which could use the existing infrastructure used for the collection of social security contributions). The introduction of a new tax, such as a GST, would involve the highest set-up and administrative costs among the tax options.[6]

Employer payroll tax

Economic impact

The first-round impact of employer payroll taxes is to increase the costs to businesses (and the government) of employing labour, thereby making Guernsey-based production less competitive in its export markets and in domestic markets where it faces competition from imports. Competitiveness is restored when labour costs decline relative to competitor locations (or some other cost is reduced). Since the adjustment in wages required to restore competitiveness in the economy takes time, during the period of adjustment, economic growth is likely to be lower than it would otherwise have been.

An employer payroll tax changes the relative price of capital and labour. It therefore incentivises employers to reduce their employment input and increase the use of capital in the production process.

The use of minimum thresholds below which employers do not have to pay tax incentivises employers to hire employees on low pay and may encourage employers to hire more workers, each working fewer hours.

Distributional impact

To the extent that the tax is eventually shifted to employees in the form of lower wages, those not in employment would not pay any additional taxes. If the tax shifts to higher prices, they would.

An employer payroll tax has the greatest impact on the costs of employers in labour-intensive industries.

Employer payroll taxes applied with a minimum threshold below which no tax is payable have the effect of reducing the impact on employers within sectors with low paid, and often relatively low-skilled employees. Employer payroll taxes applied with a ceiling have the effect of reducing the impact on the relatively high-paying sectors compared with the low-paying sectors of the economy.

[6] For further details, see: Crown Agents (2005) 'States of Jersey, Proposal for the Design of a Prototype Goods and Services Tax: Final Report', January.

Employee payroll tax

An employee payroll tax results in a reduction in gross employment income and is payable only by those in Guernsey employment. Households without earned income—including pensioners and those with only investment or rental income—are not liable to pay an employee payroll tax.

Since employee payroll taxes focus only on a particular group of tax payers—those in employment—the tax base is smaller than under either an income or a consumption tax, leading to a higher tax burden on those who pay, off-set by no additional burden on those not in employment.

Employee payroll taxes applied with a minimum threshold below which no tax is payable or a ceiling above which any additional income is untaxed have the effect of increasing the income of those below or above the threshold/ceiling. A threshold and a ceiling therefore have the impact of making the tax system more progressive and more regressive respectively.

Personal income taxes

Income taxes are paid by all residents with sources of either earned or unearned income. Of the three tax bases, income taxes can be most effectively targeted to capture personal circumstances so as to create a progressive tax system.

Changes in tax allowances can be used to raise revenue. By changing the levels of personal allowances, the amount of income on which tax is not payable can the reduced. This increases the number of people who are liable to pay income tax (ie, those on lower incomes who currently do not pay income tax), and reduces the amount of tax-free income by those on incomes higher than their allowances. For those already in the tax net, the total additional amount of tax paid tends to be a fixed amount in monetary terms, irrespective of their income level.

Changes in the income tax rate will increase the tax burden by a fixed percentage of the taxable income—both the amount and the proportion of gross income paid as additional tax rises with income.

Consumption taxes—GST

Economic impact

Consumption taxes do not affect the competitive position of Guernsey businesses, since they are generally not applied to exports, and the tax rate on imported goods is the same as that on locally produced goods.

Some sectors, such as financial services, are typically exempt from VAT-type taxes—ie, they do not have to charge VAT on their products (since this is not practical) but neither can they recover taxes paid on their inputs. To the extent that this happens, and other competing jurisdictions do not have a GST, all other things being equal, this may lead to a reduction in international competitiveness.

Consumption taxes also apply to visitor expenditure and, depending on the price sensitivity of the average visitor, this may reduce Guernsey's competitive position as a tourist destination. On the other hand, to the extent that visitors still come to Guernsey, and the required tax revenue is fixed, the total tax burden on residents is reduced.

Distributional impact

Under a broad-based consumption tax, all residents and visitors to Guernsey would pay some amount of tax on their expenditure. This spreads the tax burden across all income groups and types of household.

Housing is usually excluded from a broad-based tax; hence the impact on those spending less on housing will be relatively greater

Individuals with a lower propensity to save (ie, those on lower incomes) pay more tax. However, savings are also subject to tax in Guernsey when they are spent, unless they are spent on items outside Guernsey or on items that are not taxed.

Low-income households tend to have lower net savings, and generally pay less of their gross income in taxes, and social security contributions, etc. General consumption taxes will make up a higher proportion of gross income for these groups.

A broad-based consumption tax is a proportional tax on consumption expenditure. Due to the progressive nature of the income tax system, which tends to take a greater share of income for higher levels of income, a consumption tax makes the overall tax system slightly less progressive, as it will tend to take a higher proportion of gross income from those with lower incomes.

A consumption tax increases the total tax paid by those residents with high incomes, and may increase the tax they pay to a greater extent than if tax allowances are reduced to achieve the same total revenue, or than an employee payroll tax with a ceiling.

A more progressive distribution of the tax burden may be achieved through the introduction of rates that are lower than the standard rate, or by excluding certain items from taxation altogether. However, such variations in rates succeed in creating a more progressive tax only if individuals on relatively low incomes spend a greater share of their budgets on favoured goods or services than individuals with higher incomes. In general, redistributive policies are more effective if they are directly targeted at income (eg, via the income tax system) or implemented through the welfare system.

Comparison of the distribution of the tax burden of tax options

The summary table below compares the distributional outcome of using four different approaches to raising £30m pa in 2011. There are many alternatives available, and these illustrations are designed to show the general impact of different approaches. Since they are based on assumptions about how the economy will have evolved by 2011, they are only indicative of the rates of tax required. Small differences in the outcomes between tax types should therefore be discounted.

Table 2 Comparison of the additional tax that would be paid in 2011 by households with different incomes: two working adults, two children, mortgage of £100,000, all income earned, £30m to be raised (£)

Tax type	£10,000	£20,000	£50,000	£75,000	£100,000	£150,000	£200,000
Apply an employee payroll tax of 2.5% on all income	250	500	1,250	1,875	2,500	3,750	5,000
Increase income tax rate to 23%	0	0	775	1,525	2,275	3,775	5,275
Reduce personal allowances by 35%	0	484	1,318	1,318	1,318	1,318	1,318
Introduce a general consumption tax of 3% (housing excluded)	290	411	894	1,131	1,405	1,997	2,646

Reducing public expenditure

It is also possible to meet any remaining deficit in 2011 by reducing public expenditure. If the deficit is significant and expenditure has been held down since 2006, it is unlikely that there will be any significant efficiency gains still to be made. A policy of reducing public expenditure would, therefore, translate into a policy of reducing the output of the government. As a result, the government would have to reduce its output provided to the residents of the Island or, if it continued to provide all services in full, it would need to introduce some (additional) charges for services that are currently free (or only have a nominal charge).

There are a number of similarities between reducing the output of the government and increasing taxes. Both have the same general effect of reducing total consumption in the Island. However, as there are many ways in which government output could be reduced, the precise impact, both distributional and economical, will depend on which particular government output is reduced or charged for. There are, however, some general impacts that are likely to occur in most cases.

– Because the generation of government revenue is generally *progressive* (ie, those with higher incomes pay more tax), making consumers pay the actual costs of the

government services they consume will tend to have a *regressive* impact. To continue to consume the same level of service, low-income households will have to spend a higher proportion of their income on those services compared with paying for those services through taxation.

– Many (although not all) government-provided services are consumed in greater proportions by lower-income households, or the value of the services represent a higher proportion of their total consumption. This is particularly the case for direct transfers (eg, welfare benefits), but may also apply to services like health. Reducing the provision of these services will also have a regressive effect.

– Some government-provided services, such as education, may have a shared characteristic in that when consumers are faced with the true costs, they may consume smaller quantities of these services than is optimal for society or the economy. Under these circumstances, confronting customers with the true costs may result in longer-term damage to the economy.

– Some government services may be very difficult to provide outside a taxation-funded structure. Cutting expenditure on these services is unlikely to lead to an efficient replacement of those services by the private sector. Where these services have an impact on the workings of the wider economy—for example, the provision of an efficient infrastructure—cutting expenditure on the provision of these services may result in longer-term damage to the economy.

– There may be services provided by the government that residents do not value or, because they are 'free', are over-consumed. Cutting the output of these services, or introducing cost-based charges for them, can result in an *increase* in the overall efficiency of the economy.

Overall, significantly cutting public expenditure is not likely to be without its negative consequences for the economy, and may conflict with the distributional objectives of the government. In assessing any choice between increases in taxation and reductions in public expenditure, the relative economic and distributional consequences should be taken into account. Given the wide range of services provided by the government and, therefore, the potentially wide range of impacts that cutting those services could induce, any trade-off should be considered with respect to specific proposals.

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1 Introduction and background on the Guernsey economy

1.1 Introduction and structure of the report

The purpose of this paper is to provide the technical economic analysis to facilitate the evaluation of the likely options that will face Guernsey as a result of the introduction of the 0%/10% corporate tax policy in 2008.[7] Setting out the options and evaluating them necessarily involves making a number of assumptions as to how the Guernsey economy works and the market conditions that Guernsey is likely to find itself facing in the period up to 2008, when the changes to the corporate tax structures are made, as well as the period post 2008 when the economy will need to adjust to the new tax structures.

One of the major impacts of the adoption of the 0%/10% corporate tax structure is a significant loss of tax revenues, only part of which will be replaced as a result of tax and other changes also proposed to be implemented in 2008. As a result the government of Guernsey is likely to be running a deficit in the immediate period post 2008. A central plank of the policy to be pursued post 2008 is to grow the economy. Growth of the economy, without increasing public expenditure, can achieve the objective of eliminating a deficit over time. If this process takes too long, or is not likely to be achieved, some other policy will be required to address the deficit. The main options are increasing taxation or reducing public expenditure to achieve a balanced budget.

It is the analysis of these options that is the core to the technical economic analysis in this report. However, this analysis may benefit from briefly placing the current Guernsey economy in the context of the economy of its main trading partner—the UK. The remainder of this section provides this background information on the Guernsey economy. The remainder of the report is then structured in the following way:

– Section 2 sets out the fiscal impact of adopting the 0%/10% corporate tax policy in 2008, and looks in detail at the general possibilities for the economy and tax yields to 2011—the time period over which the policy proposals put forward by the Treasury and Resources Department are intended to operate.

– Section 3 considers the high-level options that are likely to be available to the government post-2011 in order to address any fiscal imbalances that may be present at that time.

– Section 4 analyses the economic and distributional consequences of adopting the main taxation options that are likely to be available post-2011.

– Section 5 examines the alternative to increasing taxes to address any fiscal imbalances in 2011—ie, a reduction in public expenditure.

– Section 6 examines the differences between the economic impact of a reduction in public expenditure and an increase in taxes.

– Section 7 highlights the major differences between the economies of Guernsey and Alderney and outlines the main differences in the economic and distributional impact of the tax options.

[7] See: The Independent Working Group, The economic case for a 0%/10% corporate tax rate structure in Guernsey, March 2006, for information on why this policy is necessary.

1.2 Background on the Guernsey economy

1.2.1 Comparison between Guernsey and the UK

Guernsey's economy is both open and specialised, and it is significantly different from that of the UK. Although the particular characteristics of the Guernsey economy that are of most relevance to the analysis of the available options are set out in more detail in the main sections of this report, there is some background information that is relevant, although not essential, to the analysis which places the Guernsey economy in the context of its main trading partner, the UK. There are also some historical developments of the economy that may help the understanding of the options available, even if they are not a critical element of the analysis. This background is set out briefly below.

High average incomes per head

The average income of those employed in Guernsey was approximately £28,000 in 2004.[8] This contrasts with the UK, where the average employment income was around £23,000.[9] However, this high average income is driven partly by the finance sector, where the average income is around £39,000. Beyond the finance sector, the average income is around £25,000. If those sectors that are largely dependent on the finance sector, or that are unlikely to be present in the Island without the finance sector, are also excluded (ie, business services, legal services and information services), the average income in the rest of the economy falls further to around £24,000. In addition, the lower incidence of personal income tax in Guernsey increases the differential between Guernsey and the UK in terms of disposable income. However, the difference in incomes would be reduced were the incomes adjusted for purchasing power, which is likely to be higher in the UK due to a lower general price level.

High GDP per head

The combination of high average wages and high levels of profit in the financial services sector means that Guernsey also has a high GDP per head compared with the UK. In 2003, the GDP per head in Guernsey was around £24,000, while the UK GDP per head was £18,500.[10] Again, the higher GDP per head is generally driven by the international financial services sector.

1.2.2 Importance of the international financial services sector

Both the current size and growth of the Guernsey economy are driven by the international financial services sector. In 2004, approximately 24% of the workforce in the finance sector generated 33% of the economy's remuneration (ie largely wages and bonuses) and 55% of the profits.[11] Because higher remuneration attracts higher average personal income tax rates, the contribution to the personal income tax-take was higher than 33%. In terms of profit per worker, the finance sector generates around £25,000 per worker, while the rest of the economy generates around £6,500.[12]

The recent (10–15-year) growth of the economy has also been driven by the expansion of the finance sector. Table 1.1 sets out the direct impact of this expansion. The calculations almost certainly underestimate the impact since many of the other relatively high-paying, and expanding, parts of the economy are tied to the finance sector (mainly miscellaneous business services, legal services and information services). In the absence of the finance

[8] Source: Policy Council, Policy and Research Unit; and Oxera calculations.

[9] Source: ONS, Labour Force Survey (2006), *Historical Quarterly Supplement*, Table 37: Average gross weekly/hourly earnings by industry sector.

[10] The method of calculating the Guernsey GDP is currently being revised, and the likely outcome is that the Guernsey figure will be revised upwards. If this is the outcome it will increase the gap in GDP per capita between Guernsey and the UK.

[11] Source: Policy Council, Policy and Research Unit; and Oxera calculations.

[12] Source: Policy Council, Policy and Research Unit; and Oxera calculations.

sector, it is doubtful whether these parts of the economy could have expanded to such an extent. Also included in the table, therefore, is the impact of financial services, miscellaneous business services, legal services and information services taken together ('finance plus').

Table 1.1 Impact of the finance sector growth on the size of the Guernsey economy

	Change in employment, 1991–2004	Change in real GVA, 1991–2004 (£m)	Change in real GVA if employment expansion had been outside finance/'finance plus' sectors (£m)
Finance sector	2,539	202	35
Non-finance sectors	–15	269	363
Economy-wide total	2,524	471	398 (ie, 73 lower)
'Finance plus' sectors [1]	3,636	319	79
Non-'finance plus' sectors[2]	–1,112	152	273
Economy-wide total	2,524	471	351 (ie, 120 lower)

Note: [1]The 'finance plus' category comprises financial services, miscellaneous business services, legal services and information services taken together. [2] The non-'finance plus' category comprises the rest of the economy.
Source: Oxera calculations.

1.2.3 Growing the economy to achieve increases in tax yield

The sectoral composition of the Guernsey economy has some important implications for growing the economy with the intention of increasing the tax yield. As indicated in the table above, in terms of increasing the workforce, growing the high-paying and high-profitability sectors would increase the size of the economy more than increasing the workforce in lower-paid, less-profitable, employment. Post-2008, when the general rate of tax on corporate profits will be 0% (apart from banking and the utilities) the general emphasis should therefore be on increasing the amount of high-paying employment, although if an enterprise has Guernsey resident shareholders, there will also be some taxation of profits when they are attributed or distributed.

There does not appear to be any major industry sector that can deliver these high-paying jobs apart from the international finance sector. Other (small) sectors of the economy do have high levels of remuneration—for example, information services—and it may be possible to expand these independently of the financial services sector. (More detailed analysis would be required before determining whether this would be feasible.) In the short term at least, expanding the economy to increase tax yields is likely to be significantly easier if the finance sector is expanded.

The finance sector is, however, an export industry—the bulk of its customers are not Guernsey residents, and as a result there are a number of other locations from which they could purchase their services. The *ability* to expand this sector of the economy and thereby grow the overall size of the economy is, therefore, heavily dependent on the *relative* competitiveness of Guernsey compared with other potential suppliers and the total demand for these services.

The government of Guernsey does not completely control these factors. With respect to the ability to expand the economy, it is unlikely that the government can have much influence, at least not in the short term, on the total demand for these services. With respect to relative competitiveness, there are actions that the government can take to alter the competitiveness of Guernsey, and the residents of the Island can also have an impact on this factor (particularly with respect to real wage costs).

In general, developments at three levels can be broadly identified as affecting the financial services industry.

– *Domestic decisions*—eg, providing a favourable business environment for the financial services industry.

– *External developments within the global financial services industry*—the Guernsey financial services industry competes with other providers of offshore (and potentially onshore) financial services around the world. Guernsey policymakers need to respond to global industry developments to ensure that the industry remains competitive.

– *Developments outside the offshore financial services industry*—such external developments may also have an important impact on the Guernsey finance sector. An example of the susceptibility to external events is the relatively slow growth in Guernsey GDP from 2001 onwards, which is at least in part attributable to the end of the dot.com boom and the relatively poor performance of stock markets.

Thus, while domestic decisions that impact on financial services are important, they are largely driven by requirements to react to external influences. The most recent requirement to react relates to the requirement to introduce the 0%/10% tax regime, namely:

– increased tax competition between offshore financial services providers; and
– pressure from international institutions—by the EU and the OECD.

Due to the complex interaction of factors affecting financial services, the importance of the industry to Guernsey and the high year-on-year variability in demand for financial services, it is difficult to accurately predict movements in Guernsey GDP with any satisfactory degree of precision for one year ahead, let alone for more than one year ahead.

A buoyant international financial services industry could result in a relatively rapid expansion in the economy, whereas a slow growth in financial services leads to a slow growth in output. For example year-on-year growth in real GDP in 2000 during the height of the boom in the world economy (and the financial services industry) was 7.5%, with total profits in Guernsey growing by around 16%. Almost 70% of these profits were derived from financial services. In the following year, however, GDP growth fell to 1.2%, with total profits *declining* by around 4%, and financial services profits declining by 9%[13]. GDP growth in this year was maintained by a relatively rapid growth in total remuneration in the economy, which stood at a ten-year high of 8%. Part of this high growth in remuneration is likely to be attributable to wage negotiations and hiring decisions made in the previous year, at which point companies had not yet anticipated that economic conditions were about to deteriorate. The years beyond 2001 brought more modest increases in wages and a reduction, or slower growth, in the workforce of finance sector companies.[14]

An analysis of which policies might influence the rate of growth of the economy—through growing the financial services sector or otherwise—is beyond the scope of this report. To investigate this further, careful consideration of what policies would be advantageous would be required and these have to be analysed in the context of the international market. This is particularly the case since competitor jurisdictions are likely to be conducting the same type of analysis and would also wish to grow their economies in more or less the same way.

It is against this general background of the Guernsey economy that the analysis in this paper investigates the economic and distributional impacts of the ways in which Guernsey could meet the gap between government income and government spending brought about by the adoption of the 0%/10% corporate tax policy—a policy that has been proposed in order to

[13] Source: Policy Council, Policy and Research Unit; Oxera calculations

[14] Source: Policy Council, Policy and Research Unit; and Oxera calculations.

meet the competitive threat from other jurisdictions which also have a policy of maintaining and expanding their international finance sectors.

2 Analysis of the options after adopting a 0%/10% policy

2.1 Background

The adoption of a 0%/10% corporate tax policy would have the immediate impact, all other things being equal, of significantly reducing the tax revenues available to the government. Estimates made by the Guernsey Income Tax Office indicate that, should the tax policy that is currently proposed be applied to the 2004 tax base, there would be a net reduction in income tax revenues of between £50m and up to £80m.[15] This estimated reduction represents 18–28% of the total tax revenues for Guernsey in 2004 (£285m) and, taking the level of capital expenditure (CAPEX) undertaken in 2004, the total government expenditure would have been £85/£115m greater than income.

However, this proposed change in tax policy is not due to be implemented until 2008, and the level of CAPEX in 2004 (£44m) was significantly higher than the average annual CAPEX over the previous ten years, which averaged approximately £25m per annum (in 2004 prices).[16]

To estimate the impact of the actual adoption of the 0%/10% policy in 2008, projections have to made for both the expenditure and income of the government at that time, and for the likely loss of tax revenues. All three of these elements of the economy are likely to be different from the position in 2004.

In addition, on March 5th 2006, the Policy Council issued an outline of a set of policy proposals—particularly with respect to tax—that would also be introduced in 2008.The central plank of the policy is that these proposals would run until 2011 or slightly beyond and only at that time would further measures be instigated, if required. In the period up to 2011, the proposals anticipate funding any deficit from the Contingency Reserve, up to a total expenditure from this source of half the Reserve (interest and capital). The Reserve stood at £203m in September 2005.[17]

The outline of the proposals, dealing with the important elements of both the 0%/10% proposals and the additional proposals, is set out below.

[15] Source: Income Tax Office.

[16] Source: Guernsey government accounts; and Oxera calculations.

[17] States of Guernsey, Treasury and Resources Department (2006), 'Budget Report 2006', November.

Box 2.1 The Policy Council's outline of the 0%/10% policy proposals

Overall objective
The key objective is maintaining a healthy economy. Managing the States Finances should support that objective.

The Island's future clearly lies in providing a business environment where its residents are in well-paid, secure and sustainable jobs which add value to the businesses in which they are employed.

- Change is in the best long term economic, social and political interests of Guernsey.
- Public sector expenditure (revenue and capital) must be curtailed.
- It is in the long term best interests of Guernsey to maintain and enhance both the finance and non-finance sectors.

Proposals
- The basic rate of income tax on company profits should be 0%.
- Only a limited amount of regulated business (ie, specific banking activities) should be subject to taxation at 10%.
- Trading activities regulated by the Office of Utility Regulation should be subject to taxation at 20%.
- Resident individuals should continue to pay tax at 20% on assessable income.
- Guernsey resident shareholders should be taxed at 20% on their distributed profits and on all rental and investment income but with some rules to ensure compulsory distribution in certain circumstances.
- Significant individual taxpayers should be liable to the standard rate on their non-Guernsey income only up to a defined income ceiling with a total tax payable of £250,000. Guernsey income to be taxed as above.
- 'Wealth taxes' such as inheritance and capital gains taxes should not be introduced.
- The rates of existing indirect taxes should be increased, in particular duties on alcohol, tobacco and Tax on Rateable Values, but less so than previously indicated.
- The General Revenue grant to social security should be reduced by about half (£20m).
- General Revenue should continue to fully fund the non-contributory elements of the present social security system (Family Allowances, Supplementary Benefit, etc) of around £22m per year.
- Half of the Contingency Reserve (interest and capital) should be used to fund the shortfall in public sector expenditure.
- Income tax reliefs on interest payable and life assurance policies should be less generous.
- The Corporate Anti-Poverty Programme will continue to be a key policy of the States and will need to continue to be funded.
- A system of goods and services tax should be fully investigated, and legislation developed, but not introduced in the short term.

Delivery
In order to move from the existing tax regime to a future competitive regime, a two stage process should be adopted:

Stage one
The States will need to run a deficit budget, funded by use of half of the Contingency Reserve with:

- Robust Public Sector expenditure control with only modest annual increases.
- Existing indirect taxes increased.
- Social Security: the employer rate increased by 1%, self-employed rates and employee rate staying the same. Upper Earning Limit for employees, employers and self-employed raised to £60,000.
- No Goods and Services Tax.
- The promotion of economic growth.

Stage Two
Having run a deficit budget for three to five years (ie, until 2011/12), and then after taking into account international events, GST history in Jersey and economic performance, evaluate and produce an overall package which sustains the economic position and delivers a balanced States Revenue budget.

Note: GST, goods and services tax.
Source: This policy statement has been taken from the States of Guernsey website, http://www.gov.gg/ccm/general/online-reports/2006-reports/fiscal-and-economic-structure.en

The objective of this section is to provide estimates of the likely range of outcomes that will prevail in 2011, assuming that the policies set out above are implemented in 2008.

As with all predictions of any economy, there is considerable uncertainty in estimating conditions five years hence, particularly when some of the input data for the projections is itself a number of years old (such as the GDP figures used in this report). Some assumptions have been necessary, and these are clearly described in the analysis that follows.

The problem of predicting the likely fiscal balance (ie, whether the government is running a deficit or surplus) can be broken down into a number of elements. For this analysis, the significant elements are:

– total tax yield from the proposed tax structure (section 2.2);
– total revenue expenditure (section 2.3);
– total CAPEX (section 2.4).

Within each of these elements of income and expenditure, critical sub-elements can be identified which *may* be of importance *if* there are likely to be significant changes in factors influencing these elements over the next five years. For example, the size of the remaining corporate profit tax base charged at a tax rate of 10% will be critical to estimating the tax yield post-2008. The analysis in this section proceeds by estimating the size of the critical elements using both historical precedents, modified, where appropriate, by predictable (or likely) changes that could cause significant differences in the size of the elements. The analysis also takes on board assumptions regarding the likely revenue from the policy proposal put forward in the report by Policy Council and these are incorporated in the analysis of this report.[18]

Prior to looking at each of the main elements of the fiscal balance in Guernsey in the remainder of this section, it should be stressed that the Guernsey economy is a very open and specialised economy. Its overall performance will be influenced by actions and events that are beyond its control and largely unpredictable over the time scales required for these estimations. Because of the structure of the current economy, this is particularly the case for changes in the demand for international financial services and Guernsey's competitive position in that market. For the reasons set out in section 1, growing Guernsey's economy to increase government income without increasing tax rates is likely to require growing the international financial services sector of the economy, which in turn is dependent on both Guernsey being a competitive jurisdiction and there being international demand for these services. However, within these necessary limitations, estimates can be calculated, subject to the explicit assumptions made.

2.1.1 Background evidence on the likely yield of the proposed structure

GDP and tax yield

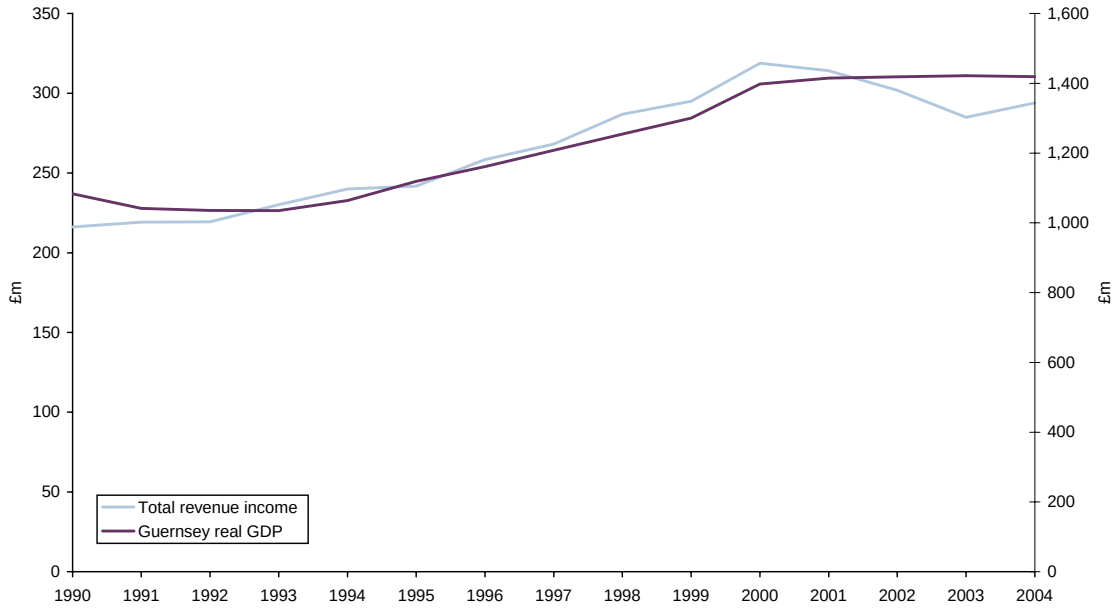
Historically, total government income (over 95% coming from taxes) is estimated to be around 20% of GDP. Due to the way in which GDP in Guernsey is calculated (the sum of wage income, profits and other income) a flat rate of 20% on all income would yield an income tax revenue–GDP ratio of 20%. Although tax rates on personal income, profits of self- employed individuals and corporations are set at 20%, in practice the average yield from these is lower than 20% due to allowances and exemptions. On the other hand the government derives revenues from sources other than income tax. In recent years around 17% of revenues were derived from taxes and charges other than income tax, such as customs and excise duties.

The relationship between GDP and Government revenue is very close— the correlation coefficient between GDP and government revenue is in excess of 0.9 estimated over various time periods. Figure 2.1 shows the relationship between real growth in government revenues and GDP. In the period 2000–03 total tax receipts fell in real terms, from £319m to £285m (2004 prices), and GDP was more or less flat (0.3% increase in real terms). The figure shows

[18] Policy Council (2006), 'Future Economic & Taxation Strategy, Preliminary Draft', April.

that the proportion of GDP taken in tax has declined recently, but recovered slightly in 2004 (ie, tax receipts obtained in 2005).

Figure 2.1 Real government revenue and GDP (£m, 2004 prices)



Note: Since income tax is paid one year in arrears, and this constitutes the majority of government revenues, the figure is constructed using GDP figures one year prior to the income figures—ie, the year in which the income tax revenues were generated rather than that in which they appear in government accounts. Although the yield from indirect tax and other sources should not be lagged—the government generally receives the money in the same year as the activity being taxed—this source of income has not been treated separately as it is only a relatively small proportion of the total and has in the past not varied significantly from one year to the next. The years in the figure relate to the year in which the government income was generated—one year before receiving it—and includes a new estimate of tax yield for 2005 made after the 2006 budget publication in November 2005.
Source: Guernsey government accounts, Policy Council, Policy and Research Unit and Oxera calculations.

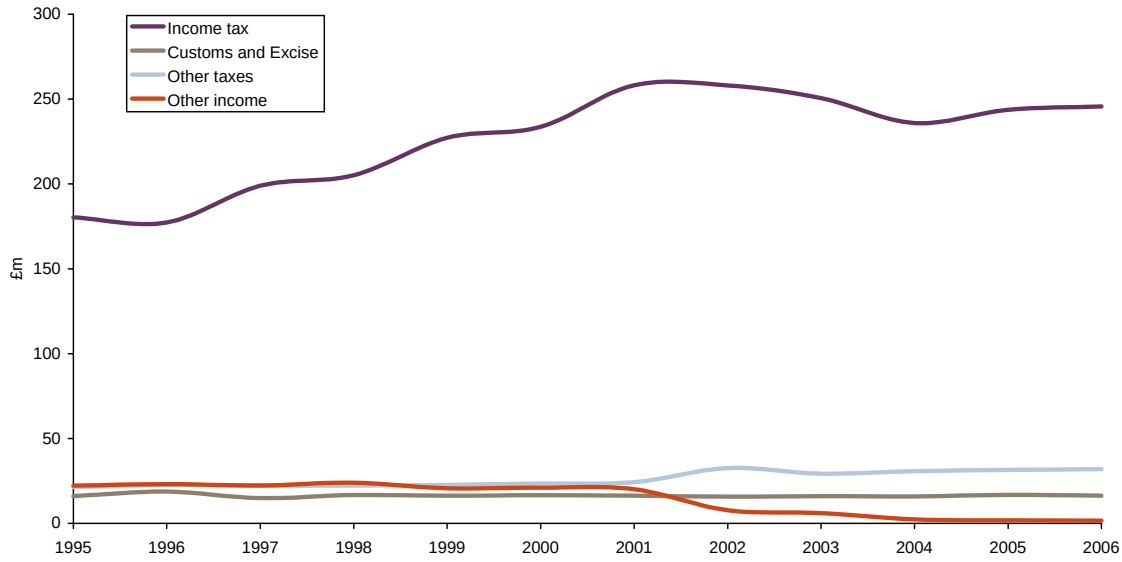
Unless the tax structure significantly changes, or the composition of the economy alters, tax receipts as a proportion of GDP is likely to remain reasonably stable at around 20%. However, although tax receipts are strongly correlated with movements in GDP, looking at potential changes in the relationship between tax receipts and GDP may also give some insights into the likely tax yield going forward. This is particularly useful when the tax structure is changing, as is proposed for 2008. For example, if government revenue from duties or other, non-income tax, sources were to rise while wages and profits remained flat over the next few years, government revenue as a proportion of GDP would also tend to rise (until the tax structure changes in 2008).[19] Similarly, if profits rise while wages remain relatively flat the tax take as a proportion of GDP would remain at around 20%, but the fall in tax take in 2008 would be larger.

The major tax bases

The major tax bases for the Guernsey economy are personal income tax, tax on corporate profits and excise duties. Figure 2.2 shows how the real level of these taxes has changed since 1991; Figure 2.3 shows the relative contributions that these taxes have made.

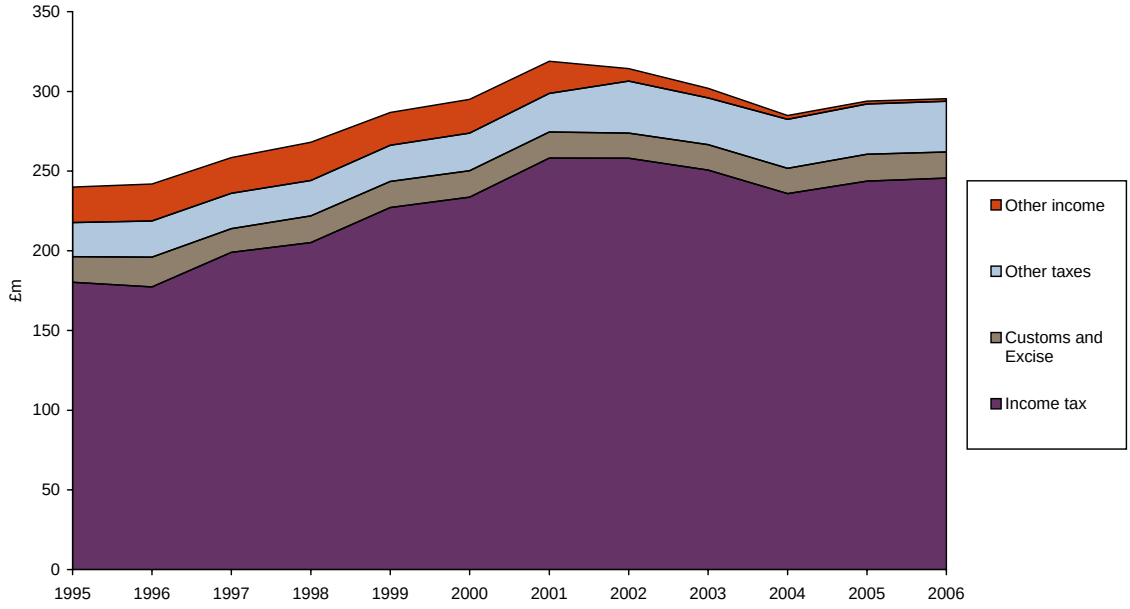
[19] However, the latest forecasts from the Treasury do not indicate that this is likely.

Figure 2.2 Real government income by source (£m, 2004 prices)



Notes: Figures for 2005 are expected outturns and figures for 2006 are updated projections post-Budget 2006. The decline after 2001 in the 'Other income' category is likely to be due to changes in accounting conventions. Years refer to the year in which revenue appears in government accounts rather than years in which it was generated. Assumed inflation for 2006 is 3.3%.
Source: Guernsey government accounts and Oxera calculations.

Figure 2.3 Contribution of government revenue sources to total income (£m, 2004 prices)

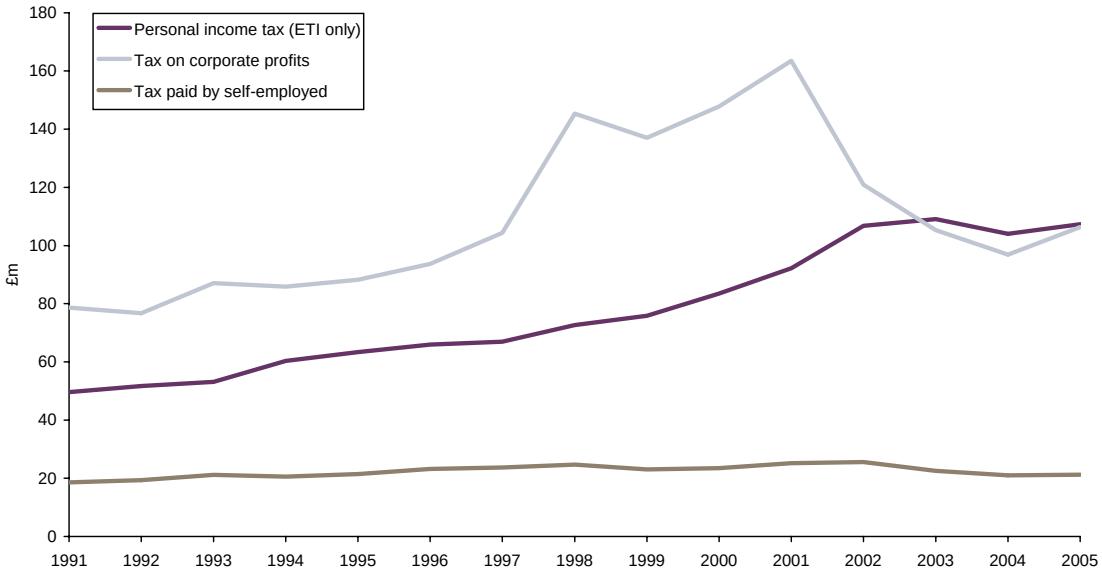


Notes: Figures for 2005 are expected outturns and figures for 2006 are projections from the Budget 2006. The decline after 2001 in the 'Other income' category is likely due to changes in accounting conventions. Years refer to year in which revenue appears in government accounts rather than years in which it was generated. Assumed inflation for 2006 is 3.3%
Source: Guernsey government accounts and Oxera calculations.

Within the overall *tax* yield, the composition of the contributions of each source has been changing over time. The overall level and share of income tax (corporate and personal) has generally been rising. The contribution of excise duties has been somewhat reduced from around 6% before 2000 to around 5% in more recent years. The reduction in 'other income' and the rise in 'other taxes' between 2000 and 2001 is likely to be due to a change in

accounting conventions rather than a change in the economy. More importantly, however, the contribution made by the taxation of corporate profits to income tax revenue has declined since 2001, while the contribution from personal tax on earnings has increased. Tax revenues derived from self-employed profits have been relatively stable over the period examined. This is shown in Figure 2.4.

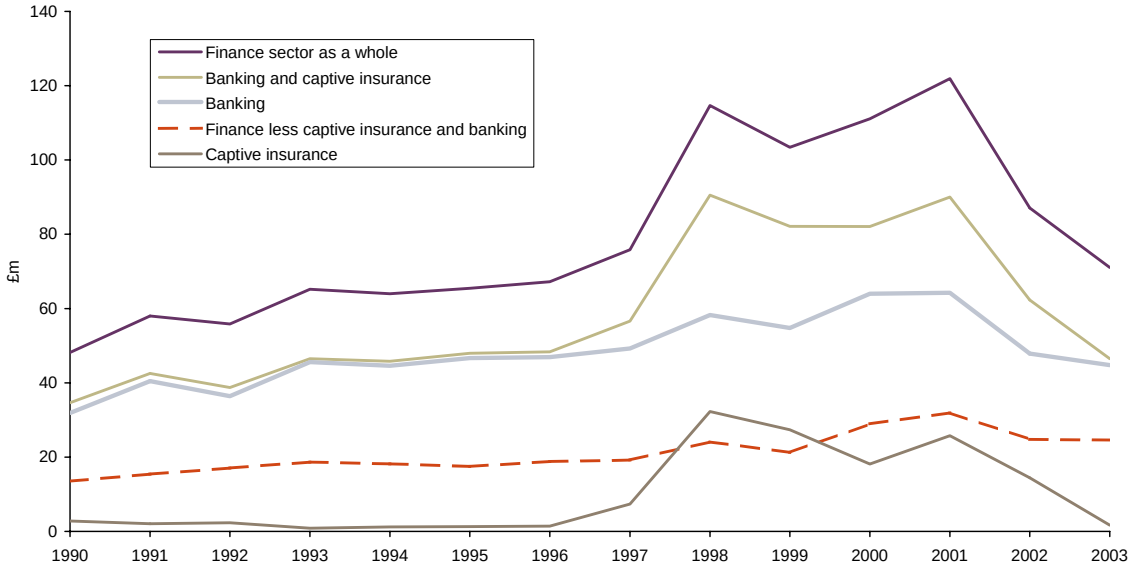
Figure 2.4 Contribution of government revenue sources to total income (£m, 2004 prices)



Notes: 1. Years refer to the year in which revenue appears in government accounts rather than years in which it was generated. Personal income tax includes tax paid out of wages, salaries and occupational pensions (covered by Employees' Tax Instalment Scheme, ETI). It excludes tax on government pensions, bank interest and rent. Therefore, if these contributions were included, the increase in contribution to income tax by personal income tax compared with corporate profits would be larger. 2. Figures on tax paid by the self-employed include some amount of income tax paid by the spouses of the self-employed (for example, around £5m in 2004)
Source: Guernsey Income Tax Office and Oxera calculations.

The fall in the contribution of tax on corporate profits from 2001 is particularly noticeable. The decline has occurred mainly in banking and offshore insurance (captive insurance, captive management and offshore life insurance). Figure 2.5 shows the relationship between these sources of tax revenue within the finance sector.

Figure 2.5 Taxation yield within the finance sector (£m)



Source: Guernsey Income Tax Office and Oxera calculations.

Most of the variation in the yield of income tax from corporations has been as a result of a steep rise in the taxation yield from offshore insurance and, to a lesser extent, banking, in the late 1990s and a fall in both post-2001. The rest of the financial sector has delivered a more stable tax yield. The decline since 2001 has also coincided with the development of more tax rate competition between offshore jurisdictions and the bursting of the dot.com bubble.[20]

The overall pattern observed in recent years, whereby total income tax receipts have been falling in both absolute terms and as a percentage of GDP, masks two underlying trends—a growth in remuneration and the tax taken from employment income, and a fall in the tax yield from corporate tax.

The growth in remuneration can be further disaggregated into the total remuneration and the average remuneration per worker. Figures 2.6 and 2.7 show the change in the size of the workforce, which, between 1994 and 2004, increased by around 12%. Growth in the size of the workforce has levelled off over recent years. However, real average earnings per employee (employed and self-employed) have increased by around 28% since 1994. In addition, if personal tax-free allowances are indexed with inflation, real growth in wages also leads to higher real tax yield as the effective tax rate rises. (If personal tax-free allowances are not indexed with inflation then *nominal* increases in wages will also result in *higher* real tax yield. Nominal increases in remuneration over the same period have been much greater (81%), and have continued up to 2004.)[21]

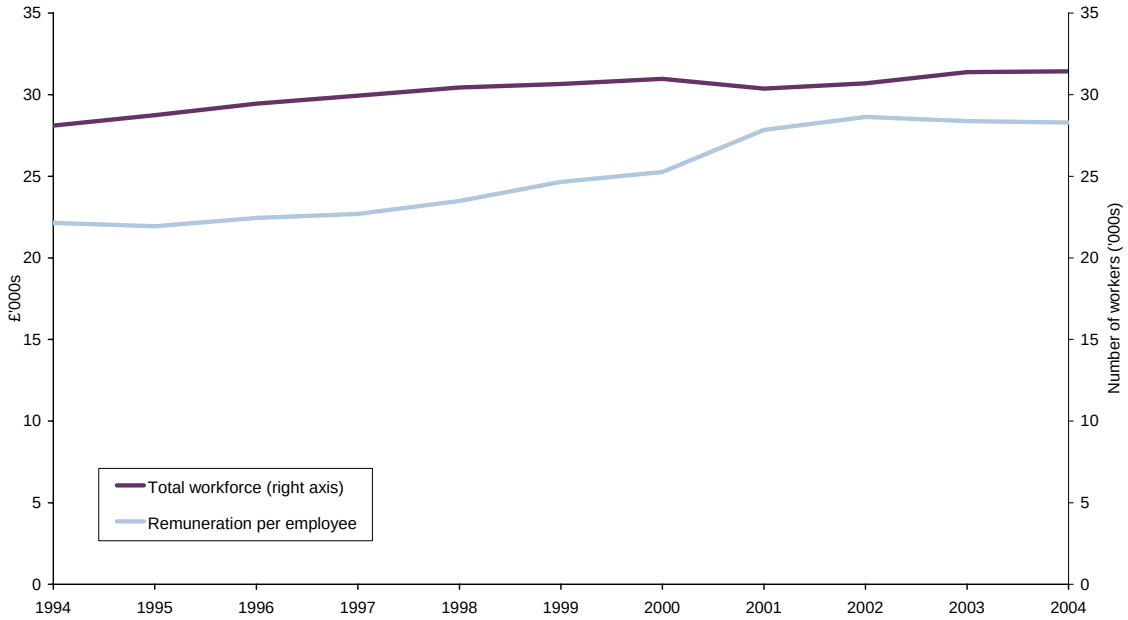
The combination of these effects—increased labour force and higher average real wages—has resulted in the increase in tax yield from employment income. These factors, within any change in real GDP, are important in estimating the tax yield going forward. For example, the recent increase in tax receipts from employment income appears to be driven by increases in average wages, and not increases in the size of the labour force. Unless this is underpinned by productivity growth this may not be sustainable and, indeed, may actually be reversed if the economy moves into an inflationary wage spiral. Avoiding an inflation spiral is important, particularly in 2008 when the new taxation structure is introduced, because Guernsey cannot

[20] It should be noted that post-2008, the contribution from the non-Guernsey-owned financial services companies will, with the exception of pure banking, be reduced to zero.

[21] Personal allowances have tended to be increased year to year more or less in line with inflation. However, the 2006 budget pegs personal allowance in 2007 at the 2006 level.

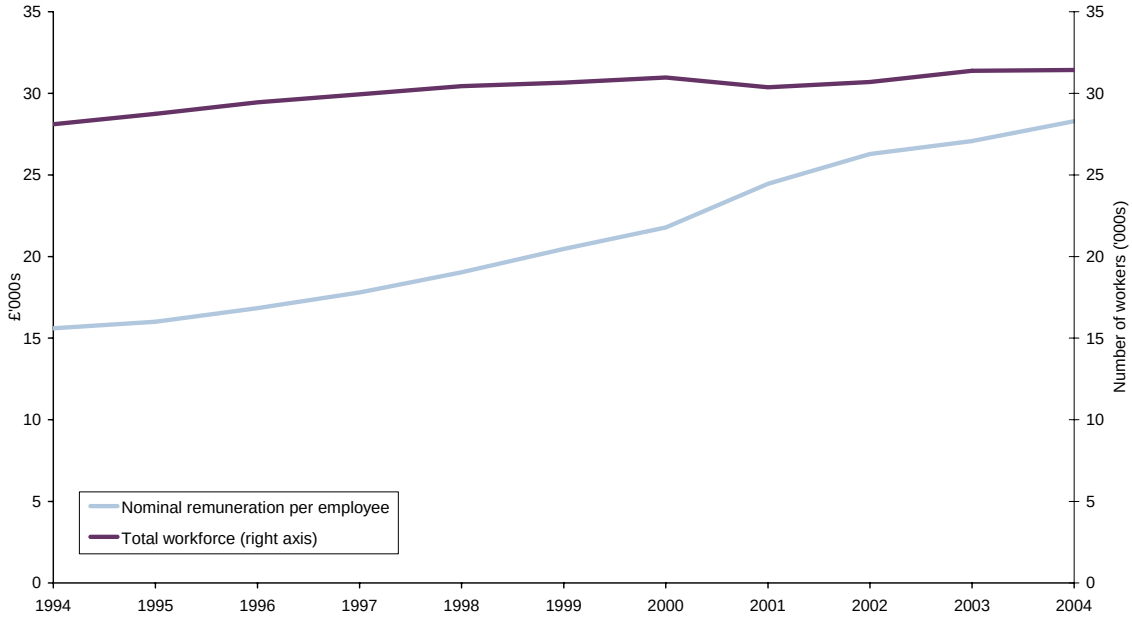
devalue its currency to retain or regain its international competitiveness. Instead, it must reduce its relative cost base (relative to its international competitors) in some other way—for example, through wage reductions (or, more likely, a period of wage growth below that of its competitors).

Figure 2.6 Trends in remuneration per employee (£'000s, 2004 prices) and size of workforce



Notes: Total workforce includes self-employed. Remuneration per worker is calculated as total remuneration from employment divided by total employed.
Source: Social Security Department, Policy Council, Policy and Research Unit and Oxera calculations.

Figure 2.7 Remuneration per employee (£'000s, nominal prices) and size of workforce



Notes: Total workforce includes self-employed. Remuneration per worker is calculated as total remuneration from employment divided by total employed.
Source: Social Security Department, Policy Council, Policy and Research Unit and Oxera calculations.

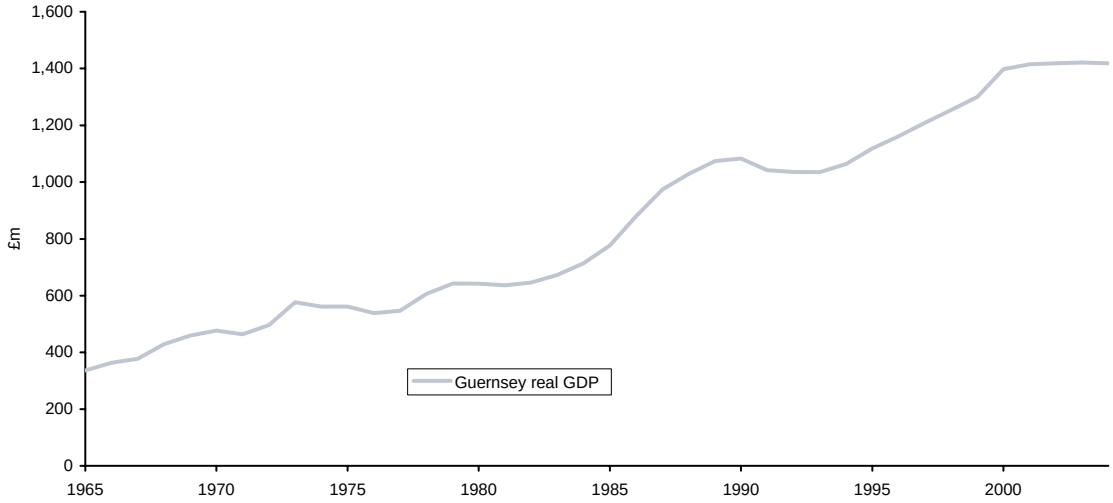
The period from 2006 to 2008

In the period to 2008, the current proposals leave the existing tax structures more or less in place. Critical to the projection of the tax yield, therefore, are the likely movements in GDP, the impact of inflation on the real tax yield and the future (taxable) profitability of the corporate sector. Although the period to 2008 is relatively short, these relationships are also important in estimating what will happen to tax revenues in the period 2008–11.

Economic growth

Over the very long run, average GDP growth has been above 3% on average, but there is a marked downward trend in the more recent past. Figure 2.8 shows the steady increase in the real GDP of Guernsey over the past 40 years.

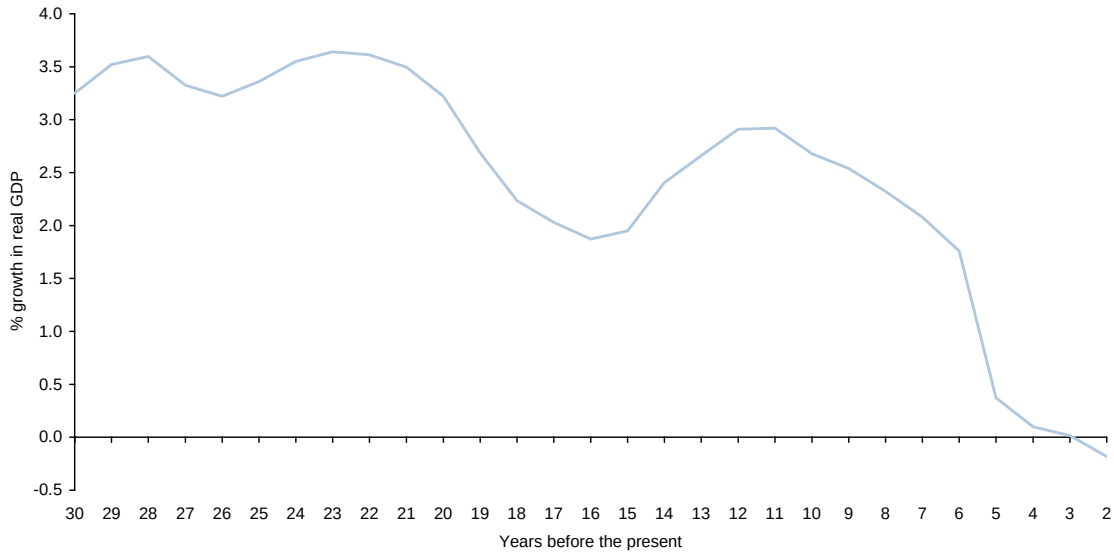
Figure 2.8 Long-run growth in real GDP, 1965–2004 (£m)



Source: Policy and Resources Department and Oxera calculations.

The average real annualised GDP growth over the past 30 years is around 3.2%, and is similar to that of the last 20 years (3.5%). However, over the last ten years, the average real annualised growth in GDP has been lower at 2.9%. This is shown in Figure 2.9, which plots the real annualised GDP growth rate for the period up to the present over the last 30 years.

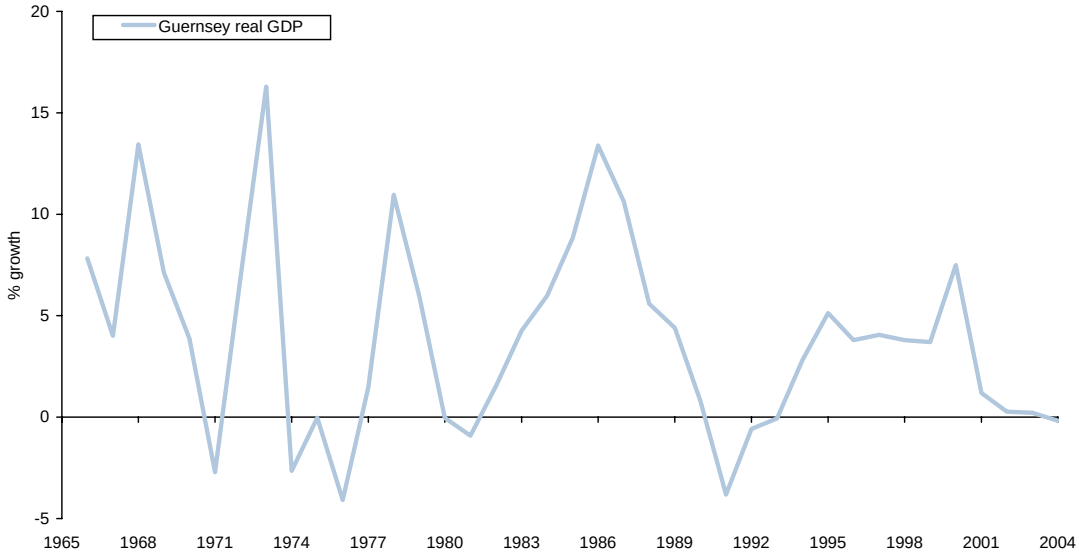
Figure 2.9 Real average annualised GDP growth up to the present for the last 30 years (%)



Source: Policy and Resources Department and Oxera calculations.

There have been a number of periods where the average growth rates have been consistently above the long-run average—particularly the years 1983–89 and, more recently, 1995–2000. Earlier years also show some periods of high growth, but generally of a shorter duration. This is shown in Figure 2.10.

Figure 2.10 Annual change in real GDP, 1965–2004 (%)

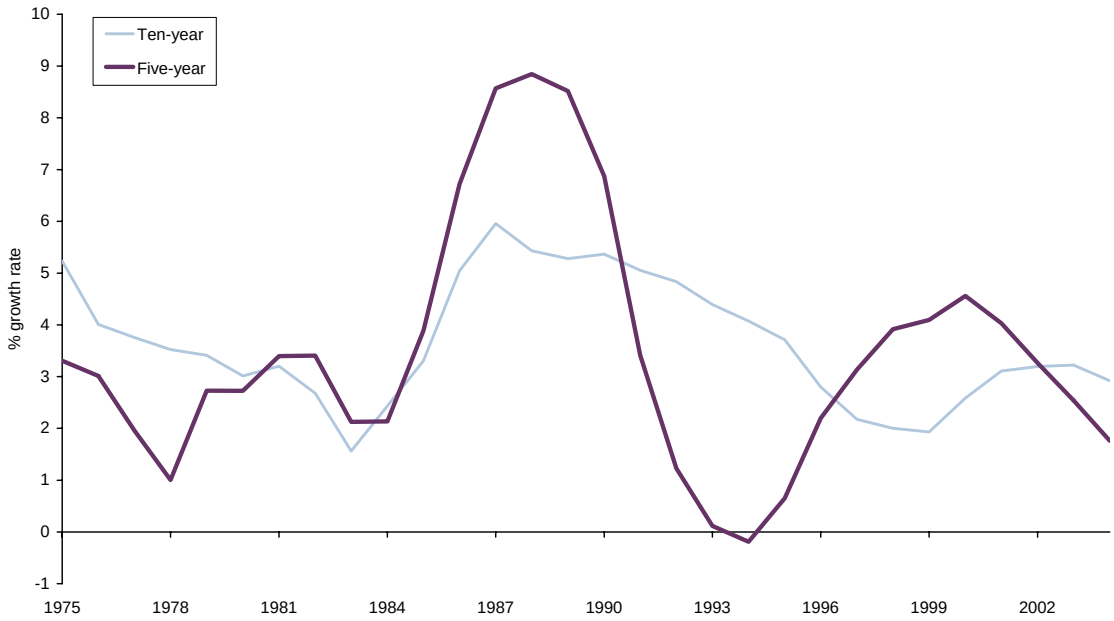


Source: Policy and Resources Department and Oxera calculations.

An examination of rolling five- and ten-year growth averages allows the identification of periods where growth has been, on average, relatively high (or relatively low). Figure 2.11 plots these rolling averages. Again, the period around the 1990s and, to a lesser extent, the 2000s appear to be the end of relatively high-growth periods. The general pattern that emerges from examining Figures 2.10 and 2.11 is that the past ten years have seen lower growth than previous periods, but the growth has been less volatile from year to year. If this

trend continues, growth would be expected to be reasonably steady, and the large swings (including up-swings) in annual GDP growth are less likely.

Figure 2.11 Rolling five- and ten-year average real GDP growth rates (%)



Source: Policy and Resources Department and Oxera calculations.

While, during the past ten years, the range of movements in GDP growth has been smaller than in previous years, growth rates have been very low since 2000. Appendix 1.1 provides additional details of historic trends in Guernsey GDP.

Links to changes in revenue growth

Figure 2.12 compares year-on year growth in Guernsey GDP and government revenue.

Figure 2.12 Real year-on-year growth in Guernsey GDP and total government revenue (%)

Note: The government revenue figures correspond to the year in which a majority of revenue—income tax—was generated rather than the year in which it appears in government accounts.
Source: Guernsey government accounts, Policy Council, Policy and Research Unit and Oxera calculations.

There are some factors that drive a wedge between the growth of the economy and the growth in government revenues—some of which are due to the government's ability to change the structure of the economy and the structure of tax revenues. However, the underlying pattern of revenue tracking economic growth is reasonably strong. This would be expected, as the main drivers of GDP are personal incomes and corporate profits—which are the main tax bases. Thus, in the absence of significant changes in the tax structure, much of the natural growth of tax revenues will be driven by growth in the economy. To estimate the tax yield in 2008, and the impact of the proposed changes in the tax structure, reasonable assumptions need to made about growth, which will then allow reasonable predictions of the tax yield and the reduction in tax yield when the proposed policies are introduced. This is examined in the next section.

2.1.2 Assumptions and sensitivities for projections of total tax yield from the proposed structure in 2008

The analysis above reveals that the past ten years have seen less volatility in GDP, but economic growth has been very slow since 2000. The Guernsey Treasury's estimate for the probable outturn on total tax receipts for 2005 shows a modest real growth and, although the GDP figure for 2005 is not yet available, this suggests that there is likely to have been some real growth. The projected increase in real GDP should translate into an increase in real tax receipts.

The recent (five-year) average real GDP growth has been around 2% and over the past 10 years it has been on average 2.9%. Whilst, as noted above, forecasts regarding the likely movements of GDP are highly reliant on the ability to accurately forecast the changes in the financial services industry's output, which, due to its volatility, is very difficult, some reasonable assumptions can be made regarding growth going forward.

As a central assumption it would appear to be reasonable to apply a growth rate of 2.5% up to 2007 (ie for estimating tax revenues in 2008), which is somewhat lower than the average growth rate of the past 10 years of 2.9%. Assuming that the estimated ratio of government

revenue and income of around 20% in 2004 remains stable over the period up to 2008 an estimate of the total revenue raised from taxation in 2008 can then be made. The sensitivity of the tax yield to the assumption of 2.5% can then be investigated by allowing growth from 2006 to 2008 to be higher or lower than the central growth estimate.

Table 2.1 summarises the main assumptions used in this paper for the central scenario and the alternative assumptions to test the sensitivity of the outcome to the assumptions of the central scenario. For the purpose of expressing numbers in nominal terms rather than in real terms, assumptions regarding the inflation rate going ahead also need to be made. The change in RPI during 2005 was 3.3% and on average was 3.5% over the past 10 years. Forecasting inflation is difficult and depends on a range of factors, including domestic and international demand in the economy and a number of other factors, such as international oil prices. The inflation assumptions for the different scenarios should therefore not be regarded as forecasts as such but merely to illustratively convert figures into cash terms of the year.

Table 2.1 Summary of main assumptions for the scenario calculations (%)

	Ratio of government revenue to GDP	GDP growth (2005)	GDP growth (2006 onwards)	RPI inflation (2005)	RPI inflation (2006 onwards)
Central assumption	20	2.5	2.5	3.3	2.5
Pessimistic assumption	20	2.5	1.5	3.3	2.0
Optimistic assumption	20	2.5	3.0	3.3	3.0
More optimistic assumption	20	2.5	3.5	3.3	3.0

Source: Inflation rate for 2005: Policy Council, Policy and Research Unit. Independent Working Group and Oxera.

The assumption for growth going forward of 2.5% is also subject to the specific caveats:

– the assumption is made that the period 2002–04 represents the bottom of the economic business cycle in Guernsey;

– the expansion of the workforce also continues along its average historical trend of around 200 additional employed persons per year.[22]

– if the rate of GDP growth is higher or lower than assumed, or the proportion of GDP taken in tax is lower (eg, if the additional tax receipts for 2005 are not sustained going forward) the tax yield will be different.

As a base point for the projections of the central estimate in tax revenue in 2008, the Treasury's latest projected revenues in 2006 are assumed (£317m). This estimate is deflated to 2004 prices, providing a basis for the projection of the revenues up to 2008 of £299m.

Table 2.2 shows the impact of higher or lower growth rates.

[22] Social Security Department (2005), 'Guernsey Facts and Figures', Table 1.14; and Oxera calculations. There is some conflict between the figures in different sources.

Table 2.2 Summary of the sensitivity of tax yield to variations in the assumptions of real GDP growth and tax share of GDP in 2008 (£m, 2004 prices)

	Real GDP in 2007[1]	Tax yield in 2008	Difference in tax yield from central assumption
Central assumptions			
GDP growth of 2.5% pa, tax yield as a % of GDP of 20%	1,528	306	n/a
Sensitivity			
GDP growth is one percentage point per annum below the central assumption from 2005 (1.5%) pa	1,498	300	–6
GDP growth is half a percentage point per annum above the central assumption from 2005 (3.0% pa)	1,543	309	3
GDP growth is one percentage point per annum above the central assumption from 2005 (3.5% pa)	1,558	312	6

Note: [1] 2008 tax revenue is mostly derived from 2007 activity. Therefore, estimated 2007 GDP is used to estimate tax revenues. The sensitivity analysis to different GDP growth assumptions is applied only after 2006, since estimates from the Treasury regarding the probable yield in 2006 have been used as a starting point.
Source: Oxera calculations.

2.1.3 Guernsey Treasury working forecasts

The analysis set out above is based on the potential capacity of Guernsey's economy and the recent trends in the development of the economy. Over the relatively short time horizon to 2008, the central assumption of 2.5% economic growth seems reasonable, as does the assumption that the current tax share of GDP is unlikely to change significantly. The outcome of these assumptions is set out above (in 2004 prices).

The Guernsey Treasury also forecasts tax revenues directly, using similar sorts of analysis a direct local understanding of the economy on the ground. Its current (April 2006) forecasts are similar and, in 2008 prices, the central/conservative estimate of revenue is £343m. Assuming an inflation rate of 2.5% per annum during the period 2006–08, this is the equivalent of £305m. The Treasury forecasts are based on the following factors:

– an estimated nominal growth of 5% per annum in tax revenues from employment income tax;
– an estimated nominal growth of 4% per annum in tax revenues from the corporate sector;
– no significant growth in the other revenue streams.

Overall, this represents a (nominal) growth in tax revenues of about 4.1% pa (8.2% in total). Based on the assumption of 2.5% inflation, this is a lower real growth rate (1.6% pa) than has been used in the calculation above. However, this is more in line with very recent growth (ie, that of the last few years).[23]

2.1.4 Tax yield after 2008

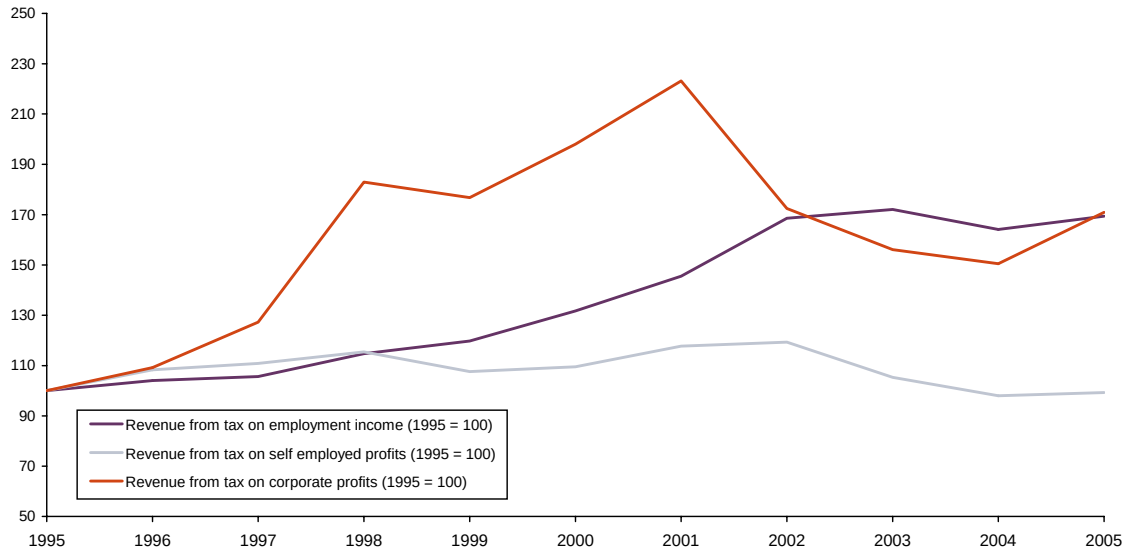
There is a discontinuity in the tax structure in 2008, with the introduction of the 0%/10% regime and the other policy proposals that have been put forward. As indicated above, the impact of the 0%/10% changes has been calculated on the 2004 tax base, with the net loss

[23] The absence of a finalised 2004 GDP estimate and the recent update in the Treasury forecast revenue in 2005 also cause a small difference in the projected revenues in 2008.

of tax revenues estimated at between £50m and £80m. Once the impact of the additional policy proposals is factored in, this is reduced, with estimates of the impact of these changes outlined below.

In addition, by 2008 the likely net loss will be different, as the economy will probably be larger (under the growth assumptions used above) and its composition likely to have changed. Figure 2.13 charts the relationship between GDP and the tax yield from employment income and from the taxation of corporate profits, indexed to 1995. The decline in GDP growth in the period 2000–04 coincides with a fall in the tax yield from corporate profits tax, while the tax yield from wages continues to increase. If GDP growth picks up it is likely that the profits component will rise and, therefore, the increase in tax yield resulting from the increase in GDP will at least partially reflect the increase in the profits tax base. This effect will *increase* the absolute size of the loss of tax revenues from adopting the 0%/10% regime compared with the situation in 2004, but from higher total tax yield.

Figure 2.13 Growth index of tax yield from main sources tax income (1995 = 100)



Note: Personal income tax includes tax paid out of wages, salaries and occupational pensions (covered by ETI). It excludes tax on government pensions, bank interest and rent. Figures on tax paid by the self-employed include some amount of income tax paid by the spouses of the self-employed (estimated, for example, at around £5m in 2004).
Source: Income Tax Office and Oxera calculations.

The following section examines the potential impact on tax yield in 2008 from moving to 0%/%10 and adopting the policy proposals made by the Policy Council.

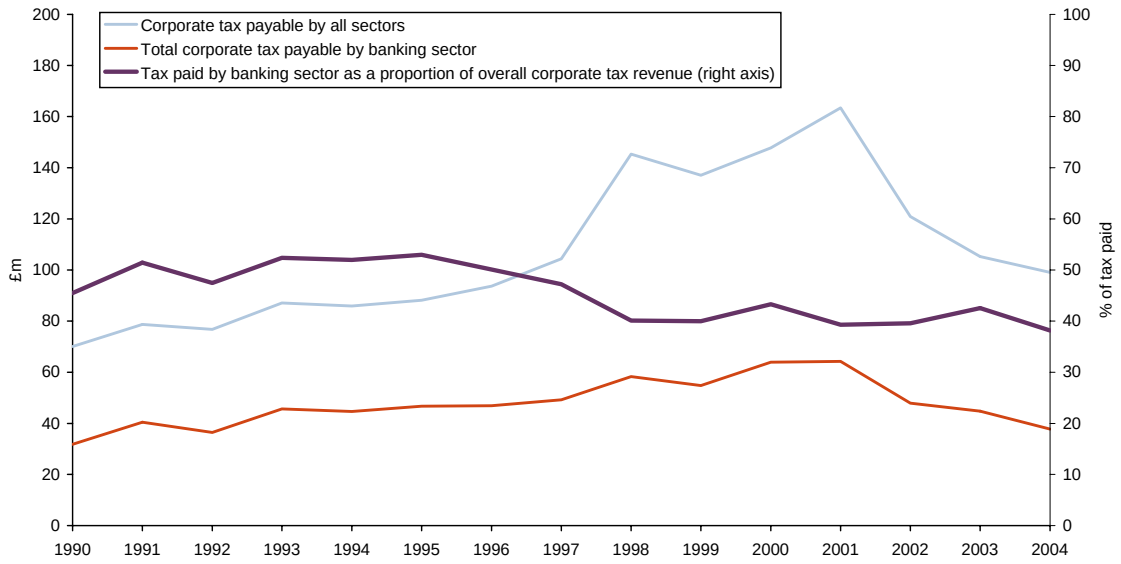
Loss in revenue from the banking sector when introducing 0%/10%

The main component of the 0%/10% structure is the application of the 10% tax to banking profits. In 2004, the tax yield from the application of the 20% tax rate on regulated bank profits was around £38m.[24] However, under the recent policy proposals, the tax base would not include all the profits made by banks, but the tax base is narrowed by including only the deposit functions of the banks. If all banking profits are included, the estimated yield at 10% would be around £19m, but with the restrictions the yield is likely to be lower—closer to £10m.[25] In what follows, the trends that underpin the central assumption of what this figure might be in 2008 are explained.

[24] Source: Income Tax Office.
[25] Source: Income Tax Office; States Treasurer.

Figure 2.14 plots the total corporate profits tax-take and the tax paid by the banking sector to the Income Tax Office. Since 1990, the contribution of revenues from the banking sector to total corporate tax revenues has declined by around ten percentage points (with a maximum of 53% in 1995 and a minimum of 39% in 2004). However, since 1998, this relationship has been more stable at around 40%. (The average over the period from 1998 to 2004 is 40.4%.)

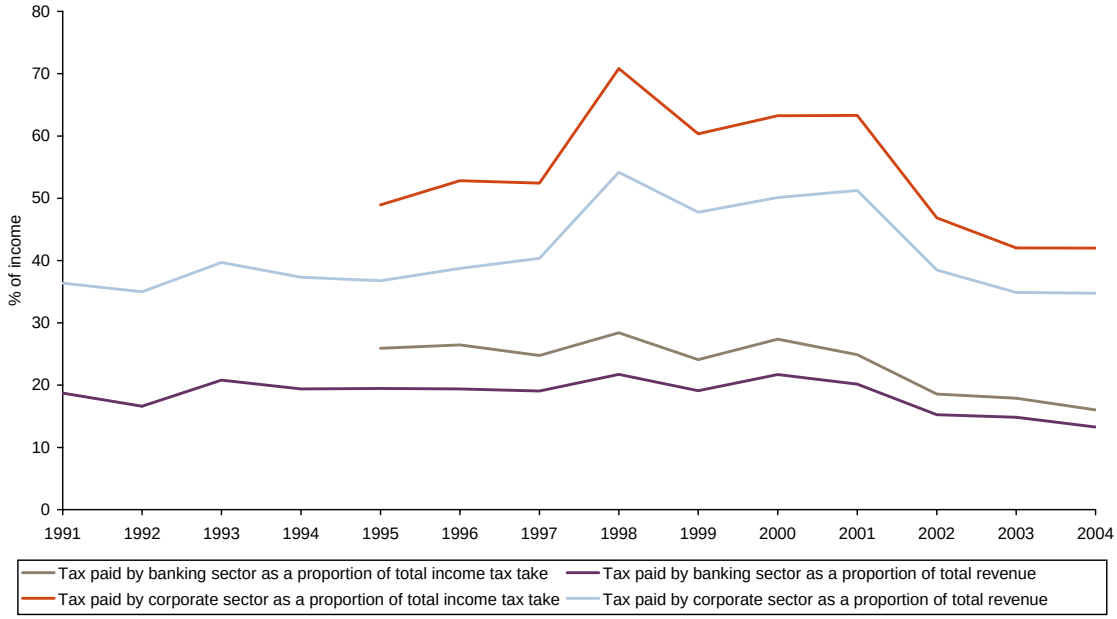
Figure 2.14 Total tax paid by the corporate sector and tax paid by the banking sector



Source: Income Tax Office and Oxera calculations.

Figure 2.15 provides further evidence of trends of shares of the banking sector and the total corporate sector as a share of total income tax-take and as total revenue. As highlighted above, the overall decline in the relative importance of corporate tax revenue over the past few years is due to the increasing importance of personal income tax in generating government revenues.

Figure 2.15 Trends in shares in income tax and total revenue paid by the banking and total corporate sectors (%)



Note: Differences in length of data series are due to unavailability of data.
Source: Income Tax Office and Oxera calculations.

Corporate tax figures are only available up to 2004, whereas budget estimates for overall income tax revenues are available for 2006. For the period up to 2006, it is assumed that corporate profits remain a constant share of income tax at the 2004 rate (39%).

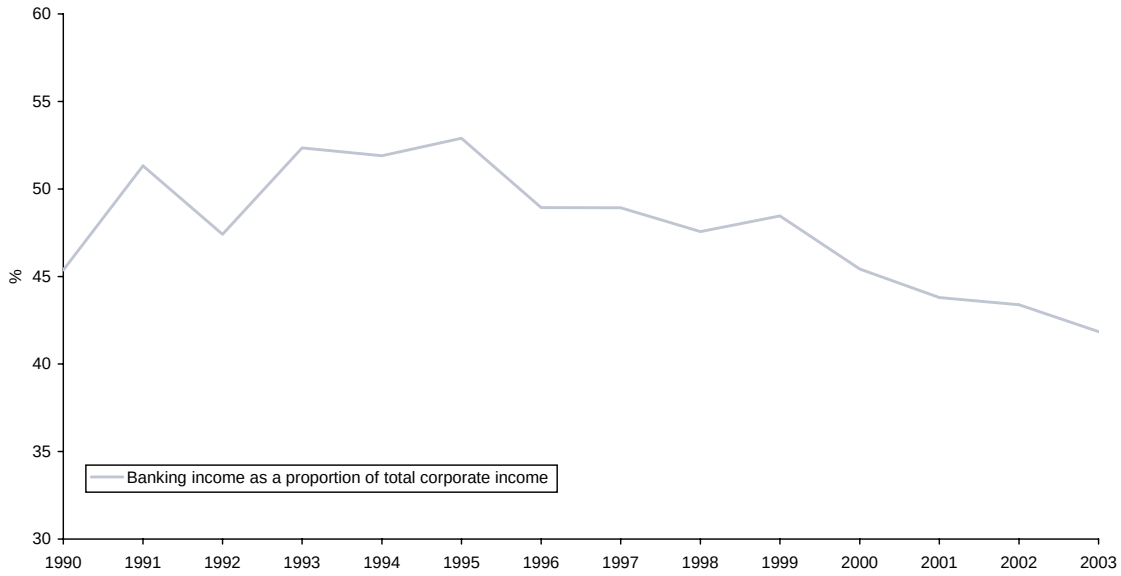
From 2006 to 2008 the central assumption is that banking profits going forward are 40% (to simplify) of total corporate tax. In addition, it is assumed that corporate tax remains a constant share in total revenues going forward—ie, it is assumed to grow in line with an overall ratio of revenue of GDP of 20% (again, to simplify).

Thus, if the part of the corporate profits represented by bank profits remains a constant percentage of the make-up of total corporate profits (in the tax base), the proportion of total corporate profits tax that remains after the introduction of 0%/10% in 2008 would be expected to be the same proportion as in 2004.

According to this assumption, the real loss of corporate profit tax revenues as a result of the introduction of 0%/10% in 2008 would be slightly higher than £10m but the remainder of revenues would also be slightly higher—approximately £11m or so.

However, as shown in Figure 2.15 over the past 10 years, the proportion of total tax paid from corporate profits (and other corporate income) has declined somewhat after reaching a peak in around 1998. This is at least partly due to banking income (ie, mainly profits) not remaining a constant proportion of total corporate profits, which is shown in Figure 2.16. The figure documents an ongoing downward trend in the share of banking income in total corporate income since 1999. Were this trend to continue, the yield from the 10% tax on banking would be lower than that estimated above. Given these uncertainties, a yield of £10m from 2008 from tax on banking profits appears a reasonable assumption.

Figure 2.16 Trend in banking income as a proportion of total corporate income (%)



Source: Income Tax Office and Oxera calculations.

Loss in revenue from the other sectors when introducing 0%/10%

In addition to taxing banking profits at 10%, the proposals also envisage taxing the profits of investment companies at 20%, to the extent that they are owned by Guernsey residents. In 2004, these companies returned around £9.6m in tax revenues[26]. Assuming growth in line with the projected GDP growth between 2004 and 2008, the yield would be a little higher in 2008—more like £10.7m. (The profits of utilities would also continue to be taxed at 20%.)

The reduction in tax yield from moving to 0% outside these sectors would, in the first instance, lead to a significant loss in corporate profits tax. The total corporate profit tax at issue was, in 2004, £32m.[27] However, of this £32m, around £19m was tax levied on profits attributable to Guernsey residents, and the loss of tax on corporate profit tax will be offset to some extent by the additional tax yield from shareholders on the distribution of (untaxed) corporate profits to those Guernsey residents. No information is readily available on the proportion of Guernsey corporate profits distributed to Guernsey residents. Perhaps more importantly, no information is available on how these corporate entities would distribute profits after the change in the rules; in any case, this is likely to depend on the precise detail of the rules, particularly the power to force distribution of profits in some circumstances, which is also suggested. It is therefore difficult to accurately predict the yield from this part of the tax proposals, as at least part of the yield will vary depending on the future behaviour of Guernsey-based corporate entities with Guernsey resident shareholders. If all profits were distributed to shareholders (which is unlikely) the addition tax (in 2004) would amount to the full £19m. If no profits were distributed (which is also unlikely, but is possible), there would be no additional tax.

Table 2.3 sets out the sensitivity of the tax yield to this factor. More realistic possibilities as to the distribution ratio of profits include the average rate in 2005 on the S&P 500 index (around 30%) and the factor used by the water regulator, Ofwat, in England and Wales to calculate the revenue requirements of the regulated companies. However, given the financial incentive *not* to distribute dividends, and hence incur an immediate tax liability, taking a low estimate of distributed profits would appear to be prudent.

[26] Source: Income Tax Office

[27] Source: Income Tax Office.

Table 2.3 Sensitivity of tax yield in 2008 to assumptions on the proportion of banking profits in corporate profits and on dividend distribution policy (2004 prices, £m)

	Yield with central assumption in GDP growth: 2.5%	Yield if GDP is 1% pa below central assumption: 1.5%	Yield if GDP is 0.5% pa above central assumption: 3%	Yield if GDP is 1% pa above central assumption: 3.5%
Yield from taxing distributions at 20% distribution policy unchanged	21.0	20.4	21.3	21.6
Yield if only 75% of profits are distributed[1]	15.7	15.3	16.0	16.2
Yield if only 30% of profits are distributed[2]	6.3	6.1	6.4	6.5
Yield if only 15% of profits are distributed	3.1	3.1	3.2	3.2

Note: The likely distribution policy in Guernsey is unknown. [1] 75% as per England and Wales water industry.
[2] 30% as per the S&P 500 index of companies in 2005.
Source: Oxera calculations.

Revenue from changing the ceiling on personal income tax

The introduction of the ceiling on personal tax liability of £250,000 could have a theoretical impact on the tax yield from personal taxpayers. However, only tax liabilities on non-Guernsey income will benefit from this ceiling and, it is likely that very few, if any, existing residents would benefit from this ceiling. Hence there is no impact on the total tax yield from this source.

Revenue from capping mortgage interest tax relief, relief on life assurance and other relatively minor changes

The current estimate from the States Treasurer is that these measures will yield £7m in 2008.

Revenue from increasing social security contributions

The proposal is to increase employer social security contributions by 1% (to 6.5%), and to increase the ceiling to £60,000 for employers, employees and the self-employed. The net effect will be to increase revenue to the government (in the form of increases paid to Social Security Department) by 1% of all employment incomes up to £36,036 (2006 rates), and by 12.5% (6% from employees and 6.5% from employers) for any income between £36,036 and £60,000. The self-employed will contribute an additional 10.5% of their income over this range of £36,036 to £60,000. (In addition, the non-employed under 65 who pay 'health only' contributions will contribute at 9.9% and the non-employed over 65 who pay 'specialist care only' contributions will contribute at 2.6% over this range.)

The ceiling on social security contributions has increased over time. Between 2005 and 2006, the ceiling was increased by 5% (in nominal terms). Some additional increase in this ceiling would be expected by 2008. For the purposes of this analysis, it is assumed in the central case that the ceiling remains constant in real terms. This may be an underestimate of the increase, which will have the effect of overestimating the additional yield since that yield is partially driven by the difference between the current ceiling in 2008 and the new proposed ceiling of £60,000.

To carry out this estimation, a number of assumptions have to be made. Because of the interaction between real wages growth, inflation, and the change (if any) in the current ceiling to 2008, a simplified calculation based on the 2004 income distribution has been used. In addition, data on the detailed breakdown of individual earnings is not available and, as a

result, an approximation based on household incomes has been employed. The results, therefore, must be treated with some caution. Applying the new rates and ceilings in 2004 would have raised approximately £15m–£16m from wage earners, and around an additional £1m from the self-employed. (The numbers of non-employed paying contributions with incomes in the range £36,036 and £60,000 is not readily available.) By 2008, the following factors are likely to have influenced this total.

– The expansion of the labour force will tend to increase the tax yield, proportionately to the expansion (3–4%).

– The increase in real wages will tend to *increase* the yield, as more workers will have earnings above the existing ceiling. The *maximum* increase would be approximately the increase in individual real wages (approximately 10%).

– The reduction of the value of the new ceiling as a result of inflation is unlikely to have a large impact on tax yield, although it will reduce the yield marginally as a few workers rise above the ceiling.

A central assumption that the gross yield will be between £17m and £18m (in 2004 prices) in 2008 would appear to be reasonable. However, it should be recognised that the employer element of this, which is paid by the government as an employer, will appear as an employment cost increase. Unless this is absorbed within the budget constraint, the effective *net* yield to the government will be reduced. In 2004, approximately 20% of the workforce was employed in public administration, health or education, and approximately 70% of the increase will be paid for by employers.[28] Thus, out of the £17m–£18m gross yield, approximately £2.4m–£2.5m is likely to appear as an increased cost item for the government. The net yield of this tax will, therefore, be more likely to be in the region of £14.5m–£15.5m.

Revenue from increases in duties

The policy proposal with regards to changes in duties is the following.

> The rates of existing indirect taxes should be increased, in particular duties on alcohol, tobacco and Tax on Rateable Values, but less so than previously indicated.[29]

The amounts put forward in the policy proposals were previously around £18m per annum.[30] The central assumption used in the analysis in this paper is that these duties are raised so as to result in an additional £8m in real terms. If this also rises in line with real GDP, this may increase to around £9m by 2008.

Additional factors from policy

There are a few additional factors that should ideally be taken into account, but for which there is little or no reliable information. One of the effects of the introduction of 0%/10%, and of taxing only distributed profits, is that there may be tax advantages for the self-employed to incorporate. This would allow this group to keep any surplus income in the company and, since this would appear as non-distributed profits, no tax liability would arise until distribution took place. At best, this would delay the tax payments. At worst it might allow those who incorporate to achieve significant reductions in their total tax liability. The actual effect will depend on the detail of the arrangements put in place, particularly with respect to any enforced distribution, which is part of the proposals. For this reason, no account has been taken of these effects. In 2003, the self-employed made up approximately 10% of the workforce, and paid approximately 7.5% of all income tax (including corporate income tax).[31]

[28] Source: Oxera calculations.

[29] Policy Council (2006), Economic & Taxation Strategy, April. Summary of policies is reproduced in Box 2.1 of this report.

[30] States of Guernsey (2005), 'Future Economic and Taxation Strategy: Second Consultation Document', September, p. 27.

[31] Source: Social Security Department, Income Tax Office; and Oxera calculations.

This was worth around £20m, so it is possible that the revenue reduction from the self-employed incorporating could be significant.

Total impact on government revenue in 2008

Combining all of the above factors allows the calculation of the range of the likely changes in the income stream after the changes have been made in 2008. Table 2.4 combines the revenue impact of the policies described in previous sections, and sets out the range of outcomes depending on the assumptions made.

Table 2.4 Range of outcomes in government revenue, 2004 prices (£m)

	Central assumption: 2.5% growth	Pessimistic assumption: 1.5% growth	Optimistic assumption: 3.0% growth	More optimistic assumption: 3.5% growth
GDP in 2007	1,528	1,498	1,543	1,558
Total taxation revenues	306	300	309	312
Amount of revenue derived from tax on corporate profits[1]	104	102	105	106
Corporate tax changes 0%/10% and policy proposals				
1. Continuing tax on banking profits	10	10	10	11
2. Continuing taxation of investment companies	10	10	10	11
3. Taxation of distributed profits [2]	6	3	6	6
4. Increase in duties etc	8	8	8	8
5. Increase in social security payments[3]	17	17	17	18
6. Changes to interest payments	7	7	7	7
7. Increases in fees	5	5	5	5
New tax yield	64	60	64	67
Total change	–40	–42	–41	–39
Post-2008 income	265	258	267	272

Note: [1] In 2006, the Treasury forecast is for tax on corporate profits to make up 34% of revenue. This split has been carried forward to 2008. [2]The assumptions for the distribution on profits are 30% in the central and optimistic scenarios, and 15% in the pessimistic scenario. [3] The Treasury estimates the revenue from increased social security payments at £20m (in 2004 prices), which differs from the estimate obtained by Oxera (around £17m).
Source: Policy proposals 1, 2, 6 and 7: calculations supplied by Guernsey Treasury; other figures Oxera calculations.

Appendix 2.1 provides the above table in nominal terms.

Treasury forecasts

Much of the analysis set out above uses estimates from the Treasury. Slight differences arise with respect to the following items.

– Gross yield from increases in social security contributions, where the Treasury forecast is slightly higher at £20m in 2008 (in 2004 prices). (Net yield may be lower, unless the increase in the government wage bill is factored into the assumption of revenue growth—see below.) There is a difference of around £2m–£2.5m here.

– The growth assumptions are slightly different and the recent revision to corporate tax revenues for 2005 create a slightly different starting position (but as this tax mostly disappears in 2008 the final outcome is not significantly changed).

– The yield from taxing distributed profits is slightly lower, while the additional yield from additional duties and other revenue is slightly higher.

2.1.5 Summary

The Guernsey economy has sustained significant average GDP growth over the last 40 years. There is evidence that in more recent times the volatility of the annual GDP growth rate has reduced and that there has been some reduction in the annual average growth rate. Over the last 10 years annual average growth of GDP has been 2.9%.

Reflecting these trends, and the rather lower growth rates experienced in the recent past, the central assumption used to calculate real GDP in 2008 has been taken as 2.5%. Sensitivities of 1% lower and 0.5% higher have also been used.

Historic trends in the relationship between government revenues and GDP have also been analysed. Current levels are in the order of 20%, and have recently been declining. Growth in GDP is largely accounted for by growth in remuneration and in profits—both of these are presently directly taxed at a maximum of 20%. In addition, government revenues are also derived from duties and other sources. However, these are not predicted to rise significantly in the period to 2008. As a result an assumption has been made that government income will remain at around 20% of GDP.

The combination of these assumptions lead to estimates of total government revenues, in 2008, prior to the change in tax structure, of between £300m and £309m (in 2004 prices) within the growth ranges of 1.5% pa to 3% pa.

Based on forecasting tax revenues directly from the projected tax base in 2006, which is higher than the base used in this report, the Treasury is estimating total revenues of around £343m in 2008 prices, or around £305m in 2004 prices.

The net reduction in revenues as a result of 0%/10% and the other measures is estimated at around £40m (in 2004 prices). However, as a direct result of the policy to increase employers' social security contributions an additional expenditure of around £2m pa is likely to be required by the government as an employer.

The combination of the growth to 2008 and the net reduction in income as a result of the 2008 measures produces a new estimate for government income. Within the growth assumptions of 1.5% to 3%, and some variations around the projected impacts of the additional tax measures, this produces a range of incomes between £258m and £267m in 2004 prices, or £283m to £302m in 2008 prices. This is similar to the forecasts made by the Treasury of between £290m and £300m (in 2008 prices).[32]

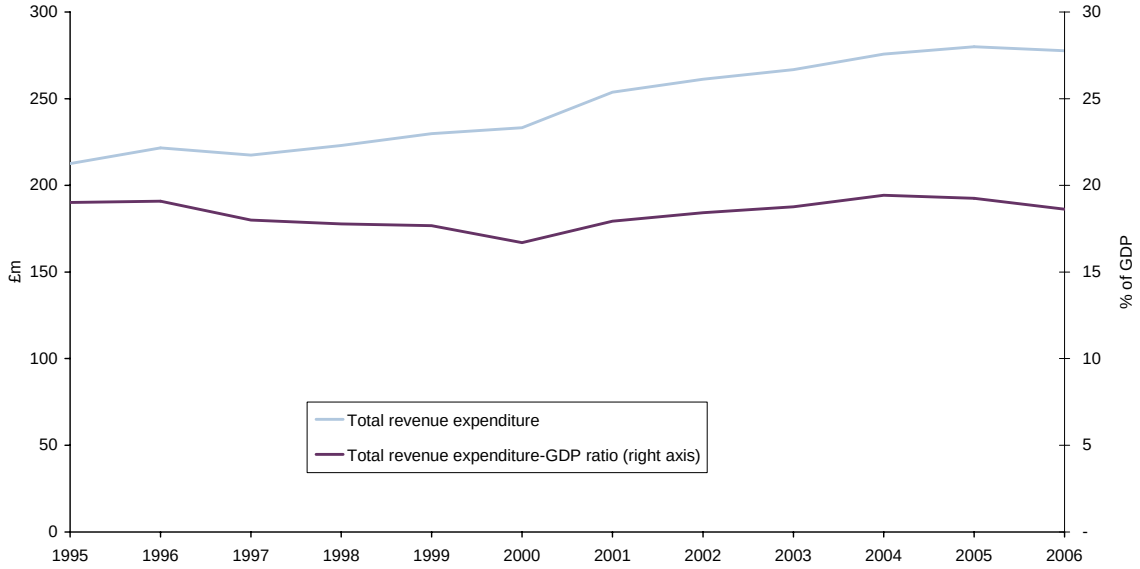
2.2 Revenue expenditure

The policy put forward by the Policy Council is for modest annual increases in public expenditure. Figure 2.17 shows the long-run changes in public revenue expenditure over the past 12 years. The average annualised year-on-year growth in public expenditure is around 2.5%, with some significant changes year to year. The past five years (2001–06) have seen a slightly above-average annualised real growth of around 3.0% per annum. The downward trend in real public expenditure as a proportion of GDP up to 2000 has, over the past four

[32] The numbers reported here for the Treasury include the additional revenue that would be generated by the increase in socials security contributions, to make them comparable with the calculations done in this report.

years, reversed into an upward trend up to 2004 (the decline after 2004 may be attributable to the fact that GDP is assumed to grow at 2.5%, revenue expenditure-GDP ratio post 2004 should therefore be interpreted with caution).

Figure 2.17 Trends in public revenue expenditure



Note: Revenue expenditure figures for 2005 and 2006 relate to budgeted rather than outturn figures. GDP is assumed to grow by 2.5% in 2005 and 2006 as per central assumption.
Source: Guernsey government accounts, Policy Council, Policy and Research Unit and Oxera calculations.

If the term 'modest growth' used in the policy proposal is interpreted as growth in nominal terms, an assumption could be made that growth in expenditure will be kept flat in real terms—ie, increases in growth of revenue expenditure are pegged at the level of inflation. The implication is that, up to 2008, the total revenue expenditure would remain at its projected level for 2006 of £281m in 2004 prices (ie, £297 in 2006 prices). This can be compared with the estimated tax yield in Table 2.3 above, of between around £258m and £272m.

Using both a pessimistic and optimistic variation around this central value of holding expenditure to RPI the outturn to 2008 can be calculated. The pessimistic expenditure assumption is RPI + 1%, which is still significantly below the long-term trend. The optimistic assumption is that expenditure declines by 1% pa in real terms (ie RPI – 1%). This is set out in Table 2.5. For comparison, a more pessimistic option is also included: that the increase in revenue growth is held at RPI + 2.5%, the average over the past five years.

Table 2.5 Scenarios of projected outturn of the gap between revenue and revenue expenditure in 2008 (£m, 2004 prices)

	Central expenditure: RPI	Pessimistic expenditure: RPI + 1%	Optimistic expenditure: RPI – 1%	*Very pessimistic revenue expenditure: RPI + 2.5%*
2008 revenue expenditure	281	286	275	295
Fiscal balance with:				
central income (£265m): 2.5% growth	**–15**	–21	–10	–30
pessimistic income (£258): 1.5% growth	–23	–28	–17	–37
optimistic income (£267m): 3% growth	–13	–19	–8	–28
more optimistic income (£272m): 3.5% growth	–8	–14	–3	–22

Source: Oxera calculations.

It is clearly open to the government to reduce public expenditure further, which would in turn further reduce the funding gap in 2008. For every 1% of real cuts in public spending, a further £2.9m would be removed from the gap.

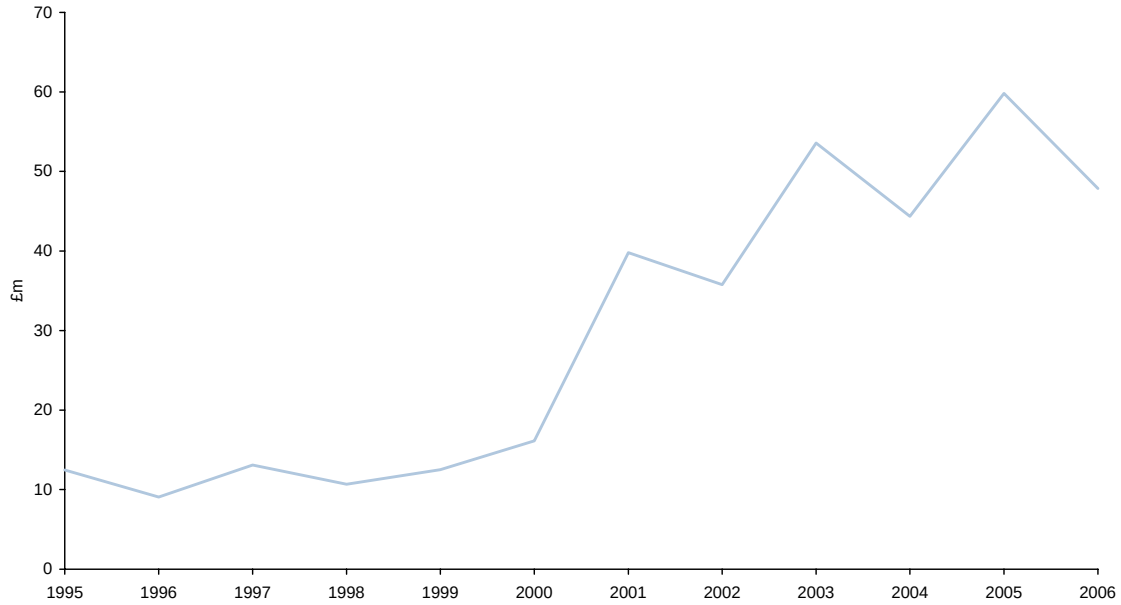
Treasury forecast to 2008

The Treasury is forecasting that revenue expenditure between 2006 and 2008 also increases modestly from £297m to £306m (in 2008 prices—ie, the equivalent of £275m in 2004 prices). This is a nominal increase of 1.5% per annum for 2007 and 2008, which is likely to be below the rate of inflation—ie, a reduction of expenditure in real terms by about 2% in total, if inflation is around 2.5% per annum. (Higher actual inflation would lead to higher real reductions in expenditure if the nominal total expenditure forecast is maintained.)

2.3 Capital expenditure

In addition to revenue expenditure, the government also undertakes CAPEX. Depending on the amount of CAPEX, the projected deficit summarised in Table 2.5 would therefore increase. Figure 2.18 shows the real CAPEX undertaken over the past 12 years.

Figure 2.18 Trends in CAPEX (£m)



Note: CAPEX figures for 2005 and 2006 relate to budgeted rather than outturn figures.
Source: Guernsey government accounts and Oxera calculations.

The amount of real CAPEX varies significantly from year to year—from £9m in 1996 to £53m in 2003 (ignoring the probable outturn number of £60m for 2005). Due to the discrete nature of capital investments, and unlike revenue expenditure, CAPEX can be (relatively) easily increased and decreased in the short term and at the discretion of the government. As a result, any one-year's expenditure is not necessarily a clear indication of what is required to maintain the infrastructure of the economy.

Estimating what the minimum capital maintenance expenditure is for Guernsey from the bottom up is beyond the scope of this analysis. However, the minimal expenditure of around £9m (as in 1996) per year is unlikely to be sustainable, while the expenditures in 2003 and 2005 almost certainly include a significant element of 'catch-up'. The long-run average expenditure over the past 12 years has been around £25m. To the extent that this contains CAPEX that is 'unnecessary', or has been inefficiently incurred, this will overestimate the CAPEX required to keep the infrastructure working efficiently. However, if this represents the amount that is *actually* required over the long term to keep the Island's infrastructure working, in the long run, there may be significant economic harm and/or reduction in the quality of services delivered by the government, if capital spending is lower than this over an extended period of time.

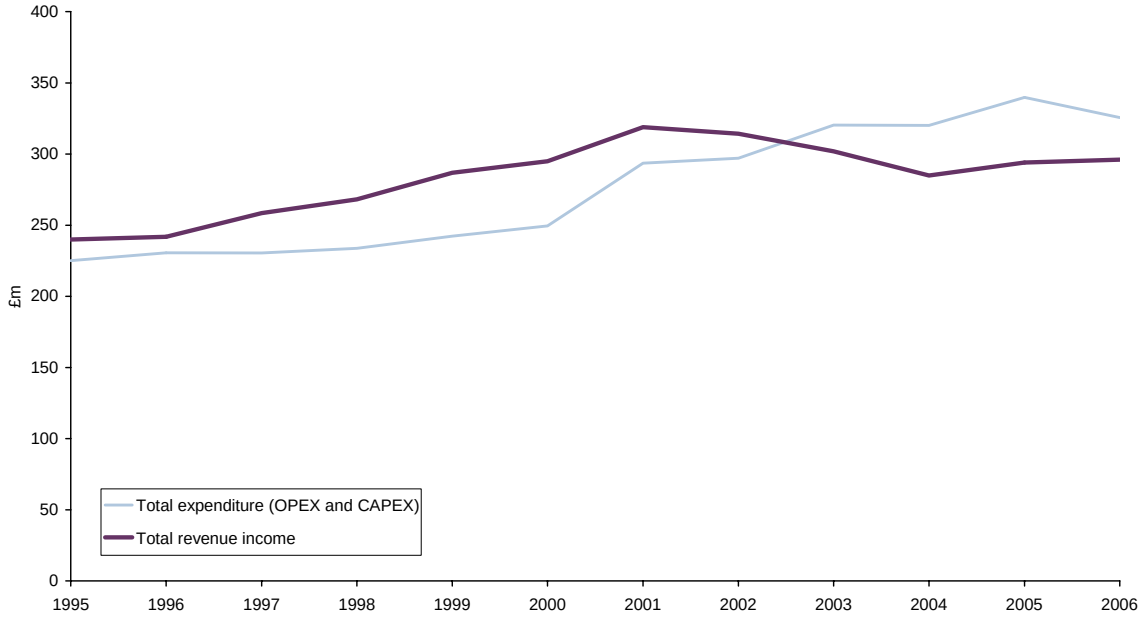
The September 2005 consultation document proposed limiting CAPEX to £15m pa.[33] Since this is significantly (40%) below the long-run average, this level of capital spending has been taken as the lower bound, and £20m capital spending per annum (in 2006 prices) has also been modelled in the period post-2008. Because of the likely element of catch-up in the projected capital spend in 2006, and the existence of the Capital Reserve Fund (projected to be £32.9m at the end of 2006[34]), a central assumption has been made that the Capital Reserve Fund is more or less exhausted by 2008, and post-2008, both the CAPEX and revenue expenditure will have to be covered by current income or transfers from the Contingency Reserve.

[33] States of Guernsey (2005), 'Future Economic and Taxation Strategy: Second Consultation Document', September, p. 9.
[34] States of Guernsey, Treasury and Resources Department (2005), 'Budget Report 2006', November, p. 25.

Although £15m per annum has been proposed, in light of the above, £20m pa has been adopted in the central assumption, £25m (the approximate long-run average) in the pessimistic assumptions, and £15m has been used in the optimistic assumptions.

Figure 2.19 plots total government expenditure and total government revenues over the past 12 years.

Figure 2.19 Trends in total revenue and total expenditure (revenue expenditure and CAPEX, £m)



Note: Expenditure figures for 2005 and 2006 relate to budgeted rather than outturn figures.
Source: Guernsey government accounts and Oxera calculations.

Appendix 5 contains historical information in trends in revenue expenditure and in CAPEX, both in real and nominal terms.

2.4 Overview of projected fiscal balance in 2008

Table 2.6 summarises the scenarios of possible deficits in 2008 as a result of changes in revenue income, revenue expenditure and CAPEX. The table therefore summarises the projected deficits, derived from the analysis in sections 2.1 to 2.3, under different assumptions regarding changes in the fiscal balance in 2008 from:

– the introduction of the 0%/10% tax regime;
– the policy proposals by the Policy Council;
– revenue expenditure up to 2008; and
– CAPEX up to 2008.

Table 2.6 Scenarios of projected outturn of the gap between revenue and total expenditure in 2008 (£m, 2004 prices)

	Central expenditure: RPI	Pessimistic expenditure: RPI + 1%	Optimistic expenditure: RPI – 1%	*Very pessimistic revenue expenditure: RPI + 2.5%*
2008 revenue expenditure	281	286	275	295
2008 CAPEX	19	24	14	19
2008 total expenditure	300	310	289	314
Fiscal balance with:				
central income (£265m): 2.5% growth	**–34**	–45	–24	–48
pessimistic income (£258): 1.5% growth	–41	–52	–31	–56
optimistic income (£262m): 3% growth	–32	–43	–22	–46
more optimistic income (£272m): 3.5% growth	–27	–38	–17	–41

Source: Oxera calculations.

For ease of comparison with the figures produced by the Treasury, Table 2.7 translates the projections in table 2.6 into 2008 prices using the inflation assumption as outlined in table 2.1. From this point forward figures mostly are also provided in nominal terms of the year to ensure that figures are comparable with those of the Treasury. However, it is worth re-emphasizing that the inflation assumptions for the different scenarios should not be regarded as forecasts of inflation as such but are used merely to illustratively convert figures into cash terms of the year.

Table 2.7 Scenarios of projected outturn of the gap between revenue and total expenditure in 2008 (£m, 2008 prices)

	Central expenditure: RPI	Pessimistic expenditure: RPI + 1%	Optimistic expenditure: RPI – 1%	*Very pessimistic revenue expenditure: RPI + 2.5%*
2008 revenue expenditure	312	319	306	328
2008 CAPEX	21	26	16	21
2008 total expenditure	333	345	322	349
Fiscal balance with:				
central income (£295m): 2.5% growth	**–38**	–50	–27	–54
pessimistic income (£287): 1.5% growth	–46	**–58**	–35	–62
optimistic income (£297m): 3% growth	–36	–47	**–24**	–52
more optimistic income (£303m): 3.5% growth	–30	–42	–19	–46

Note: the different income growth scenarios in this table have all been subject to the central assumption on inflation.
Source: Oxera calculations.

The combination of revenue expenditure and CAPEX make up the government expenditure. In 2008 prices, and ignoring the very pessimistic assumptions on revenue expenditure, and the 3.5% real growth assumption, the range of the projected deficit is between £24m (revenue spending held 1% below inflation, CAPEX £15m per year and growth at 3% real per year) and £58m per year (revenue spending held at 1% above inflation, CAPEX £25m per year and growth at 1.5% real per year). The central estimate, assuming 2.5% real growth, revenue spending increasing in line with inflation and CAPEX of £20m pa, is a deficit of £38m.

2.4.1 Summary

In any analysis of the type conducted in this report, there is a considerable degree of uncertainty because the behaviour of economies is unpredictable. However, based on an analysis of the past behaviour of the Guernsey economy, and simulating the impact of the fiscal measures to be applied in 2008 onto the 2004 economy, estimates can be made of the likely expenditure in 2008. When combined with the projected income, the fiscal balance in 2008 can also be estimated.

Under tight controls of revenue expenditure—no growth in real terms—total revenue expenditure in 2008 is in the order of £281m (2004 prices). Capital spending is likely to be in the order of £19m, making a total of £300m in 2004 prices. This translates into expenditure of around £333m in 2008 prices. If expenditure is not held constant in real terms each 1% of additional growth per year will add about £7m to the total expenditure in 2008, and a 1% real reduction in expenditure per year would reduce expenditure by the same amount in 2008.

The central assumption for income of £295m (2008 prices) is below that of the central assumption of expenditure of £333. The gap between income and total expenditure, ie the deficit, is £38m.

The range of deficits between a low growth (1.5%) and reduced expenditure control (+1%) scenario and high growth (3%) with more severe expenditure control (-1%) scenario is £58m and £24m, all in 2008 prices.

2.4.2 Treasury forecast to 2008

The Treasury forecasts, based on direct estimates of revenue growth and assumptions about how tight realistic expenditure controls can actually be, arrives at a similar range of estimates of the deficit of between £12m and £40m pa in 2008 prices. There are, however, some differences compared with the analysis in this report. In particular, the implied real growth rates for both the economy and expenditure are lower in the Treasury forecasts. Specifically, the implied real growth rate is around 1% pa in the Treasury's calculation, while the analysis in this report uses 2.5%, for its central assumption, and the implied revenue expenditure growth is –1.5%, while the above analysis uses 0% in its central assumptions.

2.5 Dynamic outcome: post-2008

A critical plank of the policy proposals is to grow the economy and, if necessary, spend some of the Contingency Reserve while the economy achieves that growth. As set out above, predicting the growth rate of any economy is difficult, but is particularly so for one as specialised as that of Guernsey. Therefore, instead of predicting the growth rate and calculating the fiscal balance, this section first examines the length of time it would take to return to a balanced budget, and the impact on the Contingency Reserve for different deficit and growth rate scenarios, using the central prediction of the (static) state of the economy in 2008.

Prior to carrying out this analysis, this section examines the potential impact of a further element of the policy proposals—the proposal to cap personal income tax liability.

2.5.1 Attracting high net worth individuals—capping personal income tax liability

One element of the proposals that does not rely on traditional economic growth to increase the tax yield is the capping of liability of personal income tax on non-Guernsey income at £250,000 per annum. There is considerable uncertainty regarding the likely effect of a move of this sort. Clearly, however, if a significant number of additional residents were persuaded to move to Guernsey as a result of this policy, the impact on the revenue gap could be significant. Current government expenditure (revenue expenditure and CAPEX) is approximately £5,000 per head per year, so even if these new arrivals were particularly expensive to service, in terms of public services, the net benefit to the Island would be high. Assuming a net gain of £225,000 per annum per household, 222 would need to be persuaded to move to Guernsey to add a net £50m per annum to government revenues from income tax alone.

However, there are a number of factors that need to be taken into account in assessing the likely impact of a policy of this sort. For example, the Isle of Man has announced an income tax cap of £100,000. Therefore, individuals wishing to move *simply* to reduce their income tax liability must be prepared to value Guernsey over the Isle of Man at more than £150,000 per annum.

In addition, most of the individuals who would benefit from such a cap in Guernsey would already benefit from moving to Guernsey under the current (20%) income tax structure.[35] It is only those who are already resident in an uncapped, low tax rate jurisdiction who would not benefit now, but would benefit in the future. Table 2.8 sets out the position at different income levels of someone moving from the UK to Guernsey (or from Jersey to Guernsey—the benefit is essentially the same as the additional benefits that can be obtained after the cap is introduced).

Table 2.8 Approximate income tax benefits to new residents of the proposed cap: current location versus UK and Jersey (£'000s)

1. Income	2. Tax UK at 40%	3. Benefit of moving to Guernsey now	4. Benefit of moving to Guernsey if tax cap of £250,000 introduced	5. Additional benefit of cap (and from moving from Jersey) (4.–3.)
500	200	100	100	0
1,000	400	200	200	0
1,500	600	300	350	50
2,000	800	400	550	150
2,500	1,000	500	750	250
3,000	1,200	600	950	350
3,500	1,400	700	1,150	450
4,000	1,600	800	1,350	550
4,500	1,800	900	1,550	650
5,000	2,000	1,000	1,750	750

Note: Column 4 represents the savings in income tax payable if individuals with different incomes (Column 1) move from the UK to Guernsey and an income tax cap of £250,000 would be introduced.
Source: Oxera calculations.

As can be seen, the effect of the cap is to improve the benefits available to new residents, but at incomes of up to, for example, £2m per annum, the *additional* benefit of the cap

[35] Although, purely on the basis of savings to be made under current tax structures, they would be more likely to go to the Isle of Man.

(£150,000) is relatively small compared with the benefit that would already be available (£400,000).

It is also possible that, were this policy to be successful in persuading new residents to move from Jersey, the government of Jersey may respond with a similar scheme. In addition, were there to be a significant number of new residents of this sort, it is possible that new housing stock would be required, which could take some time to construct.

Finally, it is also quite likely that the target individuals, even if they were living in the UK, would have organised their affairs such that their UK tax liabilities on worldwide income are lower than indicated in the table above. If this is the case, the advantage of the cap to them is correspondingly lower.

As a result, although this policy could clearly contribute to meeting the government revenue shortfall, it is unlikely to be able to reduce the shortfall within the timescales required such that other action is not needed. To simplify the analysis, any impact of this measure has not been taken into account, and the analysis proceeds on the basis that the range of deficits identified above will have to be met by the more traditional economic growth.

2.5.2 Growth in tax revenues and growth in GDP post-2008

All other things being equal, one of the effects of the 0%/10% policy and the reduction in tax yield[36] is that the proportion of tax in the GDP will be reduced. Under the central assumption, just prior to 2008, tax yield is around 20% of GDP. The net impact of the changes, under the central assumptions, is to reduce total take by around £40m in 2004 prices or £45m in 2008 prices. This would reduce the share of taxation of GDP to around just under 18%. Assuming that this share remains constant post-2008, the approximate GDP growth required to balance the budget can be calculated in the following steps:

- the central estimate of nominal GDP in 2008 is £1,658m ;
- a 1% real increase in GDP is equivalent to £16.5m;
- the tax yield as a % of GDP is 17.8%, and, therefore, a 1% increase in real GDP yields an additional £3m in tax; and
- as per central assumption, expenditure does not increase in real terms.

Therefore, to close a gap of £20m, £30m, £40m, £50m and £60m requires GDP to grow in real terms by 7%, 10% and 14% and 17% respectively. In the very pessimistic scenario of a gap of around £60m, growth of 20% is required. The approximate time taken to eliminate very optimistic (£20m) to very pessimistic (£60m) deficits is set out in Table 2.9.

[36] For the purposes of this analysis, the additional revenue gained by changing the rates and ceilings for social security contributions is included in the definition of tax for the purposes of linking tax revenues to GDP.

Table 2.9 Required time to achieve a balanced budget under different growth assumptions

	Number of years to balance budget if 2008 deficit is:				
Real annual growth rate (%)	**£20m**	**£30m**	**£40m**	**£50m**	**£60m**
1.0	6.6	9.7	12.8	15.7	18.6
1.5	4.4	6.5	8.5	10.5	12.4
2.0	3.3	4.9	6.4	7.9	9.3
2.5	2.7	3.9	**5.1**	6.3	7.5
3.0	2.2	3.3	4.3	5.3	6.3
3.5	1.9	2.8	3.7	4.5	5.4
4.0	1.7	2.5	3.2	4.0	4.7
4.5	1.5	2.2	2.9	3.6	4.2
5.0	1.3	2.0	2.6	3.2	3.8
6.0	1.1	1.7	2.2	2.7	3.2
7.0	1.0	1.4	1.9	2.3	2.7
8.0	0.9	1.3	1.7	2.0	2.4
9.0	0.8	1.1	1.5	1.8	2.1
10.0	0.7	1.0	1.3	1.6	1.9

Source: Oxera calculations.

Table 2.9 shows that, under a constant growth rate of around 2.5%pa, the central scenario, the time taken to reach a balanced budget is between three to eight years. Under the central growth estimate, and no real increase in expenditure, the deficit of around £40m is eliminated in around 5 years—ie up to 2013. Around £120m of the Contingency Reserve would have been spent by then, reducing its nominal value by around £80m from its 2008 level (see table 2.12 below). However, if spending is allowed to increase modestly in real terms at a rate of 1%pa, more than half of the Contingency reserve would have been spent by 2011—see tables below. If the deficit is as high as £60m, the government might have to borrow by 2013 (ie, all the Contingency Reserve would have been spent by then).

A critical assumption in Table 2.9 is that expenditure is held constant (central assumption) in real terms. As a result, all the increase in tax revenues that arises because of economic growth can be used to reduce the deficit. However, this assumption may be unrealistic. An alternative interpretation of the results in this table is that the growth rates in the economy in the first column represent the difference between the real growth rate of the economy (ie, GDP growth) and the real growth rate of expenditure.

It should be noted that, over the past ten years, the average annual increase in real expenditure has been 2.5% and growth in real GDP has been 2.9%—a gap of only 0.4%. If this trend continued, or if the realistic gap between real GDP growth and real expenditure growth that is sustainable over any length of time is more like 1% or 1.5%, the time taken to grow the economy out of the 2008 deficit lengthens considerably. On the central deficit assumption of £38m the deficit would not be eliminated for around 12 years (1% differential) or 8 years (1.5% differential). In addition, if spending can be held down relative to GDP growth only for a short while (for example, because there are inefficiencies in public expenditures that can be eliminated) it should be noted that the period immediately leading up to 2008 may have used up this benefit, as this is the policy that has already been proposed. (In the detailed scenarios that follow below the range of assumed gaps between GDP growth and growth spending are between 4% (high growth of 3% and reduction in real spending of 1%) and 1% (low growth of 2% and reduction in real spending by 1%).

An alternative way of examining the required fiscal measure to balance the government budgets by 2011 is to examine the reduction in spending that is required to achieve balance. Table 2.10 illustrates the annual spending growth rates (usually reductions in real expenditure) that are required from 2008 to 2011 to achieve balanced books. The first row shows the spending assumption of each of the scenarios up to 2008. The rows below show the required spending reductions in real and nominal terms under the growth assumptions of 2.5%, 1.5% and 3% economic growth in 2008 (with respective inflation rates of 2.5%, 2.0% and 3% pa) to achieve balance.

Table 2.10 Spending growth required to balance budget in 2011 (%)

	Central assumption: growth of 2.5%	Pessimistic assumption: growth of 1.5%	Optimistic assumption: growth of 3%
Growth in real spending to 2008	0.0	+1.0	–1.0
Nominal	0.8	–2.8	3.4
Real	–1.7	–4.8	0.4

Source: Oxera calculations.

A further alternative approach is to calculate the GDP growth that would be required to balance the budget by 2011. Table 2.11 takes this approach and illustrates the annual GDP growth that would be required post 2008 in order to achieve a balanced budget in 2011. The table assumes that the deficit in 2008 is that of the central scenario (£38m in nominal terms, with an inflation rate of 2.5%). The table illustrates that even under the optimistic assumption that spending can be cut in real terms, high annual growth rates of 5.7% pa (nominal) and 3.2% pa (real) need to be achieved.

Table 2.11 Annual GDP growth required to balance budget in 2011 (%)

	Central assumption: constant real spending (RPI)	Pessimistic assumption: increase in spending (RPI + 1%)	Optimistic assumption: reduction in spending (RPI – 1%)
Nominal	6.7	7.8	5.7
Real	4.2	5.3	3.2

Source: Oxera calculations.

The constraint on spending no more than half the reserve (as per the policy proposals) means that to balance the budget within this constraint requires a high rate of growth. At very high real annual growth rates of 5%, and an optimistic starting position in 2008 (ie, a gap between income and expenditure of £30m), income effectively matches expenditure by 2010, and about £50m will have been spent.[37] With a £40m deficit and 5% real growth, a balanced budget would be reached in 2011 and £80m of the Contingency Reserve would have been spent. If the outcome in 2008 is less favourable (ie, the gap between income and expenditure is closer to £60m), an annual growth rate of around 8% is needed to balance the budget by 2011, and more than £120m would have been spent by then.

Tables 2.12 to 2.20 set out the position of the deficit, the Contingency Reserve and accumulated spending of the Contingency Reserve for the period 2008–15, for a range of combinations of starting deficits, trends in GDP and trends in expenditure—in other words:

– £38m (central assumption to 2008) £58m (pessimistic assumptions to 2008) and £23m (optimistic assumptions to 2008) deficits;

[37] Note that the Guernsey annualised average GDP growth rate achieved since the start of GDP records in 1965 is around 3.6%.

– real GDP growth of 2.5%, 1.5% and 3% of growth, with inflation rates of 2.5%, 2% and 3% respectively; and
– expenditure increases in line with RPI, increases at RPI-1% (ie real cut in spending) and increases at RPI+1% (ie a real increase in spending).

Table 2.12 Central growth (GDP growth: 2.5%, RPI growth: 2.5%) and central expenditure (increase at RPI growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	188	163	**145**	133	130	135	151
Interest	8	7	6	**6**	6	6	6	8
Deficit	–38	–32	–25	**–17**	–9	0	9	19
Closing balance	188	163	145	**133**	130	135	151	178
Accumulated spending of the Reserve	–38	–70	–95	**–112**	–121	–121	–112	–93

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.13 Central growth (GDP growth: 2.5%, RPI growth: 2.5%) and real cut in expenditure (increase at RPI-1% growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	188	167	**156**	155	168	194	235
Interest	8	7	7	**7**	7	8	10	13
Deficit	–38	–28	–18	**–7**	5	18	31	45
Closing balance	188	167	156	**155**	168	194	235	293
Accumulated spending of the Reserve	–38	–66	–84	**–91**	–86	–69	–37	8

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.14 Central growth (GDP growth: 2.5%, RPI growth: 2.5%) and small real increase in expenditure (increase at RPI + 1% growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	188	160	**134**	111	91	75	64
Interest	8	7	6	**5**	4	3	3	2
Deficit	–38	–35	–32	**–28**	–24	–19	–14	–9
Closing balance	188	160	134	**111**	91	75	64	58
Accumulated spending of the Reserve	–38	–73	–105	**–133**	–156	–175	–190	–198

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.15 Low growth (GDP growth: 1.5%, RPI growth: 2.0%) and central expenditure (increase at RPI – 1% growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	167	117	**68**	20	–26	–70	–111
Interest	7	5	3	**1**	–1	–3	–5	–6
Deficit	–58	–55	–52	**–48**	–45	–41	–37	–32
Closing balance	167	117	68	**20**	–26	–70	–111	–149
Accumulated spending of the Reserve	–58	–114	–166	**–214**	–259	–300	–336	–368

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.16 Low growth (GDP growth: 1.5%, RPI growth: 2.0%) and real cut in expenditure (increase at RPI – 1% growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	167	120	**79**	42	13	–11	–26
Interest	7	5	3	**2**	1	0	–1	–1
Deficit	–58	–52	–45	**–38**	–30	–23	–14	–6
Closing balance	167	120	79	**42**	13	–11	–26	–34
Accumulated spending of the Reserve	–58	–110	–155	**–193**	–224	–246	–261	–267

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.17 Low growth (GDP growth: 1.5%, RPI growth: 2.0%) and real increase in expenditure (increase at RPI + 1% growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	167	113	**56**	–3	–65	–130	–199
Interest	7	5	2	**0**	–3	–6	–9	–12
Deficit	–58	–59	–59	**–59**	–59	–60	–60	–60
Closing balance	167	113	56	**–3**	–65	–130	–199	–270
Accumulated spending of the Reserve	–58	–117	–176	**–235**	–295	–354	–414	–474

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.18 High growth (GDP growth: 3.0%, RPI growth: 3.0%) and central expenditure (increase at RPI growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	204	197	**200**	214	240	279	334
Interest	9	8	9	**9**	10	12	14	17
Deficit	–23	–15	–6	**4**	15	27	40	54
Closing balance	204	197	200	**214**	240	279	334	405
Accumulated spending of the Reserve	–23	–38	–43	**–39**	–24	4	44	98

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.19 High growth (GDP growth: 3.0%, RPI growth: 3.0%) and real cut in expenditure (increase at RPI – 1% growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	204	201	**211**	236	277	337	417
Interest	9	9	9	**10**	12	14	18	22
Deficit	–23	–12	1	**15**	29	45	62	81
Closing balance	204	201	211	**236**	277	337	417	520
Accumulated spending of the Reserve	–23	–35	–34	**–19**	10	56	118	199

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

Table 2.20 High growth (GDP growth: 3.0%, RPI growth: 3.0%) and real increase in expenditure (increase at RPI + 1% growth rate)

	2008	2009	2010	2011	2012	2013	2014	2015
Opening balance of Contingency Reserve	218	204	194	**190**	192	202	220	247
Interest	9	8	8	**8**	9	9	11	12
Deficit	–23	–18	–12	**–6**	1	9	17	26
Closing balance	204	194	190	**192**	202	220	247	286
Accumulated spending of the Reserve	–23	–41	–53	**–59**	–59	–50	–33	–7

Notes: Interest on Contingency Reserve is calculated at 4.5% in nominal terms. The estimate for the size of the Contingency Reserve in 2008 of £218m is an estimate by the Treasury.
Source: Guernsey Treasury; Oxera calculations.

In the tables above the impact on the Contingency Reserve is measured in nominal terms. As a result the real value of the Contingency Reserve in, say, 2011 is less than that indicated in the table. The effect of inflation in the central growth tables (tables 2.12 to 2.14) means that the nominal values of the Reserve are overstated by about 10% by 2011, in the low growth table (tables 2.15 to 2.17) nominal values are overstated by about 8% by 2011 and in the high growth tables (tables 2.18 to 2.20) by about 12% by 2011. If the policy objective is not to spend more than half of the *real* value of the Contingency Reserve in 2008, the

nominal value of the Reserve should still be 8% to 12% above £109m in 2011 (£118m to £122m) depending on the growth (and, therefore, inflation) assumptions.

2.5.3 Growth and the post-2008 economy

As indicated above the proposed policy is 'the promotion of economic growth', but there are no explicit policies put forward to achieve this. In addition, there are some tentative economic indicators that suggest that the Guernsey economy may be starting to grow (in terms of GDP) after three years of very little change. For these reasons, the growth rates modelled in this section are above the recent trend rate, and as a sensitivity check include a rate just above the longer term historic growth rate of 2.9%. However, the immediate effects of the 2008 proposals could have a negative impact on the growth of the economy, and may have a negative impact on the ratio of tax yield to GDP. This is for the following reasons.

– The rapid reduction in CAPEX from around £60m in 2006 to around £20m per annum will take demand out of the local economy. The actual reduction in expenditure in the economy (as opposed to when the government allocates the expenditure) is expected to take place in 2009–10.[38]

– The imposition of higher social security contributions on *employers* (higher rate and higher ceiling), which is the source of around half of the additional revenue from the proposed policy changes up to 2008, will have the immediate effect of making Guernsey production of goods or services less competitive compared with imports (for the domestic market) and less competitive in export markets;

– The impact of increasing social security contributions will be relatively concentrated in the high-paying industries, since those sectors of the economy that pay wages of lower than £36,000 per annum will not contribute additional revenues as a result of raising of the ceiling to £60,000. (They will, however, contribute from the raising of the employers' rate from 5.5% to 6.5%.) If it is this part of the economy that is expected to grow (which would be desirable, as this is where the main source of future corporate profits tax is located, and high wages pay a higher proportion of those wages in income tax), there may be a lag while this sector adjusts to its higher cost base.

As a result, achieving rapid growth immediately post-2008 may prove even more difficult than achieving above-trend economic growth over a longer time period.

However, if Guernsey corporate entities increase their spending in the Island as a result of the reduction in their corporate tax liabilities, there will be some additional demand injected into the economy.

2.6 Implications for the 2011 fiscal balance

There are a number of conclusions that could be drawn from the analysis in the preceding sections.

– Unless there is a significant gap between the GDP growth rate and the rate of increase in public expenditure, there is a distinct possibility that, by 2011, the government will have spent more than half of the Contingency Reserve *and* the gap between expenditure and revenue will still be significant.

– The Guernsey economy is labour-constrained; it enjoys (by international standards) a high level of economic development; and the government is not planning to inject additional money into the economy to boost economic growth (which in any case might be inflationary). Therefore, the revenue gap that remains in 2011 could be significant—

[38] Source: States of Guernsey Treasurer.

for example, if the wedge between spending increases and GDP increases is 1.5%, and the starting deficit is around £40m, the deficit that remains in 2011 is still around £28m (in 2011 prices), and around £133m will have been spent from the Contingency Reserve.

This analysis suggest that there is a reasonable possibility that to meet a spending cap of half the Contingency Reserve (or £100m or so) post-2008, it is likely that some action to increase revenue (or to reduce public expenditure in real terms) will need to be taken some time *before* 2011. In addition, even if action is not required before 2011 there are possible outcomes where action in 2011 could be desirable, for example to limit the continued spending of the Contingency Reserve. If economically efficient options at this point require any significant lead times, it may be desirable to carry out preparations for their implementation before 2011.

If additional action is required the main options available to the States of Guernsey, and their high-level implications, are set out in the next section.

3 High-level evaluation of options post-2011

For the reasons set out above, this section makes the assumption that it is very likely that some further polices will need to be introduced in 2011. To keep the analysis simple, the base case used in the following analysis is that the revenue gap in 2011 is in the order of £30m pa, in 2011 prices. As the analysis above has indicated, it might be smaller than this if the economy grows very rapidly, but it could also be larger, particularly if the assumption that public revenue expenditure stays constant in real terms from 2006 onwards does not hold. In a more optimistic scenario, if the revenue gap were only £20m, the rates of tax (section 4), or reductions in public expenditure (section 5) would need to be reduced proportionally (unless otherwise indicated).

If the revenue gap was even less—say £10m or less than 1% of GDP— it is likely that the revenue shortfall could be made up by making relatively small changes to existing taxes, other sources of government income or expenditures. Alternatively, at this level of deficit, as long as expenditure growth can be kept below GDP growth, a few more years of growth in the economy (in particular real wages) should eliminate the deficit. As there are many different ways of achieving this limited level of additional revenue (or expenditure reduction) this option has not been explored further.

On the assumption of a deficit of around £30m pa (or more) there are three main ways in which a revenue gap of this size could be tackled in the long term:

– *economic growth*—a larger economy, with the same tax rates, produces a bigger tax yield;
– *increase taxes*—the proportion of the economy's income taken in taxes rises (to pay for the provision of the same level of public goods and services);
– *decrease public spending*—the output of the public sector falls, and the quantity of goods and services that are provided by the public sector, and consumed by Island residents, falls.

In the short term, there is a fourth way of meeting the revenue gap, which is to borrow. However, unless the result of that borrowing is higher economic growth in the future leading to permanently higher productivity in the economy, the effect of borrowing is really to transfer the problem into the future, when the deficit will be larger, since not only will the revenue gap still have to be addressed, but there will also be interest payments to be made. This option is therefore not considered further.[39]

There is also a fifth option—potentially representing at least part of the solution to address the shortfall in revenue—put forward in the Policy Council proposals (see Box 2.1), involving persuading high net worth individuals to locate on Guernsey in return for a cap of personal income tax liability of £250,000 pa. This is discussed in section 2.5.1 above.

3.1 Economic growth

Economic growth can play a part in meeting a revenue gap, and the analysis in section 2 explores this effect in three years from 2008 to 2011. In this analysis, the central growth rate is assumed to be slightly lower (2.5%) than the 10 year average trend rate (2.9%). A growth rate slightly higher than trend (3%) has also been used. The proposals for 2008 also contain

[39] This does not mean that borrowing should never be considered. For example, if as a result of borrowing and investing the money the future size of the economy is sufficiently bigger to pay for the costs of the borrowed money both the current generation and the future generation can be better off compared to the situation when no borrowing takes place.

a policy to promote economic growth, although the policy proposals do not contain any suggestions of how to achieve this. In general, many, if not most, governments pursue policies that attempt to boost economic growth, but these policies are often not guaranteed to achieve *permanently* higher growth rates which is required, for instance, to address a structural deficit.

There are a number of factors that are likely to make the achievement of permanently high growth rates difficult over the next few years for an economy like that of Guernsey.

– The Guernsey economy has few spare labour resources. Unemployment is low, both relative to other countries and historically.

– Average wages are already relatively high.

– The 0%/10% policy maintains Guernsey's *relative* competitive position in the international financial services sector, but does not give Guernsey a large competitive advantage over its competitors compared with the recent past.

– There does not appear to be any obvious other economic activity that could be either introduced to, or expanded in, the Island other than the financial services industry that can deliver anything like the current GDP per worker (and therefore deliver similar tax revenues). (However, that is not to say that another activity will not emerge.) Given the labour constraint, unless some new activity arises, rapidly growing the economy actually translates as rapidly growing the financial services sector.

– Growing the economy by importing labour would make the achievement of public expenditure constraint more difficult, since it implies lower real spending per head.

The analysis set out above for the period 2008 to 2011 demonstrates the difficulty of growing the economy out of the revenue shortfall over an economically viable timescale. Only on the basis of an optimistic outturn to 2008, a high growth of GDP between 2008 and 2011, and an absolute cap on public expenditure in real terms, does the income come close to expenditure (ie fiscal balance) in 2011.

These same constraints apply to the post-2011 period, and it may be even more difficult to maintain a higher-than-average annual growth rate in GPD into the future. As a result, the possibility that one of the other two alternatives—increasing tax revenues or reducing public expenditure—is likely to be required and should probably be considered.

4 The economic and distributional impact of tax options

This section looks at the high-level tax options available to Guernsey to fill a £30m revenue shortfall. It concentrates on the *differences* in impact between the tax types on both the overall economy and the distribution of the tax burden within the economy. Where all taxes have the same, or similar, impacts, these impacts are not described in detail with respect to the individual tax, but are dealt with generically. As indicated above, if the revenue gap was small in the order of £10m—relatively minor modifications to the existing tax structure could be sufficient. Under these circumstances, and assuming that no further requirement to significantly change the tax was expected, more careful consideration would be required before embarking on introducing any new tax structure that involved significantly increased administration costs. In particular, this would apply to a general consumption tax which would require a new administration for the government and would involve some additional compliance costs for businesses. For example, the analysis undertaken by the Crown Agents for the States of Jersey suggest ongoing administrative costs on staff costs estimated at around £400,000 pa. One-off capital costs for purchasing the software systems to administer the GST are estimated at around £500,000.[40] Assuming the impact on Guernsey would be similar, setting up such a structure to collect only £10m would be unlikely to be economically efficient.[41]

Under these circumstances an alternative approach of, say, increasing income tax rates marginally, or reducing tax-free allowances, would have little impact on the collection costs of income tax.[42]

Predictions about the rates of tax that would be required to fill a particular revenue shortfall have been made on the basis that the tax base has increased approximately in line with projected GDP growth, as outlined in section 2. The central assumption is that, by 2011, the bases will be around 15% higher than they are now (2006) in real terms. However, if the pessimistic outcomes have materialised, the tax bases are more likely to be only 10% bigger (and the corresponding revenue shortfalls that will need to be filled will be higher); while if the optimistic assumptions have been fulfilled, the tax bases are more likely to be 20% higher (and the revenue gap to be filled will be smaller). Under this assumption, the distribution within the tax base is assumed to be similar to that prevailing in 2004 or 2006, depending on the availability of data.

4.1 Main tax options and revenue potential

There are a multitude of taxes that could be applied to meet a shortfall of around £30m per annum. However, unless there are going to be a large number of different taxes that each raise a small amount of revenue, a large tax base is required to meet the revenue requirement to address a substantial budget deficit. Therefore, for the purposes of this analysis, only tax types with large tax bases have been considered.

4.1.1 Size of the tax base

The main large tax bases that are considered are as follows.

[40] Crown Agents for States of Jersey (2005), 'Proposal for the Design of a Prototype Goods and Services Tax', Final Report, January.

[41] It could still be economically efficient to set up a general consumption tax if that system provided other benefits— for example more revenue stability or a wider tax base—or there were off-setting advantages that could flow from raising more than £10m and reducing other taxes (or even increasing public expenditure).

[42] Raising the rate would have very little impact as the same number of tax payers would each pay slightly more tax. Reducing the allowances will bring in more households into the tax base, so will increase collection costs a little.

– *Personal income*—this includes earned income (eg, from employment or self-employment) and unearned income (eg, income from savings, pensions). This is the base for personal income tax.

– *Wage income*—the basis of payroll taxes, applied to either the employee, employer or both, and can include the self-employed.

– *Consumption expenditure*—this includes spending by residents in the Island from their disposable income (income available for spending after income taxes, social security contributions and similar items have been deducted) and expenditure by visitors to Guernsey (unless they are specifically excluded); this is the basis of VAT or sales taxes.

There are some other large tax bases that would be theoretically available, including corporate profits and wealth. Wealth taxes have already been ruled out in the proposals made by the Policy Council, and for the reasons set out in the 0%/10% paper by the Independent Working Group, [43] a corporate profits tax is not a base that Guernsey could use to increase its tax yield significantly and maintain its international financial services sector.

Table 4.1 shows the estimated tax base during 2004 and the projection of the tax base in 2011, assuming that it grows in line with predicted GDP growth of the central assumption. Table 4.1 also sets out the tax rates that would be required if the complete tax base were used, to raise £30m, £40m and £50m from these three tax bases. In practice, not all the tax base is likely to be used, and the impact of limiting the use of the tax bases is discussed further below.

Table 4.1 Estimate of the main Guernsey tax bases and tax rates required to raise £30m, £40m and £50m (2011 prices), using the entire tax base

	Consumption expenditure	Personal income	Payroll (employment and self employment)
2004 (£m – 2004 prices)	900	1,070	850
2011 (£m – 2004 prices)	1,070	1,272	1,010
2011 (£m – 2011 prices)	1,282	1,524	1,210
Approximate tax rate in 2011 to raise £30m (%)	2.3	2.0	2.5
Approximate tax rate in 2011 to raise £40m (%)	3.1	2.6	3.3
Approximate tax rate in 2011 to raise £50m (%)	3.9	3.3	4.1

Source: Income Tax Office and Oxera calculations.

4.2 Characteristics common to all tax types

All of the tax types set out above have the same basic impact on the residents of Guernsey—they will reduce their spending power. For personal income tax, employee payroll tax and consumption tax, the mechanism by which this reduction in spending power occurs is relatively straightforward—in the first two, disposable income is reduced, while in the third, prices rise. Therefore, regardless of the *formal* tax incidence (ie, who is formally liable for paying a tax), which may be imposed on households, shareholders or employers, the *effective* tax incidence (ie, who ultimately pays the tax) is on only individuals (eg, householders, consumers or shareholders).

[43] States of Guernsey, Independent Working Group (2006), 'The Economic Case for a 0%/10% Corporate Tax Rate Structure in Guernsey', March.

Where an employer payroll tax is used the effects are more complex. The first effect is to increase the costs to businesses. If these costs are passed on to consumers in the form of higher prices, the effect is similar to a sales tax—prices rise. This is the outcome that would be expected in a competitive market if all suppliers were faced with the same cost increase. The impact might not be felt immediately, since there may be a lag while the increase in production costs feeds through to prices, but it will eventually feed through unless shareholders take a permanently lower return on their capital. If the supplier is in competition with firms that have not experienced the same cost increase, the cost increase can either be absorbed by shareholders, or the employer may seek to reduce its cost base to remain competitive by seeking lower wage costs (thus leaving the total of wage costs and wage taxes constant). The former outcome reduces profits and returns to shareholders; the latter outcome reduces real wages.[44]

Only if the outcome is reduced profits, and the shareholders are not resident in Guernsey, will the employer payroll tax be paid by someone other than a resident of Guernsey. In all other cases, the net impact of the tax is to reduce the total consumption in the Island.

The distinction between resident and non-resident taxpayers is useful to illustrate the impact of a reduction in the amount of tax income derived from non-residents, and to put this problem in the context of the adoption of the 0%/10% policy. Since the level of public services is determined by the total amount of tax receipts, for any given level of public services, the total amount of taxes payable by Guernsey residents for these services depends on the amount of tax that foreign residents can be made to pay. The introduction of 0%/10% leads to a reduction in the ability of Guernsey to derive revenues from non-residents—a majority of those who stand to benefit from the transition to 0%/10% are non-resident capital holders. Therefore, for Guernsey residents to continue enjoying the current level of public services, they need to either bear a greater proportion of the costs of these themselves through a higher resident taxation, or find a different way of effectively taxing non-residents.

The difficulty with the latter approach is that non-residents are usually free to take their business elsewhere, so attempting to apply additional taxes to them may simply result in them using some other location to conduct their business, either as customers or as holders of capital.

In theory, within the three tax bases, the mechanisms by which additional tax could be directly paid by non-residents are as follows.

– *Personal income tax*—generally it is difficult to get non-residents to pay more personal income tax (apart from tax-capping, discussed above, in which case non-residents become residents and then pay tax).

– *Employee payroll tax*—generally it is difficult to get non-residents to contribute to employee payroll tax revenue.

– *Employer payroll tax*—foreign residents can contribute, either through higher prices in export markets or lower returns to non-resident shareholders.

– *Consumption taxes*—foreign residents can contribute through higher prices charged to visitors in the Island.

None of the mechanisms that achieve the shifting of the tax burden away from Island residents is easy to achieve. The conclusion is, therefore, that most, if not all, of the additional tax burden required to meet the revenue shortfall will be paid for, in one way or

[44] The increase in the relative cost of labour may induce capital substitution for labour, an effect that would not occur with a sales tax. In this case, the effect on prices is slightly lower, but at the expense of jobs.

another, by the residents of Guernsey. All other things being equal, the residents of Guernsey will be unambiguously worse off compared with not having to pay these additional taxes. However, the consequence of not paying the additional taxes would be that public expenditure, and therefore services, would have to be reduced (see section 5).

There is an important economic implication of this conclusion with respect to how the residents of the Island react to this reduction in spending power. If the reaction is to press for higher wages to restore purchasing power, the net impact is to increase further the cost base of production in the Island or, in the case of the government, to increase further the costs of the provision of public services. The increase in the cost base of the Island will make Guernsey's exports less competitive, and reduce the relative costs of imports to the Island. At a minimum, the rate of economic growth would be expected to slow, and could reverse. This would exacerbate the problem of the revenue shortfall since tax revenues would decline further (and net welfare payments might increase). The residents of the Island as a whole cannot escape the reduction in spending power by demanding real increases in wages, unless those increases are consistent with maintaining Guernsey's relative competitive position—in other words, increases in labour productivity. The problem of raising productivity is the same as the problem of raising the level of economic growth: it is very difficult to achieve and any policies that boost productivity are likely to be effective only in the medium to long run (and might require additional public expenditure in the meantime).

Therefore, the conclusion that Guernsey residents will ultimately pay most, if not all, of the increased tax applies to all the major tax types, irrespective of the tax base chosen. Consequently, it is inevitable that residents will experience a real reduction in spending power. How this reduction feeds through the economy, and the differences between the impacts of the tax options, are examined in the next sections.

4.3 Direct economic impact of tax options

When tax changes are made there will be a direct impact on the economy and, over time, the economy will react and adjust. Differences in the direct impact and the adjustment process drive the differences between tax types. These processes will also occur as a result of the implementation of the policy proposals in 2008, where a similar amount of new tax (and social security contributions) revenue is being generated for the government. In the context of the analysis below the proposals for 2008 approximately map onto the following categories:

– increased employer social security contributions are the approximate equivalent of an employer payroll tax;

– increased employee, self employed and non-employed social security contributions are approximately equivalent to employee payroll tax or, if the coverage of the non-employed contributions approximates all unearned personal income, personal income tax;

– increased duties are equivalent to targeted consumption taxes (but the distribution of the tax burden is likely to be different);

– increased fees, to the extent that they are either paid directly by end consumers, or are directly linked to individual consumption (eg marriage licences) are also largely equivalent to targeted consumption taxes.

4.3.1 Income, employee payroll taxes and consumption taxes

Income taxes and *employee payroll taxes* have the same general impact on the local economy: they reduce effective demand by reducing disposable income. If £30m is raised by either of these sources, £30m is, in effect, taken out of the local economy. If wage earners do

not respond by asking for, and achieving, higher wages, the economy is left to settle at this new level of lower domestic consumption. Some spare capacity is likely to be created, which can then be used to satisfy any increased export demand that may arise and currently cannot be satisfied due to the economy operating at or close to full capacity. International competitiveness in export markets is not directly affected by either of the taxes, and nor is the competitive balance between imports and on-Island production.

Consumption taxes have a similar effect, subject to some minor variations.

– First, to avoid an impact on international competitiveness, any consumption tax should not apply to exports. Although this is the norm for VAT-type taxes, there are some complexities in actually achieving this in practice, especially for the export of financial services. Similarly, consumption taxes should apply to imports. Again, this is the norm for VAT-type taxes, but it can be difficult to achieve across all imports, including information services provided from remote locations. Failure to achieve these two outcomes has a potentially negative impact on the Island's competitiveness.

– Second, consumption taxes would normally apply to consumption in the Island by visitors. This reduces the competitiveness of the Island as a destination, with the impact on competitiveness being related to the price sensitivity of the average visitor. However, to the extent that visitors (including business visitors) still consume in the Island, the tax burden paid by residents (in total) declines.

4.3.2 Employer payroll taxes

Employer payroll taxes have a rather different effect to that described above. Because they impact directly on the real costs of production, the first-round effect is to reduce the international competitiveness of Guernsey production of goods and services. Unless the labour input (ie, wages) of goods and services that are predominantly or exclusively destined to export markets is excluded, the production costs of exports will increase and the competitiveness of Guernsey products in export markets will decline. In addition, because the tax only applies to the Guernsey labour content of goods or services consumed in the Island, imports will become relatively more competitive since they will have a lower proportion of Guernsey labour costs in their cost base—only the wage cost element that arises in Guernsey (eg, transportation or retailing) is likely to be included in the tax base and hence in the final selling price of a good or service. Unlike income tax, employee payroll tax or consumption tax, employer payroll tax directly worsens the competitive position of Guernsey production.

To restore the competitive position of Guernsey production, some other part of the cost base of production must be reduced (or, perhaps more realistically, increased more slowly than the competitors' costs to restore Guernsey's relative competitiveness). The international nature of the capital market makes it difficult to achieve this cost reduction through reducing returns to capital, particularly if that capital is not tied to Guernsey. What is generally left, therefore, is the wage component. This needs to fall or, again more realistically, rise more slowly, compared with competitors' labour costs for both import and export markets. The long-run impact of imposing a payroll tax on employers is therefore likely to be very different from the actual tax incidence. Over the long term, such a tax can therefore be expected to result in a reduction in real wages (or a slower rise than would otherwise have been the case). In industries such as financial services, where such a reduction may be more difficult since pay packages need to be competitive in an international labour market, the tax could lead to a decrease in international competitiveness for some time.[45]

[45] In the long term, the relative cost of living could fall, allowing nominal wages in these sectors to fall also, but maintaining the real purchasing power of those wages and restoring the competitive position of the Island.

Employer payroll taxes may also distort the composition of the economy as the cost of labour relative to capital has increased. Producers would therefore have an incentive to move towards more capital-intensive production techniques, and in general switch resources out of labour-intensive sectors to more capital-intensive sectors. This distortion on the input side does not occur with the other three tax types of tax being considered here.

Finally, employer payroll taxes directly increase the employment costs of the government, so the costs of providing the same level of public services rises by the level of the tax paid by the government. Unless off-setting savings are made in the costs of public service provision, the *net* yield to the government of an employer payroll tax will be lower than the gross yield.

All of the tax types require an adjustment in the economy. Income tax, employee payroll tax and consumption tax all require the economy to adjust to a lower level of demand. With employer payroll taxes, an additional adjustment is required with respect to earnings; until this happens, the competitiveness of both Guernsey exports and Guernsey production relative to imports may suffer.

4.4 Variations in taxes

There are a number of variations in the detailed way in which any of the taxes being analysed in this paper could be applied, and this would have implications for the distribution of the tax burden within the economy and the population. The main dimensions of variations are briefly described in what follows.

Payroll taxes can be distinguished in the following way:

– *tax liability*—the tax can be formally levied on employers, employees or both;
– *thresholds and ceilings in the tax structure*—these have the impact of excluding employment income earned at the low or high end of the distribution;
– *tax rates*—variations in the rate of tax for different segments of the wage distribution; and
– *industry sectors*—specific sectors of the economy can be either included or excluded from the tax.

Income taxes can be implemented, with variations, as follows:

– *tax rates*—different rates can be applied at different income levels;
– *income allowances*—tax-free income allowances depending on personal circumstances;
– *tax rates*—different rates for different types of income.

Consumption taxes can be varied according to the type of consumption and sectors of the economy that they include (or exclude):

– *necessities*—goods on which certain (eg, low) income groups spend disproportionately larger amounts of income than other groups can be excluded or taxed at a lower rate in an attempt to mitigate the impact of the tax;
– *goods with desirable characteristics*—the government may consider the consumption of certain goods as beneficial for society and therefore encourage this consumption by imposing reduced or zero rates on such goods;
– *luxury rates*—certain goods may be considered as being consumed mainly by wealthy individuals and therefore charged at higher rates. In practice, it is difficult to identify ‘pure’ luxuries, and the impact of such a tax on the distribution of income is likely to be low or perhaps negative; and
– *exemptions*—since it its difficult to levy a consumption tax on the output of certain sectors of the economy (such as financial services), some sectors are often exempted from consumption taxes—ie, they do not charge taxes, but cannot recover any taxes they pay on the inputs to their production process.

A limited number of the possible variations in the taxes are analysed below, and all examples are designed to raise approximately £30m per year. While variations to taxes can be used by policymakers to change the distributional impact of taxes, since the aim is to raise a given amount of revenue, any reductions in the tax burden of some individuals leads to an equal increase in tax liability of other groups of individuals. In general, it is useful to consider taxes in the context of the wider tax and benefit system, rather than in isolation. Certain taxes are effective at raising revenues and are non (or less) distortionary, but they have less-desirable distributional characteristics from the policymaker's perspective. The proceeds from such taxes can be used to address these distributional issues through mechanisms in the wider tax and benefit system.

It should also be noted that, in general, the more complicated the tax structure, the more costly it is likely to be to administer for both the government and those paying the tax. This administrative overhead is, in general, a deadweight loss to the economy, and should therefore be minimised, all other things being equal.

4.5 Distributional impacts: payroll taxes

This section examines the distributional impact of variations in a number of payroll tax options. The calculations are based on the current tax system and therefore assume that all other elements of the Guernsey tax system are unchanged.

4.5.1 Employee payroll tax: simple structure

The simplest form of employee payroll tax is one that is applied uniformly to all wages. To raise £30m, a uniform rate of approximately 2.5% would be required. This section describes the distributional consequences of such a payroll tax payable by employees.

A payroll tax of 2.5% (applied to gross earnings, including those of the self-employed, and assuming that households do not have any sources of unearned income) would translate to a straight reduction in gross employment income of 2.5%. For low-income wage earners, this would constitute a reduction of somewhat more than 2.5% of their disposable income (ie, their net employment income), because they will have already made social security contributions (ignoring any transfers). High earners, on the other hand, would find their disposable income reduced by relatively more than 2.5%, because of the income tax payments already made. For very high-wage earners, the reduction in disposable income approaches 3%, because 20% of income is paid in income tax.

Importantly, households without earned income will not see any increase in their tax liability. This group of households includes both pensioners and those with only investment or rental income. Around 65% of all personal income in Guernsey is derived from direct employment, and another 15% from self-employment. The remainder, approximately 20% of gross income, is unearned income (ie pensions, dividends, interest on deposits etc). However, this unearned income is unlikely to be distributed evenly among households. The household income bands of between £20,000 and £80,000 gain more than 75% of their income from direct employment. For households with incomes above £100,000 per annum, only 40% of income is from direct employment. However, for households with incomes below £15,000 direct employment income is only around 60% of all income.

In the absence of information on the distribution of self-employment income, it is not possible to gain further direct evidence of the distribution of unearned income, but the observed patterns in the tax data appear to suggest that unearned income is mainly concentrated at the extremes of the income distribution—low-income pension households and high-income households with rental or dividend income.

It is also worth noting that if employees seek and achieve higher wages to compensate for the payroll tax they have to pay—to maintain the same take-home pay—the employee tax converts into an employer tax—see below.

4.5.2 Employer payroll tax: simple structure

A uniform employer payroll tax designed to raise £30m (gross) would need to be at a similar rate to the employee payroll tax (ie, 2.5%) [46] However, the distributional consequences of such a tax are different.

If the increase in tax translates into an increase in prices, the distribution of the tax burden would depend on the incidence of purchase of the relevant goods and services. The component in the prices of different goods and services that account for the cost of Guernsey wages is not known, so the actual distribution of the additional tax is also unknown. However, it is likely that some residents with unearned income will make purchases from Guernsey suppliers, so the distribution of the tax will be wider than that of the payroll tax applied to employees.

However, if the tax is translated into a reduction in wages, the distribution will be similar to that of a simple employee payroll tax, once this adjustment in the economy has taken place.

During the transition, the distribution may be more idiosyncratic and, if the adjustment process results in business failures (or failure to expand), the employer payroll tax may manifest itself in a reduction in employment rather than wages and/or workers taking on different, and lower-paying, jobs. While it is not possible to estimate the extent to which an employer payroll tax would translate into lower employment rather than lower incomes in Guernsey, such impacts are more likely to occur at the lower end of the income distribution, particularly for less-skilled workers. Findings of academic research on the incidence of tax burdens tend to be consistent with limited (if any) employment impacts of employer payroll taxes and a full adjustment in wages following changes to payroll taxes.[47]

4.5.3 Payroll: more complex structure

Thresholds and ceilings are often applied to payroll taxes (or their economic equivalents, ie social security contributions). The general effect of a threshold, when all earnings below the threshold are untaxed, is to make the tax more progressive when applied to employees. When applied to employers, the effect is to make lower-paid employees relatively cheaper to employ and, subject to the precise details of the tax, may encourage employers to hire a larger workforce, each member of which works for fewer hours.

The general effect of a ceiling is the reverse. The tax becomes regressive as higher incomes over the threshold pay a lower proportion of gross pay in tax. When applied to employers, there is an incentive to employ fewer people for longer hours if this has the effect of taking their individual earnings above the ceiling.

Selecting specific sectors for an employers' payroll tax will tend to depress their activity in the economy through a combination of lower wages and higher prices in that sector.

4.6 Distributional impacts: income taxes

4.6.1 Income tax: simple structure

Because the personal income tax base is larger than the employment income base, the uniform income tax required to raise £30m is, at 2%, somewhat lower than the rate of a uniform payroll tax of 2.5%.

[46] Unless off-setting savings can be made the imposition of the 2.5% employers' payroll tax will directly increase the costs of provision of public services, as the government as employer will have to pay. If the public sector represents 20% of the employment base to raise £30m *net* would require a higher tax rate of approximately 3%.

[47] See, for example, Gruber, J. (1997), 'The Incidence of Payroll Taxation: Evidence from Chile', *Journal of Labour Economics*, **15**:3.

However, income taxes are not usually applied in this way. Under the current Guernsey tax system, in 2004, approximately £130m of tax was generated from personal incomes of around £1.07 billion.[48] Therefore, as a result of tax allowances, approximately only 60% of income is actually taxed at 20%. The rest, around £420m, is taken out of the tax base.

If allowances are held constant in real terms, the proportion of the tax base excluded from taxation will decline as real incomes per worker rise. However, adding more workers leaves the proportion unchanged, although this also increases the total tax base.

Assuming that allowances are held constant in real terms, and that the workforce has expanded between 4–5% from its 2006 levels (see above), the total tax base of personal incomes will have risen to around £1.25 billion in 2011 in 2004 prices, and £1.5 billion in 2011 prices. By 2011, the proportion of the personal income tax base actually being taxed will be above the proportion that is now being taxed. This will have risen to approximately 66%, giving a total taxable income of around £1 billion (in 2011 prices).[49] To raise £30m, the present tax rate would need to rise by around 3 percentage points (ie, from 20% to 23%).

The distributional implications of this tax structure would be to raise all the additional tax from those who will then be paying income tax, while raising none from those who do not—ie, those without earnings or those with incomes which are lower than tax allowances. Table 4.2 shows the additional tax payable under the new tax system raising £30m in 2011 and as a proportion of gross income for a representative household comprising two working adults, two children and a mortgage of £100,000 (at an assumed interest rate of 5.5%).

Table 4.2 Additional tax paid by household with two working adults, two children, mortgage of £100,000 (2011 prices)

Gross income	£10,000	£20,000	£50,000	£75,000	£100,000	£150,000	£200,000
Additional tax (£)	0	0	775	1,525	2,275	3,775	5,275
Additional tax, % of gross income	0.0	0.0	1.5	2.0	2.3	2.5	2.6

Source: Income Tax Office and Oxera calculations.

4.6.2 Income tax: more complex structure

Since the current structure removes a significant proportion of personal income from taxation, an alternative approach would be to reduce the tax-free income available. This would also increase the tax-take. The yield from removing allowances can be calculated using the latest available data on distribution of income and tax among income groups (ie, 2004). Because the tax base will be larger in 2011, the following adjustments are then made.

– The total tax base in 2006 will be similar to that of 2004 in real terms. This assumption is based on the comparison of aggregate data from 2004 with that from 2006.

– The central assumption is that the workforce increases by 4% in total up to 2011, leading to a corresponding increase in tax yield by 4%.

– Higher real wages mean that a higher proportion of the working population will have incomes above the tax-free allowances. This will also slightly increase the yield from any reduction in tax-free income. An increase in the yield by 2.5% has been applied as an approximate adjustment.

[48] Source: Income Tax Office and Oxera calculations.

[49] To keep the analysis reasonably simple the decision to freeze personal allowances in 2007 to the 2006 rates has not been incorporated in this estimate.

Based on the above assumptions, the corresponding yield from reducing the tax-free allowances can be calculated. To raise £30m in 2011 requires personal allowances to be reduced by about 35%. On the assumptions being used personal allowances will have gone up in nominal terms by inflation, so, for example, the single personal allowance will have risen to around £9,350 by 2011, so would need to be reduced to around £6,100.[50] For a couple, the equivalent allowances are £18,700 falling to around £12,200. The impact of this approach is set out in Table 4.3.

Table 4.3 Additional tax paid as a result of reducing personal tax allowances by around 35%: two working adults, two children, mortgage of £100,000, (2011 prices)

Gross income	£10,000	£20,000	£50,000	£75,000	£100,000	£150,000	£200,000
Additional tax (£)	0	484	1,318	1,318	1,318	1,318	1,318
Additional tax, % of gross income	0.0	2.4	2.6	1.8	1.3	0.9	0.7

Source: Income Tax Office and Oxera calculations.

When reducing allowances all current taxpayers pay more, with all single households (below 64) paying around £650 more, and couple (under 64) paying around £1,300 more per year.[51]

In addition, many households that currently do not pay income tax would also be liable to income tax under the reformed income tax structure, with their additional tax liabilities varying according to their income. Households on low incomes would pay only small amounts of additional tax, while those just below the current tax threshold would pay almost as much as current taxpayers. In table 4.3 the household with an income of £20,000 pays an additional £484, not £1,318, because prior to the reduction in personal allowances it would pay no income tax.[52]

In addition to the variations in income tax, other types of allowance could also be changed, or a combination of changing the income tax rate and reducing the allowances could be used. The impact will be a combination of the impacts set out above.

4.7 Distributional impacts: consumption taxes

4.7.1 Tax base

Appendix 2 sets out in more detail the estimation of the consumption tax base. The overall base is made up of the following elements:

– *Disposable income of Guernsey residents*—defined as gross income less income tax payments and employee social security contributions.

– *Visitor spending*—visitor expenditure tends to increase the consumption tax base.

– *Guernsey resident spending abroad*—residents spend part of their disposable income outside Guernsey (eg, on holidays or education), thereby reducing the consumption tax base;

[50] Given the assumptions that have had to be made, particularly with respect to inflation, these nominal values for allowances etc should not be seen as estimates of what they will actually be in 2011.
[51] Because those over 64 have higher tax free allowances these households will pay a bit more if their allowances are also reduced by 35%.
[52] In this example, the income at which the full additional amount of £1,318 becomes payable is approximately £24,000.

– *Savings*—part of residents' disposable income is saved, thus reducing the tax base to the extent that those savings are not used to finance spending within the same year. However, past savings that are spent on taxable goods will generate tax revenue.

Depending on the type of implementation of the tax, there may be some additional spending by businesses that could be subject to a consumption tax and/or that is applied to exports. This is not explored in this report, but a more detailed investigation would need to take these impacts into account.

Even for the relatively high-level analysis undertaken in this report, not all data required to estimate the size of the tax base and the distributional impact in Guernsey is fully available, and the following analysis should be seen as indicative.

Applying the above analysis produces an estimate of total spending on Guernsey in 2011 of about £1.28 billion. However, expenditure on housing is normally excluded from consumption taxes. Excluding housing reduces the consumption tax base to around £980m in 2011 (in 2011 prices). Therefore, to raise £30m would require a tax rate of around 3%.

If fresh food is also excluded the tax base falls further to around £820m, so under these circumstances a tax rate of around 3.7% is needed to raise £30m. However, given the assumptions made, these figures should be regarded as indicative only.

4.7.2 Distributional impact

The distributional impact of a consumption tax depends on the spending patterns of taxpayers. If the tax is broad-based, essentially excluding only housing (and, clearly, net savings), it will have a greater impact on those who spend less on housing and who have the lowest propensities to save. (However, when savings are spent, they will incur tax, unless they are spent outside the Island or on non-taxed items.)

Based on the 1998/99 Household Expenditure Survey,[53] Table 4.4 shows the average level of expenditure (per week) for the average household in each decile, for the broad categories of housing, savings, food, and other expenditure. There are some unrecorded expenditures in the original survey, which may be as high as 5-10% of expenditure in the higher-income deciles. Since these have not been included in the tax base, this will underestimate the tax paid in these deciles.[54]

Table 4.4 Amount spent on categories of expenditure (£ per annum) (nominal 1998/99 prices)

	Decile									
Expenditure type	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Housing	1,575	2,374	2,898	4,046	4,447	7,351	7,547	8,784	9,308	18,203
Fresh food	2,170	2,364	3,110	3,211	3,779	3,614	4,462	4,355	4,477	4,799
Gross savings	373	1,052	2,089	2,686	3,084	3,758	5,205	6,558	9,265	20,988
Other expenditure	4,269	8,673	11,049	14,149	16,147	17,317	20,264	24,026	32,616	44,565
Average income	8,386	14,463	19,146	24,092	27,457	32,040	37,479	43,723	55,667	88,554

Note: Missing expenditure may exist in the higher deciles, which would raise their expenditure.
Source: Household Expenditure Survey and Oxera calculations.

[53] Economics and Statistics Unit (1999), 'Household Spending, A report on the 1998/99 Household Expenditure Survey'; and associated data.
[54] For example, in deciles 8, 9 and 10, recorded expenditure is between 70% and 75% of reported income. Around 20 percentage points can be explained by tax, but this is still likely to leave some left over.

If the consumption tax rate is set at 3%, and the coverage is everything except housing (and net savings), the additional tax paid by each decile (on average) can be calculated and expressed as a percentage of total expenditure. Table 4.5 sets this out. In order to make this calculation of the distribution of the tax, a simplifying assumption has been made that net savings are 5% of incomes (see above) and the gross savings in Table 4.4 have been reduced accordingly.

Table 4.5 Increase in tax paid as a result of a 3% consumption tax: housing excluded (£ per annum) (nominal 1998/99 prices)

	Decile									
Expenditure type	1	2	3	4	5	6	7	8	9	10
£ paid in tax	203	263	378	408	500	534	648	672	776	1,151
% of gross income paid in tax	2.4	1.8	2.0	1.7	1.8	1.7	1.7	1.5	1.4	1.3

Note: The missing expenditure in the higher-income deciles could raise their effective tax rate by up to 0.25 percentage points.
Source: Household Expenditure Survey and Oxera calculations.

If additional categories are excluded from the consumption tax base, the base becomes smaller, and the rate has to rise to achieve the same yield. Table 4.6 excludes fresh food from the tax base, and increases the tax rate to 3.7%.

Table 4.6 Increase in tax paid as a result of a 3.6% consumption tax: housing and food excluded, 1998/99 (£ per annum)

	Decile									
Expenditure type	1	2	3	4	5	6	7	8	9	10
£ paid in tax	164	229	340	372	461	508	614	647	767	1,205
% of gross income paid in tax	2.0	1.6	1.8	1.5	1.7	1.6	1.6	1.5	1.4	1.4

Notes: The missing expenditure in the higher-income deciles could raise their effective tax rate by up to 0.3 percentage points. Slightly less in total is raised from Island residents when food is excluded, although visitors contribute more since it is assumed that their spending on the Island does not include significant amounts of fresh food.
Source: Household Expenditure Survey and Oxera calculations.

The pattern and amount of expenditure set out in tables 4.5 and 4.6 relate to 1998/99 and are in nominal terms, and the distributional impact of a particular tax rate and base has been illustrated. By 2011 the tax base will have changed, as will consumption patterns and the real incomes of the different decile groups. If an assumption is made that the pattern of spending at a given *real* income level is more or less constant to 2011 the results in tables 4.5 and 4.6 can be mapped onto the 2011 household incomes used in tables 4.2 and 4.3 above. Table 4.7 illustrates the results.

Table 4.7 Additional tax paid as a result of the imposition of a general consumption tax of 3% (housing excluded) and 3.7% (housing and fresh food excluded): two working adults, two children, mortgage of £100,000, (2011 prices)

Gross income	£10,000	£20,000	£50,000	£75,000	£100,000	£150,000	£200,000
3% tax rate (housing excluded)							
Additional tax (£)	290	411	894	1,131	1,405	1,997	2,646
Additional tax, % of gross income	2.9	2.1	1.8	1.5	1.4	1.3	1.3
3.7% tax rate (housing and fresh food excluded)							
Additional tax (£)	254	375	790	1,291	1,452	2,099	2,780
Additional tax, % of gross income	2.5	1.9	1.6	1.7	1.5	1.4	1.4

Source: Household Expenditure Survey, Income Tax Office and Oxera calculations.

Numerous variations can be achieved, and they have different impacts on different decile groups, as well as on different households within groups, depending on their consumption patterns. However, all of the structures have largely the same overall distributional impact—tax is taken right across all the incomes groups.

Appendix 3 provides details on additional representative household types.

4.8 High-level comparison of the tax options

Tables 4.8 and 4.9 compare the tax-take from the representative household types used in Tables 4.2 and 4.3 for four different tax options, namely:

– an employee payroll tax of 2.5%
– an income tax with a higher tax rate,
– an income tax with reduced personal tax-free allowances; and
– a broad-based consumption tax that excludes only housing.

In Table 4.8, the additional tax paid is expressed in monetary terms; in Table 4.9, this amount is expressed as a % of gross income. Each tax system is designed to raise £30m in total, but given the assumptions made, the results should be treated as indicative. Small differences between the outcomes may therefore represent measurement error rather than true differences.

Table 4.8 Comparison of the additional tax that would be paid by households with different incomes: two working adults, two children, mortgage of £100,000, all income earned, £30m to be raised (£)

Tax type	£10,000	£20,000	£50,000	£75,000	£100,000	£150,000	£200,000
Employee payroll tax of 2.5% on all income	250	500	1,250	1,875	2,500	3,750	5,000
Increase income tax rate to 23%	0	0	775	1,525	2,275	3,775	5,275
Reduce personal allowances by 35%	0	484	1,318	1,318	1,318	1,318	1,318
General consumption tax of 3% (housing excluded)	290	411	894	1,131	1,405	1,997	2,646

Note: The tax paid in the higher-income brackets under consumption tax may be understated.
Source: Income Tax Office, Household Expenditure Survey and Oxera calculations.

Table 4.9 Comparison of the additional tax that would be paid by households with different incomes: two working adults, two children, mortgage of £100,000, all income earned, £30m to be raised (% of gross income)

Tax type	£10,000	£20,000	£50,000	£75,000	£100,000	£150,000	£200,000
Employee payroll tax of 2.5% on all income	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Increase income tax rate to 23%	0.0	0.0	1.5	2.0	2.3	2.5	2.6
Reduce personal allowances by 35%	0.0	2.4	2.6	1.8	1.3	0.9	0.7
General consumption tax of 3% (housing excluded)	2.9	2.1	1.8	1.5	1.4	1.3	1.3

Note: The tax paid in the higher-income brackets under consumption tax may be understated.
Source: Income Tax Office, Household Expenditure Survey and Oxera calculations.

5 Reduction in public expenditure

As an alternative to increasing taxation to maintain existing levels of public services, the shortfall could be addressed through a corresponding *permanent* reduction in public expenditure. There are several ways in which such a reduction could be achieved.

1) *Imposing user charges*—certain services that are currently provided free or below cost could be directly charged for. The government remains the provider of the public service, but rather than funding the service through direct taxation revenues, the services are now funded through direct charges levied on users.

2) *Reducing services*—the government could withdraw the provision of specific services. If these are essential services (eg, health), and the private sector can be relied on for the provision of such services, these services will continue to be provided, but users will now have to pay for them directly, rather than through taxation. If a service that is withdrawn is not considered essential or valuable, or the private sector cannot provide it, the service would no longer be available to residents.

3) *Increasing public sector efficiency*—if the current production of government output is inefficient, by raising the efficiency of production the output can be maintained but the input costs reduced. From an economy-wide perspective, residents receive the same services, but do not need to pay additional taxes. (The impact on individuals may be different: if the increase in efficiency means using fewer labour inputs, some workers will need to gain employment in other parts of the economy.)

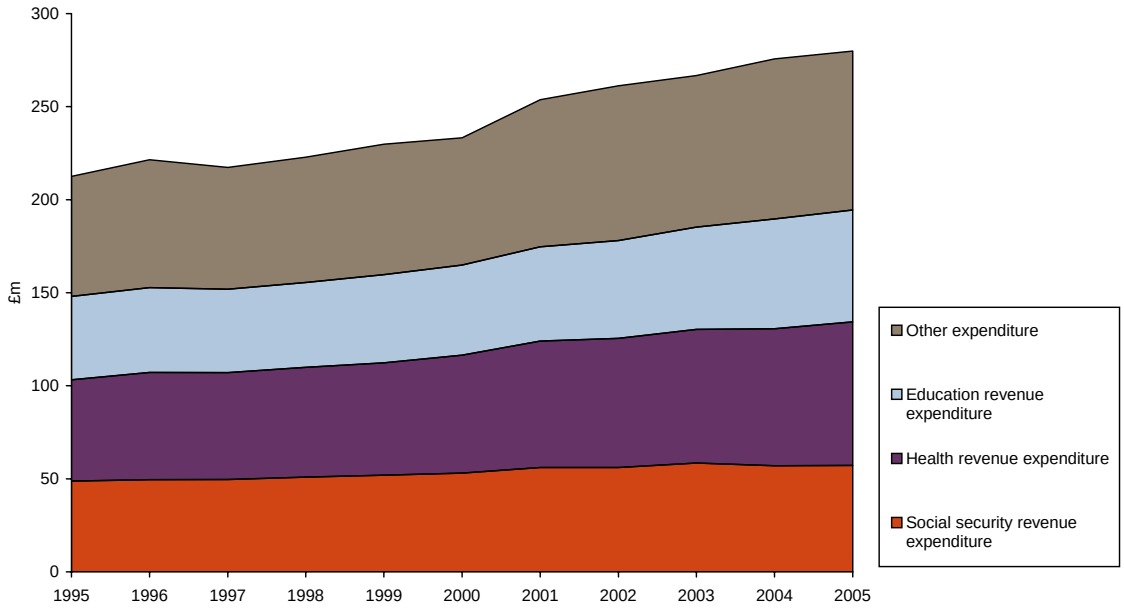
The first two ways of reducing public expenditure lead to a corresponding reduction in the real income of residents, if they are users (or beneficiaries) of the relevant services. Either their income has been reduced because they no longer benefit from the service or, if they do, they now have to pay for it, and as a consequence expenditure on some other goods or services will be reduced. There will, therefore, be a corresponding distributional impact on residents.

The third approach to reducing expenditure does not lead to any general reduction in the incomes of residents, although in the transition there may be individuals who lose out as they need to retrain, etc. However, the scope for significant efficiency savings that would allow the same services and benefits to be provided from a lower tax income may be limited, for reasons described below. The main distributional consequences of the first two options are also analysed below.

The main components of public revenue expenditure are those of health, social security and education. Since these relate most directly to services provided to Guernsey citizens, the potential scope for their reduction is examined in further detail in this section.

Figure 5.1 describes the trends in total real revenue expenditure, and provides a breakdown of its main elements. Year-on-year growth in spending has varied from a minimum of –1.9% in 1997 to a maximum of 8.8% in 2001. The ten-year annualised average growth in real expenditure over the period from 1996 to 2005 (budgeted expenditure) was 2.8%

Figure 5.1 Trends in the main elements of public expenditure



Note: Figures for 2005 refer to budgeted rather than actual expenditure.
Source: Guernsey government accounts and Oxera calculations.

The three main components of expenditure have maintained a relatively stable share in total revenue expenditure of 69% (with a minimum of 68% and a maximum of 71%). Similarly, the shares in total expenditure in each of the three main components have remained constant over time with ten-year averages of 21%, 22% and 27% out of total expenditure for education, social security and health expenditure respectively.[55]

One of the main consequences of the composition of public expenditure is that saving revenue expenditure of £30m (in 2011) through improving efficiency could be difficult to achieve. On the central assumption this will represents around 9% of revenue expenditure in 2011 and 8% in terms of total expenditure.[56] This reduction in expenditure would come after more than 5 years of keeping expenditure constant in real terms (while the economy has grown significantly). At this point achieving such a sizeable reduction in expenditure may not be possible through efficiency gains alone—see below. To make such savings, it may be necessary to reduce public sector output or introduce some form of user charge (this latter option is similar to raising taxes).

5.1 Efficiency gains

There are three main ways in which public expenditure can be categorised. Some efficiency gains (ie, reductions in real expenditure) can be made in each category.

– Where the public expenditure is on *wages*, efficiency savings can be achieved by using less labour input to create the same output, or using the same amount of labour but at lower wage rates.[57] Efficiency savings on wages therefore translate into full-time equivalent job losses or lower wage rates.

[55] The maximum and minimum of all these expenditures are within one percentage point of these figures.

[56] In 2008 the central estimate for revenue expenditure is £312m. If inflation is 2.5% and real expenditure is held constant this rises to £336m by 2011. Total expenditure is £333m and £358m respectively – see table 2.7

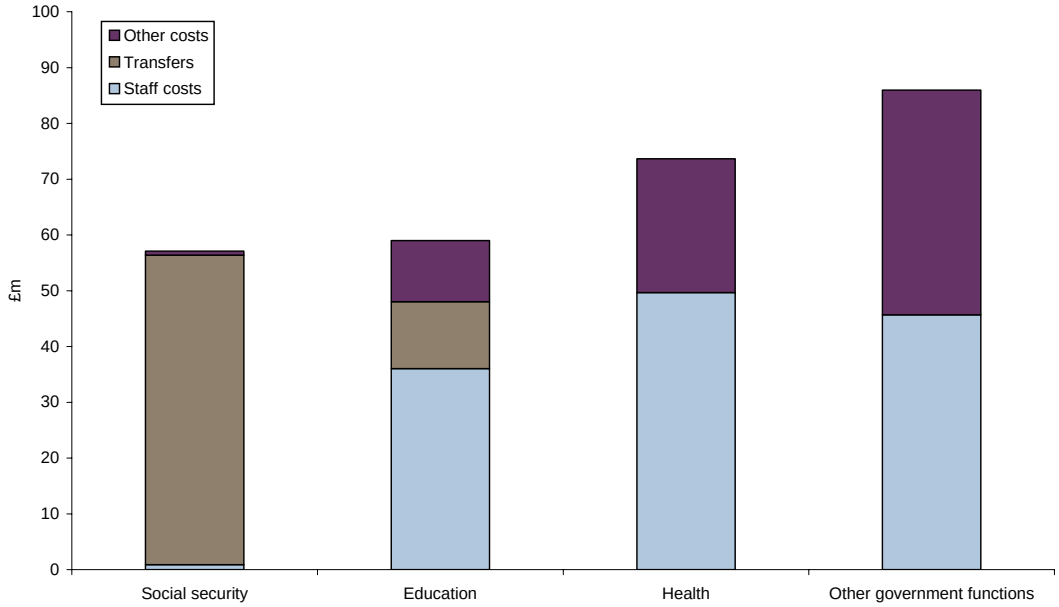
[57] It may be possible to reduce the labour input and increase the capital input to achieve the same output. Under these circumstances, the cost of that additional capital employed needs to be subtracted from the apparent labour cost savings.

– Where public expenditure is on the *purchase of goods or services* from the private sector, the savings come from either buying fewer inputs or purchasing the same inputs for a lower price. In both cases, the amount of money flowing into the private sector decreases.

– Where the public expenditure is on direct money *transfers*, there are no real efficiency savings that can be made in the transfer itself. Reducing the amount transferred can be achieved by reducing the size of the benefit, or by reducing the number of beneficiaries. However, neither of these is really an efficiency gain. The former is a reduction in the value of the transfer and the latter is likely to be caused by either changes in external circumstances or a reduction in service levels (eg if certain potential recipients are now excluded). Within the limitations of the analysis in this report it has not been possible to estimate any changes on the demand side, and, therefore, an assumption has been made that the amount transferred has been held constant in real terms.

Figure 5.2 shows the composition of expenditure in terms of staff costs, pure transfers (ie, expenditure incurred as a result of services provided to Guernsey citizens, and direct monetary transfers), and other costs within each of the main categories of public expenditure in 2004.

Figure 5.2 The composition of Guernsey public revenue expenditure in 2004 (£m)



Note: The main component in health expenditure of 'Other costs' is expenditure on supplies and services. These expenditures relate to the expenditure made by the Social Security Department, the Education Department, and the Health and Social Services Department. To the extent that certain expenditure by other departments could also be considered as belonging to any of the above broad categories, the above composition and absolute size of expenditure may vary somewhat.
Source: Guernsey government accounts and Oxera calculations.

Table 5.1 provides the data underlying the calculations Figure 5.2. Overall, out of a combined expenditure of £276m, over 70% of expenditure on these categories are either staff costs (48%) or transfers (24%). The share in expenditure increases to over 80% when focusing on the three main components of public expenditure, with 46% of expenditure on staff and 36% of expenditure on transfers. Virtually all of social security expenditure can be classified as transfers of some sort, while the main components in education and health expenditure relate to staff costs. Education and health provision are labour-intensive, and staff costs are therefore directly related to the amount of services delivered.

Table 5.1 The composition of Guernsey public revenue expenditure in 2004 (£m)

	Social security	Education	Health	Subtotal (% of subtotal)	Other government functions	Total (% of total)
Staff costs	1	36	50	87 (46)	46	132 (48)
Transfers	55	12	0	67 (36)	0	67 (24)
Other costs	1	11	24	36 (19)	40	76 (28)
Total	57	59	74	190 (100)	86	276 (100)

Note: The health and other government functions categories may contain some element of transfers, but this is less easily identifiable. Any transfer elements are therefore classified as 'Other costs'
Source: Guernsey government accounts and Oxera calculations.

If transfers are removed from public expenditure—ie, assuming that transfers are held constant in real terms—the expenditure base on which efficiency gains must be made is reduced from £276m to £209m (in 2004). Therefore, to achieve a yield of £25m in 2004 (which is the rough equivalent of £30m in 2011) efficiency savings of 12% on the remaining expenditure need to be achieved.

In addition, under the central assumptions that have been made, by 2011, public expenditure will have been held constant in real terms for five years, while the economy will have grown by 15%. Real wages growth is a component of this projected increase in GDP, and wages are a significant component of public expenditure. The increase in the labour force, which is also part of the GDP growth assumptions, would require a larger population unless the participation rate of the existing working population increases. The population projections do not allow for a higher number of residents in the 16–64 age range without some increase in the total population of the Island.

Therefore, the assumption of no increase in real terms of public expenditure up to 2011 is likely to mean that very significant efficiency gains will already have been necessary. This reduces the scope for future efficiency gains, thereby making meeting the revenue shortfall post-2011 through further efficiency gains even more difficult, since all relatively easy efficiency savings are likely to have been achieved by then.

5.2 Reducing public output

A large proportion of public expenditure is likely to be used for providing essential services. If the government does not provide them, or if it charges for them, these services will continue to be consumed, but the direct users will pay. There are likely to be a number of distributional and economic consequences of this shift to direct payment.

5.2.1 Distributional consequences

The progressive nature of the tax structure and the profile of the income distribution mean that the income tax yield per person or household is very skewed. The top 10% of households contribute around 50% of total personal income tax, while the bottom 10% of households contribute relatively little. (See Appendix 4 for evidence on the distribution of income in Guernsey). Even if all households benefit to the same level in terms of the value of public services consumed, there is a large transfer of real income from high-income households to low-income households. When users are directly charged for the services they consume, this transfer is removed. The general outcome of reducing the provision of public services paid for out of taxation is therefore regressive.

The consumption of public services may also be skewed (eg, consumption of public health services is often inversely correlated with income[58]); the extent to which this is the case will further exacerbate the general regressive nature of cutting public provision (or introducing user charges).[59]

Reducing the payment of transfers is also an area where there would generally be a regressive consequence. The income component of transfers for the lowest-decile households is around 73%, while it is around only 4% for the highest decile.[60] In general, reducing the values of transfers would therefore have a greater proportionate impact on the lower-decile households.

Clearly, cuts in public services (or user charges) will mainly affect those who actually use the services.

– The impact of cutting education expenditure (or of introducing user charges) would mainly affect families with children and young adults involved in secondary or higher education.

– A reduction in health expenditure is likely to have a disproportionately large impact on the elderly.

– Cuts in transfers would tend to impact mainly on those groups requiring state assistance (ie, those on low incomes or with special circumstances).

In general, the distributional impact of cuts in expenditure through reductions in essential public services is likely to be disproportionately higher on low-income groups than on higher-income groups.

5.2.2 Economic consequences

The distributional impact outlined above is also likely to have an impact on demand for these services, notwithstanding the fact that they may be essential. Charging for them is likely to reduce demand and, for lower-income groups, this could depress demand considerably as they may not be able to afford all the services they currently consume. The total output of the economy would therefore need to adjust to this reduction in demand.

More importantly, for the analysis in this section, assuming that demand stays constant, a reduction in the output of the public sector (or the introduction of user charges) does not create additional demand in the rest of the economy. Charges for services have the same impact as increases in tax—they require households to reduce their expenditure in the rest of the economy, either because they have less take-home pay (eg, through income taxes) or because they have less to spend because a proportion of their purchasing power has been taken away by charges for services that were previously ‘free’.

Finally, a number of the services provided by the government share the characteristic that individuals may choose to consume sub-optimal amounts of them were they required to pay for them directly. Education is one example. By making users pay for these services, consumption may decrease, and the long-term consequences for the economy are likely to be negative.

[58] See Morris S., Sutton M., Gravelle, H. (2003) ‘Inequity and Inequality in the Use of Health Care in England: An Empirical Investigation’, CHE Technical Paper Series 27.

[59] Clearly this may not apply to all services provided by the government. If a service can be identified that is solely or mainly used by the higher-income groups, introducing charges for this service will not be regressive.

[60] Source: Guernsey Household Expenditure Survey; and Oxera calculations.

An analysis of the impact of these effects is beyond the scope of this report, but if significant reductions in the provision of public services were contemplated, these effects should be taken into account.

6 Comparison of economic impacts of tax increases and public expenditure reductions

The measures taken to close the fiscal gap either by increasing the tax burden on Guernsey residents or reducing public expenditure are likely to affect both aggregate demand, at least in the short term, and the supply performance of the economy. The literature on fiscal policy indicates that, in the absence of supply-side effects, the impact on real (inflation-adjusted) demand in the economy will disappear in the long run, but may be significant for a number of years.

How far any reduction in demand as a consequence of fiscal consolidation—ie, the set of policies aimed at reducing a government deficit—matters in practice will depend on both the impact of the measures which are creating the initial fiscal imbalance, summarised in section 2.4.2, and the cyclical position of the economy. Other things being equal, consolidation measures are likely to be least disruptive if they are implemented when the economy is strengthening, with growth above the sustainable, long term trend, and utilisation of scarce resources tightening, and when the world economy is also strengthening and hence generating overseas demand for Guernsey output to replace (probably after some adjustment in the economy) any reduction in domestic demand if needed.

The Guernsey economy does not have its own independent monetary policy or exchange rate, and therefore some of the mechanisms which are able to stabilise other economies in the face of fiscal and other changes are not available. The short-term impacts of fiscal consolidation in Guernsey are consequently likely to be both larger and more long-lived.[61]

These short-term impacts will depend on the degree of wage and price flexibility, as well as the amount of spare capacity in the economy. Greater flexibility helps to minimise both their scale and duration by allowing the economy to adjust more quickly through changes in inflation and relative prices. Domestic inflation will fall (relative to what would otherwise have happened) when demand is reduced as a consequence of fiscal consolidation, improving the external competitiveness of the Guernsey economy and allowing overseas demand—higher exports or reduced imports[62]—to replace domestic demand. In addition, if the economy were to be operating temporarily above trend, fiscal tightening may actually be helpful in reducing demand pressures.

6.1 Impact of taxation measures

In general, fiscal measures which work primarily by affecting real personal or corporate incomes—such as income taxation, consumption or payroll taxes—are likely to take longer to have their full effect on the economy than measures which involve direct changes in spending on domestic goods and services, and may also have an overall weaker impact. This is also the case for government transfer payments, which, like tax changes, alter demand by changing the disposable income of the groups affected. This reflects a number of factors: consumers and firms typically exhibit a degree of inertia in their spending, and they therefore tend to respond with a significant lag to changes in their incomes. However, such

[61] Macroeconomic model simulations reported by the UK government in its study of the EMU in 2003 suggest that, in the UK, these effects could last for at least five years, with peak GDP multipliers of the order of 1 or higher, depending on the fiscal instrument deployed. See Annex A of HM Treasury (2003), 'Fiscal Stabilisation and EMU'. Employment effects are likely to be somewhat lower than the effects on GDP, given the lags in the system.

[62] The Guernsey economy's ability to adjust by altering its mix of imported goods and domestically produced goods may be relatively limited since it is highly reliant on imports.

lags will be shorter—and hence the speed with which individuals respond to policy changes is faster—if individuals are forward-looking and the government has made clear statements that the changes are permanent and the impact on incomes is likely to be sustained. Insofar as fiscally induced cuts in personal income lead to pressure for higher wages to compensate, thus temporarily worsening competitiveness and reducing net exports, these effects also take time to build up. Payroll taxes which raise industrial costs also take time to have their full effect on overseas demand. However, there may be important differences in the speed of response between industrial sectors, in that highly mobile sectors, such as financial services, may respond relatively quickly to a loss in international competitiveness that could be caused by a substantial increase in their cost base.

The scale and profile of effects will depend on the precise nature of the tax increases involved. Measures that directly raise prices, such as consumption taxes, are thought to be faster acting because they reduce the real value of existing savings[63] as well as reducing real incomes. Tax increases (or cuts in transfer payments) that have disproportionately greater impacts on lower-income groups also tend to be faster acting. However, higher taxes on corporate income (if these were available), which feed through mainly to lower shareholder incomes—rather than raising prices or reducing incentives to invest—or to comparatively well-off individuals, may take a considerable length of time to materialise and have relatively muted short-term effects.[64]

6.2 Impact of expenditure reductions

Cuts in government spending on goods and services are, in general, faster acting, and hence most likely to reduce output significantly in the short term, if changes in spending plans are translated promptly into changes in actual spending. Clearly, merely changing programme totals does not necessarily guarantee this, since it takes time to design and implement the necessary cuts in services or efficiency increases. Insofar as spending cuts are achieved largely through cutting public sector wages or increasing prices through the introduction of (higher) user charges, this acts in much the same way as tax increases.

Cuts in CAPEX are often easier to achieve quickly, less damaging to current service provision, and less likely to be politically unpopular. Governments are thus often tempted to achieve quick results by means of investment moratoria despite the likely adverse impact on service provision in future years and a greater short-term loss of output.

6.3 Choice criteria between tax increases and expenditure reductions

Macroeconomic model simulations suggest that the effects of increases in taxes and transfer payments on GDP continue to build up for at least three years and often longer.[65] However, the generally larger peak effects of spending cuts on output have typically materialised fully by the second year, assuming the cuts have not primarily taken the form of lower pay. Thus, if the policy aim is to minimise the short-term adverse impact on domestic output and employment, given the state of the domestic and international economic cycles, tax increases—or possibly cuts in transfer payments—are generally to be preferred.

Whichever route is chosen for delivering the required fiscal tightening, the adverse impacts on demand and output are likely to gradually disappear through compensating reductions in prices, temporarily lower inflation, a boost in net exports through improvements in international competitiveness, and an increase in the real value of savings. Nonetheless, the

[63] Assuming that a permanent consumption tax is introduced, the real value of savings is reduced by the amount of tax on the goods and services that are eventually purchased with the savings.
[64] If the increase in corporate taxes causes an immediate (re)location decision the impact could be considerably faster.
[65] See HM Treasury (2003), op. cit.

long-run effects of alternative fiscal measures on the economy are more likely to depend on their impact on the supply side.

– Increases in taxes generally lead to an increase in distortions to the economy and eventually tend to reduce potential output, thus reducing GDP in the longer term (with consequences for tax revenue). In such circumstances, the short-term adverse effects on output will not be completely diminished. To the extent that certain taxes introduce fewer distortions than others, this impact on long-term output can be minimised.

– Cuts in public investment in infrastructure or, for example, spending on education, will also tend to reduce future potential output; cutting maintenance spending will increase the cost of restoring infrastructure later, after it has deteriorated further with consequent damage to the economy.

How quickly these supply-side effects will materialise will vary. Cuts in transport provision, for example, may have an immediate impact on business costs and therefore quickly affect productivity and output. Yet tax increases take some time to affect economic performance, and cuts in education spending are likely to take much longer to affect the underlying strength of the economy.

Some forms of spending are motivated by considerations other than economic efficiency and their impact on output—for example, social security, pensions and provision for the elderly. Some public services may not be charged for, and are thus liable to be over-consumed. The net *economic* impacts of cuts in health spending in an advanced economy like Guernsey, for example, are not clear-cut. Cutting these latter forms of spending is less likely to have adverse longer-term consequences for the economy, and indeed may have beneficial economic effects. However, to establish what proportion of spending in Guernsey falls into this category would require a detailed review. There is often a trade-off between economic and other considerations, such as social and distributional concerns, so fiscal consolidation, which has the least-damaging *economic* effects, may be discounted for other reasons.

The timing of the different impacts will also affect the political impact of the measures. Personal income tax increases on the one hand are highly visible and likely to be unpopular, while the beneficial effects represented by lower prices and improved competitiveness are more drawn out and therefore less visible, and less obviously able to counteract the negative impression of the tax increases themselves. Cuts in public spending, on the other hand, particularly public employment, may not be visible or unpopular in the short term, and their impact will depend on how far valued public services are scaled back as a consequence.

None of these different types of measure to restore fiscal balance is likely to have significant effects on employment in the longer term unless they directly affect the operation of the labour market—for example, by cutting expenditure on employment services. While a reduction in such expenditures is likely to have important negative consequences, it would not be sufficient to restore fiscal balance. The choice of measure may affect the balance of public and private sector employment—for example, if public sector jobs are cut and eventually replaced by private sector jobs once the compensating beneficial competitiveness effects on net exports work their way through the economy. This in turn may affect the dynamism of the economy in the longer term insofar as this depends primarily on the health of the private sector. For measures such as tax increases and public procurement, which impact directly on private income or output, such effects are likely to be insignificant.

6.4 Summary

The fiscal measures discussed in this report are designed to replace the expected shortfall in revenue resulting from the change to the 0%/10% regime. The main *economic* question of interest in terms of choosing between the two main options to address this shortfall is whether the economic impacts of shifting the tax burden from mainly non-Guernsey residents

to Guernsey residents in the form of higher taxes is desirable, or whether a reduction in public services through a cut in expenditure is preferable.

There is no unambiguous answer as to which forms of fiscal consolidation are to be preferred in terms of their short- and long-term impact effects on the economy.

– Tax increases, which do least economic damage in the short term, may have more detrimental supply-side effects in the longer term.

– Spending cuts, which may cause the least long-term economic damage—and may ultimately be beneficial—may depress output more in the short term and have distributional effects which run counter to government objectives.

– Some spending cuts (eg, on infrastructure and education), which may reduce economic activity more strongly in the short term, also cause more longer lasting economic damage (without obviously favouring more privileged groups in society), and may have more obvious disadvantages than most other measures.

Since, in addition to concerns about short- and long-term economic impacts of fiscal consolidation measures, there are other non-economic concerns that are of relevance in making choices between economic policies, the government is best placed to judge the respective political costs and benefits of the options.

7 Differences in impact between Guernsey and Alderney

The analysis in this report has thus far focused on the combined impact of fiscal changes on Guernsey and Alderney taken together. However, although residents of Alderney are subject to the same income tax and social contributions as those of Guernsey, there is a degree of fiscal independence between the two Islands.

Furthermore, the economies of the two Islands differ and therefore, for the purposes of the analysis in this report, the incidence of any changes made to the tax structure will differ. This section therefore highlights some of the main differences between Guernsey and Alderney and the implications that these differences are likely to have for the impact of tax options.

Under the present tax structure, the tax income generated per head for corporate and personal income tax differ, with less tax revenue generated per head in Alderney. Table 7.1 broadly compares tax paid per head of population in Guernsey and Alderney in 2004.

Table 7.1 Comparison of approximate average tax yields in Guernsey and Alderney

	Guernsey	Alderney
Population (according to census in 2001)	59,807	2,294
Average personal income tax rate (% of gross income)	12.3	11.2
Income tax per household (£)	4,000	2,700
Personal income tax per capita (£)	2,100	1,600
Corporate income tax per capita (£)	1,600	350
Total income tax per capita (£)	3,700	1,950

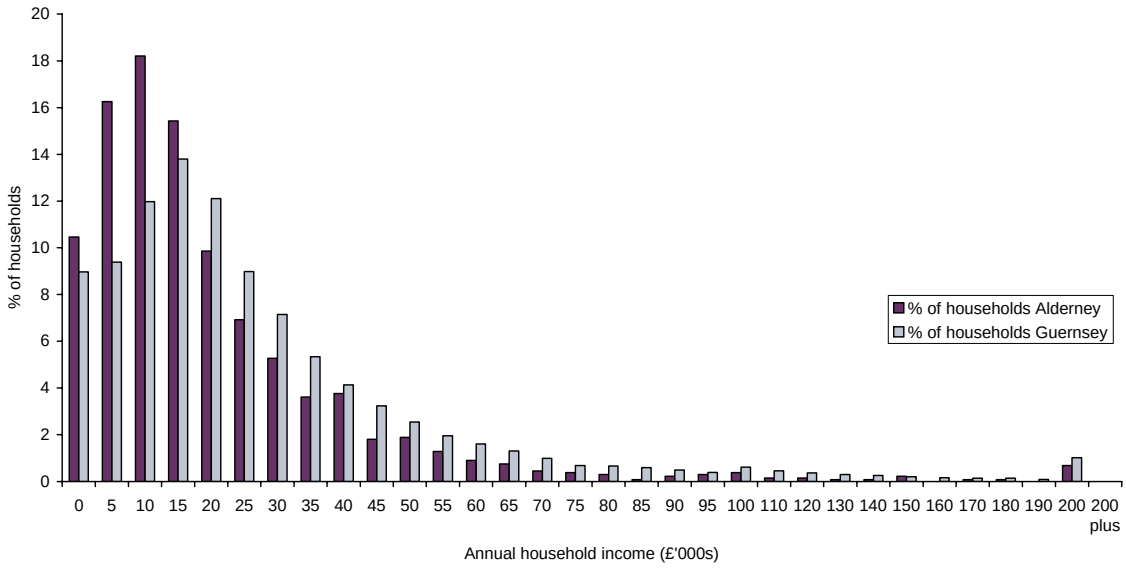
Notes: To simplify the analysis, the tax yield for 2004 has been allocated on a pro rata basis according to the population in 2001. The population is likely to have changed slightly between 2001 and 2004, but not so significantly as to have changed the overall pattern of the results shown in the table.
Source: 2001 Guernsey Census, 2001 Alderney Census, Income Tax Office and Oxera calculations.

The difference in corporate tax receipts reflects differences in the economic activities undertaken in Guernsey and Alderney and the age profiles of the residents. In particular, Alderney has a higher proportion of residents over the 'general' retirement age of 65 (24%) than Guernsey (16%).[66] This is also reflected in the fact that a higher proportion of Alderney's personal incomes are derived from non-employment sources (eg, pensions and investments)—57% and 33% respectively in Alderney and Guernsey.[67]

Average personal incomes are also lower in Alderney, resulting in both the lower average tax rate (11.2% Alderney compared with 12.3% Guernsey) and the lower average amount paid. Figure 7.1 shows the proportion of all household incomes within comparable income bands (income bands of £5,000 up to £100,000, and of £10,000 thereafter).

[66] Source: States of Guernsey Advisory and Finance Committee (2002), 'Report on the 2001 Alderney Census', p. 7, and 'Report on the 2001 Guernsey Census', p. 17
[67] Source: Income Tax Office and Oxera calculations.

Figure 7.1 Comparison of household income distribution in Alderney and Guernsey



Source: Guernsey Income Tax Office and Oxera calculations.

Implications

The implication of these differences in income distribution and types of income is that the impacts of any of the possible tax structures used to address a potential deficit will vary. This will not usually manifest itself in the impact on individuals, particularly in the context of changes in income tax or payroll tax, but will be evident in terms of the average impact on the Alderney economy as a whole. The differences are likely to take the following pattern.

– Simple payroll tax will yield less per head of population in Alderney, reflecting the higher proportion of total income derived from sources of unearned income. The effect is that the disposable income in Alderney will decrease at a lower rate under payroll taxes.

– Simple income tax will yield less per household, reflecting the lower average household income.

– Consumption taxes are likely to yield slightly less per head of population, reflecting the lower average income (and hence expenditure), although this effect may be reduced if the net savings rate is higher in Guernsey.

– Progressive variants of tax structures will tend to *increase* the differences between yield per household, reflecting the lower average household incomes.

– Regressive variants of tax options have the opposite effect.

The difference between the two Islands in the current average corporate income tax yield has two effects. As the current level of corporate profits tax in Alderney is lower than that of Guernsey (£350 compared with £1,600), the *loss* per capita as a result of the adoption of 0%/10% will be smaller. However, the resulting average yield post-implementation of 0%/%10 will still be lower than that for Guernsey.

Appendix 1 Additional information for section 2

Appendix 1.1 Additional evidence on historical trends in Guernsey GDP

This appendix provides further evidence on historical movements in Guernsey GDP. Table A.1.1 lists the official statistical data on Guernsey GDP, in both nominal and real terms (2004 prices).

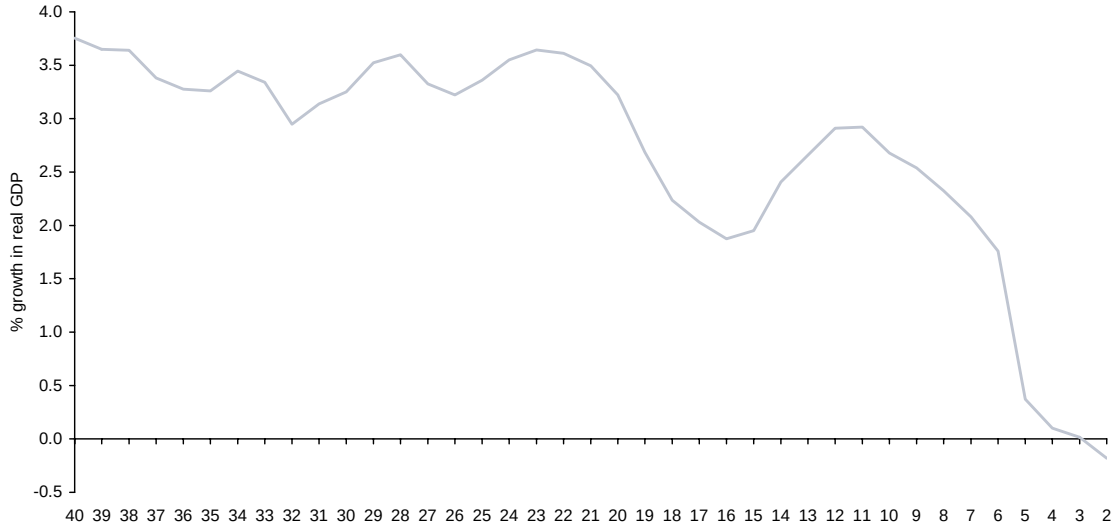
Table A1.1 Historical trends in nominal and real GDP (£m)

Year	Guernsey real GDP (2004 prices)	Guernsey nominal GDP	Year	Guernsey real GDP (2004 prices)	Guernsey nominal GDP
1965	337	22	1985	777	341
1966	363	25	1986	881	402
1967	378	27	1987	974	471
1968	429	31	1988	1,029	533
1969	459	35	1989	1,074	610
1970	477	39	1990	1,083	675
1971	464	42	1991	1,042	685
1972	496	49	1992	1,036	703
1973	577	64	1993	1,035	712
1974	561	76	1994	1,064	749
1975	561	92	1995	1,119	816
1976	538	105	1996	1,161	871
1977	546	122	1997	1,208	949
1978	606	148	1998	1,254	1,016
1979	642	178	1999	1,300	1,080
1980	642	203	2000	1,398	1,205
1981	636	222	2001	1,415	1,243
1982	646	239	2002	1,419	1,302
1983	673	261	2003	1,422	1,356
1984	714	296	2004	1,419	1,419

Source: Policy Council and Policy and Research Unit.

Figure A1.1 shows the annualised real GDP growth rates for different time horizons, with year-on-year growth from 2003 to 2004 on the far right, and each point moving leftwards on the figure representing the increasing time period over which growth is calculated by an additional year. The point on the graph furthest to left (40) represents the annualised growth rate between 1965 and 2004. Over the past 20 years, GDP growth has averaged 3.2%; over the past ten years, it has been 2.9%. Over the very long run, average GDP growth has been above 3% on average, but there is a marked downward trend in GDP growth in the more recent past.

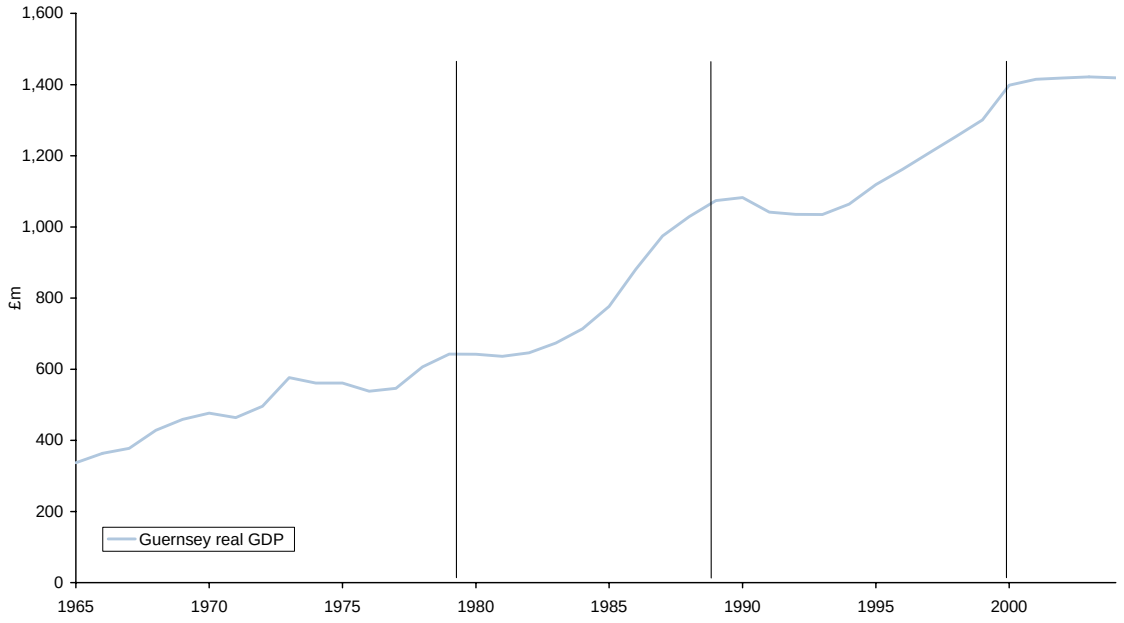
Figure A1.1 Trends in annualised growth in Guernsey real GDP up to the present for the last 40 years



Source: Policy Council, Policy and Research Unit and Oxera calculations.

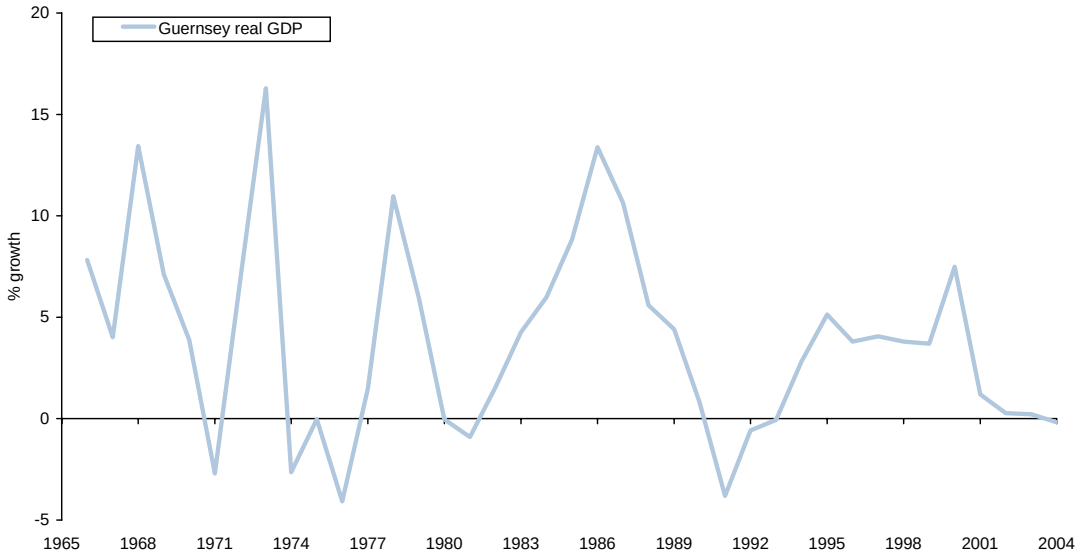
Figure A1.2 shows the annual real change in GDP over the past 30 years, with the approximate peaks in the last three business cycles—approximately ten years apart—demarcated by vertical lines. Figure A1.3 shows the growth in real GDP over the same period. The last ten years have seen a smaller range of movements in growth than previously, and growth rates have been particularly low since 2000.

Figure A1.2 Long-term trends in Guernsey GDP (2004 prices)



Source: Policy Council, Policy and Research Unit and Oxera calculations.

Figure A1.3 Real year-on-year growth in Guernsey GDP (%)



Source: Policy Council, Policy and Research Unit and Oxera calculations.

Appendix 1.2 Table 2.4 of report in nominal terms

Table A1.2 reproduces Table 2.4 of the main report, converted into 2008 prices with inflation assumptions as per Table 2.1, ie:

– central assumption: 3.3% inflation in 2005 and 2.5% thereafter;
– pessimistic assumption: 3.3% inflation in 2005 and 2.0% thereafter; and
– optimistic assumption: 3.3% inflation in 2005 and 3% thereafter.

Table A1.2 Range of outcomes in government revenue (£m, 2008 prices)

	Central assumption: 2.5% growth	Pessimistic assumption: 1.5% growth	Optimistic assumption: 3.0% growth	More optimistic assumption: 3.5% growth
GDP in 2007	1,658	1,610	1,691	1,724
Total taxation revenues	340	329	348	357
Amount of revenue derived from tax on corporate profits[1]	116	112	118	121
1. Continuing tax on banking profits	11	11	11	12
2. Continuing taxation of investment companies	11	11	11	12
3. Taxation of distributed profits[2]	7	3	7	7
4. Increase in duties etc	9	9	9	9
5. Increase in social security payments[3]	19	19	19	20
6. Changes to interest payments	8	8	8	8
7. Increases in fees	6	6	6	6
Adjustment for difference in inflation assumption from central assumption		–1	1	2
New tax yield	71	66	72	77
Total change	–45	–46	–46	–45
Post-2008 income	295	283	302	312

Note: [1] In 2006, the Treasury forecast is for tax on corporate profits to make up 34% of revenue. This split has been carried forward to 2008. [2]The assumptions for the distribution on profits are 30% in the central and optimistic scenarios, and 15% in the pessimistic scenario. [3] The Treasury estimates the revenue from increased social security payments at £22m (in 2008 prices), which differs from the estimate obtained by Oxera (around £19m).
Source: Policy proposals 1, 2, 6 and 7: calculations supplied by Guernsey Treasury; other figures Oxera calculations.

Appendix 2 Estimating the tax base for a consumption tax in Guernsey

This appendix describes the calculations and the assumptions made in estimating the tax base for a consumption tax in Guernsey. Note that, even for the relatively high-level analysis undertaken for the purposes of this report, not all data required for estimating the size of the tax base and the distributional impact in Guernsey is fully available, and a number of assumptions have been necessary. The main assumptions made in estimating the tax base for a consumption tax were as follows.

– *Disposable income*—in 2004, total non-corporate income (employees, self-employed, pensioners, etc) was approximately £1.1 billion, of which approximately £130m was paid in income tax, and a further £42m was paid in social security contributions, leaving approximately £930m in disposable income.[68] (The Household Expenditure Survey suggests a lower number than this—around £830m when scaled up to a total personal income of £1.1 billion.)

– *Visitor spending*—visitor spending has been estimated at £104m, using 2004 visitor numbers and average expenditure figures from the Guernsey Passenger Survey.[69]

– *Guernsey residents spending abroad*—no information is available for off-Island spending by Guernsey residents. Evidence for Jersey shows that the Crown Agents estimate that Jersey residents spend around £100m abroad each year.[70] If Guernsey expenditure is proportionate to the difference in the Islands' respective populations, this would translate to around £68.5m.[71]

– *Savings*—the net savings ratio is also not available for Guernsey. Again the Crown Agents estimated this to be 5% of household income in Jersey. Using the same assumption, this would be around £65m in Guernsey. The Household Expenditure Survey for Guernsey in 1998/99 estimates gross savings at around 12%. This estimate of net savings may, therefore, be a little low.

Under these assumptions, the total (private) income that is spent in the Island is around £900m for 2004.

Not all expenditure in the Island is likely to be taxed. In particular, expenditure on housing (rents and mortgage interest) is not usually subject to a consumption tax. Expenditure on financial services is also usually excluded. Housing expenditure accounted for around £210m when scaled up to 2004 total personal income levels, based on expenditure in 1998/99 (the year of the most recent Household Expenditure Survey). Financial services expenditure will largely be included in savings.

Excluding housing, therefore, the total tax base for a consumption tax in 2004 would have been around £690m.

[68] Source: Income Tax Office.

[69] TNS Guernsey Passenger Survey. For the purposes of this report, the expenditure category on travel to and from Guernsey has been excluded since this is likely to be paid to international travel operators and is thus unlikely to be captured by a Guernsey consumption tax.

[70] Crown Agents for States of Jersey (2005), 'Proposal for the Design of a Prototype Goods and Services Tax', Final Report, January.

[71] For 2001 Jersey's population was measured at 87,400 and Guernsey's at 59,807 in their respective censuses.

Appendix 3 Comparative impact of tax options on different households

This appendix sets out the approximate impact on different household types of raising £30m (in 2011 prices) by:

– introducing a simple employee payroll tax of 2.5%;
– raising the income tax rate to 23%;
– reducing personal tax allowances by 35% ; and
– introducing a wide-based goods and services tax (GST) of 3%, covering most expenditure except housing and financial services.

It is estimated that these tax measures would raise approximately £30m. However, it has been necessary to make a number of assumptions, particularly about the size and shape of the different tax bases in 2011. As a result small differences between the outcomes should therefore be discounted. In addition, these figures are based on aggregated data for representative household types, and as such are unlikely to represent any one particular household on the Island.

Different household types are required to pay different amounts of tax mainly as a result of the interaction between elements of the taxation and benefit structures. These differences in amounts of tax payable are mainly caused by:

– households with two people of 65 and over not paying additional tax under employee payroll tax since they are assumed not to be employed;

– households with two people of 65 and over paying *more* under the GST options because they pay *less* income tax and are not paying employee social security contributions, and therefore have *higher disposable incomes*;

– households with children paying more under GST as a result of receiving family allowance (£663 pa per child); this raises their disposable income, and thereby increases the amount they would pay in GST.

In addition, actual households, rather than representative households used for the purpose of the calculations below, will pay different amounts of GST depending on their net savings rate and their relative expenditure on housing.

Tables A3.1 to A3.5 show the estimated monetary impact of the taxes on different representative household types.

Table A3.1 Single person, no children, earned income; additional tax paid to raise £30m (£, 2011 prices)

	Gross household income						
Tax type	**£10,000**	**£20,000**	**£50,000**	**£75,000**	**£100,000**	**£150,000**	**£200,000**
Apply an employee payroll tax of 2.5% on all income	250	500	1,250	1,875	2,500	3,750	5,000
Increase income tax rate to 23%	20	320	1,220	1,970	2,720	4,220	5,720
Reduce personal allowances by 35%	659	659	659	659	659	659	659
Introduce a general consumption tax of 3%	242	308	790	1,027	1,301	1,893	2,543

Source: Oxera calculations.

Table A3.2 Single person, aged 65 or over, no children, unearned income; additional tax paid to raise £30m (£, 2011 prices)

	Gross household income						
Tax type	**£10,000**	**£20,000**	**£50,000**	**£75,000**	**£100,000**	**£150,000**	**£200,000**
Apply an employee payroll tax of 2.5% on all income	0	0	0	0	0	0	0
Increase income tax rate to 23%	0	269	1,169	1,919	2,669	4,169	5,669
Reduce personal allowances by 35%	580	779	779	779	779	779	779
Introduce a general consumption tax of 3%	263	338	845	1,082	1,355	1,947	2,597

Source: Oxera calculations.

Table A3.3 Married couple, no children, earned income; additional tax paid to raise £30m (£, 2011 prices)

	Gross household income						
Tax type	**£10,000**	**£20,000**	**£50,000**	**£75,000**	**£100,000**	**£150,000**	**£200,000**
Apply an employee payroll tax of 2.5% on all income	250	500	1,250	1,875	2,500	3,750	5,000
Increase income tax rate to 23%	0	40	940	1,690	2,440	3,940	5,440
Reduce personal allowances by 35%	0	1,318	1,318	1,318	1,318	1,318	1,318
Introduce a general consumption tax of 3%	242	364	846	1,083	1,357	1,949	2,599

Source: Oxera calculations.

Table A3.4 Married couple, both aged above 64, no children, unearned income; additional tax paid to raise £30m (£, 2011 prices)

	Gross household income						
Tax type	**£10,000**	**£20,000**	**£50,000**	**£75,000**	**£100,000**	**£150,000**	**£200,000**
Apply an employee payroll tax of 2.5% on all income	0	0	0	0	0	0	0
Increase income tax rate to 23%	0	0	838	1,588	2,338	3,838	5,338
Reduce personal allowances by 35%	0	1,145	1,557	1,557	1,557	1,557	1,557
Introduce a general consumption tax of 3%	252	404	918	1,180	1,465	2,058	2,707

Source: Oxera calculations.

Table A3.5 Married couple, two children, earned income; additional tax paid to raise £30m (£, 2011 prices)

	Gross household income						
Tax type	**£10,000**	**£20,000**	**£50,000**	**£75,000**	**£100,000**	**£150,000**	**£200,000**
Apply an employee payroll tax of 2.5% on all income	250	500	1,250	1,875	2,500	3,750	5,000
Increase income tax rate to 23%	0	40	940	1,690	2,440	3,940	5,440
Reduce personal allowances by 35%	0	1,318	1,318	1,318	1,318	1,318	1,318
Introduce a general consumption tax of 3%	290	411	894	1,131	1,405	1,997	2,646

Source: Oxera calculations.

Table A3.6 Married couple, two children, earned income, mortgage of £100,000; additional tax paid to raise £30m (£, 2011 prices)

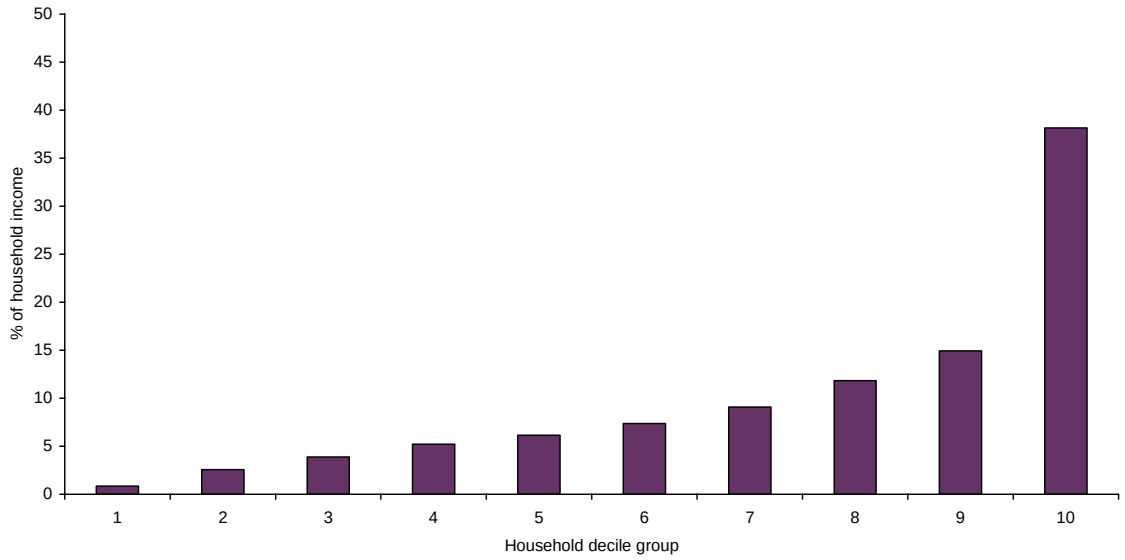
	Gross household income						
Tax type	**£10,000**	**£20,000**	**£50,000**	**£75,000**	**£100,000**	**£150,000**	**£200,000**
Apply an employee payroll tax of 2.5% on all income	250	500	1,250	1,875	2,500	3,750	5,000
Increase income tax rate to 23%	0	0	775	1,525	2,275	3,775	5,275
Reduce personal allowances by 35%	0	484	1,318	1,318	1,318	1,318	1,318
Introduce a general consumption tax of 3%	242	364	846	1,083	1,357	1,949	2,599

Source: Oxera calculations.

Appendix 4 Distribution of income in Guernsey

This appendix provides additional information on the distribution of income in Guernsey. Figure A4.1 shows that the top 10% of Guernsey households (in terms of income) have an income of almost 40% of total Guernsey income. The lowest-income decile has only a small share of household income in Guernsey—less than 1% of Guernsey total household income.

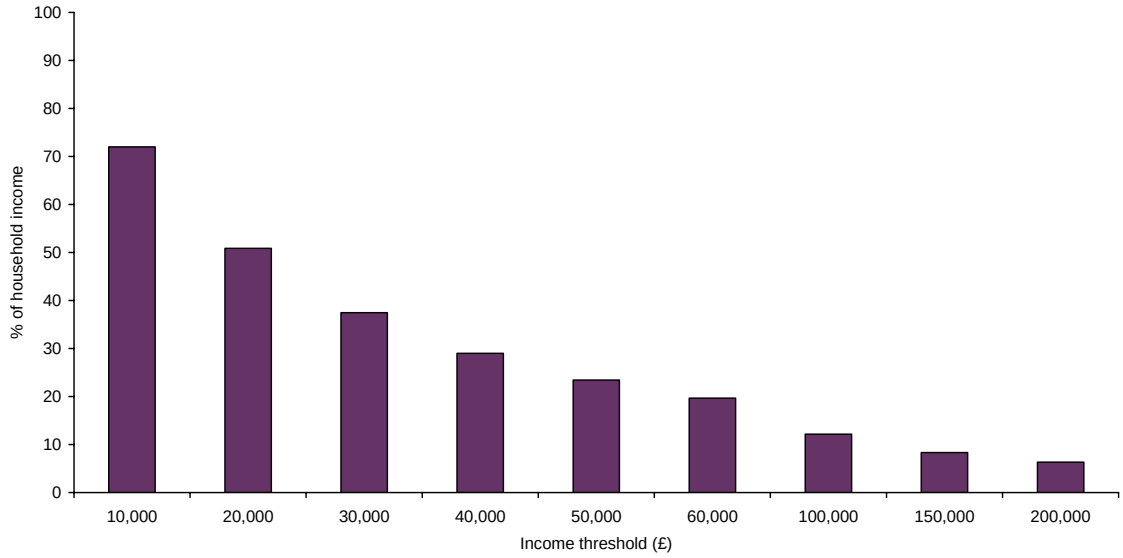
Figure A4.1 Distribution of gross household income by decile group



Note: The income data used in the figure is available as discrete groups of data rather than continuous data. Household incomes have been allocated on a pro rata basis according to the number of households in each decile; this chart should therefore be regarded as only an approximate representation of the income distribution.
Source: Income Tax Office and Oxera calculations.

Figure A4.2 represents the approximate share of total income that is above a defined household income threshold. The figure can be used to obtain an indication of the approximate proportion of the total income tax base that would be untaxed using different income tax thresholds.

Figure A4.2 Proportion of income above defined income thresholds



Source: Income Tax Office and Oxera calculations.

Appendix 5 Trends in revenue expenditure and CAPEX

This appendix provides historical data on revenue and CAPEX in Guernsey, both in real and nominal terms.

Table A5.1 Trends in nominal Guernsey government expenditure (£'000s)

	Social Security revenue expenditure	Health revenue expenditure	Education revenue expenditure	Sub-total main revenue expenditure categories	Total revenue expenditure	CAPEX
1995	35,630	39,745	32,686	108,061	155,153	9,092
1996	37,187	43,224	34,197	114,608	166,171	6,805
1997	38,987	45,134	35,135	119,256	170,678	10,278
1998	41,297	47,832	36,919	126,048	180,681	8,664
1999	43,146	50,127	39,294	132,567	190,763	10,390
2000	45,775	54,651	41,709	142,135	201,149	13,897
2001	49,253	59,699	44,571	153,523	222,901	34,965
2002	51,487	63,685	48,294	163,467	239,727	32,820
2003	55,823	68,529	52,313	176,666	254,390	51,108
2004	57,079	73,623	58,990	189,691	275,656	44,365
2005	59,225	79,730	62,225	201,180	289,459	61,863
2006	61,580	82,050	64,250	207,880	297,225	51,251

Note: Figures for 2005 and 2006 relate to budgeted rather than outturn figures
Source: Guernsey government accounts and Oxera calculations.

Table A5.2 Trends in real Guernsey government expenditure (£'000s, 2004 prices)

	Social Security revenue expenditure	Health revenue expenditure	Education revenue expenditure	Sub-total main revenue expenditure categories	Total revenue expenditure	CAPEX
1995	48,818	54,456	44,784	148,058	212,581	12,457
1996	49,585	57,634	45,598	152,817	221,570	9,074
1997	49,662	57,492	44,755	151,909	217,410	13,092
1998	50,953	59,016	45,552	155,521	222,928	10,690
1999	51,969	60,378	47,330	159,677	229,774	12,515
2000	53,086	63,379	48,370	164,835	233,275	16,116
2001	56,056	67,945	50,727	174,728	253,688	39,794
2002	56,110	69,403	52,630	178,143	261,250	35,766
2003	58,533	71,855	54,853	185,241	266,738	53,588
2004	57,079	73,623	58,990	189,691	275,656	44,365
2005	57,271	77,099	60,172	194,541	279,907	59,822
2006	57,516	76,635	60,010	194,160	277,608	47,868

Note: Figures for 2005 and 2006 relate to budgeted rather than outturn figures.
Source: Guernsey government accounts, Policy Council, Policy and Research Unit and Oxera calculations.

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