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# *Economic* PERSPECTIVE

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## A CRITIQUE OF GERS: GOVERNMENT EXPENDITURE AND REVENUE IN SCOTLAND

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### INTRODUCTION

This paper represents a critique of the government's published report on "Government Expenditure and Revenue in Scotland", (commonly referred to as GERS). There are, in fact, two levels at which such a critique might be approached. The first is primarily philosophical, and would be concerned with fundamental questions such as "what is the purpose of a GERS exercise and how relevant are the results to different time periods or constitutional arrangements?" The second is concerned primarily with practical issues: notably the adequacy of the methodology used and the accuracy of data sources.

In the main, this paper deals with the second level of approach, although we return briefly in the final section to consider more philosophical issues.

The GERS report intends, "to provide a strictly factual contribution to public understanding of the budgetary issues in Scotland. The report examines circumstances and data, using a methodology which is analytically sound and which can be clearly explained". Our conclusions, based on analysis of publicly available data, are that it does not achieve this objective. The existing methodology is in certain respects flawed; the data sources are in many cases inadequate. Leaving aside philosophical issues, and concentrating only on practicalities, there are a number of points which require to be addressed before confidence can be placed in the estimation of a general government borrowing requirement for Scotland.

The structure of this paper is as follows. The first section provides background information on GERS, and also on the key source document, the Financial Statement and Budget Report (FSBR), which sets out expenditures, revenues and borrowing requirement at the UK level. The next two sections give a critique of the techniques used in GERS on the revenue and expenditure side respectively. There then follows a section which looks specifically at the important topic of European funded expenditure and the handling of European receipts. The final section sums up the findings, states the conclusions of the work, and puts forward suggestions of what is now necessary to improve information on Scotland's public finances; it also raises some of the philosophical issues concerning the production of a GGBR for Scotland: by and large, these philosophical issues are every bit as important as the practical issues raised in this paper.

### BACKGROUND

The GERS report is concerned with an analysis of the public finances in Scotland, and within it, it includes the calculation of the General Government Borrowing Requirement (GGBR) for Scotland. "General Government" denotes the combined central government and local authorities sectors. General Government Expenditure is a National Accounts concept and is the combined expenditure of the two sectors, excluding payments between them. GERS defines the GGBR for Scotland as the difference between General Government Expenditure (defined to exclude privatisation proceeds) and General Government Receipts (GGR), (defined to exclude North Sea Oil Revenues). To date the exercise has been carried out five times since 1992. The latest report is for 1996-97, and was published in November 1998.

To a large extent GERS is an attempt to provide at Scotland level the counterpart of the calculation of the GGBR at UK level in the Financial Statement and Budget Report (FSBR).<sup>1</sup>

For 1996-97, the FSBR recorded the Outturns as follows:

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<sup>1</sup> The latter records the GGBR as the difference between GGE (inclusive of privatisation proceeds) and GGR where GGR includes North Sea Oil revenues.

UK £ Billion	1996-97
General Government Expenditure	309.0
General Government Receipts	286.3
General Government Borrowing Requirement	22.7

Note that this snapshot or static view of general government transactions is insufficient in itself to say much about the state of general government finances. The dynamics of the situation are of importance, as also are indicators such as the level of general government debt and of the public sector's net wealth. The FSBR contains information on these aspects. As the FSBR indicates, for most of the 1980s and 1990s the current balance (the difference between government receipts and current spending) for the UK has been in substantial deficit. The gross general government debt (the Maastricht measure) has risen steeply over the past five years from 34% to 55% of GDP. At the same time, the public sector's assets have fallen with privatisation and low levels of public investment. With the debt burden also rising, the public sector's net wealth has fallen steeply from around 70% of GDP during the 1980s to an estimated 10% of GDP at end 1996.

An aspect of the FSBR, which is important, is its treatment of payments to and from the European Union. There is nothing in writing, which says how the FSBR handles these European transactions. The Treasury has however confirmed that at the UK level, the relevant figures are included in the FSBR on a net basis. On the expenditure side, implicit in the figures are terms for expenditure on UK's net contribution to Europe plus expenditure directly funded by European receipts. Apart from timing effects, the sum of these two items equals the UK's gross contribution to Europe. There is no term on the revenue side representing receipts from Europe.

The other possible approach would have been a gross treatment. This would have included on the expenditure side the UK's gross contribution to Europe and expenditure in the UK on projects funded by European receipts: on the revenue side would appear receipts from Europe. At the UK level, the net

treatment and the gross treatment have the same result on the GGBR.

## GERS: REVENUES

### Introduction

General government receipts for the UK for 1996-97 (outturn), as presented in the FSBR, 1997 are shown in the table below:

	Outturn £ billion	As a % of Total
Income tax	69.5	24.3
Corporation tax	27.7	9.7
Value added tax	46.7	16.3
Excise duties <sup>1</sup>	30.6	10.7
Other taxes and royalties <sup>2</sup>	49.7	17.4
Social security contributions	47.4	16.6
Other receipts	14.8	5.2
<b>General Government Receipts</b>	<b>286.3</b>	<b>100</b>

1. Fuel, alcohol and tobacco duties
2. includes council tax and money paid into the National Lottery Distribution Fund, as well as other central government taxes.

Source: *Financial Statement and Budget Report 1997*

Data for the above are provided by Departments such as the Inland Revenue and Customs and Excise. Actual data for Scotland is in the main not available; the major exceptions being council tax and non-domestic rates. The following paragraphs outline the methods which have been used in GERS to obtain estimates for these taxes and detail some of the issues and problems which arise from the methods used.

### Income Tax

Information on net income tax receipts is held by the Inland Revenue in such a way that it cannot be broken down into different countries in the UK. To break the figures down in order to give an estimate of net receipts of income tax for Scotland, GERS uses the Scottish share of UK income tax liability and applies this to UK net income tax receipts. So, for example, in 1996-97, the UK Survey of Personal Incomes estimated the Scottish share of UK income tax liability to be 8.0%. This share was applied in GERS to UK income tax net

receipts to obtain a figure of £5,500 million as being income tax raised in Scotland.

There are two major criticisms of this.

1. There are two surveys which give information on income tax: the Survey of Personal Incomes (SPI) and the DSS 1% Survey. Of the two surveys, the DSS 1% Survey is six times larger than the SPI survey. The DSS 1% survey concentrates on income from employment; while the SPI includes the self employed and other forms of income.

GERS uses the SPI as it has a fuller coverage. However, it is possible to carry out a comparison of the results from the two surveys by looking at a large group covered by both; in other words comparing like with like. The two surveys can be directly compared on their estimates of the total of PAYE pay for Scotland: the comparison shows a 0.4 percentage point difference between the two surveys in their estimates of Scotland's total PAYE pay as a share of UK PAYE pay, with the DSS survey giving the higher estimate. The DSS is by far the larger sample; and this suggests that the SPI underestimates for Scotland. Given total income tax receipts for the UK, an underestimate of this magnitude would understate Scotland's income tax revenues by £270 million.

2. There is a further major point - and that is that the distribution of income tax liability among the countries in the UK may be different from the distribution of net income tax receipts. There is indeed a very big difference between the total of income tax liabilities and the total of income tax receipts: for example in 1995-96, income tax liabilities were £72 billion, gross income tax receipts were £82.5 billion and after income tax repayments of over £14 billion, net income tax receipts were £68 billion. Given these very large differences, there is scope for the distribution of tax liabilities between the different parts of the UK to be quite different from the distribution of net income tax receipts.

According to the Inland Revenue, the main reason for the difference between tax liabilities and tax receipts relates to tax credits on dividends. Individuals with dividend income receive a tax credit. The Inland Revenue includes this as part of the tax liabilities for UK individuals - but there is nothing corresponding to this in actual income tax receipts, (since the tax relating to the tax credit has already been received by the government as Advanced Corporation Tax).

This implies that, the greater the amount of tax credit received by an individual, the greater the difference between his income tax liability and the income tax the government will actually receive from him. Given that investment income is higher per head, on average, in the rest of the UK compared to Scotland (Source: Regional Trends), the gap between tax liabilities and tax receipts is likely to be larger for the rest of the UK than it is for Scotland. In other words, Scotland's share of tax receipts will be higher than its share of tax liabilities.

The GERS methodology, which estimates Scotland's share of tax receipts on the basis of its tax liabilities is therefore likely to underestimate Scotland's share of tax receipts. The size of the likely underestimate cannot be quantified.

### Social Security Contributions

Social security contributions in the UK in 1996-97 were £47.2 billion. An estimate of the amount attributable to Scotland was obtained by GERS with reference to the 1% DSS sample of National Insurance records. In 1995-96, this survey indicated that Scotland had a 9% share of UK National Insurance contributions (employees and employers); GERS for 1995-96 used a factor of 8.6%. This year GERS records a 9% share for 1996-97. Either GERS was in error in 1995-96, or the basic series it is using is different from the 1% DSS sample results as published and is very erratic with a jump of 0.4 percentage points, (equivalent to £180 million), in one year.

A further point is that the percentage share used relates only to those in employment using the PAYE system. Although this group

accounts for by far the largest share of National Insurance contributions, it excludes the self-employed and those who pay their contributions outwith the PAYE system. It cannot be assumed that the distribution of this group among the countries in the UK is the same as that of the employed.

### Value Added Tax

Net receipts of value added tax in the UK amounted to £46.7 billion in 1996-97. For VAT purposes a business normally pays VAT at a single geographical location. This location is normally the locus of their main accounting functions, and may not be the same as the place(s) at which their sales are made and VAT paid by their customers. It is therefore not possible to tell from business's VAT returns how much VAT has been paid by consumers in any one area. The allocation of VAT to different areas is thus necessarily a statistical exercise.

In principle VAT is a tax on consumption by end users of goods and services. GERS allocates a share of the UK total to Scotland on the basis of consumers' expenditure on the final goods and services affected by the tax, using data from Regional Accounts. This itself is based on the Family Expenditure Survey. By its nature the FES does not include all those small businesses where turnover is too small for the firm to be registered for VAT. These firms are however end consumers and VAT payers. If the distribution of expenditure by VAT unregistered businesses differs from the distribution of consumers' expenditure, then the method of allocation used in GERS will be inadequate.

### Corporation Tax

Corporation tax is assessed on company profits. As noted in the GERS report, (Appendix B), it is not sensible to allocate the tax within the UK where it is collected, since many companies have production facilities located in different parts of the UK. To get round this problem, the Scottish share of UK corporation tax, less North Sea corporation tax, is allocated in GERS on the basis of Scotland's share of UK (less Continental Shelf) gross trading profits and surpluses and income from self employment, as estimated in the Regional Accounts. The share of gross trading profits and surpluses was used in previous reports but this is no longer published separately.

The GERS methodology results in Scotland receiving a 9.2% share of the total of non-oil corporation tax collected in the UK.

There are a number of severe practical problems with this approach. These arise primarily because the measure used to allocate corporation tax in GERS differs significantly from the true tax base on which corporation tax is assessed. Specific problems are as follows:

1. Corporation tax is paid on company profits, but not on income from self-employment: however, the measure on which GERS allocates corporation tax includes such income. The potential inaccuracy here is large, as indicated by the fact that, before Regional Accounts stopped publishing self employment income and gross trading profits separately, self employment income was estimated to account for approximately 40% of the aggregate of these two categories.
2. The relationship between company gross trading profits and the tax base for corporation tax is not straightforward. Companies have significant other sources of income besides their trading activities (e.g., from ownership of financial assets): corporation tax is paid on profits whether arising from trading or non-trading activities. Conversely, there are significant set-offs against total profits before corporation tax is paid: for example, relating to capital allowances. According to Inland Revenue figures, in 1995-96, at the UK level, total gross trading profits amounted to £170 billion: allowing for other sources of income increased this to £245 billion: but then taking off capital allowances and other deductions reduced this to a total taxable profit of £106 billion. Given the magnitude of these changes, simply allocating corporation tax on the basis of gross trading profit will be subject to significant potential error.
3. There are also specific problems with the assessment of gross trading profits for banks and financial institutions. According to the conventions used in the National Accounts, (see UK National Accounts, Sources and

Methods), receipts of interest are regarded as transfer payments. So if a bank lends money to a company, in national accounting terms the interest payment from the company to the bank will not be deducted from the gross trading profit of the company: and it will not be included in the gross trading profit of the bank. The interest payment will, however, reduce the company profits for tax purposes, and increase the bank's profit for tax purposes. The National Accounts definition of Gross Trading Profits, therefore, will understate the profits of banks and financial institutions for the purpose of calculating corporation tax.

4. There are also problems about the taxation of life insurance companies. From a National Accounts point of view, that part of the profits of a life insurance company which accrues to shareholders is included in company profits: while that part which accrues to policy holders is allocated to the personal sector. Corporation tax, however, will be paid on both parts. The effect is that, for life insurance companies, the National Accounts definition of gross trading profits will understate the true tax base. The effect will be most extreme for mutual companies - where the National Accounts will allocate the entire profit to the personal sector, even though such a company will pay significant corporation tax. This could be important for Scotland, which contains a number of large mutuals.

The above points indicate that there are severe difficulties about the GERS approach towards allocating Corporation tax to Scotland. It is, however, not easy to be constructive about how the exercise should be done. The difficulties go deeper than lack of data, or the fact that National Account conventions are in several respects inappropriate from the point of view of modelling the tax base. There are also underlying philosophical difficulties here: in particular, if significant amounts of company profits, (and hence corporation tax) arise from non-trading activity, what is the correct conceptual approach for allocating this element of tax? What is clear is that more thinking and more work needs to be done in this area.

## GERS: EXPENDITURES

### Introduction

The basic sources for information on government expenditure in Scotland is the *Public Expenditure Survey Analysis* (PESA). Each year the Treasury carries out a territorial exercise, requesting Departments to allocate as much as they can of the expenditure within their programmes to the country on behalf of which the expenditure was incurred. This forms Identifiable Expenditure. This and Non-Identifiable Expenditure comprise all expenditures on services. What falls into the "Other" category is mainly general government debt interest (excluding local authority debt interest paid to central government) and accounting adjustments to put the figures on a consistent basis with National Accounts. Identifiable expenditure for Scotland is itself split into that within the responsibility of Scottish departments, and that within the responsibility of other departments.

GERS takes the identifiable expenditure figures for Scotland as published in PESA. The non-identifiable and "other" categories for Scotland are estimated, in most cases by taking Scotland's GDP or population share. The problems we have identified with the GERS approach are discussed below:

1. The broad results of the exercise to estimate identifiable expenditure by other departments on Scotland's behalf are shown below for 1995-96 and 1996-97:

The Treasury notes that the figures for the two years are not directly comparable in many cases, due to changes in the approach used to collect the data. The coverage of the 1996-97 exercise for apportioning spending by country was wider, with a higher proportion of total expenditure being allocated. Where departments did not have precise accounting information, they were asked to use appropriate indicators to arrive at an estimate; for example, allocation of administration costs in the same proportions as the corresponding programme expenditure.

There is a lack of information on what expenditure is covered in the above table, the reasons for changes, and the estimation methods used to allocate

previously non-identifiable expenditure. This is unsatisfactory from two points of view: both from the point of view of scrutinising GERS, and from the point of view of the Scottish Parliament attempting to exercise its responsibilities in for example the area of industry and employment.

**Identifiable General Government Expenditure by Other Departments**

Expenditure £ million: Scotland	1995-96	1996-97
<b>Agriculture fisheries food forestry</b>	<b>2</b>	<b>130</b>
The Intervention Board	2	74
MAFF		56
<b>Trade Industry Energy Employment</b>	<b>145</b>	<b>290</b>
DfEE	111	121
DTI	33	159
Other	1	10
<b>Transport</b>		<b>161</b>
Passenger Rail Franchising		156
Other		5
<b>Other Environmental Services</b>		<b>27</b>
<b>Law Order Protective Services</b>	<b>47</b>	<b>72</b>
Crown Office	47	48
Home Office		24
<b>Culture Media Sport</b>		<b>7</b>
<b>Social Security</b>	<b>8608</b>	<b>9142</b>

Source: Letter from HM Treasury

- Non-identifiable expenditure for the UK is set out in PESA, and is as follows:

**Non-Identifiable General Government Expenditure 1996-97**

Function	£ million
Defence	21,164
International Development	3,374
Agriculture, fisheries, food, forestry	1,261
Trade, Industry, Energy, Employment etc.	2,347
Transport	- 374
Housing	

Other Environmental Services	144
Law, Order, Protective Services	7
Education	16
Culture, Media, Sport	
Health and Personal Social Services	142
Social Security	1,355
Miscellaneous	5,973
<b>Total</b>	<b>35,407</b>

In GERS, most of these items are allocated to Scotland either on the basis of population or GDP share. The rationale of this appears to be that this is consistent with the overall principle of "who benefits", given that non-identifiable expenditure is generally incurred on behalf of the UK as a whole. It is arguable, however, that this simple interpretation of the "who benefits" principle is inadequate. In particular, this interpretation fails to take account of the different types of benefit which arise from government expenditure. Specifically, the following three categories of benefit can be identified:

- the direct benefit of the service or product purchased
- the employment generated in providing the service
- the multiplier effect on the rest of the economy, for example, the goods and services which have to be purchased from other firms in order to provide the service

The GERS approach only takes the first of these into account. We would argue that a better approach to the "who benefits" principle would involve estimating Scotland's share of benefit under each of these three headings separately for each category of non-identifiable expenditure, and then deriving a factor as a weighted average of the three individual factors. This begs the question, of course, of the appropriate weights to attach: but that, in itself is an issue of judgement, which should be explicitly addressed, and the subject of debate.

For several of the major items of expenditure, there is evidence to suggest that the employment and multiplier effects accruing to Scotland

are less than Scotland's population or GDP share.

4. Within Other Expenditure at the UK level, the largest single item is central government debt interest, which amounts to £26.6 billion. GERS allocates this to Scotland on the basis of Scotland's share of non-oil GDP. With respect to this allocation, a footnote in GERS records that "this approach is consistent with that adopted in the previous GERS reports. However, it could lead to an underestimate of this component of Other Expenditure given that, historically, Scotland's share of public expenditure has been higher than its share of population or GDP".

This footnote in GERS is very significant as an indication that the appropriate way to allocate this item of expenditure is indeed a topic, which could be argued. It would be possible to advance the view likewise that the correct allocation for Scotland should be below its non-oil GDP share, given the contribution of Scotland's oil revenues to the UK exchequer over the past twenty odd years. It is not our purpose here to advocate either position. The important point to note is that the appropriate assumption to use is a topic for legitimate debate: that this debate would have inherently political elements: and that the GERS approach does not adequately air the issues involved.

## EUROPE

As noted above, the UK's contribution to, and receipts from, the European Union is handled in the FSBR on a net basis. The way in which European transactions come into GERS appears to be as follows:

Within the *Public Expenditure Statistical Analysis*, the UK net contribution to the European Union is shown in the "miscellaneous" category within non-identifiable expenditure: in other words this published analysis does not allocate this category of expenditure to the different parts of the UK. The last published GERS report allocated this category to Scotland on the basis of Scotland's share of non-oil GDP. Applying this approach to the PESA figure for 1996-97, would imply that the share of the UK net

contribution allocated to Scotland on the GERS methodology would be about £120 million.

The other category of expenditure that is relevant is expenditure on schemes and projects within Scotland directly funded by European receipts. The bulk of this expenditure is included within the category of Identifiable Expenditure for Scotland in PESA, but is not separately distinguished from other expenditure. It is not, in fact, easy to estimate the total of European funded expenditure using published sources. On the basis of available evidence, we estimate the total of this expenditure at about £750 million: but this could well be an under estimate.

As far as can be inferred from the published GERS methodology, there is no element of European receipts included within the Revenue side of GERS.

At first sight, this implicit treatment of European transactions in GERS seems to be the direct analogy of the net approach adopted at the UK level in the FSBR. There is a term (£120 million) which appears to correspond to the net contribution implicit in the FSBR: and European funded expenditure (which we estimate at around £750 million), is simply included within the overall total of Scottish expenditure. Just as in the FSBR, there is no allowance for European receipts on the revenue side of the balance sheet.

But if the GERS treatment of European transactions is indeed the direct analogy of the FSBR treatment, then the sum of the "net contribution" and expenditure on European funded projects would equal the gross contribution to Europe: this would imply that Scotland must be making a gross contribution to Europe of £870 million, or over 12% of the total UK gross contribution. If correct, this would be a startling figure: it would imply that Scotland is in fact making a gross contribution to Europe which was 50% higher than Scotland's GDP share of the UK gross contribution, and that the GGBR calculated in GERS was being inflated by the requirement to fund this gross contribution. If this is indeed the government's position, then this represents a key assumption underlying the GERS methodology which should be stated explicitly rather than being buried implicitly in the figures.

It seems most unlikely that this explanation of the way European transactions are handled in GERS is actually what the government

intends. Are there any other possible alternatives?

One possibility is that the government actually regards European receipts coming to Scotland as being qualitatively different from receipts coming to the UK as a whole. At the UK level, the alternative gross presentation of the FSBR figures would include, on the expenditure side, an additional flow equal to the difference between the UK's gross and net contribution: and on the revenue side, an exactly balancing inflow equal to the UK's European receipts. The government might argue that neither of these notional flows actually exists at the Scotland level: and that, in particular, the reason that European receipts coming to Scotland should not count as revenue in the GERS calculation, is because they do not represent an external revenue source but are, in effect, just revenue which comes from Whitehall anyway.

This position, however, does not look tenable either, for the following two reasons:

- European receipts are not in Whitehall's gift: the amount and allocation of these funds is determined by stringent conditions laid down by Brussels and the funding should be additional to mainstream public expenditure. This is the principle of additionality.
- To treat European receipts coming to Scotland as an internal revenue flow is inconsistent with the treatment at UK level. If the UK as a whole received £X million more European receipts, this would increase expenditure on European funded projects by £X million. At the same time, the UK's net contribution to Europe would decrease. However, because of the workings of the Fontainebleau agreement governing the rebate which the UK receives on its contribution to the EU budget, the effect on the UK net contribution is not straight forward. Let us suppose that the effect of the Fontainebleau agreement is to reduce the UK rebate by a factor (f) of the additional receipts the UK has received. The overall effect on the UK's net contribution to Europe of the additional £X million receipts is then to change the net

contribution by an amount  $(-X+fX)$ . (Here the factor f will vary depending on the type of programme involved but will typically be a good deal less than 1). The overall effect on the UK borrowing requirement of receiving the additional £X million EU receipts is to increase the borrowing requirement by  $X + (-X+fX)$ , that is £ fX million

Now suppose that all of the additional £X million came to Scotland. The effect of applying the GERS methodology is to increase Scottish expenditure on services by £X million: and to change Scotland's "net contribution" by Scotland's GDP share of the change in the UK net contribution: that is, by  $0.086(-X+fX)$ .

The overall effect on the Scottish borrowing requirement is then on the GERS methodology,

$$X + 0.086 (-X + f X) = 0.914 X + 0.086 f X$$

Since f will normally be materially less than 1, the effect is that the GERS methodology implies that Scotland's borrowing requirement increases by a good deal more than the UK's borrowing requirement. In other words, the Scottish and UK approaches are inconsistent.

What seems much more likely than either of the above possible rationalisations for the treatment of European transactions in GERS is that the GERS approach is not tenable. A much more reasonable approach would involve starting with the gross treatment at UK level. A reasonable way of apportioning this would then be for Scotland to have, on the expenditure side, Scotland's GDP share of the UK gross contribution to Europe; on the revenue side the actual EU receipts coming to Scotland: and on the expenditure side, again, the expenditure on projects funded by these receipts. The overall contribution of these flows to Scotland's GGBR would then be Scotland's GDP share of the UK gross contribution to Europe.

In order to move from the way European transactions are currently handled in GERS to

the more reasonable apportionment of the gross flows would involve increasing GERS expenditure by Scotland's GDP share of the difference between the UK's gross and net contribution to Europe, which would amount to about £400 million; and increasing GERS revenues by Scotland's European receipts which we estimate at approximately £750 million. The effect would be to reduce Scotland's apparent borrowing requirement by approximately £350 million.

### SUMMARY

We suggest that four main conclusions about GERS can be drawn from the above analysis.

1. The results are inherently inaccurate and subject to potential bias. This arises because, in many cases, the required data is not available to enable apportionment of revenue terms to Scotland to be carried out with reasonable accuracy. The type of uncertainty which results is different from that which can be quantified in statistical confidence limits. This is particularly the case for income tax, VAT and corporation tax, among the major revenue items.

The GERS report indeed notes in its Executive Summary that the "calculations required to derive a GGBR for Scotland are subject to imprecision due to the need to estimate a number of elements of both expenditure and revenue".

On the basis of the above analysis, the extent of the imprecision is considerable.

2. While the detail published in the GERS is reasonably full, the same cannot be said for some of the key input figures, in particular those taken from the Public Expenditure Statistical Analysis. It is unsatisfactory not to know in more detail what is included in some of the key PESA figures, why the figures change from year to year, and what estimation techniques have been used.
3. In some key areas, (e.g., the handling of North Sea Oil, European receipts, defence expenditure, and central government debt interest), the choice of different assumptions would materially affect the outcome: the

focus of debate about what the most appropriate assumptions should be is not primarily statistical but inherently involves value judgements. For example: how should the "who benefits" principle apply to items such as non-identifiable expenditure, where there is more than one type of benefit? What is a fair apportionment to Scotland of central government debt interest, etc.? These areas need to be exposed in the analysis, so that they can be the focus of meaningful debate.

4. Given the above identified data deficiencies, there is a need for considerably improved data collection, if this kind of exercise is to be repeated.

As noted in the introduction, there are two possible approaches to a critique of the GERS methodology: on the one hand, one could focus on the wider philosophical issues; on the other, on more practical and technical considerations. The substance of this paper has concentrated on the latter approach. It is worth, however, touching on some of the wider philosophical issues before we finish. In particular, it is useful to consider the following two questions.

- A. Should a GERS type analysis be viewed in isolation or should it be presented in the context of a wider set of indicators?
- B. How relevant are the results of a GERS type analysis to different time periods or constitutional arrangements?

On the first question, it is relevant that the FSBR, as noted above, does not present the GGBR calculations for the UK in isolation, but presents them as part of a suite of indicators covering both the dynamics of the government's finances, and aspects such as central government debt and public sector wealth. This is surely a much more appropriate treatment than the snapshot concentration in GERS, primarily focused on a single indicator. It is our view that, if a GERS type exercise is to be attempted, this should only be done if the results are indeed set in a wider financial context as is done in the FSBR.

As regards the second question, GERS in itself does not purport to be more than a static statement, describing a position at a given

point in time and conditional upon current economic and constitutional circumstances. The temptation, however, is for users to take the results of this type of analysis and then to generalise the implications, either through time, or to different possible constitutional arrangements. Such a generalisation, however, should not be attempted without examining how robust the results are likely to be in the face of changing circumstances. In particular, how robust are the conclusions of GERS likely to be in the face of major constitutional change?

It seems to us that the results of a GERS type analysis are highly conditional upon specific constitutional arrangements, and are therefore unlikely to be generalisable in the face of constitutional change. There are a number of reasons for holding this view:

1. The pooling of resources at UK level is an inherent principle of current UK constitutional arrangements. This means that there is no consciousness at Scotland level that expenditure decisions relate to available taxation resources. Instead, expenditure decisions relate primarily to resources made available by current Scottish Block arrangements.
2. The control mechanisms currently available to be exercised on taxation resources at the Scottish level are extremely limited, essentially relating only to Council tax. Before generalising the conclusions of GERS it would be necessary to consider what steps might be taken under different constitutional arrangements to design different tax structures: and how, say, an independent Scotland might be motivated to use these mechanisms.
3. Similarly, on the expenditure side, it would be necessary to consider what different mechanisms might apply to the control of expenditure, and how an independent Scotland might be motivated to use these.

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