

PUBLIC SECTOR SPENDING AND THE SCOTTISH ECONOMY: CROWDING OUT OR ADDING VALUE?

Kean Birch and Andrew Cumbers

INTRODUCTION

A recent debate in Scottish media and business circles has been highly critical of the role of the public sector in the Scottish economy. The debate has revolved around the extent to which public sector expenditure and investment has ‘crowded out’ the private sector, leading to poor national economic performance. This article suggests that there is little evidence for such a claim, whilst it could be argued that the opposite is actually more accurate; i.e. there is a link between the total gross domestic product (GDP) change and total government expenditure change during the late 1990s and early 2000s. Furthermore, there is only a small negative relationship between corporation tax rates and economic growth although outliers suggest this is not statistically significant. Perhaps more significant is the relationship between tax receipts and income equality. Countries with higher state involvement generally have lower levels of income inequality, suggesting that government intervention remains important in ensuring wealth is fairly distributed. The reason this is important is that inequality produces detrimental social effects, whilst

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increasing average income once it reaches a certain level does not produce greater ‘happiness’ (Inglehart 2000; Oswald 2005).

There is a need to critically engage with crowding out arguments in order to show how such claims tend to assume that only one form of economic development, mythologised in Ireland’s ‘minimalist state’ model, are not only inaccurate reflections of government involvement (i.e. it ignores the massive EU subsidies Ireland receives), but also that public sector involvement is critical to the success of the Scottish economy through providing basic infrastructure as well as key human and technological resources for emergent sectors such as biotechnology. This article therefore seeks to move beyond a simple dichotomy of public sector ‘bad’, private sector ‘good’, to develop a more sophisticated understanding of how the two inter-relate in successful and balanced economies. In order to do this we outline the media debate about crowding out from 2005 before reviewing the evidence in four parts. In the first, we consider both the theoretical and empirical arguments for and against the crowding out thesis. We then consider some international comparative data on the relationship between economic growth and the size of public expenditure. This is followed by data exploring the evidence that Scotland has in recent years seen a much greater increase in public sector spend relative to other parts of the UK. We then draw upon recent research into the role that the public sector has played in anchoring key new clusters of economic activity as part of a shift towards the knowledge-based economy.

THE SCOTTISH MEDIA DEBATE ON ‘CROWDING OUT’

At a private breakfast meeting with MSPs on 6 October 2005, the chairman of Scottish Enterprise, Sir John Ward, allegedly made a comment comparing areas of the Scottish economy with the former Soviet Union by suggesting that government spending in Ayrshire was at ‘Eastern bloc’ levels (see MacDonnell 2005; Nelson 2005; Smith 2005). This comment, motivated by research data from Scottish Enterprise comparing public and private spending, stimulated a debate in parts of the Scottish media about the role of the Scottish public sector in relation to economic growth and the crowding-out of private investment. An article in **Scotland on Sunday** (9 October) argued that the Scottish public sector was ‘cash-bloated’ and ‘efficiency-challenged’, alongside which it stressed the need to reduce taxes because high rates ‘depress the private sector’ as does public sector employment, a position endorsed by Bill Jamieson, writing in the **SoS’s** sister paper **The Scotsman** (10 October). A week later

Scotland on Sunday continued with this theme, presenting a series of possible solutions to the perceived effects of too much public spending. These included greater private involvement in health and education services.

The production of a critical analysis of Sir John Ward's claims by Professor Brian Ashcroft of the Fraser of Allander Institute later in the month added fuel to the debate. In his analysis, Ashcroft highlighted several flaws in the Scottish Enterprise figures and their presentation. Subsequently Fraser Nelson, writing in **The Scotsman** (27 October), sought to challenge this analysis, continuing to argue that the public sector 'occupies' around three-quarters of the economy in parts of Scotland. In **The Herald** (27 October) Mark Smith highlighted one of the main points of Ashcroft's argument that the Scottish Enterprise figures ignored 'income generated by people who live in the area but work elsewhere'. Two weeks later, George Kerevan criticised Ashcroft in **The Scotsman** (9 November) for presenting 'contradictory' arguments, whilst comparing Scotland unfavourably to Ireland and other small European countries such as Estonia where the key to economic success is perceived as a low tax, 'minimalist state' economy.

'CROWDING OUT': EMPIRICAL EVIDENCE AND THEORETICAL ARGUMENTS

Crowding out in the context of the UK economy

The general definition of crowding-out is when government spending in an equilibrium economy pushes out private investment by producing disincentive effects, such as rising interest rates induced by government borrowing requirements, and consuming goods and services produced by the private sector, meaning that the private sector has to procure goods and services from an external source (i.e. import) (Griffiths and Wall 2001, pp.13-4). Crowding out arguments were central to the analysis of leading Conservative and neoclassical economists in the 1970s in explaining the decline of British industry. In particular, industrial decline was attributed to the displacement of private industry by the public sector, especially through the growth of non-market sectors like health and education (Bacon and Eltis 1978).

Evidence for crowding-out effects can be derived from comparing potential with actual performance within an economy. If we take the average UK growth rate as the potential output that Scotland could achieve then it would appear that Scotland is underperforming. The argument that private investment is

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being crowded-out in Scotland is based on evidence of levels of economic growth, namely the lower relative performance in GDP growth against the UK average. However, when compared against other UK regions, Scotland performs relatively strongly with a gross value added (GVA) per capita index of 96.2 in 2004 against the UK average; this means it has the fourth highest GVA per capita figures in the UK, only behind the high growth regions of the South-east and East of England and London (ONS 2005).

Whilst it is true that the Scottish economy has performed below the UK national average for a long period, certainly going back to the late 1970s, it would be difficult to make the argument that this is due to the crowding out effects of public expenditure. Treasury figures for 2005 show that public sector investment has declined significantly since the late 1960s. As a proportion of GDP, public investment declined from 7.1% (1967-8) to less than 1% by the mid 1990s, before rising under the current Labour Government to 1.6% in 2004-5 (HM Treasury 2005; see also Kitson and Michie 2000). In contrast, public expenditure has fluctuated considerably over the past three decades. Rising public expenditures in the 1970s reflected the particular circumstance of the time: rising oil prices, inflation, wage pressures, balance of payments problems and growing unemployment. Government expenditure may have contributed to rising inflation and interest rates, but was unlikely to be the key factor. Subsequent increases in expenditure during the 1980s and 1990s, up until 1997, were largely due to the effects of the economic cycle (see Figure 1). In particular, the recessions of the late 1970s/early 1980s and early 1990s and rising unemployment were the main reasons for the rise in the state sector under the Thatcher and Major administrations. However, since a peak in the early 1980s, the trend over the longer term has been one of decline. Despite the decline in public sector investment and expenditure, there has not been a corresponding increase in private sector investment, which, as a recent paper by the Institute of Fiscal Studies noted, continues to lag behind countries such as Germany, France, the United States and Japan (Bloom and Bond 2001, p.10).

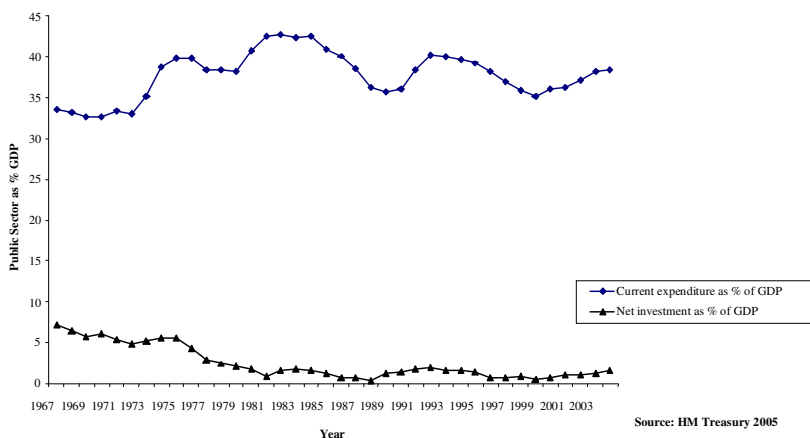
Crowding out since devolution

More recently, it has been argued that the relatively low level of recent GDP growth in Scotland, with an average annual rate of around 1.7% between 2000 and 2003, is a direct result of public spending, as public expenditure ‘crowds out’ private spending, particularly associated with devolution. As Fraser Nelson claimed in **The Scotsman** (27 October) ‘the government employs a third of the workforce, and pays another sixth to be either unemployed or claim

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incapacity benefit. There is less room for companies to grow.’ The implication is that government spending somehow has a direct and negative effect on private sector investment.

Figure 1: UK Public Sector Expenditure and Investment 1967-8 to 2004-5



However, there are several problems with this argument, especially in the Scottish context. Most importantly, it conflates two very different aspects of possible crowding-out effects; (a) the macroeconomic effect on interest rates and investment, and (b) the structural effect on employment and firms. It also ignores the ‘crowding-in’ effects of public expenditure, such as that from education, infrastructure or research and development spending.

Responding to these arguments in the December 2005 **Scottish Economic Report**, the Scottish Executive argued that there are several factors that need to be accounted for in any discussion. Firstly, government expenditure in Scotland is split between devolved and non-devolved budgets, with the devolved budget representing 60% of the total. This means that the Scottish Executive has a limited influence over crowding-out effects.

Second, the expression of ‘government expenditure as a proportion of GDP does not measure the public sector’s share of GDP’ (Scottish Executive 2005a, p.77), meaning that characterising the dominance of a local economy by the

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public sector based on GDP proportion is misleading. GDP measures value added rather than total economic activity.

Thirdly, government expenditure consists of two aspects; (a) government services and (b) transfer spending. The first of these can be further split between procurement of (i) 'intermediate' resources such as material for public organisations, and (ii) purchases from the private sectors. Government services procurement can therefore contribute to the economy and to private sector wealth, whilst transfer spending is a form of redistribution of income, rather than an element of crowding-out. The latter represents over a third of government expenditure in Scotland or 16.4% of GDP (*ibid.*).

Finally, Scottish Executive policies have no effect on fiscal policy because government borrowing is an irrelevant factor in regional economies like Scotland's as is the claim that increased spending necessitate increased taxation. In the Scottish context this latter point can be disregarded because Scottish spending 'is collected via the UK tax system and distributed to the devolved administration in the form of a block grant in accordance with the Barnett formula' (*ibid.*, p.87).

Differentiating public spending from private investment

One important assumption of the crowding-out theory is that the public sector is less efficient than the private sector, which therefore means that private sector spending is more productive than public sector spending leading to higher rates of economic growth (along with attendant impacts on fiscal policy, interest rates, employment motivation etc.) (McGregor and Swales 2005). In discussing the relationship between government spending and GDP growth, Martin Wolf (2005), of the **Financial Times**, has argued that the relationship between high spend and low growth is minimal, if existent at all, a finding reiterated by Chris Giles (2005) in his discussion of taxation and public expenditure. It is therefore difficult to sustain the claim that the public sector is either less productive than the private sector or impacts on economic growth. Further evidence for these claims is reviewed in the next section of the article.

The simplistic analysis behind these arguments is not just that the private sector creates wealth and the public sector stifles it, but also that an increase in the public sector, in employment, in capital investment and in current expenditure somehow crowds out private investment. This idea comes from a very simplistic understanding of the relationship between private and public investment. This is based on two rather flawed assumptions: firstly, that private

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sector investment and public sector expenditure and investment are substitutable for each other; and, secondly, that the level of interest rates affects the rates of private sector investment. If interest rates are lowered, private sector investment will increase as the price of borrowing falls. Increased public sector investment and capital spending means more demand for borrowing, which leads to higher interest rates, which causes a decline in private sector investment. A highly flawed assumption here is that public and private investment inhabit the same market space and that if demand from the public sector – for investment funds – is reduced, this will lead to increased private sector investment in the economy as interest rates fall. However, this is not the case (Sawyer and O'Donnell 1999).

Public investment and private investment work on very different principles. It is important to reiterate here that public spending is largely directed at providing essential collective services and goods – public goods – in which the private sector will normally not invest. National defence and street lighting are the usual examples that are used, but, in the context of the debate here, education, training, transport infrastructure and even welfare provision are important. Public investment, in this sense, is focused on long-term investment that complements, rather than crowds-out, private investment, providing a basis for economic growth that would not be provisioned by the private sector. Private sector investment, on the other hand, is ultimately geared towards making profits and returns to shareholders. An important point to note here is that, whilst the level of interest rates may play a role in investment decisions, the critical factor for private firms is expected returns on capital – i.e. anticipated future profits. It follows that the interests of individual firms – in making a profit – do not always tally with those of the wider economy.

Recent problems arising from attempts by both Conservative and Labour administrations to induce private capital into long term public infrastructure projects through public-private partnerships have illustrated this point. To guarantee private sector involvement, the Labour Government has had to construct contracts and forms of market relations that offer very favourable returns to investors, whilst reducing the share of risk borne by the private sector. The result is often heavily inflated costs to the public purse, far beyond what would have been achieved under a more conventional public borrowing arrangement. This turns the original argument for PPPs on their head; that the private sector bears the risk and the public sector gets the benefit (Shaoul 2005).

WHAT IS THE RELATIONSHIP BETWEEN ECONOMIC GROWTH AND PUBLIC SPENDING?

Measuring economic performance

Alongside claims about crowding out, the idea is circulating that there is an inverse relationship between successful economic development and government intervention in the economy (e.g. Kerevan 2005; Nelson 2005). Critics of the public sector claim that those economies performing best in the 1990s – an era of increased globalisation and open markets – are those that keep taxes low and restrict government spending. Such policies are perceived as the only route to economic growth in a context where business investment is increasingly mobile, trans-national and able to choose to invest in those economies where taxation levels and restrictions on business (i.e. ‘red tape’) are kept to a minimum. Leaving aside the extensive evidence that business is not quite this footloose (see for example Hirst and Thompson 1998; Dicken 2003),¹ the question raised in the recent debate is do low tax, low public sector economies outperform those characterised by higher public spending and tax rates?

In contesting a recent Fraser of Allander report about the effects of higher taxation on economic growth, **The Scotsman** article states: ‘This has, for years, been disprovable by a simple chart plotting countries’ tax burden against their economic growth and national wealth’ (Nelson 2005). However, no such evidence is provided in the article beyond some reference to Ireland and Estonia, without any supporting statistics.

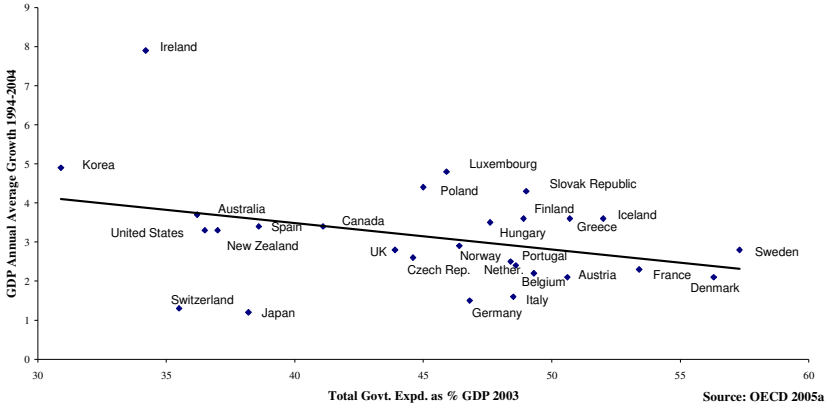
If we actually consider the international comparative evidence to back up these claims, we find little discernible pattern in the relationship between economic growth and levels of public sector involvement in the economy (see Figure 2). The most recent data for the OECD (i.e. the world’s more advanced economies) shows that there is neither a strong negative or positive relationship between rates of economic growth (average annual GDP change) and government spending in the economy. States with low levels of public expenditure (i.e. under 40% of GDP) account for the two highest performing

¹ For example, in his analysis of the top trans-national corporations between 1993 and 1999, Dicken (2003) found no significant increase in the extent of overseas operations and that the majority of firms remain reliant upon and heavily embedded in their domestic economies.

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economies in the OECD (Ireland and Korea) and the two lowest (Japan and Switzerland) over the period.²

Figure 2: GDP Growth versus Government Expenditure for OECD countries



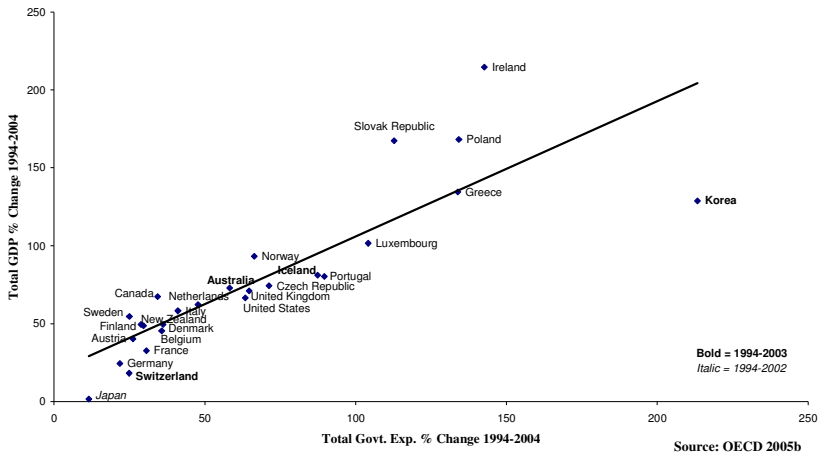
A comparison of the relationship between the total growth of GDP and total growth of government expenditure is perhaps clearer in illustrating that economic growth and public expenditure are not negatively related (see Figure 3). Again using data for OECD countries between 1994 and 2004, where available, it is possible to discern a clear positive association between the two indicators. Most countries follow a strong trend line.³ An important point to make is that the data shows that the countries with the highest total GDP growth are also the ones with the highest total government expenditure growth over this period. Obviously there is an association between growth and public expenditure; however, it would be difficult to specify the causative relationship although these figures do present another argument against simplified crowding out arguments.

² A correlation analysis of the two variables using the OECD data confirms the absence of any significant relationship, giving an R^2 figure of 0.1 (where 1 = strong relationship and 0 = no relationship).

³ The R^2 figure for this relationship is strong at 0.85.

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Figure 3: GDP Growth versus Government Expenditure Growth 1994-2004



There is also little evidence to back up crowding out arguments with regard to data on taxation levels, with very low correlation figures for the relationship between GDP and total tax receipts or for the levels of highest income tax.⁴ Whilst the data on levels of corporation tax provides some support for the ‘minimal state’ thesis, even this does not provide unequivocal support.⁵ In this respect, Ireland is clearly an outlier from the rest of the data, whilst the other states with corporation tax rates below 20% (Hungary and Iceland) do not perform much above the OECD average. The country ranked fourth in terms of low business taxation, Switzerland, has the second worst growth rate (after Japan) across the OECD.

As **Financial Times** columnist Martin Wolf, has noted: ‘no link exists between the size of government spending and something one could reasonably define as “international competitiveness”’. Wolf goes on to argue that

⁴ The R^2 figures for GDP and 0.07 total tax receipts and 0.04 highest income tax.

⁵ An R^2 figure of 0.3 which though higher than the other figures in indicating a negative relationship is still not a strong one, particularly when outliers are taken account of.

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What does indeed matter is the efficiency with which money is spent ... tax levels are only one of many determinants of economic performance. Far more important are: the quality of institutions, particularly of public administration and the judiciary, the security of property; the probity and public spiritedness of politicians; the soundness of money; the quality of education, health and infrastructure. (Wolf 2005)

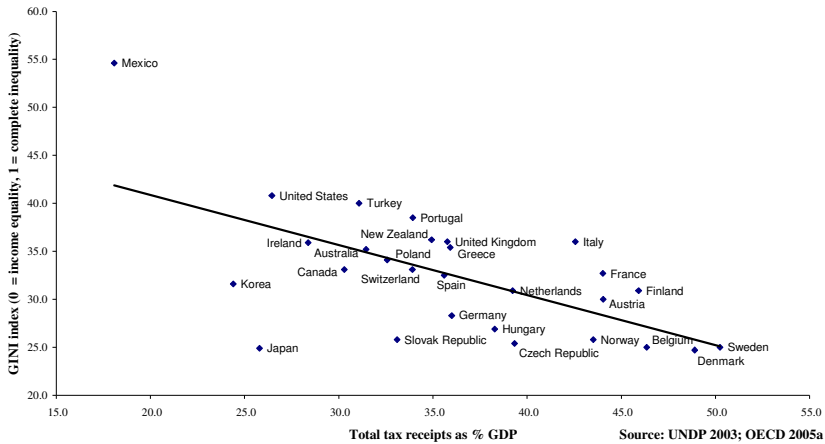
Moreover, if we are concerned with a broader definition of economic development and exploring other measures of performance, public sector involvement in the economy has more beneficial effects. If we look at the relationship between levels of inequality in a country and the level of tax receipts as a proportion of GDP, we find a positive relationship, although, again, not a significantly high one. Nevertheless, it does add another layer of complexity to debates about the merits of a minimalist state (see Figure 4).

The Celtic Tiger: myths and realities

As noted above, Ireland, with its image as a low business tax haven, is a favourite for the critics of big government, especially in Scotland. As our GDP figures illustrate, there is no disputing the dramatic turnaround in the Irish economy in recent years. Over the period 1994-2004 it was one of the fastest growing economies in the OECD. However, even though it illustrates the importance of public spending, a focus on national government expenditure is only part of the picture. Since its entry into the European Union in 1973 Ireland has been a major beneficiary of funds from the Common Agricultural Policy, regional development initiatives and social cohesion programmes. Since 1973 it has received over 34 billion euros of net investment from the EU (Hennigan 2004). Between 1984 and 1995 – key transition years – net EU receipts to Ireland were on average worth over 4% of national GDP. Even in 2003, Ireland was still receiving the highest net receipts of all EU countries at 1.5 billion euros or 391.70 euros for every Irish person. Including EU funding in this way would put the public sector share of GDP roughly on a par with the UK for the same period (ibid.). Thus we would argue that public sector investment, albeit at the European scale, has had at least as significant a role in the Irish renaissance as entrepreneurialism and a low tax economy.

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Figure 4: The relationship between 'tax take' and inequality across the OECD countries



Behind the rhetoric of the Celtic Tiger are some less appealing characteristics. In particular, levels of inequality as measured by the GINI index reveal Ireland to be one of the most unequal countries in the OECD. Ireland's growth miracle has in this sense been highly unevenly distributed, both between rich and poor and geographically between the cities and outlying regions. Hot spots of development in Dublin, Cork and Galway co-exist with continuing poverty and social dislocation both within these cities and in other parts of the country.

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In responding to the analysis produced by Scottish Enterprise on the role of the public sector in the Scottish economy, Professor Ashcroft of the Fraser of Allander Institute outlined three issues conflated by Scottish Enterprise: 'the degree of *benefit* from public spending; the relative scale of public activities; and, whether on account of this scale there are harmful, or crowding out, effects on private sector activity' (Ashcroft 2005, p.2).

Scottish Enterprise figures did not include imports, indirect taxes and subsidies, nor the net income derived from residents who worked outside the area. As such the measure it used (GVA) excluded several factors; i.e. external net income for a particular area. This is important in relation to Ayrshire

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because the Scottish Enterprise figures included workbase GVA estimates rather than residence based ones, which means that the importance of commuting to the Ayrshire economy was ignored. Ashcroft suggests that a better means to judge public expenditure is public employment, which ranges between 23% and 32% across Scottish LEC areas; a proportion significantly lower than the claims of three-quarters of the economy. A not insignificant point Ashcroft also made was that Scottish Enterprise actually provided no evidence that public spending was crowding-out the private sector, although Sir John Ward and subsequent commentators implied this consequence.

In Scotland, the level of public spending as a proportion of GDP was around 50% in 2003, which is higher than the UK at around 44%, but below the level of several other small European countries with comparable population levels (see Table 1). Other countries have lower levels of spend, but the relationship between spending and growth is far from clear cut, especially when European Union (EU) subsidies are factored into the performance of Ireland. However, since the Scottish public spend does not impact upon fiscal policy in Scotland, because it does not affect interest rates, and therefore does not bear a direct relationship to overall interpretations of economic growth, it is more useful to consider structural features of the Scottish economy such as employment.

In his criticism of Ashcroft's analysis, Nelson (2005) claimed that the public sector represented a third of the Scottish workforce, although Scottish Executive (2005b) data contradicts this claim. Scottish Executive figures show that the public sector represented 28% of total employment in 2003, which, although it is still above the UK at 23.6%, is lower than a third. Furthermore, Scotland had almost half the public sector employment growth between 1996 and 2003 witnessed by the UK more generally (3.4% and 7% respectively). Finally, the Scottish Executive data also shows that there have been more significant increases in private sector employment across a range of jobs in Scotland than in the public sector and that the public sector share has fallen between 1996 and 2003 from 28.8% to 27.9%. In comparison the public sector across the UK has only fallen from 23.77% to 23.61% over the same period.

Just as important is the composition of the Scottish workforce, with a declining number of jobs in the manufacturing sector where a boom from 1995 to 2000 subsequently collapsed between 2000 and 2002 (see McLaren 2003). The longer term collapse of Scotland's manufacturing and industrial base – particularly in coalfield regions such as Ayrshire – and the failure by either policymakers or Scotland's business sector to create alternative employment is arguably a much greater factor in continuing poor economic performance. That

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the public sector's share of total employment in these areas has risen in recent years is arguably more an effect of industrial decline and economic underperformance than its cause.

Table 1
Small European Country Government Spending

Country	Government Expenditure as% of GDP (2003)	Population (000)	Average Annual GDP% Growth 1994-2004
Sweden	57.3	8,994	2.8
Denmark	56.3	5,401	2.1
Finland	50.7	5,228	3.6
Norway	50.7	4,592	2.9
Austria	50.6	8,175	2.1
Scotland	49.9	5,078	2.2
Slovakia	49	5,382	4.3
Switzerland	35.5	7,391	1.3
Ireland	34.2	4,044	7.9

Source: OECD 2005a; Scottish Executive 2005a.

THE ROLE OF PUBLIC SECTOR INSTITUTIONS IN THE KNOWLEDGE-BASED ECONOMY

At a broader level, there has been a growing recognition in academic and policy circles that forms of government intervention are critical for successful regional and national economic performance, particularly if growth is to be balanced with a more even distribution of wealth. Recent global financial crises and corporate scandals, such as the collapse of Enron, have demonstrated the dangers of unregulated economic development and trade. In this context, those arguing against 'Big Government' in Scotland are directing their ire at a 'straw man'. No serious economic commentators are arguing for Soviet style command economies, but there is recognition that the state and public sector have an important role to play in economic development, particularly if the

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needs of business are to be balanced against those of the wider population and the environment.

Moreover debates about how countries compete in the context of an increasingly knowledge intensive economy have identified the important incubator and anchoring roles played by public sector institutions in fostering growth in new local clusters linked to sectors such as information technology and biotechnology (Rodrigues et al 2002; Cooke 2002a; Cumbers and MacKinnon 2006).

Researchers stress the importance of the qualitative nature of the relationships between state and business, between public sector actors and the private sector in fostering economic growth and more importantly adapting successfully to a dramatically changing global economy. Competitive success depends more and more upon the harnessing of key knowledge and skills, requiring long term commitments in a country's human and technology resources, which firms with short term profit horizons are increasingly unwilling to undertake. Governments need to take a more active part in 'systems of national and regional innovation' which involve intervention in education, in training, in R&D, in labour market regulation and in the provision of finance and support for entrepreneurialism and innovation (Cooke 2002b).

Government investment has been critical in the success of a small country like Finland, which has developed a competitive presence in sectors such as IT, telecommunications (symbolised by the emergence of Nokia as world leader in mobile phones) and biotechnology. Crucially, the Finnish government expanded R&D expenditure from 1 to 3% of GNP between 1980 and 1999 (Schienstock et al 2004). Contrast UK government expenditure on science and technology which remained static at 0.2% of GDP between 1987 and 2004 (HM Treasury 2005, p.38).

Reflecting the failure of past strategies to improve the competitive position of the Scottish economy vis-à-vis other UK and European regions, the Scottish Executive has recently recognised the importance of a more strategic role for government in facilitating successful economic growth. Scotland's national economic development framework, entitled **Smart, Successful Scotland**, has reflected a qualitative shift in the premises of the nation's economic growth from a strategy emphasising the attraction of inward investment on the basis of low-cost advantages, low value added and labour-intensive activities, to one which attempts to redress issues of productivity, competitiveness and innovation (Scottish Executive 2001).

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Scotland's emergent biotechnology 'cluster' now employs around 8,700 people in Edinburgh, just under 4,000 in Glasgow and 3,500 in Dundee (Leibovitz 2004, p.1139). The public sector, in various forms, has played an important role in the development trajectory of the cluster. In the first place, the country's science base has provided the foundation for biotechnology. An ESRC Innogen Centre report by Alessandro Rosiello (2004) on specific life sciences policies highlights the important role that the public sector can play in connecting science and technology in public organisations like universities with private sector commercialisation. A critical factor is the overall investment in Scottish higher education (and schooling), which is now 40% more per capita than the rest of the UK. More specifically, Scotland is over-represented in the UK in terms of its share of university graduates in the life sciences, 'producing' a yearly average of 18% of the UK's postgraduates in these fields (Leibovitz 2004; Scottish Enterprise 2004).

Aside from the education system, key public sector agencies have been important at different phases of the cluster's development. Scottish Enterprise has played an important role through interventions ranging from government grants or awards (i.e. SMART, SPUR) through to small company support, proof of concept funding and investment funds. Furthermore, initiatives taking more localised forms have been supported by Scottish Enterprise's local agencies. For instance, investment to the tune of £1.4 million is expected in order to develop a Centre for Biomedical Research in Edinburgh as 'a life science knowledge hub' accompanied by other elements of business and physical infrastructure. A Science Park is also being planned for the City of Dundee, while Glasgow's West of Scotland Science Park is promoted as Scotland's leading location for developing bioscience business (Leibovitz 2004).

But considerable innovation and entrepreneurialism has also stemmed from the public sector itself. One example is that of the biotechnology firm Cyclacel in Dundee which was spun-out of Dundee University in 1996 to pursue research into cancer treatments derived from the world-class research of Professor David Lane and his colleagues. It was initially funded by the Cancer Research Campaign, Merlin Ventures and the universities of Dundee and Glasgow, and had by 2004 raised over \$100 million in investment financing, the first biotech spin-out in Europe to do so (Evans 2004). This illustrates the importance of the company in the European biotech industry, as well as the potential that its research and products have. Its leads drug candidate is an oral-based 'Cyclin Dependent Kinase (CDK) inhibitor that causes cancer cell death by inducing

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apoptosis in tumor cells' (www.cyclacel.com/home.htm), which is currently in Phase II trials. More recently, Scottish Enterprise itself has invested £5 million into Cyclacel as part of the public-private investment scheme it runs called the Co-Investment Fund (**The Times** 2005). According to a Cyclacel press release, this investment could increase to £7.5 million from Scottish Enterprise, depending upon the investment from the private sector. The Scottish Enterprise Chief Executive, Jack Perry, is quoted as saying that:

This deal epitomises everything that the Chairman Sir John Ward and I want to see for the commercialisation of world class Scottish science. It is about *stimulating* private sector investment and about *sharing* risk for the benefit of the Scottish economy. (www.cyclacel.com/home.htm: press release, 10 October 2005. Emphasis added)

CONCLUSION

The example of the biotechnology industry serves to illustrate a much broader point about the relationship between public and private sectors in Scotland's contemporary economy. Recent criticisms of the public sector have tended to resort to old and largely discredited arguments about 'crowding out' which do not reflect the more complex ways that public spending interacts with business activity. The evidence that we have presented here suggests that there is no clear evidence, either historically, or through international comparison, that countries with high levels of public spending have a poorer economic performance than those with lower levels; if anything it shows the opposite. Public spending however is important in ensuring that economic wealth is broadly distributed.

The attack on public services in Scotland is particularly misinformed about the realities of both the devolution settlement, the way tax and spending processes operate between Holyrood and Westminster and of how crowding out would work in practice. It has also overestimated the role played by the public sector. Recent employment growth has been higher in the private sector, particularly in the services sector, whilst manufacturing continues to perform poorly. However, as we have noted, no evidence has been presented to make the link between public sector growth and poor manufacturing performance.

It is not surprising that business and media commentators' rail against the public sector. There is nothing new to arguments for low taxation from business and corporate lobbyists. From the perspective of an individual

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businessman or entrepreneur, more tax paid to government can mean less finance for investment in a firm or business. However, at the aggregate of the economy as a whole, there is little evidence that reductions in public expenditure lead to greater business investment. If anything, the opposite seems the case. As the Institute for Fiscal Studies has noted, business investment in the UK as a whole continued to lag behind the experience of many competitor countries during the later half of the 1990s, despite a drop in government expenditure. Meanwhile, as the venerable **Observer** economics correspondent, William Keegan, continually reminds us in his column, the UK's better economic performance than much of the rest of the European Union in the first half of the 2000s was due to increased public sector investment at a time when private sector investment and growth was relatively static.

Nevertheless, levels of public investment and expenditure in Scotland and the UK in the recent past have still been low by historical standards. Indeed, the evidence from countries and regions that are competing successfully in new knowledge economy sectors is that greater levels of strategic public investment are required in areas such as science and technology, R&D and education to facilitate innovation and entrepreneurship. Private sector investment remains low, particularly in manufacturing activity, despite numerous policies such as tax credits and reduction in corporation tax geared towards stimulating it. In this sense, the policy debate needs to move away from the simplistic story that business is 'good' and government is 'bad' to a more informed analysis of how private and public sectors interact in successful and balanced economies.

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