GLAECONOMICS

Filling the coffers: London's tax export

Transport for London

LONDON DEVELOPMENT AGENCY

MAYOR OF LONDON

Greater London Authority
November 2008

Published by
Greater London Authority
City Hall
The Queen's Walk
London SE1 2AA
www.london.gov.uk
enquiries 020 7983 4100
minicom 020 7983 4458

ISBN **978-1-84781-196-7**

Photographs
All photographs © shutterstock.com

Paper
Printed on 9Lives 80 silk – 80 per cent recycled fibre,
20 per cent from sustainable forest management, totally chlorine free fibre.

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Foreword

London is a growing and economically successful city. In the last ten years economic growth in London has averaged 3.1 per cent a year compared to 2.4 per cent for the rest of the UK. That success has undoubtedly been of benefit not just to Londoners but also to our nation as a whole. One very important aspect of this is the tax revenue that London generates.

This report from GLA Economics indicates that London in 2006/07 generated between £8.4 billion and £18.4 billion more in tax revenues than it received in public expenditure. This means that in 2006/07 of every £1 of tax paid by Londoners and London companies between 9p and 19p of this revenue was exported from London to fund public expenditure elsewhere in the UK. Moreover this research shows that London has almost consistently generated more in tax revenues than it has received in public expenditure for the last two decades and so has time and again exported tax revenues to the rest of the UK.

I do not decry this export of taxes from London in principle. London is after all *on average* a more prosperous city than the UK overall, and in a decent society I think we would all agree that it is only right and proper for the relatively better off to pay a bit more into the nation's coffers than the less well off. But London's tax export does not descend like manna from heaven. GLA Economics' research demonstrates that London's tax export increases the faster is economic growth in London. This positive relationship with London's economic growth indicates that there is a positive return to the national exchequer from investing in the infrastructure and other public services that underpin London's economic growth. Investing in London generates a tax export which can be used to fund public services throughout the UK.

There is a clear national interest in ensuring that London receives sufficient public investment to underpin its continued economic dynamism. London is a global centre of business and finance. Underinvestment in London would cause vital inward investment to switch to other locations, not in the UK but abroad. Given the major opportunities and challenges facing a growing London over the coming years, the government's investment decisions must reflect and sustain London's national and international roles.

In addition, London needs investment to tackle the unacceptable levels of deprivation that exist in the capital, often cheek by jowl with its wealth. London has one of the lowest percentages of its working age population in work of any UK country or region. Similarly, the unemployment rate in London at 7.5 per cent is well above the national average, and the second highest of the UK countries and regions. These facts help explain why London has the highest child poverty rate of any of the UK's countries and regions with 41 per cent of children in London living in poverty – a figure that rises to an even more shocking 48 per cent in inner London.

So in short London needs investment to both support its continued economic vibrancy and keep generating the tax exports it has produced in the last two decades and to tackle the unacceptable levels of deprivation and disadvantage that too many Londoners currently suffer.

Boris Johnson
Mayor of London

Executive summary

GLA Economics has previously produced estimates of London's tax export, that is the estimated surplus of taxes raised in London over the amount of public expenditure that occurs in London. This paper first sets out our estimates of London's tax export in 2006/07 using our pre-existing methodology. We then review this methodology and introduce some changes to improve the quality of these estimates. We use this new methodology to estimate how London's tax export has changed over time.

Using our pre-existing methodology we estimate that London's tax export in 2006/07 was between £6.6 billion and £14.4 billion. However we have developed a new methodology incorporating improvements in the way we allocate part of particular UK taxes and other revenues to London. These improvements have principally affected our estimates of the amount of income tax, corporation tax, and vehicle excise, fuel, tobacco and alcohol duties that are generated in London. **Using our revised methodology we estimate that London generated a tax export in 2006/07 of between £8.4 billion and £18.4 billion. This represents between 9.5 and 19.1 per cent of all tax revenues generated in London.** This compares with recent estimates of London's tax export in 2006-07 produced by Oxford Economics of £12.3 billion to £19.7 billion and by the London School of Economics of £11.5 billion to £18.4 billion.

When we estimate London's tax export over time then we find that London has produced a surplus of tax revenues over public expenditure in London for all years since 1989/90 with the sole exception of 1993/94. The magnitude of this tax export has varied over time. In all but two years, 1999/00 and 2000/01, London's tax export exceeded the overall UK public sector fiscal surplus and then only marginally. Hence with the exception of these two years the rest of the UK outside London has consistently run a public sector deficit.

In line with our previous research in this area[1], we find that there are two primary drivers of the size of London's tax export – national fiscal policy and the strength of economic growth in London. Larger UK public sector deficits tend to reduce the size of London's tax export. Stronger economic growth in London tends to increase the magnitude of London's tax export. **This positive relationship with London's economic growth indicates that there is a positive return to the national exchequer from investing in the infrastructure and other public services that underpin London's economic growth. Investing in London generates a tax export which can be used to fund public services throughout the UK.**

Introduction

In March 2004, GLA Economics published *Working Paper 6: Calculating London's Tax Export* that provided estimates for London's tax export (taxes collected in London less public expenditure in London) for the 2002/03 financial year. Since then updates have been provided for the 2003/04, 2004/05 and 2005/06 financial years using the same data sources and methodologies.

Oxford Economics (OE) have, as part of a past series of reports entitled *London's Place in the UK Economy* for the City of London Corporation, produced their own estimates for London's tax export. Using some different data, and employing different methods for allocating non-identifiable public expenditure and some national taxes to London, OE have produced significantly higher estimates for London's tax export. This year, OE set out their estimates separately in a short paper published in July[2], as the London School of Economics (LSE) has returned to authorship of *London's Place in the UK Economy*. Within this publication the LSE produces its own estimates of London's tax export[3]. Hence for the first time there exists three separate estimates of London's tax export.

In this paper we review and, where beneficial, update the methodologies we use in forming our estimates of London's tax export. In the first section we provide an estimate of London's tax export for 2006/07, updating data and using the same methodology as previously. In the second section we review the methodologies and approaches used and arrive at a new approach. In the third section we employ this revised approach to establish new estimates of London's tax export for 2006/07. In the fourth section the new method is applied back to 1989/90 to produce new estimates of London's tax export over time. Finally, we end the paper with our conclusions.

London's 2006/07 tax export: Traditional methodology

In this section we use the same methodology as we used in GLA Economics' *Working Paper 6: Calculating London's Tax Export* to produce estimates for London's tax export for 2006/07.

Public expenditure

Public expenditure on services is divided into identifiable and non-identifiable expenditure. Identifiable expenditure is spending that can be attributed as benefitting a particular region. Non-identifiable expenditure cannot be attributed to a particular region and includes defence and other services benefiting the UK as a whole, overseas aid and spending adjustments. GLA Economics uses the public expenditure estimates published in HM Treasury's Public Expenditure Statistical Analysis (PESA). Estimates for identifiable public expenditure in PESA are defined as that which:

"can be recognised as having been incurred for the benefit of individuals, enterprises or communities within particular regions. Examples are most health, education and transport services, and spending on social security and on pensions"

In order to calculate the total public expenditure in London, a proportion of the non-identifiable expenditure needs to be allocated to London and added to the identifiable expenditure. GLA Economics has taken two approaches in the past to determine this allocation:

i. In accordance with the proportion of the UK population that lives in London; or
ii. In accordance with the proportion of identifiable public expenditure attributed to London.

A summary of identifiable and non-identifiable expenditure and the estimate of total London public expenditure from using the two allocation methods can be found in Table 1.

Table 1: Public expenditure in London 2006/7 (£ Billion)

Allocation method:	Population	Identifiable Expenditure
Total managed expenditure (UK), cash (nominal terms)	550.1	550.1
Identifiable spending on services (UK)	442.8	442.8
Spending not allocated to regions	107.3	107.3
Identifiable spending on services (London)	64.2	64.2
Allocation of non-identifiable expenditure to London	13.3	15.6
Total public expenditure in London	77.5	79.8

Source: PESA 2008, GLA Economics calculations

Tax receipts

Most taxes are collected nationally and are presented by Treasury as UK totals. An exception is those taxes raised or collected by local authorities such as council tax and business rates. UK taxes were allocated to London following the methodology outlined in GLA Economics' *Working Paper 6: Calculating London's Tax Export*. A detailed summary of the mechanisms used to allocate the different taxes to London is given in Appendix I.

Table 2: London's tax estimates 2006/7 (£ Billion)[4]

	Residence	Workplace
Income tax net from tax credits	25.3	27.9
Council tax	2.8	2.8
Vehicle excise duty	1.0	1.0
National insurance contributions	14.3	15.3
Value added tax	11.8	11.8
Corporation tax	7.7	8.5
Stamp duty	1.7	1.7
Fuel duties	3.6	3.6
Tobacco duties	1.2	1.2
Alcohol duties	1.2	1.2
Other customs and excise duties	1.5	1.6
Petroleum tax and oil royalties	0.4	0.4
Capital gains tax and inheritance tax	1.1	1.2
Business rates	4.5	4.5
Other taxes and royalties	2.4	2.6
Interest and dividends	1.1	1.2
Other receipts	4.8	5.3
Total tax receipts	86.4	91.9

Source: Budget 2007, HM Treasury; Office of National Statistics, the Blue Book, Department of Local Communities, HM Revenue and Customs.

GLA Economics has provided two estimates using two approaches in the past, one based on where individuals live (residence based), the other on where they work (workplace based). Table 2 provides tax receipts in London on both residence and workplace bases.

Many residents of the adjacent regions, East and South East England, commute into London for work. This increases the estimates of GVA and employee compensation in London when calculated on a workplace basis compared to a residence basis, and so increases the London tax estimates for the categories affected.

The estimate for tax receipts in London using the residence-based approach provides an overall figure of £86.4 billion. Using a workplace-based approach sees this figure increase to £91.9 billion.

Tax export

By subtracting the estimates for public expenditure in London from the estimates of tax receipts we can form estimates for London's tax export as shown in Table 3.

Table 3: London's tax export 2006/7 (£ Billion)

Public expenditure allocation by…	Population		Identifiable Expenditure		Mid Point
Tax allocation by…	Residence	Workplace	Residence	Workplace	
Tax revenues from London	86.4	91.9	86.4	91.9	89.2
Total public expenditure in London	77.5	77.5	79.8	79.8	78.7
Tax exports	8.9	14.4	6.6	12.1	10.5
Tax exports as a share of tax receipts	10.3%	15.7%	7.7%	13.2%	11.8%

Source: GLA Economics calculations

Taking the higher public expenditure estimate (based on allocating non-identifiable by London's share of identifiable expenditure) from tax receipts allocated to London on a residence basis gives a low-end estimate for London's tax export of £6.6 billion (7.7 per cent of London's tax receipts). Using the lower public expenditure estimate allocated by London's population share, and the higher workplace-based estimate for tax receipts provides an estimate of London's tax export of £14.4 billion (15.7 per cent of London's tax receipts). Taking an average of the four estimates in Table 3 provides an estimate of £10.5 billion.

Data changes

These estimates were established using the same methodologies used in GLA Economics' previous attempts to establish the size and direction of London's tax export. Most data for public expenditure, tax and the "allocators" used to allocate a proportion of UK takes to London were updated with the same sources used previously with one exception.

Previous estimates for council taxes used a bottom up approach where the published average council tax rate in London was multiplied by the number of residential properties to arrive at an overall estimate of London councils' council tax receipts. This year figures collected and published by the Department of Communities and Local Government are used. This produces a lower figure (by about £500 million) than previous estimates, which may have been inflated by not taking into account council taxes not received, and exemptions (such as for student households) and rebates.

Review of methodology

In this section we review the methodologies and approaches used previously with the intention of arriving at an updated and more robust approach. We will review various methodological issues and provide sensitivity analysis of different approaches for each issue.

Public expenditure

In its Public Expenditure Statistical Analyses (PESA), the Treasury provides a breakdown of public expenditure by region, in terms of where the benefit of the spending is achieved. In 2006/07 about 77 per cent of total managed public expenditure could be identified to be to the direct benefit of one of nine English regions[5] or to Scotland, Wales or Northern Ireland. Of this around 14.5 per cent was directed to the benefit of Londoners. A further 2 per cent was identified as benefiting people outside the UK. For the remaining 21 per cent the particular beneficiaries of the service are unable to be identified, or the service is of equal benefit to all. For about 15 to 20 per cent of this non-identifiable expenditure the region of the recipients of the associated pay are known.

Self-evidently, identified public expenditure in London forms the basis of all plausible estimates of total expenditure. The grey area occurs in the allocation of the non-identified expenditure, including that where pay-costs are known, and public expenditure, which occurs outside of the UK.

Allocation of non-identifiable public expenditure

In previous calculations of London's tax export, estimates for public expenditure in London were arrived at through allocating all non-identifiable public expenditure (including non-identifiable regional pay costs) and identifiable expenditure outside of the UK e.g. overseas aid by either London's share of the UK's population or by its share of identifiable public expenditure. Oxford Economics (OE) and the London School of Economics (LSE), who provide their own estimate of London's tax export, employed similar approaches.

These two approaches produce different outcomes, as London's population share (12.4 per cent in 2006/07), is significantly less than its share of identifiable spending (14.5 per cent in 2006/07). The higher spending per head in London is easy to understand. Higher land, living and salary costs raise the cost of delivering the same level of service in London over the rest of the country.

In Table 1 in the previous section we can see that allocating non-identifiable public expenditure by population share gives an estimate of total public expenditure in London in 2006/07 of £77.5 billion. This is more than £2 billion less than the estimate obtained by allocating in line with identifiable public expenditure of £79.8 billion, which reduces the tax export estimates by the same amount (as shown in Table 3).

An argument could be made that the population approach is sounder as non-identifiable expenditure may benefit each UK subject equally. Alternatively one might argue that the higher cost of service delivery in London should be reflected in the allocation of the public expenditure to the general benefit of the country, in which allocating in line with identifiable public expenditure would be more appropriate. Accounting adjustments, which have accounted for up to a fifth of the difference between total UK public expenditure and total UK identifiable expenditure, are allocated in a similar manner.

Given this, it seems appropriate to maintain GLA Economics' current approach of providing both estimates, and using them to provide a range of estimates of London's total public expenditure and tax export.

Non-identifiable pay costs

Since 2002/03, the PESA publications have included a table that identifies the pay of employees occupied in the provision of services that cannot be attributed to the benefit of any particular region. GLA Economics' has in the past provided estimates of London's tax export on the basis of the methodology set out in the previous section and also a variant of this approach utilising this information on pay costs.

Non-identifiable pay costs in the UK amounted to about £16.9 billion in 2006/07, or around 16 per cent of non-identifiable expenditure. Of this, Londoners received £2.3 billion, or 13.9 per cent. Allocating these directly reduces the amount otherwise allocated using one of the two approaches for allocating non-identifiable costs. Table 4 is comparable to Table 3 in the previous section, though this time allocating non-identifiable pay costs directly.

Table 4: London's tax export 2006/7 (£ Billion) – Allocating non-identifiable pay costs

Public expenditure allocation by…	Population		Identifiable Expenditure		Mid Point
Tax allocation by…	Residence	Workplace	Residence	Workplace	
Tax revenues from London	86.4	91.9	86.4	91.9	89.2
Total public expenditure in London	77.9	77.9	79.8	79.8	78.9
Tax exports	8.5	14.0	6.6	12.1	10.3
Change From Base Case	*-0.4*	*-0.4*	*0.0*	*0.0*	*-0.2*
Tax exports as a share of tax receipts	9.8%	15.2%	7.6%	13.2%	11.6%

Source: GLA Economics calculations

Comparing Table 4 to Table 3 we can see that the public expenditure estimate obtained by allocating non-identifiable expenditure by population increases (from £77.5 to £77.9 billion) while allocating by identifiable public expenditure remains at approximately £79.8 billion. This convergence occurs as: firstly the non-identifiable component subject to allocation reduces in size due to the direct allocation of non-identifiable pay costs; and secondly London's share of non-identifiable pay costs (14.6 per cent) is greater than its population share (12.4 per cent) and very similar to its share of identifiable spending (14.5 per cent).

There are some strong arguments for allocating non-identifiable pay costs directly even though the benefit of the associated service cannot be identified to a specific region. Firstly, it is likely that much of the salaries would be spent in the region in which the salary earner lives. Secondly, associated tax receipts from these salaries would be included on the other side of the ledger. Overall the impact of doing so on the tax export estimate for 2006/07 is not that substantial.

Expenditure outside of the UK

GLA Economics has allocated identifiable public expenditure outside of the UK proportionally to London in line with the approaches taken for non-identifiable public expenditure. OE has left this out of its estimation of London's tax export. In 2006/07 about £11.7 billion was identified spending to the benefit of people outside the UK.

Table 5 presents the impact of excluding public expenditure outside of the UK from the allocation process used for non-indentifiable spending.

Table 5: London's tax export 2006/7 (£ Billion) – Outside UK not allocated

Public expenditure allocation by…	Population		Identifiable Expenditure		Mid Point
Tax allocation by…	Residence	Workplace	Residence	Workplace	
Tax revenues from London	86.4	91.9	86.4	91.9	89.2
Total public expenditure in London	76.1	76.1	78.1	78.1	77.1
Tax exports	9.8	15.4	7.8	13.3	11.6
Change From Base Case	*1.4*	*1.4*	*1.7*	*1.7*	*1.6*
Tax exports as a share of tax receipts	11.3%	16.8%	9.0%	14.5%	13.0%

Source: GLA Economics calculations

The result is a reduction in the estimated total public expenditure in London of either £1.4 or £1.7 billion depending on which allocator is used, and a corresponding increase in the estimates of London's tax export.

Whether or not it is appropriate to exclude expenditure that benefits non-UK residents depends on the purpose for which the estimate of London's tax export is being sought. If one wishes to calculate simply the difference between taxes raised in London and public expenditure in London then excluding public expenditure outside the UK might be appropriate. However if one seeks to calculate whether London makes a net contribution to the UK public finances then including a share of this expenditure seems appropriate. Effectively this implies that London is making a proportional contribution to UK Government expenditure overseas as are the other regions and countries of the UK.

Tax receipts

As mentioned earlier, most taxes are collected nationally and no regional breakdown is provided of the source region from where they are collected. To overcome this, GLA Economics has adopted various approaches for estimating London's share of different types of tax. This has involved using a number of different data sources to estimate London's share of the various different UK tax revenues.

In Appendix 1, the mechanisms used traditionally for each tax are listed. While the taxes collected by local councils provide London figures that are used directly, the remainder use various methods of allocation including: population share, compensation of employees, household income, gross value added (GVA), and household consumption. As noted in the previous section, for the taxes where GVA and compensation of employees are used, an overall estimate of total tax receipts is sought for both a residence basis and a workplace basis.

We will first consider the benefit of the two broad approaches of allocating by residence or on a workplace basis. Following this we review the current mechanisms used in allocating the various taxes.

Residence or workplace basis

About half of all tax revenue attributed to London is affected by the two approaches. It is estimated that 17.4 per cent of GVA in the UK is accounted for by London on a residence basis, while 19.3 per cent of GVA occurred in London. For compensation of employees these numbers are 17.6 and 19.5 per cent on a residence and workplace basis respectively. As such there is approximately a 10 per cent premium when measuring on a workplace basis, which has significant bearing on the divergence of the two estimates.

In Table 2 in the previous section we estimated total tax receipts attributable to London at £91.9 billion when estimating on a workplace basis, over £5 billion more than £86.4 billion when a residence-based approach is employed. By extension, this leads to estimates of London's tax export of around £5 billion higher using a workplace-based approach.

These results are unsurprising considering an estimated net 400,000 to 500,000 workers (around 10 per cent of London's workforce) commute to London to work every day. It is not difficult to establish a case for both methods. On the one hand, it makes sense that taxes collected off production and consumption that occur in London should be attributable to London, whether or not the incomes taxed are those of people who live in London. On the other hand, it may seem misleading to attribute the taxes from commuters to London, when much of the public services the person may receive occur in their region of residence and so are excluded from the other side of the ledger. In principle the tax revenues generated by commuters into and out of London should be divided between London and the surrounding regions, from which they come or work in, according to how much public services they consume in each location. This is impossible to do in practice hence the residence and workplace estimates provide upper and lower bands for the "true" estimates of tax receipts accruing in London.

Income tax

GLA Economics previously estimated London's income tax by using London's share of UK compensation of employees' (wages and salaries) based on data from ONS regional accounts to allocate a percentage of UK income tax receipts to London. This was justified on the basis that employment income constitutes the majority of taxable income. Alternatively, OE and LSE base their figures on the HMRC Survey of Personal Incomes. This survey includes regional estimates of income from employment, self-employment, pensions and investment incomes as well as total tax. In 2005/06 this produced a residence-based estimate for London's income tax of £25.4 billion, compared to the GLA's estimate of £21.4 billion.

The use of income tax estimates from the Survey of Personal Incomes appears superior to the method GLA Economics has used in the past, for two main reasons. Firstly, it includes non employment income which, proportionately, is significantly higher in London and, secondly it provides actual estimates of total income tax by region, and the UK totals are very similar to published budget figures for the UK. Accordingly it seems sensible to adopt this method.

Corporation tax

GVA shares have been used previously by GLA Economics to estimate London's share of corporation tax. The problem with using GVA as a proxy for shares of taxes on profit is that GVA is quite simply not a measure of profits. OE has, instead allocated its shares by inferring profit shares from the Annual Business Inquiry (ABI) subtracting labour costs from GVA giving operating surplus, which is a good approximation of profits[6]. Again, this method has provided OE with higher estimates for London's contribution than those of GLA Economics'.

VAT

In previous estimates, GLA Economics has used household income figures as a proxy for household consumption in forming its estimates of the proportion of VAT to London, and allocated solely on a "residence" basis, not on where the money is spent. This has differed from the approach taken by OE, who use its own forecasts of consumer spending by region for its residence-based estimates and use retail turnover in business for "workplace" based estimates. LSE base their estimates on data from the ONS Regional Accounts and Regional Retail turnover figures.

The differences in approach between GLA Economics and OE have a significant impact on the overall estimates. GLA Economics' estimate of London's VAT contribution in 2005/06 was £10.9 billion. OE's estimates on a residence and workplace basis were £11.5 billion and £12.5 billion respectively, or an increase of between £0.6 and £1.6 billion. Two methodological issues raised are: firstly should VAT be subjected to the dual residence-based and workplace-based estimation; and secondly, given this, how is it best allocated?

The residence versus workplace conundrum in tax attribution, like the broader tax base problem, is not immediately straightforward. VAT collected on the sale of goods and services in London is arguably a tax on the associated service of provision. Additionally, VAT collected off the London purchases of foreign tourists should be unambiguously attributable to London. On the other hand it could be argued that purchases made by domestic tourists and workers commuting from outside of London are a tax on their consumption. Again, these people are users of public services outside of London.

For the sake of consistency and conservatism it seems appropriate to calculate VAT on both a residence and workplace basis. As regional VAT data is not produced an estimate of where VAT is collected would need to be arrived at indirectly. The simplest approach to estimating this is likely to be the one used in establishing a workplace-based estimate for compensation of employees – essentially raising it in line with the ratio of workplace GVA over residence-based GVA, to produce a workplace estimate of VAT receipts from the residence-based estimate.

GLA Economics traditionally used household income to estimate London's VAT contribution, which was a proxy for household consumption. As consumption represents a higher a proportion of poorer households income it would be more appropriate to use household consumption data directly. Unfortunately it does not exist in timely fashion. Historically, surveys of household consumption and income demonstrate a very close correlation at the regional level, suggesting household income share provides an appropriate proxy for household consumption.

Vehicle and fuel excise

In previous estimates, GLA Economics has used household income figures as a proxy for household consumption in forming its estimates of the proportion of most duties on goods (such as vehicle, fuel, tobacco and alcohol) to London. This has differed from the approach taken by OE who use car registration and rates figures for vehicle and fuel excise duties, and "household consumption by appropriate goods" for many of the remaining duties.

OE's approach has tended to produce lower estimates than GLA Economics'. This has been most pronounced for vehicle and fuel duties, which OE estimated at £0.45 billion and £2.1 billion respectively, compared to GLA Economics' London estimates of £0.8 and £3.5 billion in 2005/06. Together this represents an extra tax attribution to London of about £1.7 billion in GLA Economics' estimates compared to OE's.

This difference is understandable when it is considered that car ownership and use is much lower in London than the rest of the country, due to the much higher reliance on public transport characteristic of larger cities.

OE's approach seems to be methodologically better, particularly for vehicle duties where the use of rates and volume appear most appropriate. While applying vehicle registration volumes to estimate fuel consumption is likely to provide a better estimate than household income, it relies on the assumption that all vehicles consume a certain quantity of fuel a year, ie, that there are uniform patterns of registered vehicle use and fuel economy between vehicles in different regions. Short of actual regional shares, it would clearly be better to use a measure that better represented actual fuel consumption in London.

Alcohol and tobacco estimates

GLA Economics has previously attributed duties on individual consumption items such as tobacco and alcohol to London by household income, as opposed to OE's practice of allocating by regional estimates for the consumption of the appropriate good. In 2006/07, OE's approach attributed an estimated approximate £0.9 billion to London of both tobacco and the (aggregated) alcohol duties. This compares with GLA Economics' estimates of £1.2 and £1.1 billion for tobacco and alcohol duties respectively. OE's smaller estimates are likely to reflect lower rates of consumption of these products in London.

The General Household Survey provides estimates of the regional consumption of tobacco and alcohol. Figures for the percentage of smokers in each region provide the simplest mechanism of allocation, though the assumption is that similar patterns of consumption occur among smokers in different regions.

For alcohol consumption, an estimate for "average drinks per week" seems the most appropriate allocation. Different prices and excise rates for the various beverage types mean a similar assumption of consistency in patterns between regions is necessary.

Stamp duties

Regional data is available for stamp duties relating to land and property transactions, which account for the majority of the total yield. The remaining component relates to transactions of shares and stocks and other liable securities and has traditionally contributed a significant minority of between 30 and 40 per cent of total stamp duties.

In previous estimates GLA Economics has used population to allocate a proportion of total UK stamp duties to London. It is questionable whether this is the most appropriate mechanism. The use of population implies that households in all regions, regardless of any other level of wealth or earnings, on average own and trade the same value of shares and stocks. This would seem unlikely.

A more reasonable assumption would be that share ownership and trading is positively correlated to household wealth or income. As such it seems the optimal approach, in terms of timeliness and accuracy, is to use regional household income shares to allocate this component of stamp duties to London.

National insurance

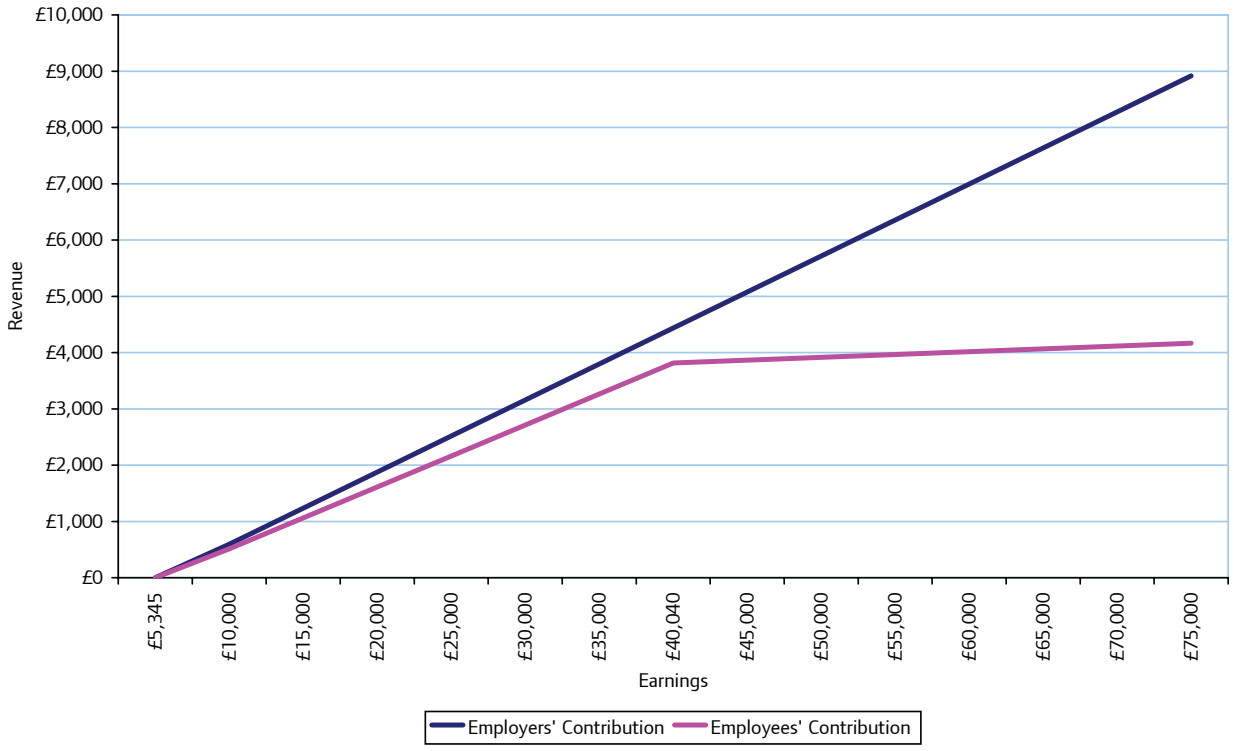
Previously, GLA Economics attributed London employees' national insurance (NI) contribution by (workplace-based) employment shares and the employers' component by compensation of employees (on a residence and workplace basis).

For most employment types neither employees nor employers make any contribution on income up to £5,435 per annum. On income between £5,435 and £40,040, employees make NI contributions of 11 per cent while employers contribute a further 12.8 per cent. For income above this upper threshold employees contribute 1 per cent, whilst employers continue to contribute 12.8 per cent. Figure 1 plots earnings against employees' and employers' NI contributions.

The method in allocating employers NI contributions to London appears to be sound. As the marginal increase in contributions after £5,435 is at the constant marginal rate of 12.8 per cent, average regional income levels impact on regional shares of employers NI contributions. London's higher average income may mean that a smaller share of its total income falls below the lower threshold than in other regions, giving London a higher effective rate, meaning this methodology may underestimate London's share. It is unlikely that any attempt to remedy this, such as using an income deciles model, would justify the added complexity.

Employees' NI contributions differ in that the large drop in the marginal rate above £40,040 means that there is not much difference between total NI contributions above this amount. This creates much ambiguity in establishing the relationship between overall regional income levels and regional shares of employees' NI contributions. This ambiguity would suggest the current method of using the income-neutral employment share is likely to be appropriate.

Figure 1: Revenue from national insurance contributions



Source: GLA Economics calculations

As noted above the employment share used has been on a workforce basis. The same allocator has been used in both workforce and residence-based estimates. This would appear to be inconsistent with the general approach, with a residence-based employment measure being more appropriate in the residence-based estimate of London's tax contribution.

Summary of changes to the tax allocation methodology

On review it would seem appropriate to make a number of adjustments to our approaches in allocating tax to London. The adjustments are summarised below:

1. **Income Tax:** Use of regional tax figures from the HMRC Survey of Personal Incomes for residence-based estimates and deriving workplace-based estimates by increasing the residence-based estimate by the ratio of London's workplace and residence-based GVA estimates.

2. **Corporation Tax:** Use profit share estimates derived from the ABI for the workplace-based estimates and deriving residence-based estimates by reducing the workplace-based estimate by the ratio of London's residence and workplace-based GVA estimates.

3. **VAT:** Use of an estimate of household income at a workplace level derived by increasing London's share of household income by the ratio of London's workplace and residence-based GVA shares.

4. **Vehicle Excise:** Use of Vehicle registration data by region and total yield by vehicle type.

5. **Fuel Excise:** Use of regional consumption figures and duty yields.

6. **Tobacco and Alcohol Excise:** Use of consumption rates from the General Household Survey.

7. **Stamp Duties:** Use of household income to allocate stamp duties for shares and stock transactions and actual figures for land and property transactions.

8. **National Insurance:** Use of an estimate of London's share of employment from the Labour Force Survey as an estimate for a residence-based employment share of employees' NI contribution.

London's 2006/07 tax export: Revised methodology

In the previous section, we proposed a number of changes to our methodology for tax allocation to London. These included changes in methodology for allocating a share of UK VAT, national insurance, stamp duties, and fuel, vehicle, tobacco and alcohol excises to London.

Public expenditure

Table 6 recreates Table 1 in the first section, but includes the direct allocation of non-identifiable pay costs to London.

Table 6: Public expenditure in London 2006/7

	New Methodology		Change From Base Case	
	Population	Identifiable Expenditure	Population	Identifiable Expenditure
Total managed expenditure (UK), cash (nominal terms)	550.1	550.1	0.0	0.0
Identifiable spending on services (UK)	442.8	442.8	0.0	0.0
Spending not allocated to regions	107.3	107.3	0.0	0.0
Identifiable spending on services (London)	64.2	64.2	0.0	0.0
Allocation of non-identifiable expenditure to London	13.7	15.6	0.4	0.0
Total public expenditure in London	77.9	79.8	0.4	0.0

Source: GLA Economics calculations.

As noted in the previous section a marginal "narrowing" occurs between the estimates of public spending in London based on the population and identifiable expenditure shares methods. This is due to London's share of pay costs approximating its share of identifiable expenditure. The estimate of London's public expenditure using the population method increased from £77.5 billion to £77.9 billion, while the estimate employing the share of identifiable expenditure method remains the same at £79.8 billion.

Tax receipts

In Table 7, tax receipts are updated using the new methodologies set out in the previous section and the changes to the previous results using the previous methodology are shown.

Table 7: London tax estimates 2006/7 (£ Billion) – New methodology

	New Methodology		Change from previous methodology[7]	
	Residence	Workplace	Residence	Workplace
Income tax net from tax credits	28.6	31.6	3.4	3.7
Council tax	2.8	2.8	0.0	0.0
Vehicle excise duty	0.5	0.5	-0.5	-0.5
National Insurance contributions	13.5	15.3	-0.9	0.0
Value added tax	11.8	13.0	0.0	1.2
Corporation tax	8.4	9.3	0.6	0.7
Stamp duty	3.2	3.3	1.5	1.6
Fuel duties	1.9	1.9	-1.7	-1.7
Tobacco duties	1.0	1.0	-0.3	-0.3
Alcohol duties	0.8	0.8	-0.4	-0.4
Other customs and excise duties	1.5	1.6	0.0	0.0
Petroleum tax and oil royalties	0.4	0.4	0.0	0.0
Capital gains tax and inheritance tax	1.1	1.2	0.0	0.0
Business rates	4.5	4.5	0.0	0.0
Other taxes and royalties	2.4	2.6	0.0	0.0
Interest and dividends	1.1	1.2	0.0	0.0
Other receipts	4.8	5.3	0.0	0.0
Total tax receipts	88.2	96.3	1.8	4.4

Source: GLA Economics calculations.

Overall, the changes have increased the residence and workplace-based estimates of London's tax contribution by £1.8 and £4.4 billion respectively. The biggest positive impacts were due to the changes in methodology for income tax and stamp duty, which raised both the residence and workplace estimates by around £5 billion in total. The creation of a workplace-based estimate for VAT increased the overall workplace-based estimate by £1.2 billion while introducing a residence-based allocation for employees NI contributions reduced the residence-based estimate by £0.9 billion, overall increasing the gap between the two aggregate estimates.

Using vehicle registration figures instead of compensation of employees' shares reduced the residence and workplace-based estimates of vehicle excise duties attributable to London by £0.5 billion. Likewise using fuel consumption, the number of tobacco smokers, and alcohol consumption estimates all reduced London's share in the respective excise categories where they were previously calculated using London's share of household income.

Tax export

In Table 8 we replicate the tax export summary from the earlier section but on the basis of our new methodologies.

Table 8: London's tax export 2006/7 (£ Billion) – New methodology

Public expenditure allocation by…	Population		Identifiable Expenditure		Mid Point
Tax allocation by…	Residence	Workplace	Residence	Workplace	
Tax revenues from London	88.2	96.3	88.2	96.3	92.3
Total public expenditure in London	77.9	77.9	79.8	79.8	78.9
Tax exports	10.3	18.4	8.4	16.5	13.4
Change From Previous Methodology	*1.4*	*4.0*	*1.8*	*4.4*	*2.9*
London's tax export as a share of London's tax receipts	11.6%	19.1%	9.5%	17.1%	14.5%

Source: GLA Economics calculations.

Overall the net impact of the changes in methodology is to increase all four estimates of London's tax export by between £1.4 billion (for the "population based" public expenditure estimate and "residence-based" tax receipts estimate) to £4.4 billion (for the "identifiable expenditure" estimate for public expenditure and "workplace-based" tax receipts estimate). The range of estimates is now wider from the lowest estimate of £8.4 billion to the highest estimate of £18.4 billion. The average estimate rises to £13.4 billion.

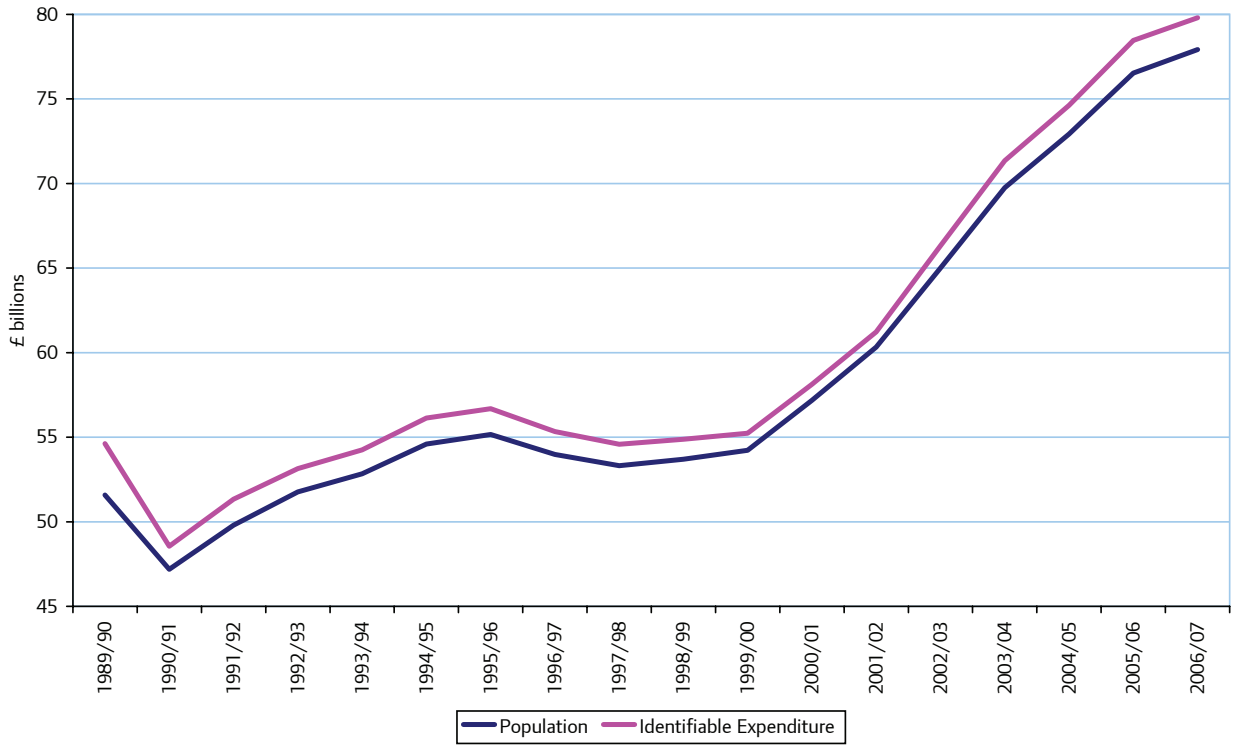
London's tax export over time

In this section we look at London's tax export over time. Starting from 1989/90 we map the path of estimates of London's public expenditure and tax receipts and explore the relationship between London's tax export, its growth and the UK Government's overall public sector net borrowing (PSNB).

Public expenditure

Figure 2 plots the evolution of estimates of London's public expenditure using the population based and identifiable expenditure based mechanisms.

Figure 2: Public expenditure in London 1989/90 to 2006/07 (2006/07 prices)



Source: GLA Economics calculations.

Public expenditure in London has grown rapidly since 1999/2000 after relatively much slower growth over the previous decade. The identifiable expenditure estimate is consistently higher than the population estimate reflecting the consistently higher spending per head in London, compared to the rest of the UK.

Tax receipts

Figure 3 shows the change in London's tax receipts from 1989/90 to 2006/07.

Figure 3: Tax receipts in London 1989/90 to 2006/07 (2006/07 prices)

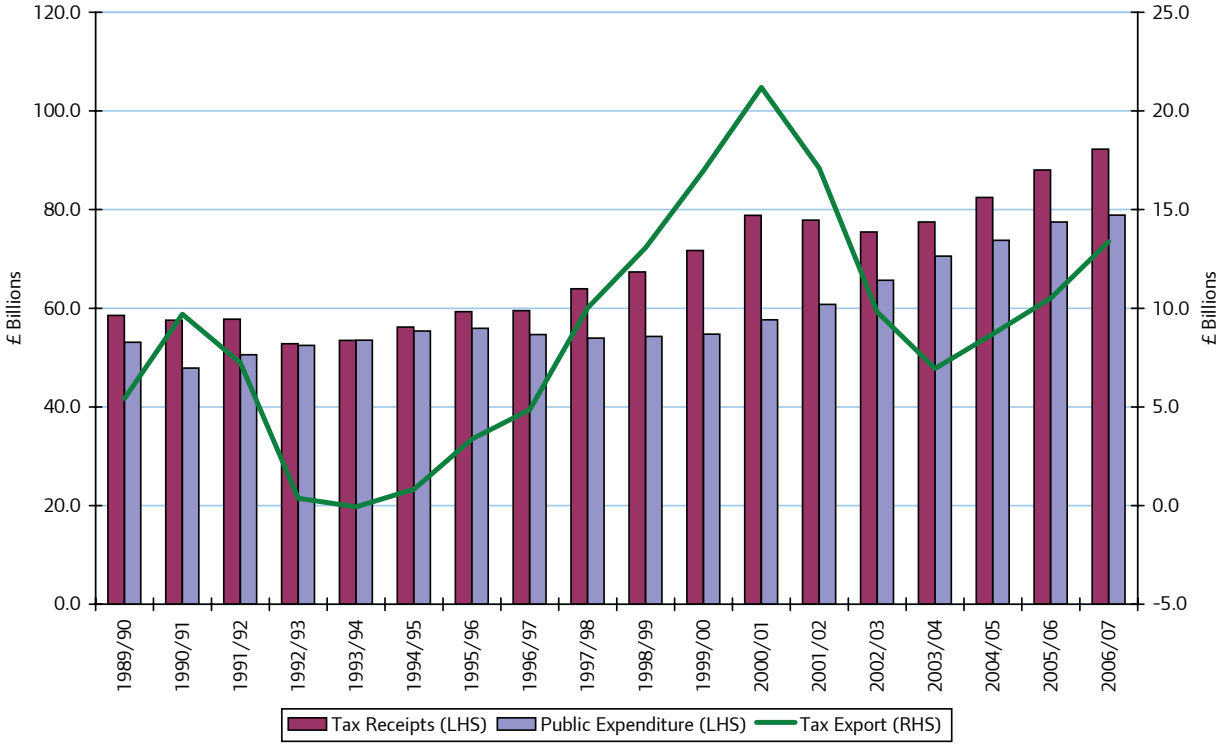
Source: GLA Economics calculations.

London's tax receipts take a somewhat different course than public expenditure with real growth in tax receipts in the second half of the 1990s occurring when real public expenditure growth fell marginally. The workplace-based estimate was consistently higher as London has always had a significant net inflow of commuters coming in daily to work from neighbouring regions.

Tax export

Figure 4 compares the midpoints of the estimates for the public expenditure and tax receipt estimates and shows the resultant estimate for London's tax export.

Figure 4: London's tax export 1989/90 to 2006/07 (2006/07prices)



Source: GLA Economics calculations.

London has provided a positive net contribution to the UK public finances for all years since 1989/90 with the exception of 1993/94. Even in this year, London's 'deficit' was only £0.1 billion. This peaked at £21.2 billion in 2000/01 following a period where London tax receipts grew solidly and public expenditure plateaued.

Oxford Economics comparison

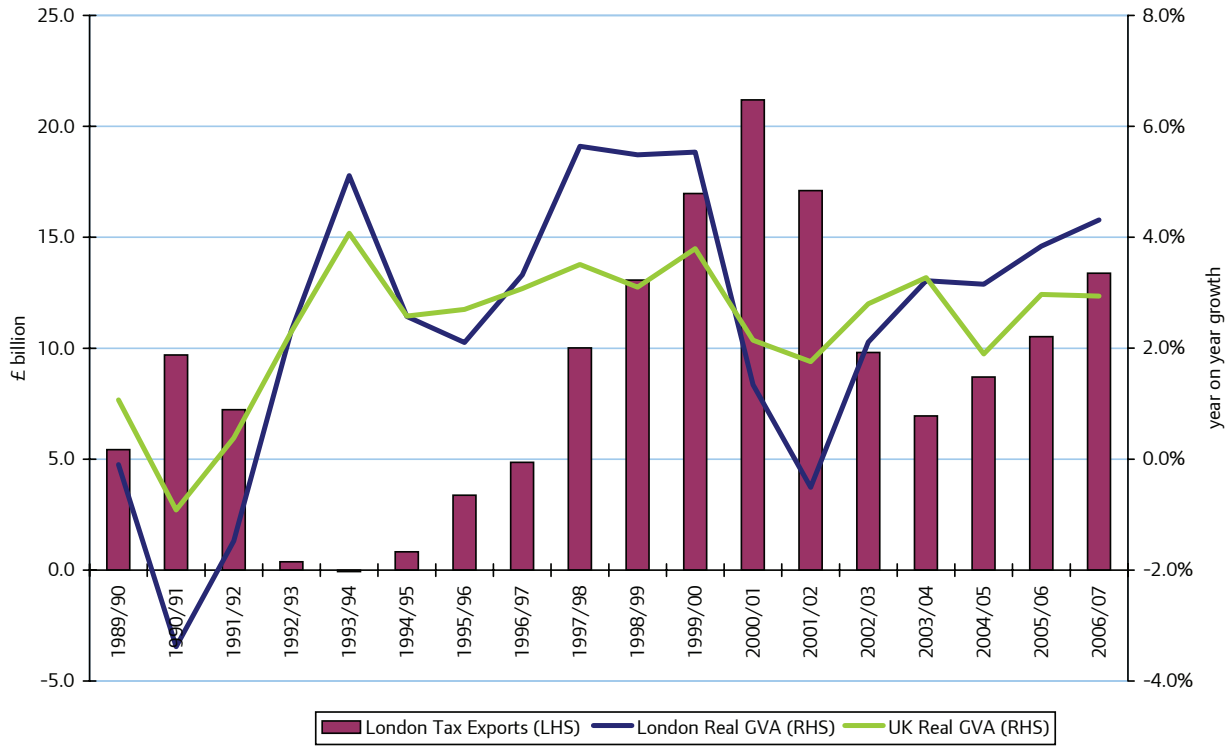
OE have recently estimated London's tax export (or regional contribution) for 2006/07 at between £9.9 and £21.9 billion[8,9], still somewhat higher than GLA Economics' estimate of between £8.4 and £18.4 billion. In 2006/07, £11.7 billion was spent to the benefit of people outside the UK. GLA Economics' allocation of a part of this to London is responsible for a considerable portion of the difference in the two estimates.

Exploring the tax export

That London has consistently received less public expenditure than the taxes collected from here is unsurprising. As London is on average relatively wealthier than the rest of the UK[10], one would expect some of its income to be redistributed to poorer regions. What is of interest though is why the value of London's tax export fluctuates over time.

Figure 5 compares London's tax export with growth in London's and the UK's GVA[11].

Figure 5: London, UK real GVA growth vs London's tax export (2006/07 prices)

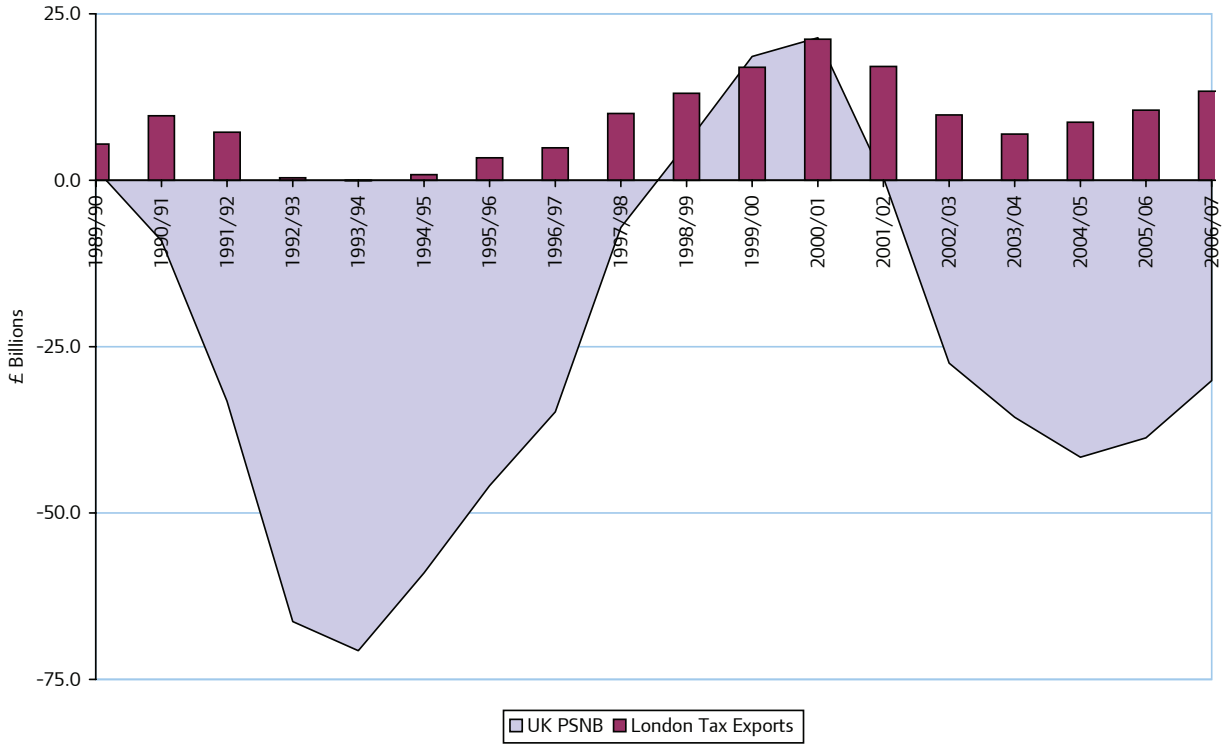


Source: GLA Economics calculations, Experian Business Strategies

For the three years 1992/93 to 1994/95 London's tax export was close to zero. As economic growth increased in the late 1990s, London's tax export grew as well until reaching its peak in 2000/01. The growth in London's tax export slightly lagged the three-year period when London grew significantly faster than the UK as a whole. More recently, as steady growth in London closely followed that in the rest of the UK, the tax export has been lower than in the years around the turn of the century.

When assessing London's net fiscal contribution to the UK's finances it is important to understand its relationship with the UK's general fiscal position. London has recently provided a consistent tax export but this could be in line with a consistent surplus in the UK's finances. Conversely, London's net contribution may be underplayed if a persistent tax export coincided with net borrowing by the UK Government. Figure 6 maps London's tax export and the UK government's public sector net borrowing (PSNB).

Figure 6: UK PSNB and London's tax export (2006/07 prices)



Source: GLA Economics calculations, HM Treasury

The first thing to note when comparing London's tax export over time with the borrowing of the UK Government are the large fiscal deficits in the early 1990s, peaking at £71 billion (2006/07 prices) in 1993/94. Overall in these years, in contrast, London's public spending was just covered by taxes raised in London.

Figure 6 also demonstrates the persistence of fiscal deficits in the UK outside of London. It is only in two years 1999/00 and 2000/01 that the fiscal surplus in the UK exceeds London's tax export. Hence only in these two years does the rest of the UK fund its own public spending in the absence of a net financial contribution from London.

Overall, the correlation between London's tax export and UK PSNB is clear. With minor exceptions, London's tax export increases in years where UK PSNB falls and vice-versa. The larger amplitude associated with the movement in UK PSNB is a factor of scale.

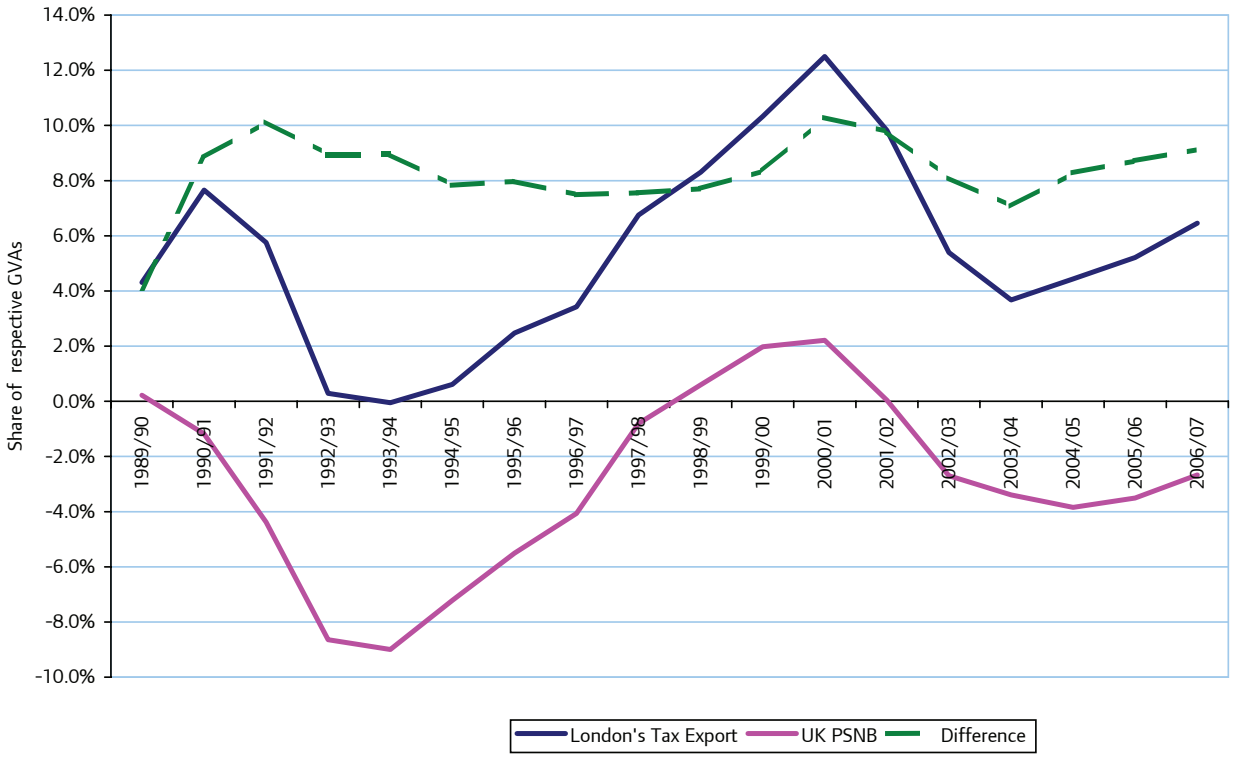
Figures 5 and 6 together provide a good understanding of London's tax export. The tax export tends to increase following years of strong growth in London's economy, particularly when London "out grows" the rest of the UK. While persistently in surplus, London's tax export moves broadly in tandem with overall UK public borrowing.

When the UK is running large public sector deficits this obviously creates a tendency for London's public spending, or indeed any other part of the UK, to be higher relative to its tax receipts. This helps to explain why London's tax export did not increase significantly in the early to mid 1990s, despite rising London economic growth.

Figure 7 combines this information by comparing the time paths of London's tax export and PSNB as shares of London's and the UK's respective GVA. This gives a measure of London's relative fiscal contribution controlling for UK national fiscal policy. The dotted line in Figure 7 represents London's tax export "premium", the difference between the ratio of London's tax export to GVA and UK PSNB to UK GVA:

$$\text{i.e} \quad \textit{London's Tax Export Premium} = \frac{\textit{London's Tax Export}}{\textit{London GVA}} - \frac{\textit{UK PSNB}}{\textit{UK GVA}}$$

Figure 7: UK PSNB, London's tax export as shares of respective GVAs



Source: GLA Economics calculations, HM Treasury

From the early 1990s the paths of London's tax export and the UK's net borrowing have remained broadly parallel. The difference between these two lines essentially compares the net proportion of London's output that it transfers to the UK. This difference, with the exception of 1989/90, has remained within a band roughly between 7.5 and 10 percentage points.

This broadly constant difference supports the idea that movements in London's tax exports are largely determined by overall growth in its output, the relationship of its output growth with the UK's, and the UK's fiscal position.

The remaining movements are likely to be a result of either change in:

- demographic and macroeconomic factors that impact areas of spending and revenue differently; or
- government spending priorities or the tax regime that directly or indirectly affect London in a different way to the UK overall.

It is beyond the scope of this paper to explore these factors in detail.

The finding that London's tax export is positively related to economic growth in London points to the need for continuing public investment in London's infrastructure in order to underpin the continued growth of the London economy and so allow it to generate continued tax exports to fund public services throughout the UK.

Conclusion

Using our pre-existing methodology we have estimated that London's tax export in 2006-07 was between £6.6 billion and £14.4 billion. However we have developed a new methodology incorporating improvements in the way we allocate part of particular UK taxes and other revenues to London. These improvements principally affected our estimates of the amount of income tax, corporation tax, and vehicle excise, fuel, tobacco and alcohol duties which are generated in London.

Using our revised methodology we estimate that London generated a tax export in 2006-07 of between £8.4 billion and £18.4 billion. This represents between 9.5 and 19.1 per cent of all tax revenues generated in London. This compares with recent estimates of London's tax export in 2006-07 produced by Oxford Economics of £12.3 billion to £19.7 billion and by the LSE of £11.5 billion to £18.4 billion.

When we estimated London's tax export over time then we found that London has consistently produced a surplus of tax revenues over public expenditure in London. The magnitude of this tax export has varied over time. In all but two years, 1999-00 and 2000-01, London's tax export exceeded the overall UK public sector fiscal surplus. Hence with the exception of these two years the rest of the UK outside London has consistently run a public sector deficit.

In line with our previous research in this area, we found that there are two primary drivers of the size of London's tax export – national fiscal policy and the strength of economic growth in London. Larger UK public sector deficits tend to reduce the size of London's tax export. Stronger economic growth in London tends to increase the magnitude of London's tax export. This positive relationship with London's economic growth indicates that there is a positive return to the national exchequer from investing in the infrastructure and other public services that underpin London's economic growth. Investing in London generates a tax export that can be used to fund public services throughout the UK.

Footnotes

Footnotes

1 See Chapter 5 of GLA Economics' 'Growing Together: London and the UK Economy', January 2005.

2 Oxford Economics, 2008, 'Regional winners and losers in UK public finances', Economic Outlook July.

3 See Chapter 7 of London School of Economics (2008), "London's Place in the UK Economy 2008-9", October. Research commissioned by the City of London Corporation.

4 A number of taxes are allocated the same way in both approaches, that is, they are unaffected by the residence – workplace distinction.

5 North East, North West, Yorkshire and Humberside, East Midlands, West Midlands, East of England, London, South East, South West.

6 See note 6 in the ABI 2006 Revised Results pp 5.

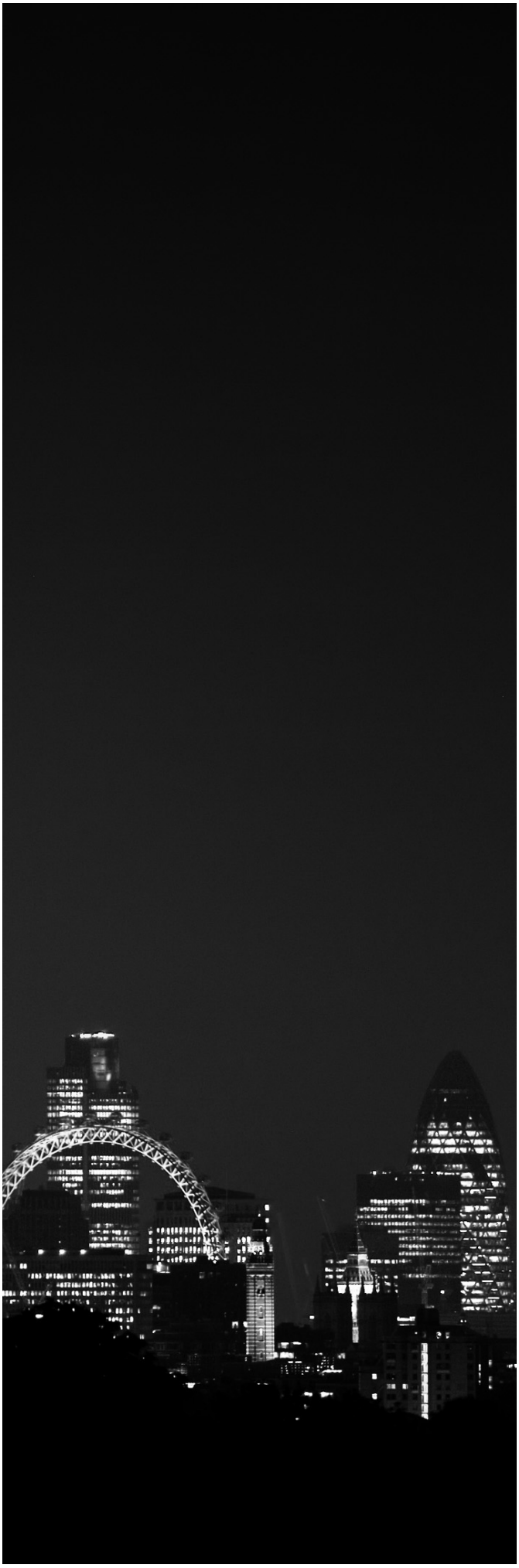
7 The figures here may differ from a simple subtraction of the estimates in Table 2 from those shown in Table 7 due to rounding.

8 This differs from how OE presented the upper and lower estimates in their report as they used the midpoint estimate for public expenditure rather than their "high" and "low" estimates thereby reducing the range of their estimated London tax export, which in their report is presented at between £12.3 and £19.7 billion.

9 Oxford Economics, "Regional Winners and Losers in UK public finances", July 2008.

10 Though it should be remembered that London exhibits a wide distribution of income compared to the rest of the UK with concentrations of both poverty and wealth.

11 Using Experian Business Strategies Data.



Appendix 1

Table 9: Mechanism used to estimate public taxation in London

Tax receipts	Old Mechanisms	Revised Mechanisms
1. Income tax (gross of tax credits)	Compensation of employees at residence level and workplace level	HMRC Survey of Personal Incomes
2. Council tax	London figures available	London figures available
3. Vehicle excise duties	Compensation of employees at residence level and workplace level	Regional vehicle registration statistics
4. National insurance contributions (employees and employers)	Part using employment and part using compensation of employees (the latter on alternatively a residence and workplace basis)	Part using employment and part using compensation of employees (both on alternatively a residence and workplace basis)
5. Value added tax	Household income	Household income residence and workplace bases
6. Corporation tax	GVA residence and workplace bases	Annual Business Inquiry
7. Stamp duty	Population	London figures for property and land, household income for stocks and shares
8. Tax credits (includes personal and corporate)	GVA residence and workplace bases	GVA residence and workplace bases
9. Fuel duties	Household income	Regional fuel consumption statistics
10. Tobacco duties	Household income	General Household Survey
11. Spirits duties	Household income	General Household Survey
12. Wine duties	Household income	General Household Survey
13. Beer and cider duties	Household income	General Household Survey
14. Betting and gaming duties	Household income	Household income
15. Air passenger duty	Household income	Household income
16. Insurance premium tax	Compensation of employees at residence level and workplace level	Compensation of employees at residence level and workplace level
17. Landfill tax	GVA residence and workplace bases	GVA residence and workplace bases
18. Climate change levy	GVA residence and workplace bases	GVA residence and workplace bases
19. Aggregates levy	GVA residence and workplace bases	GVA residence and workplace bases
20. Customs duties and levies	Household consumption	Household consumption
21. Petroleum revenue tax	GVA residence and workplace bases	GVA residence and workplace bases
22. Oil royalties	GVA residence and workplace bases	GVA residence and workplace bases
23. Capital gains tax	GVA residence and workplace bases	GVA residence and workplace bases
24. Inheritance tax	Population	Population
25. Business rates	London figures available	London figures available
26. Other taxes and royalties	GVA residence and workplace bases	GVA residence and workplace bases
27. Interest and dividends	GVA residence and workplace bases	GVA residence and workplace bases
28. Other receipts	GVA residence and workplace bases	GVA residence and workplace bases

Source: ONS, DCLG, EBS, HMRC, DfT

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Hindi

यदि आप इस दस्तावेज की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नंबर पर फोन करें अथवा नीचे दिये गये पते पर संपर्क करें

Vietnamese

Nếu bạn muốn có văn bản tài liệu này bằng ngôn ngữ của mình, hãy liên hệ theo số điện thoại hoặc địa chỉ dưới đây.

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন্ নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος εγγράφου στη δική σας γλώσσα, παρακαλείστε να επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυδρομικά στην παρακάτω διεύθυνση.

Urdu

اگر آپ اِس دستاویز کی نقل اپنی زبان میں چاھتے ھیں، تو براہ کرم نیچے دئے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Turkish

Bu belgenin kendi dilinizde hazırlanmış bir nüshasını edinmek için, lütfen aşağıdaki telefon numarasını arayınız veya adrese başvurunuz.

Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

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