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Labour Market Balance Sheets

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Executive summary

This paper sets out two labour market balance sheets laying out the implications of the latest GLA population and employment projections for London. There are very significant statistical inconsistencies between labour market data drawn from various different sources. The method used for constructing the two labour market balance sheets takes these differences into account. Both methods suggest that the percentage of London's workers who commute into London is likely to remain broadly stable/increase slightly. The percentage of Londoners who commute out of London for work has been rising strongly in the last 25 years and that increase is expected to continue into the future. Overall net in commuting is projected to decline to 2011 and then increase thereafter. After 2006, the unemployment rate in London is expected to decline gradually.

Introduction

Changes in employment and population in London and the rest of the country interact in complicated ways affecting both patterns of unemployment and commuting. Understanding these factors and the relationships between them is essential if we are to gain an accurate picture of how the labour market will respond to London's projected expansion in population and jobs. This note sets out a methodology for estimating a range of labour market indicators using a balance sheet approach and estimates this for 2001, 2006, 2011, 2016, 2021, and 2026.

A balance sheet containing the following variables has been constructed:

- Total Workforce Employment (WE)
- Double Jobbers (DJ)
- Workplace Workers (WW)
- London Residents in Employment (RE)
- Resident Unemployed (U)
- Economically Active Residents (EAR)
- In Commuting to London (IC)
- Out Commuting from London (OC)
- Net In Commuting (NC)
- Unemployment Rate (UR)
- Total Population (P), - this is a memo item, derived directly from projections produced by the Data Management and Analysis Group in the GLA

Methodology

Labour market balance sheet relationships

There are 10 variables from those set out in the introduction above which are related to each other via a set of five labour market identities. In addition to this we include numbers for London Residents working in London (REL) as this adds to the transparency of the balance sheet. This gives a total of six labour market identities as follows:

WW = WE – DJ (1)
That is workplace workers are equal to workplace employment (or jobs) minus the number of double jobbers (people with two or more jobs).

RE = REL +OC (2)
The number of London residents in employment is equal to employed residents working in London plus those who commute to work outside London.

REL = WW – IC (3)
Employed London residents working in London equals the number of workplace workers in London minus commuting into London or the number of London workers who are commuters.

EAR = RE +U (4)
The number of economically active Londoners equals employed Londoners plus Londoners who are unemployed and seeking work.

NC = IC – OC (5)
Net Commuting into London equals people commuting into London minus Londoners commuting out of London.

UR = U / EAR *100 (6)
Unemployment rate equals the number of unemployed divided by the number of economically active residents then multiplied by 100.

In addition, the commonly used identity as follows can be derived from a combination of identities (2), (3) and (5) above[1]:

RE = WW – NC (7)
London residents in employment equals workers at London workplaces minus net in commuting.

Exogenous variables

In addition to the above identities there are two variables that are given exogenously:

- Workforce Employment - Projections for WE, that is workforce employment are given in GLA Economics Working Paper 20, February 2007

- Economically Active Residents – these are based on DMAG's latest round of demographic projections, the preferred High projection for London (RLP High) as used in the Review (Further Alterations) of the London Plan, as set out in DMAG Briefing 2006/32

[1] RE = REL + OC (2). Substituting for REL from (3) gives RE = WW – IC + OC
= WW – (IC – OC). Substituting for (IC – OC) from (5) gives RE = WW – NC.

Other variables

Given that there are 11 variables, six identities and two exogenously determined variables, this leaves three variables to be determined by some assumed behavioural relationship, or other judgement.

- Double Jobbers
- In Commuting
- Out Commuting

The next step is to consider some recent trends for these three variables.

Double jobbers

Table 1 shows that the percentage of employed individuals who have a second job for selected years. In both the UK and London this percentage appears to have been falling since 1995. The driving forces of double jobbing are not clear and do not appear to have been significantly researched. On the one hand we might expect the proportion of double jobbers to rise as the economy strengthens, as it will presumably be easier to find a second job when jobs are generally more plentiful. The reverse may also be true because in economic downturns people wanting full-time work may have to take two part-time jobs instead. There seems to be no empirical literature on which of these two effects might dominate.

Table1: Double jobbers as a percentage of employment

	1992	1995	2000	2002	2005
UK	3.9	5.1	4.4	4.2	3.9
London	2.7	4.5	4.0	3.6	3.5

Source: Labour Force Survey, Spring Quarters

Note: The data for both double jobbers and total employment used here is residential based employment.

In commuting

Table 2 shows the number of commuters and the proportion of London jobs they fill from the last three censuses. The census data suggests that the proportion of London jobs filled by commuters (or the in-commuting rate) fell slightly in the 1990s.

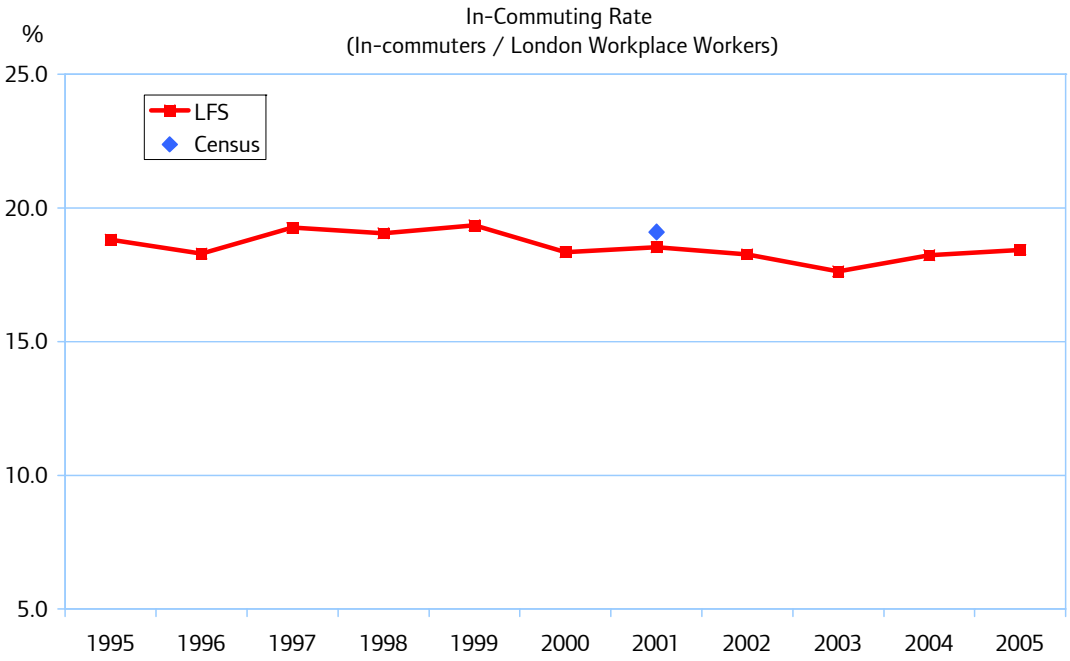
Table 2: In commuting 1981-2001

	1981	1991	2001
Number	629,010	672,730	722,539
As a % of London Workers	17.5%	20.1%	19.0%

Source: Census of Population

Data from the Labour Force Survey (LFS) for 1995-2005 in Figure 1 shows a similar pattern. The in-commuting rate has hovered between 17.5 and 19.5% of workplace workers over the last 10 years.

Figure 1: In commuting rate 1995-2005



Source: Labour Force Survey

Out commuting

Table 3 shows the number of people commuting out of London for work and the proportion of employed London residents (out-commuting rate) they account for from the last three censuses. Clearly, out-commuting was on a strong upward trend in the years to 2001 – more recently the proportion has increased by around one-third between 1995 and 2005 as illustrated in Figure 2.

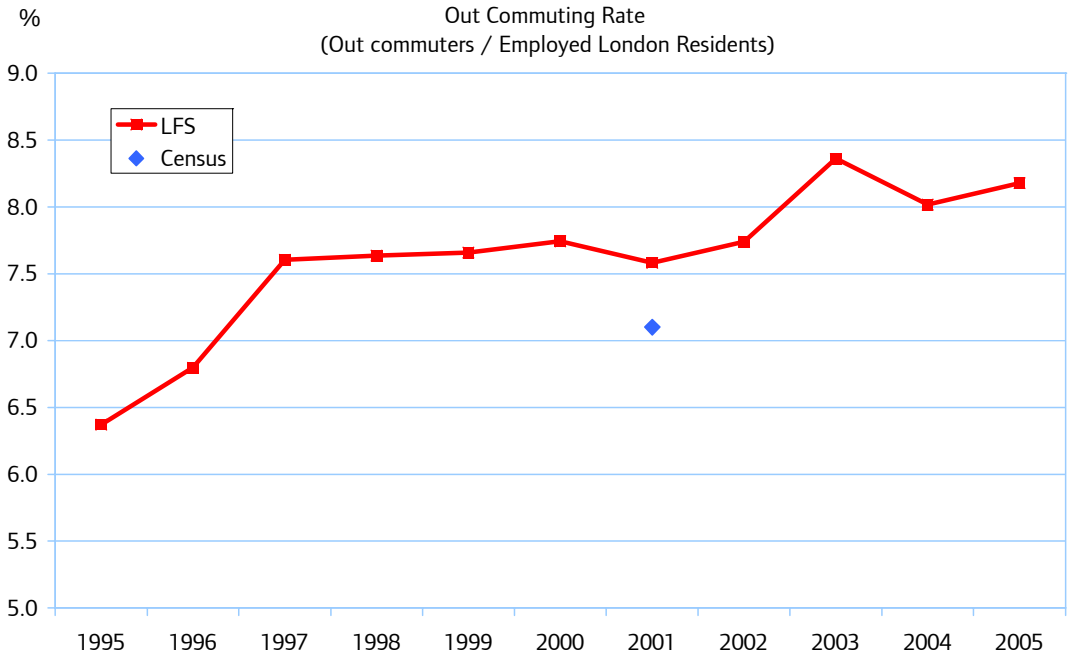
Table 3: Out commuting 1981-2001

Census	**1981**	**1991**	**2001**
Number	111,520	149,820	236,018
As a % of London Residents	3.6%	5.3%	7.1%

Source: Census of Population

Going forward it is clear that the out-commuting rate is rising and there seems no reason to suppose that this might change in the future.

Figure 2: Out commuting Rate 1995-2005



Source: Labour Force Survey

Data inconsistencies

The data sources for the variables in our balance sheet vary and are not consistent with each other. There is a well known discrepancy of around 250,000 to 500,000 each year between the LFS and ABI measures of employment data[2]. This emerges when we start from the ABI based workplace employment numbers and derive the number of Londoners in employment, and when we derive the same variable from the number of economically active residents, netting off the proportion who are unemployed (based on the LFS unemployment rate). The result is an error in between the two estimates of 499,000 in 2001, falling to 413,000 in 2006.

[2] The reason for this difference is only imperfectly understood; see ONS 'Review of Employment and Job Statistics' Report No. 44, January 2006.

Table 4: Illustrating the problem of data inconsistencies

	2001	2006
Total Workplace Employment	4552	5487
- Double Jobbers	173	161
In-commuting	703	735
Out-commuting	254	313
- Net in commuting[3]	449	422
= Londoners in Employment (a)	3930	4004
Economically Active Residents	3643	3882
(Unemployment Rate LFS)	*5.8%*	*7.5%*
- Unemployed	211	291
= Londoners in Employment (b)	3431	3591
Error Balance (a) –(b)	499	413

Applying an error term

The difference between the different statistical sources means that in practice the set of identities set out above do not hold without the introduction of the error term to allow for these statistical inconsistencies. Hence we apply the 413,000 error term throughout the forecast period to 2026. Applying it to the number of Londoners in employment (derived from ABI based workplace employment data) sources gives the following set of results in Table 5.

Using this methodology the results overall look fairly reasonable, although the unemployment rate changes little to 2011, mainly due to the fact that the number of economically active people rises slightly faster than employment to 2011. To arrive at the unemployment figure of 4.5 per cent by 2026 meant some judgemental adjustment of net-commuting flows after 2011 onwards and to the proportion of double jobbers from 2021 onwards.

[3] LFS commuting data to remain consistent with the LFS measure for economically active individuals. They therefore differ slightly from the Census 2001 measures for in-commuting (723), out-commuting (254) giving a net commuting total of 487.

Table 5: Labour market balance sheet with error term

LABOUR MARKET BALANCE SHEET	Actual	Projections				
(Thousands)	**2001**	**2006**	**2011**	**2016**	**2021**	**2026**
Workplace Employment	4552	4587	4808	5038	5264	5499
Double Jobbers	173	161	168	176	172	209
Workplace Workers	4379	4426	4640	4862	5092	5290
In-Commuting[4]	703	735	742	778	866	936
Out-Commuting[4]	254	313	333	361	378	398
Net In-Commuting[4]	449	422	409	417	488	539
Londoners in Employment (a)	3930	4004	4230	4445	4604	4751
Economically Active Residents (c)	3643	3882	4110	4295	4444	4544
(Unemployment rate LFS)	5.8%	7.5%				
Unemployed	211	291				
Londoners in Employment (b)[5]	3431	3591	3817	4031	4191	4338
Error Balance (e) = (a) – (b)	499	413				
Forecast Error Term			413	413	413	413
Forecast Unemployed (d)			293	264	254	205
Forecast Unemployment Rate [(c) – (a) + (e)] / (c)			7.1%	6.1%	5.7%	4.5%
Memo Item: Population[6]	*7322*	*7572*	*7895*	*8193*	*8467*	*8710*

Note: Figures in the table above may not sum exactly due to rounding

Workplace Employment and the number of Economically Active residents are exogenously determined. They are derived from the sources given on page 3.

A census based balance sheet

There are also data inconsistencies between the LFS and the census data, which for example recorded different unemployment rates for London in 2001. The census showed an unemployment rate of 6.6 per cent in 2001 whilst the LFS rate was 5.8 per cent in the 2001 Q2. The fact that the census rate is higher is not surprising. While on the census form people are asked whether they have looked for work and whether they were available to start work in a similar way to the LFS, the definition is looser than the more rigorous way in which individuals' economic activity status is established in the LFS. Hence some people who would be classified as economically inactive in the LFS are probably included in the census measure of unemployment.

In order to generate a census based balance sheet, we apply the growth rates observed in the LFS and ABI data as appropriate between 2001 and 2026 to census based estimates of workplace employment and the number of economically active people and work it through the balance sheet to give an estimate of Londoners in employment. Subtracting this from the implied census economically active total for 2006 gives an

[4] LFS based measures of in and out-commuting

[5] (b) is our preferred estimate of 'Londoners in employment' as this is consistent with the LFS based estimate for residential employment and this data source is recommended by the ONS for estimates of residence based employment; see their Quality Review No.44, January 2006.

[6] Population here is consistent with the mid-year population estimates

unemployment level of 389,000. This is described as the derived census unemployment and is shown in Table 6. Alternatively we can apply an estimate of the census unemployment rate at 2006 to the implied census economically active figure. This gives an alternative unemployment figure in 2006 of 314,000, which we described as the implied census unemployment in Table 6. The census based unemployment rate for 2006 is derived by adding the percentage point difference between the census and LFS rates at 2001 to the 2006 LFS based unemployment rate. There is a discrepancy of 74,000 between these two estimates of unemployment.

In order to ensure that the balance sheet identities hold and for the census and LFS based projections to remain closely aligned, we apply this error term throughout the forecast period by subtracting it from the derived census unemployment level. Through judgemental adjustment of commuting and double jobbing rates we can derive a plausible path for the projected unemployment rate.

Table 6: Labour market balance sheet applying percentage changes to Census 2001 data.

LABOUR MARKET BALANCE SHEET	**Actual**	**Projections**				
(Thousands)	**2001**	**2006**	**2011**	**2016**	**2021**	**2026**
Census Workplace Workers	3806	3847	4032	4225	4401	4588
Census In Commuting	723	756	766	782	819	895
Census Out Commuting	236	308	343	363	383	408
Net In-Commuting[7]	487	448	424	419	436	487
Residents in Employment (a)	3319	3399	3609	3806	3965	4101
Census Economically Active Residents (b)	3553	3787	4009	4190	4335	4432
Derived Census Unemployed (c) = (b-a)	*235*	*389*	*400*	*384*	*371*	*331*
Derived Census Unemployment Rate (d) = (c) / (b)		*10.3%*				
Implied Census Unemployment Rate (using LFS rates) (e)	*6.6%*	*8.3%*[8]				
*Implied Census Unemployed (f)= (e) * (b)*	*235*	*314*				
Error Balance (h) = (c) - (f)*	0	74				
Error Balance (Forecast) (h)			74	74	74	74
Forecast Unemployed (i) = (c) - (h)			326	309	296	257
Forecast Unemployment Rate (j) = (i) /(b)			**8.1%**	**7.4%**	**6.8%**	**5.8%**
Population (Census based)[9]	7172	7416	7732	8025	8293	8531

**figures many not sum due to rounding*

[7] Based on Census 2001 measures of commuting which differ slightly from LFS (see footnote 3)
[8] This figure is arrived at by boosting the 2006 LFS rate by 0.8%, the differential observed between the census unemployment rate (6.6%) and LFS measure (5.8%) in 2001
[9] The 2006-26 projections for census based population are derived by applying the growth shown by DMAG's latest population projections to the 2001 Census figure.

In general, this error term approach helps to achieve more plausible set of results than other methods we tried in attempting to develop a coherent labour market balance sheet for London. A similar approach was used in the previous GLA Economics research[10]. This method is also widely used in for example, the analysis of commodities markets where data is drawn from many sources.

Commuting and double jobbers – assumptions

It is important to ensure that variations made in double jobbing and commuting to improve the plausibility of the results for all the other variables are not achieved at the expense of making the projections for double jobbing or commuting implausible. On the basis of the actual historic numbers reported above and the extrapolation of these trends going forward, therefore, the following limits have been taken for these three variables:

- Double Jobbing – 3.0 to 4.5 per cent of workplace employment
- In Commuting – 16 to 20 per cent of London workers
- Out Commuting – on a rising trend from the 2001 actual of 7.1 per cent, but not to exceed 10 per cent by 2026.

Tables 7 and 8 show the assumptions used for the balance sheets in Tables 5 and 6 respectively. All these proportions fall within the plausibility limits set out above. These are ad hoc but judgementally based adjustments to the proportions of in and out-commuting and double jobbing for each data point to 2026. Overall, both show similar trends of rising out-commuting although with the LFS-based projections showing a smaller rise in the out commuting rate. In both cases the in-commuting rate shows a marked rise after 2016. The period after 2016 is one when employment rises fast relative to population and the number of economically active residents, and in consequence unemployment, falls. This is likely both to encourage London employers to seek to recruit workers resident outside London and to make London a more attractive labour market for such workers to seek employment. This demonstrates the inter-relationship between unemployment in London and the patterns of commuting and double-jobbing.

Table 7: Adjusted commuting and double jobbing rates- LFS based (table 5)

	2001	2006	2011	2016	2021	2026
LFS Out Commuting Rate	7.4%	8.7%	8.7%	8.9%	9.0%	9.2%
LFS In Commuting Rate	18.1%	18.3%	17.6%	17.6%	18.8%	19.4%
Double Jobbers as % of Employment	3.8%	3.5%	3.5%	3.5%	3.3%	3.8%

[10] B. Rosewell, A. Freeman and D.Walne, 'Working Paper 1: Labour market balances and employment in the wider South-East', GLA Economics, February, 2003.

Table 8: Adjusted commuting and double jobbing rates- census based (table 6)

	2001	2006	2011	2016	2021	2026
Census Out Commuting Rate	7.1%	9.0%	9.5%	9.5%	9.6%	9.9%
Census In Commuting Rate	19.0%	19.6%	19.0%	18.5%	18.6%	19.5%
Double Jobbers as % of Employment	4.0%	3.6%	3.6%	3.6%	4.0%	4.2%

Conclusion

This note has set out two labour market balance sheets for London. These are based on published projections for workforce employment in London and the number of economically active residents in London, a set of labour market identities and assumptions for commuting and double jobbing. By using an error term to address discrepancies between different sources of data and ad hoc but reasonable adjustment of rates of commuting and double jobbing, this generates a plausible set of results for the variables in the balance sheet.

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