Accounting for Big City Growth in Low Paid Occupations:

Immigration and/or Service Class Consumption

Ian Gordon and Ioannis Kaplanis

Spatial Economics Research Centre,

London School of Economics

NOT FOR INCLUSION IN CONFERENCE CD – MICRO-DATA USE HAS TO BE CLEARED WITH OFFICE OF NATIONAL STATISTICS

1. Introduction

Increased inequality in labour market outcomes during the past 30 years gas been a subject of note, concern and academic investigation in a number of advanced economies, notably the US and UK. For much of the academic literature, the issue of interest has been that of a widening of earnings differentials across occupations (and sometimes also industries), often seen in terms of changing returns to particular components of human capital (increasing returns to 'skill', or more specifically to human capital).   The dominant approach to explaining this has been in terms of shifts in the demand-supply balance for these assets, driven by a demand for upskilling stimulated by some combination of technological change with an reinforcal of the comparative advantage of advanced economies in the context of intensified competition in a globalised economy. An alternative approach has emphasised structural changes in the context of pay determination within increasingly deregulated labour market institutions – itself perhaps a response to intensified competition and these market forces, but one mediated in different ways by national political/social systems and the established power of labour unions.

Within the more neo-classical (supply-demand) accounts of this change, shifts in the occupational distribution – generally seen in terms of a shift toward more highly/sophisticated skilled jobs - play an important intermediate role. Their direct, compositional effects on the aggregate distribution of earnings/incomes has been of less interest, though on some plausible assumptions (if technological change was particularly biased toward elimination/deskilling of intermediate jobs, a la Braverman, 198?), they might

have led to a significant increase in their variance, as well as to an upward shift of the whole distribution.   A number of studies did, however, suggest that the occupational structure of advanced economies might actually be polarising, in the sense that the share of the least well rewarded job types might be increasing as well as that of the most rewarded types. This hypothesis was first advanced by sociologists/political economists in the context of debate about an emerging post-industrial/post-Fordist economy (Pahl, 1988; Sassen, 1991). More systematic evidence of this pattern has subsequently been presented by labour economists (Goos and Manning, 2004). A key observation in both cases was that the least well paid jobs were typically to be found in activities with (more or less) untradeable products, notably in personal services and construction, which could not as readily be offshored to cheap labour economies, in accordance with comparative advantage – and which might not be readily mechanisable either, because of some barriers to standardisation. The relative prices of these products would presumably grow, but their share of demand might actually increase of they could be substituted for self-production/self-servicing by increasingly affluent/time-poor consumers and/or workers in other occupations. The Sassen (1991) version of this argument focused particularly on a claim that this phenomenon was especially concentrated among the higher echelons of the service class[1] who were to be found in global command and control centres such as New York and London. The empirical evidence for her case (as it applied to the emergence of global cities during the 1980s) was, however, vigorously contested in relation to European centres by urban geographers/sociologists, who contended that the observable trend was simply one of professionalization not polarisation (Hamnett, 1994a and b; Buck et al., 2002;).

For London at least, however, there were indications that some such occupational polarisation might belatedly have been emerging during the later 1990s (Buck et al., 2002). In fact, as one of us has shown in previous papers, the trend observed by Goos and Manning (2004) across the 1979-99 period in national data for the UK appears to be:

a) very largely to be a London phenomenon, rather than one generally observable across UK regions; and
b) essentially one of the period since vvvv, rather than of earlier years (Kaplanis, 2007).

The first of these empirical observations is entirely consistent with the Sassen (1991) thesis, and has been further investigated through econometric modelling of the dependence of the share of employment in the lowest quintile of jobs on that in the top quintile (where growth has been especially concentrated in London). The second observation is, however, less readily explicable in these terms since service class growth, both in the UK as a whole and in London specifically was a feature of years both before and after this break. One possible hypothesis both to account for this break and the apparent discrepancy between New York

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[1] i.e. those in professional and managerial occupations

and London trends in the 1980s (as reported by Sassen and Buck/Hamnett respectively) is that actual employment growth in the bottom segment of jobs is conditional on availability of an elastic supply of cheap labour, which was afforded - in New York from the 1980s on, but only more recently in London – by large scale immigration from low wage economies (Buck et al., 2002).

In this paper we investigate the role of both demand and supply-side factors on the evolving occupational profile of employment, via a two equation panel model of earnings and employment for quintile[2] segments of ..... across UK regions over the years 197?-2007. The model is set in simple supply-demand terms, with wages in each segment potentially influenced by international migration, and employment levels responding to these as well as to exogenous demand factors. The scale/earnings of the top segment is included in the demand equations for other segments; more general interdependence across the segments is allowed for by estimating the full system by G3LS; spatial interdependences are explicitly incorporated via lagged independent variables in both sets of equations.

2. Theory

Conceptually our starting point involves an economy with two sectors and three occupational groups. The sectors distinction is based solely on the tradeability of their products. The outputs of one include a mix of goods and services, all of which may be traded at least inter-regionally, either in intermediate or final form. The outputs of the other are only sold to private consumers in final form, and are untradeable beyond the region of production, because they require pace-to-face contact between producers and consumers.

 In both sectors, production requires inputs from three types of labour, differentiated by levels of human capital, and by capital. Each type of labour may (in differing degrees) be substituted with capital – but, because of the face-to-face requirement, substitutability is assumed to be substantially less in the untraded sector.

In the traded goods/service sector, demand is determined simple by price (implicitly defined as a price-quality ratio), relative to that in other regions/internationally.   Within the traded goods sector, production may be functionally disaggregated across regions (and/or internationally), so that at the regional scale there are effectively three independent trading sectors, each employing just one type of labour, as well as a local service sector employing all three.   In the non-traded sector, demand is determined by price – relative to that of

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[2] Quintiles are defined by aggregating occupations, grouped in terms of in relation to national earnings and employment shares at a reference date, with the observed share of employment in each open to variation over time and across aeas.

traded products – by local real incomes, and by other social/demographic influences (operating both via tastes, and via the opportunity cost of self-servicing).

Total factor productivity in each sector may vary across regions in relation to fixed regional attributes, but the high human capital traded goods sector is distinguished by displaying strong agglomeration economies. Technological changes are assumed to be sector- but not region-specific in their effects on productivity.

Wages are set competitively at the regional scale, but with spillovers between both regions and occupations. The strength and rapidity of inter-regional spillovers depends on:

a) Inter-regional proximity; and
b) Inter-regional mobility within an occupational group, which is assumed to vary positively with the level of human capital.

Real wage levels (adjusted for regional cost of living differences) should tend to converge across regions though being continually disturbed by shocks to competitiveness in the traded sector and/or to labour supply (e.g. as a consequence of exogenously determined elements of international migration). Inter-occupational wage spillovers may be asymmetric, and are expected to operate more strongly downward from higher human capital groups than in the reverse direction. Real wage variations in the lowest group are expected to be largest and fluctuate more, because of:

a) their relative immobility;
b) bumping down of workers from the higher groups when demand falls; and
c) constraints on access to higher job types for recent arrivals among 'exogenous' immigrants.

Finally, we assume that the spatial concentration of high human capital activities within the traded sector, will compound with the greater capacity for product differentiation within these, to confer some monopoly power on dominant regions in these activities, and lower the responsiveness of demand to inter-regional variations in price for these products.

One widely recognised consequence following from this simple conceptual framework is that free/extended competition will lead advanced economies toward a pattern of specialisation biased toward high human capital trading activities, though retaining untradeable activities which are both relatively labour intensive and which necessarily include a substantial element of low status/low human capital jobs. This pattern would be especially evident within the major agglomerations (including Sassen's global cities).

It is not obvious a priori, however, whether in the most successful areas a combination of rising real incomes with increasing relative prices/slower productivity growth for untradeable services should lead to larger or smaller employment in that sector – and hence

to growing/contracting job numbers of low status/human capital jobs. Particular factors which could produce such growth would include, on the demand side:

a) the presence of a luxury element within untradeable services with demand non-linearly related to real incomes of workers in the high human capital sector;
b) particularly strong labour supply responses by actual/potential workers in the high human capital sector (via longer hours and/or increased female participation rates), substituting paid work time for self-servicing; and/or
c) an induced taste shift toward differentiated/luxury types of untraded service as a consequence of an increasing concentration of high human capital groups in major agglomerations/metropoles.

On the supply side, this effect might be achieved in major agglomerations/international cities, if:

d) an exogenously attracted type of labour – whether of international migrants or other young people moving for consumption/life-style reasons - provided a particularly elastic source of supply in these areas for low human capital jobs with few barriers to entry.

In this paper we investigate how either or both of these types of contingency may have affected the shifting pattern of employment change for the bottom segment of the labour market (where untraded services now clearly predominate) in British regions. On the demand side we look both at the potential impact of employment/earnings in the top group of jobs and at that of changes in household structure/women's labour market participation. On the supply side we focus on the impacts of recent international migration, first on relative earnings in the bottom group of occupations, and then (indirectly) on employment levels there.

3. Data and Model

Our empirical analyses focus entirely on outcomes disaggregated by broad occupation group, with no breakdown by sector. Occupations have been grouped in terms of pay relativities (at a benchmark date, for the UK as a whole), both to reflect market valuations of the various attributes that workers possess (not simply formal qualifications), and because of our interest in impacts on labour market inequalities. After inspection of patterns observable at decile level, five quintile groups were retained for the main analyses.

No direct correspondence has been attempted with the conceptual breakdown used in the previous section which distinguished high human capital occupations (for which a uniquely strong effect of agglomeration on productivity was hypothesised), an intermediate group (with no special characteristics), and a low human capital set (which were only expected to retain an important presence now within untradeable activities). However, the *top* quintile does include almost all the graduate jobs that distinguish London employment in those

financial/business service activities where the strongest agglomeration effects have been found (Graham, 2007). And jobs in the *bottom* quintile are strongly concentrated in those service activities with a strong bias to serving intra-regional markets (notably retailing, hotels/catering, education and health/social care[3])

Time series data on regional employment/earnings in each quintile were derived from New Earnings Survey micro-data sets, using a bridge to link two series based on successive versions of the official occupational classification. Each of these showed patterns of change over time which principally distinguished London from the other 9 NUTS1 regions (see Figures 1-4), with:

a) Bottom quintile earnings in London starting well above those eldewhere but converging during the 1990s (Figure 1);
b) Top quintile earnings there remaining clearly above those elsewhere by a similar margin throughtout the period (Figure 2);
c) Bottom quintile numbers in London declining, absolutely and relative to those elsewhere until the mid-1990s, after which they showed some growth (Figure 3);
d) Top quintile numbers remaining much higher (relative to population) by a margin which grew slowly but rather steadily throughout the period (Figure 4).

The other key variable in our conceptual model is international migration. In principle we expect the relevant variable to be recent gross inward migration rates from poor countries, in the light of evidence that new migrants from these origins are at least temporarily crowded into jobs in the bottom quintile (Table 1 and Figure 5). Data by origins are not available at regional level, but both gross and net migration series were rested against each other.
Time series data for this variable also shows a strong regional contrast between London and the other regions, with:
e) Migration into London always being much higher but accelerating much more sharply during the 1990s (Figure 6).
The basic model estimated for each quintile included a supply/earnings equation and a demand/employment equation.   These took the general form:

• *Wage* – related to house prices, employment in the quintile (locally and spatially lagged), a measure of labour market tightness, international migration and temporal/spatial lags in earnings;
• *Employment* – related to wage in the quintile, temporally lagged employment, employment and earnings in the higher paid quintiles, household characteristics (married couple households and married women's employment rates)

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[3] Logically construction should figure in this category, but it happens to employ few workers in this bottom tier of occupations. This is not, however, inconsistent with the hypothesis, which requires that workers in this tier be concentrated in untradeable sectors, not that the workforce of these sectors need be predominantly made up of such workers.

4. Estimation and Results

Demand and supply equations for the bottom quintile, which are our focus of interest, were estimated by G3SLS within a system including those for each of the other quintiles, using a panel data-set for the years 1976-2007 and the 10 NUTS1 regions of Great Britain. Year fixed effects were included, together with two separate sets of regional fixed effects, to control for any inconsistencies in the data between the quintile classifications derived from the earlier/later occupational classifications. A series of structural instruments were derived from the General Household Survey and from lagged values of endogenous variables.

Final results from the chosen model set for the two equations relating to the bottom quintile are presented in Table 2.

In terms of spatial relations these show one significant result only, namely a dependence of wages in the bottom quintile on employment levels (for that quintile) in nearby regions as well as locally – representing a spillover of demand pressure within linked spatial sub-labour markets.

Substantively, however, the key results are:

i.   Wages in the bottom quintile *(only)* appear to be strongly depressed by higher levels of current/recent international in-migration;
ii.   Employment in this segment is in turn strongly influenced by the wage level – i.e. more migrants lowering the wage serves to boost employment in this bottom tier of jobs;
iii. There is no evidence then of a significant/positive effect from employment or earnings in top tier jobs on employment in the bottom tier.

It thus appears that polarisation in the job structure of the major British agglomeration (at least) reflects the impact of recent large scale immigration (from poor countries), rather than service class growth (as in the Sassen analysis).

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Table 1 London Migrant Jobs by Type and Quintile 2005-6

Migrant Origin	Years in the UK	Bottom quintile (<£6.4 ph)	2nd quintile (£6.4-£7.5)	3rd quintile (£7.5-£9.9)	4th quintile (£9.9-£13.5)	Top quintile (> £13.5 ph)
Non-Migrant	..	21%	20%	21%	19%	20%
High Wage countries	0-3	18%	14%	12%	21%	**35%**
HWC	>3	19%	15%	16%	22%	28%
Asylum Countries	0-3	31%	24%	14%	13%	18%
AC	>3	23%	20%	14%	21%	22%
Other Low Wage countries	0-3	46%	20%	10%	14%	11%
OLWC	>3	25%	19%	16%	17%	22%

Source: Annual Population Survey 2005-6

Table 2 Quintile 1 Regression Results

Supply: Wage – Quintile1		Demand: Jobs – Quintile1	
$Q1Wage_{t-1}$	0.332 (2.9)**	$Q1Jobs_{t-1}$	0.460 (7.7)***
$Q2Wage_t$	0.607 (2.6)*	$Q1Wage_t$	-0.957 (4.0)***
$Q1Wage_t\_SpLag$	0.015 (1.3)	$Q2:Q5Jobs_t$	0.249 (2.8)**
$Immigration_t$	-4.25 (6.0)***	$Q5Jobs_t$	-0.159 (0.7)
$Immigration_{t-1}$	-1.58 (1.7)	$MarCouple_t$	-0.152 (1.4)
$Q1JobRatio_t$	0.045 (0.8)		
$Q1JobRatio_t\_SpLag$	0.058 (2.9)**		
$HousePrice_{t-1}$	0.009 (0.5)		
RMSE=.008	N=220	RMSE=.026	N=220

Figure 1

Bottom Quintile Earnings

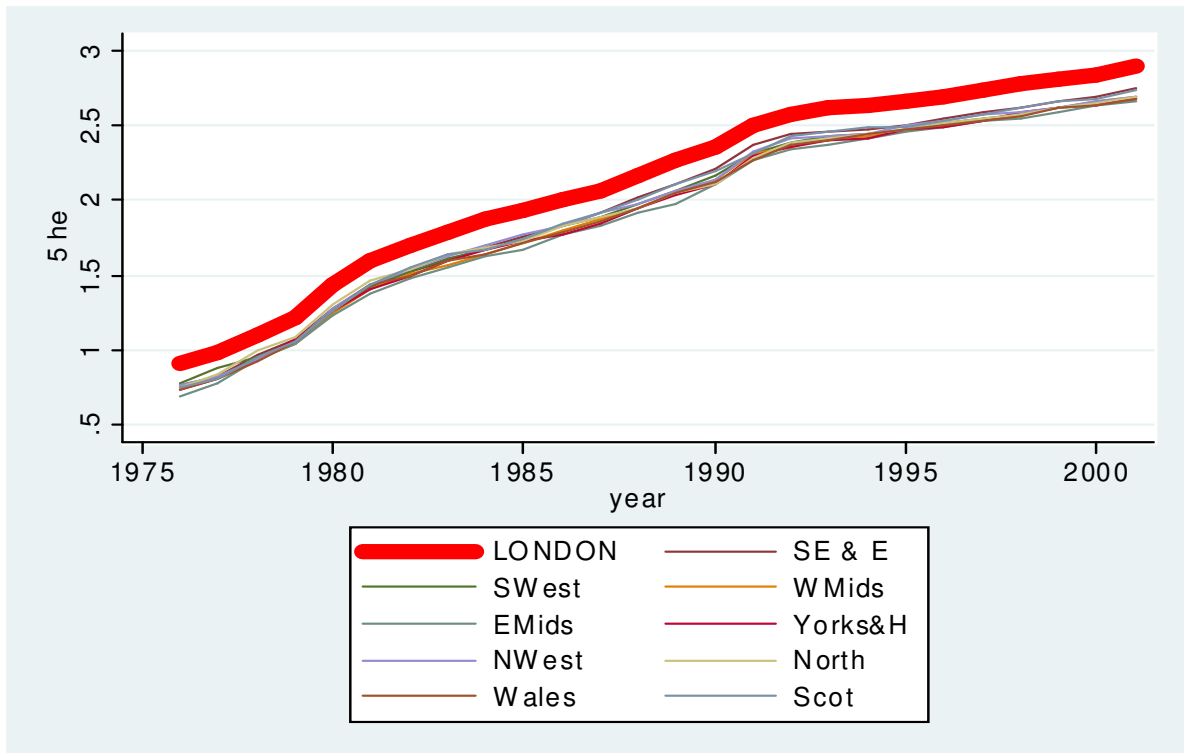**Figure 2   Top Quintile Earnings**
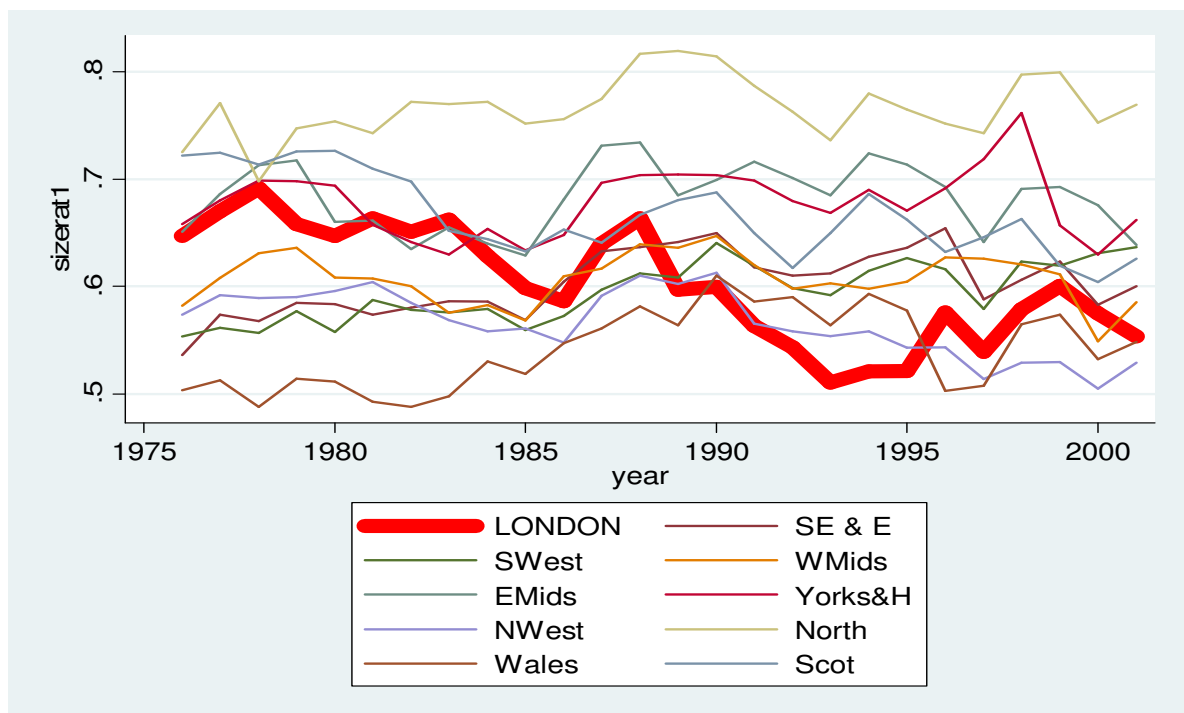

Figure 3 Bottom Quintile Numbers
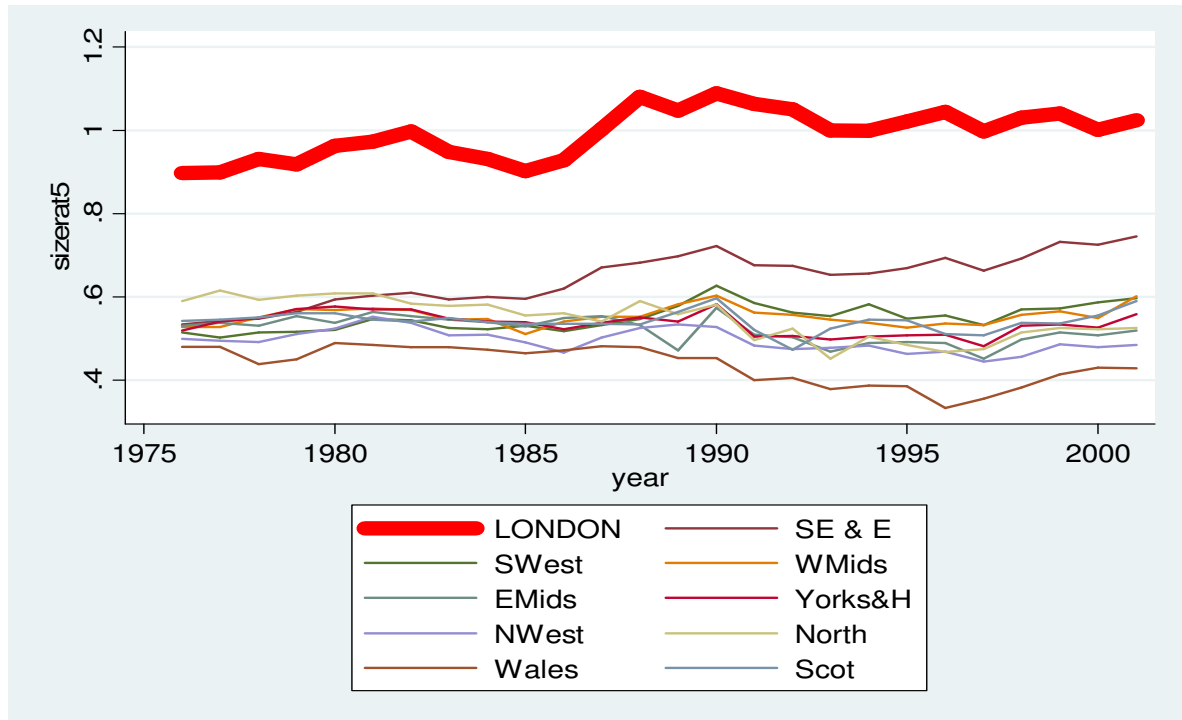
Figure 4. Top Quintile Numbers

Figure 5

Relation Between Years in Country and Working in Bottom Quintile for Migrants from Poor Countries

Figure 6   In-Migration from Overseas