

New Migrant Databank: Concept, development and preliminary analysis

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Abstract

This paper reports on work completed for an ESRC research project examining the changing profile and dynamics of the UK's ethnic populations. The estimation and projection of ethnic group populations for local areas requires accurate intelligence on the inflow and outflow of international migrants. In the absence of a definitive source of data that can provide these statistics, the New Migrant Databank (NMD) has been developed. The NMD combines alternative sources of international migration data into a common structure, providing consistent data reporting, a common view of the patterns and trends evident at national, regional and local authority level and the basis for further research and analysis into methods for improved estimation of immigration and emigration.

The NMD combines data from a number of sources: Total International Migration (TIM) estimates, National Insurance Number (NINo) registrations from the National Insurance Recording System (NIRS), GP registration statistics provided by ONS, Workers Registration Scheme (WRS) statistics, international student numbers from the Higher Education Statistics Authority (HESA) and Labour Force Survey (LFS) statistics. With the exception of the LFS, data from each source has been captured for London Boroughs, local authority districts and unitary authorities in Great Britain. LFS data has been captured for Government Office Regions (GOR).

This paper reports on the conceptual and definitional differences that exist between the various sources and demonstrates how a combined view of statistics for local authority areas can provide enhanced intelligence on the pattern and trends in international migration.

The NMD is used to examine the level and distribution of immigration flows from alternative sources. ONS statistics on Total International Migration (TIM) are compared to migration data available from complementary administrative sources. Differences that exist at a national, regional and local level are examined to identify where administrative data might improve existing migration estimation methods. The difficulty of estimating short-term migration flows is highlighted, using data from a number of sources to produce an alternative estimate of the scale of short-term migration evident since EU expansion in 2004. Finally, the paper reports on the preliminary estimation of international migration for ethnic groups, using data from the 2001 Census and NINo statistics in combination.

Acknowledgement

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Introduction

International migration is a key driver of population change in the UK. National projections for the UK for 2006-11 estimate an annual population increase of 435,000, with approximately 50% due to natural increase and 50% due to net immigration (ONS, 2008a). Since 2004, with the accession of ten new countries to the European Union (EU), the UK has experienced an unprecedented inflow of economic migrants from Central and Eastern Europe, supplementing historical flows from the new and old commonwealth, EU member states and other foreign countries. This inflow of new migrants has had an impact upon existing migrant communities but has also created new, ethnically diverse communities in areas previously untouched by the effects of economic migration (Bauere *et al.*, 2007).

In the absence of a population register in the UK, there is no single source of statistics that provides a comprehensive measure of the new migrant population and its many dimensions. However, the UK-wide impact of migrant populations is placing far greater importance on their measurement and there is increasing political pressure for improved intelligence on the volume, profile and geographical distribution of migrant communities (Statistics Commission, 2007; House of Lords Select Committee on Economic Affairs, 2008a&b; House of Commons Treasury Committee, 2008). With an uncertain statistical picture at a national level, the analysis of migrant impacts at a local level remains even more problematic.

This paper reports on research from the School of Geography at the University Leeds, investigating the impact of new migrant communities upon the UK's ethnic profile. The primary focus of the research is the development of local area, population projections for ethnic groups within the UK. A key component of these projections is the measurement and estimation of immigration and emigration at a local geographical level.

The paper provides an illustration of some of the difficulties involved in accurately measuring international migration and summarises the types of data that are available from alternative UK sources. No single source provides a definitive measure, so it is necessary for datasets to be combined to provide the most informed view of the impact of migration at a local level. The paper reports on the development of the New Migrant Databank (NMD) concept. The NMD combines data sources to provide a common framework for the presentation and analysis of patterns and trends in international migration at a local level, whilst providing the basis for the development of immigration and emigration estimates to inform the projection of ethnic group populations.

The content of the NMD is described and a series of preliminary analyses of NMD data are presented to illustrate work-in-progress on the research project and to demonstrate the more general application of the NMD concept to local research and analysis into international migration.

throughout the EU but, until 2009, must register with the Workers Registration Scheme (WRS) if they are to be employed in the UK (this does not apply to migrants from Malta and Cyprus). Bulgarian and Romanian migrants have similar freedom of movement but employment in the UK requires an individual application for an ‘accession worker card’ and, in certain cases, an application for a work permit from an employer.

There is a variety of terminology associated with the process of international migration, describing the event of moving to or from a country, the individuals involved and the duration of stay (Figure 2). The terminology has changed over time in response to events (streams of migration) and the changing social meanings attached to different terms.

What is a migrant?	
<u>General:</u>	A migrant is a person who relocates from one place to another within a specified period of time.
<u>International:</u>	An international migrant is a migrant who relocates from one country to another.
<u>Immigrant:</u>	An immigrant is an international migrant who migrates into a country.
<u>Emigrant:</u>	An emigrant is an international migrant who migrates out of a country.
<u>New:</u>	A new migrant is an international migrant who has arrived in the UK in the recent past. It is sometimes used to refer to recent immigrants from central and eastern Europe.
<u>Old:</u>	An old migrant is an international migrant who arrived some years ago.
<u>Long-term:</u>	A long-term migrant is an international migrant whose country of usual residence changes for a period of 12 months or more.
<u>Short-term:</u>	A short-term migrant is an international migrant who moves to a country other than that of his or her usual residence for a period of at least 3 months but less than a year.
<u>Transition:</u>	A transition is defined as a change in country of residence between two points in time. The Census records as migrant as a person whose country of usual residence has changed over a twelve-month period.
<u>Move:</u>	A move is the event associated with a change in country of residence. There may be more than one move between two points in time.
<u>Flow:</u>	Flows provide a count of the number of international migrants that come to or leave the UK in a specified period of time, usually a single year.
<u>Stock:</u>	Stocks provide a count of the total number of resident migrants. Resident migrants can be counted in a number of different ways; as persons with a different country of birth or as persons who have immigrated to the UK within a specified time period.

Figure 2: International migration terminology

The length of time a migrant stays in the UK is a particular issue when interpreting migration statistics (Figure 3). Those staying for less than three months, for example, are generally classed as visitors. A ‘short-term migrant’ is defined as, ‘a person who moves to a country other than that of his or her usual residence for a period of at least 3 months but less than a year, except in cases where the movement to that country is for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment or religious pilgrimage’ (United Nations Statistics Division, 2006).

At present, data on short-term migrants are not included in published statistics and it is the indeterminate length of stay of the majority of Accession country migrants that is the main source of confusion and uncertainty when interpreting UK migration statistics.

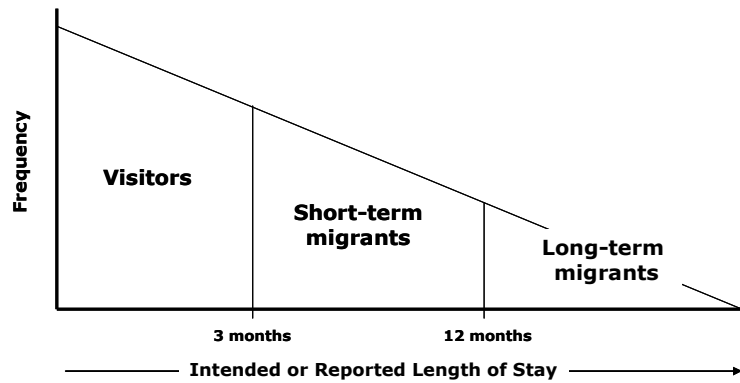


Figure 3: Visitors and migrants

A ‘long-term migrant’ is a person whose country of usual residence changes for a period of 12 months or more. It is this migrant definition that is the basis for the UK’s National Statistics on total annual immigration and emigration via a question on intended duration of stay in the International Passenger Survey (IPS).

The distinction between stocks and flows is also an important one when using migrant statistics. Stocks provide a count of the total number of resident migrants. Resident migrants can be counted in a number of different ways; as persons with a different country of birth or as persons who have immigrated to the UK within a specified time period. Flows provide a count of the number of new migrants that come to or leave the UK in a specified period of time, usually a single year. Migrant flows will increase or decrease the size of the resident stock of migrants, depending upon the balance of emigration to immigration.

‘Migrant workers’ have typically been classified as those who have arrived in the UK within the last five years, so will encompass both stocks and flows when considering available statistics. These workers will be a combination of legal and illegal workers, including those from the EEA who have a right to live and work in the UK plus those from outside the EEA who require a work permit or who come to the UK as working holiday makers or seasonal agricultural workers.

Alternative data sources

There is no single data collection instrument for the measurement of international migration. There are a number of alternative sources which provide specific intelligence about the movement of population into and out of the UK. These sources may be generally classified as either census, survey or administrative datasets. Each has its own limitations depending upon the question asked, the purpose of the data collection and the population covered (Table 1).

The decennial census is the most comprehensive source of data on the UK population but its data ages rapidly, particularly at a time of significant demographic change. Surveys are rich sources of data but are typically not statistically robust for local-area analysis and do not adequately capture all migrant populations. Administrative sources can provide excellent geographical detail but typically do not have the data richness that a survey provides. Few sources provide data on emigration from the UK.

Table 1: Sources of data on UK international migration

Source				Coverage			Migrant Definition				
Name	Respon- sibility	Type	Reporting period	National	GOR	LADUA	Stocks	Flows	Migrant Population	Immigr- ation	Emigr- ation
Composite											
Total International Migration (TIM)	ONS	Composite	Annual	✓	✓	✓		✓	Long-term migrants	✓	✓
Censuses											
UK Census	ONS	Census	Decennial	✓	✓	✓	✓	✓	All	✓	
Pupil Census	DCSF	Census	Biannual	✓	✓	✓	✓		Children joining State Schools	✓	
Surveys											
International Passenger Survey (IPS)	ONS	Survey	Continuous	✓	✓			✓	All migrants	✓	✓
Labour Force Survey	ONS	Survey	Quarterly	✓	✓		✓	✓	All (but with survey exclusions)	✓	
Administrative											
Immigration Control	HO	Admin	Continuous	✓				✓	Non-EEA migrants	✓	
Work Permits	HO	Admin	Continuous	✓	✓	✓		✓	Non-EEA migrants	✓	
National Insurance Number (NINO) Applications	DWP	Admin	Continuous	✓	✓	✓		✓	Migrant workers	✓	
Worker Registration Scheme (WRS)	HO	Admin	Continuous	✓	✓	✓		✓	A8 workers excluding self-employed	✓	
GP Registrations	NHS	Admin	Continuous	✓	✓	✓		✓	All	✓	
Higher Education Statistics	HESA	Admin	Continuous	✓	✓	✓	✓	✓	Students	✓	

Notes:
 GOR = Government office Region (England) plus Wales, Scotland and Northern Ireland
 LADUA = Local Authority District and Unitary Authority

The **International Passenger Survey** (IPS) is the only instrument for measuring UK immigration and emigration, for nearly all types of migrant. It is a multi-dimensional survey, of which the migrant questions are just one part. It surveys approximately 250 thousand passengers each year: about 1 in 400 of the total number entering or leaving at the UK ports. Of this sample, about 1% are migrants whose stated intention is to stay or leave the UK for more than 12 months. This is equivalent to approximately 3,000 respondents, 70% of which are immigrants and 30% are emigrants. From 2007, the number of interviews with departing migrants is being boosted to a comparable level to those on entry.

IPS respondents are asked their 'intended length of stay'. Estimates of long-term migration (where duration of stay is less than twelve months) feed directly into National Statistics of **Total International Migration** (TIM) produced by the Office of National Statistics (ONS). TIM combines data from the IPS with additional statistics from the Home Office on asylum seekers and their dependants and from the Irish Central Statistical Office on estimates of migration between the UK and the Irish Republic based on the Labour Force Survey (LFS) in Ireland. Visitor switchers, those people whose original intention was to stay for less than twelve months but who subsequently stay for longer, are estimated from IPS visitor data. Migrant switchers, those people who intended to stay for more than twelve months but decide to leave within a year, are derived from Home Office data on non-EEA citizens.

TIM statistics, provide the most accurate estimates of long-term immigration and emigration at a national level (ONS, 2008b). ONS has an ongoing programme of improvement for its international migration statistics that has included changes to the way sub-national estimates of long-term migration are produced. This has removed the tendency for over-estimation of immigration into London by incorporating statistics from the LFS to calibrate IPS migration flows for Government Office Region (GOR) and by creating a new 'intermediate' geography to improve the allocation to local area (ONS 2007b; 2007c).

The **Census** can provide both a view of migrant flows for the year prior to enumeration and a measure of migrant stocks present in the usually resident population. Migration 'flow' data are derived from a question, which asks for an individual's address twelve months prior to enumeration day. Only in-migration is measured as there is no attempt to capture information on individuals who have emigrated during the Census year. The stock picture is derived from detailed country of birth statistics, although in the absence of a question on year of entry to the UK, it is not possible to measure the length of time a migrant has been resident in the UK.

The **Pupil Census** contains individual pupil records for all children in grant maintained schools in the UK. The dataset is managed by the Department for Children, Schools and Families (DCSF) and collected on a twice-yearly basis from individual schools within each Local Education Authority (LEA). A total of 8 million pupils are included on the dataset each year. The dataset does not provide an obvious source of statistics on migrant workers but it does have the potential to provide an informed picture of the composition of local areas based on the changing profile of pupil numbers using captured information on ethnicity and first language.

The **Labour Force Survey** (LFS) is a quarterly sample survey of households living at private addresses in the UK and provides the most detailed statistics on the UK labour market. The LFS captures a 60,000 sample of households in Great Britain and asks the question, 'where were you living one year ago' so it can provide a count of the 'flow' of migrants coming to the UK within a single year. It also records information on year of entry to the UK, which provides a picture of the length of time migrants have been resident – thus producing the most reliable statistics on the 'stock' of migrant workers in the UK.

However, as an accurate measure of international migration the LFS has a number of constraints:

- It excludes students in halls of residence who do not have a UK resident parent
- It excludes people in most types of communal establishments
- It will exclude migrants who have been in the UK for less than six months
- It is grossed to population estimates that only include long-term migrants

The LFS is therefore likely to significantly undercount foreign students and foreign workers, whose stay is relatively short. The LFS contains a sample of about 700 international migrants per year (i.e. persons who state they were resident overseas one year ago). This small sample size, precludes more detailed analysis of migrant inflow by local geographical area.

During 2008-2009, it is planned to combine the LFS with the Annual Population Survey (APS), the General Household Survey (GHS), the Expenditure and Food Survey (EFS), and, the National Statistics Omnibus Survey (NSOS) to create the Integrated Household Survey (IHS). This single survey approach will create a much larger sample size, with migrant worker questions from the LFS being retained in a core module that is expected to cover 221,000 households (ONS, 2007d). The capture of communal households and migrants who have been resident for less than six months will need to be addressed if the new IHS is to significantly improve the migrant counts available from the LFS.

The **Home Office** regularly publishes National Statistics on immigration and asylum. British Citizens, those Commonwealth Citizens who have freedom of entry to the UK and nationals from the EEA are not subject to immigration control and are not included in Home Office statistics. No information is recorded on people emigrating from the UK. National Statistics produced by the Home Office fall into three broad categories: asylum; control of immigration and persons granted British Citizenship (Home Office 2008a, 2008b). Most statistics are only available at a national level, with no sub-national provision. **Work Permit** statistics for each local authority district and unitary authority (LADUA) have previously been made available but these data are no longer routinely produced by the Home Office, although **asylum statistics** are still available at a local authority level.

For a new migrant to the UK, acquiring a **National Insurance Number** (NINo) is a necessary first step for employment/self-employment purposes or to claim benefits or tax credits. NINo statistics, managed by the Department of Works and Pensions (DWP) record an individual's residence, 'country-of-origin', age and gender. The Information Directorate (IFD) within DWP is responsible for the publication of statistics from its National Insurance Recording System (NIRS) and a summary of NINo registrations to A8 migrants is published periodically as part of the more general release of migration statistics coordinated by ONS (Home Office, 2008c).

NINo statistics exclude dependents of applicants, unless they claim benefits or work themselves. They will also exclude most students and those migrants who are not of working age and not claiming benefits. They provide no indication of the length-of-stay of a migrant worker and there is no formal de-registration process. Migrants can actually leave the UK and return at a later date without the necessity to re-register for a new NINo.

Nationals from the Accession 8 countries of the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia who come to work in the UK are required to register with the **Workers Registration Scheme** (WRS). A new registration is required when a person changes employment or an applicant is employed by more than one employer. Year of registration is recorded, as is nationality of the individual. Date of birth, gender and occupational status are also routinely captured. There is no method for tracking how long

each applicant stays in the UK as, like the NINo system, there is no de-registration process necessary. A detailed statistical picture produced from the WRS is regularly published, illustrating the profile of applicants and of registered workers and detailing type of employment, hours of work, wages and a regional disaggregation (Home Office, 2008c).

The WRS provides richer data detail than NINo statistics but has a number of limitations. It records the location of the employer but not the residential location of the applicant. It only records information on A8 migrants and it also excludes those who are self-employed. In addition, the WRS will not record A8 migrants who come to the UK for reasons other than work, including students. The WRS is also only a temporary administrative system and is scheduled to terminate in April 2009.

When new migrants first register with a **General Practitioner (GP)**, they are explicitly identified as an individual whose previous address was outside the UK and who has spent more than three months abroad. The Patient Registration Database System (PRDS) records the age and gender of new migrants but does not provide any more detailed information on nationality, country of origin or country of birth. No information is captured on patients who have emigrated from the UK. GP registrations capture all migrants, regardless of age and employment status, so in theory they provide the most comprehensive view of migration inflows. Migrants captured by the registration process will include short-term migrants, in addition to those who have been resident for at least twelve months. It is not possible to identify actual or intended length of stay from the data. For the majority of migrants, there will be a time-lag between entering the UK and registering with a GP and some migrants may never complete the registration process during their stay in the UK. Young men, in particular, will delay registration after migration more than older men or women. Also, a PRDS record loses its migrant status once a patient moves within the UK and registers with a new GP.

The **Higher Education Statistics Agency (HESA)** maintains a record of all students in the UK, including those whose country of usual residence is outside the UK. HESA administrative systems do not capture the residential address of international students, only the location of the institution of study. Students provide information on their expected length of stay and although nationality is requested, it is not a mandatory field and coverage is typically poor. Age and gender are recorded and ethnicity is only provided on students with a UK domicile. A 'flow' picture can be produced, recording all students who arrive and depart in a particular year. In addition, by looking at all students who are studying during a particular year, a 'stock' picture can be produced. The picture is dynamic because of the constant churn of students by institution.

An Integrated View

TIM statistics provide the definitive source of information on (long-term) international migration to and from the UK but as the migration process has become ever more diverse and complex it has been necessary to seek additional intelligence from alternative sources.

The New Migrant Databank (NMD) is a simple concept but one which can provide a measure of consistency into the way international migration statistics are presented and interpreted (Rees and Boden, 2006). It can also provide the basis for more detailed research and analysis into the most appropriate methods for measuring international migration at all geographical levels. It is not a perfect solution to the problem of accurately measuring the impact of international migration but in the absence of a population register, or equivalent, it makes best use of the intelligence available and can potentially make it accessible to those organisations in the service sector that most need it.

In summary the New Migrant Databank can provide:

- A 'single view' of alternative statistics for an extended time-series, by geographical area.
- A common and consistent reporting framework for all local authority areas.
- Clarity of conceptual and measurement differences.
- A framework for analysis of trends and patterns in migration.
- The basis for research and analysis targeted at improving migration and population estimation at a local geographical level.

The NMD has been created as part of an ESRC research which examines the changing profile of the UK's ethnic group populations. The NMD combines statistics from a number of alternative sources, to provide a consistent view of each, benchmarked against each other and against regional and national totals. Figure 4 gives an example of the type of output that can be generated by the NMD for a selected urban local authority area. The statistics presented are as follows:

1. New Migrant Counts

This summary chart illustrates both change over time and the differences that exist between four alternative sources: the 2001 Census, TIM statistics used within official mid-year population estimates, GP registrations to foreign nationals and NINo registrations to foreign workers. The NINo data are disaggregated to illustrate the total number of registrations and those to non-Accession migrants.

In this local area, the 2001 Census benchmark indicates an inflow of approximately 2,500 migrants in the year prior to enumeration. Over time, there is consistency between the TIM estimate of long-term migration and the GP registrations.

Prior to 2004, the trend in NINO registrations to non-Accession migrant workers was also consistent with both TIM estimates and GP registrations; indicating an absence of short-term migrant workers in this local authority. Total NINO registrations rise sharply after 2004 illustrating the impact of A8 migrants. Interestingly, for this local authority, there is no corresponding rise in either GP registrations or TIM estimates, suggesting that a large number of these migrants have been short-term or, due to their age-profile, have not considered registering with a GP.

2. MYE – Internal and International Migration

The second chart illustrates the net flow picture for both internal and international migration. The statistics are drawn from the migration assumptions that underpin the mid-year population estimates (MYE) produced by ONS for 2002-2006 and for the sub-national population projections (SNPP) for 2007-2031. International migration is derived from TIM statistics, internal migration is based on evidence from GP registrations between local authority areas in the UK.

This local area has experienced a significant net loss due to internal migration since 2002 that peaked in 2004 but reduced to 4,000 by 2006. A net inflow of long-term international migrants is evident, with an average annual net gain of approximately 2,000 over the time-period. The trend for the SNPP is for a continued net loss due to internal migration of over 4,000 per year, coupled with a net gain through international migration of approaching 2,000 per year.

3. Alternative Sources (2006)

These two illustrations are designed to give a snapshot of the migrant counts that are produced from alternative sources and to illustrate whether the local area has a consistent share of its regional total. An indication of the local authority's share of the regional population total is provided in the second of the two charts.

In this instance, data are displayed for: the TIM estimates that are used in the ONS mid-year estimates and those that have been used as the long-term assumptions in the ONS sub-national projections; 2001 Census; WRS; GP registrations; and NINo registrations, for both Accession and non-Accession migrants. HESA data has no students recorded in this local authority.

The TIM estimates and the GP registrations are consistent, both in absolute terms and as a percentage of the regional total. The WRS count is low, an indication that few employers are based in the local area. The split between non-Accession and Accession migrants is approximately 70:30. The higher regional share for the NINo counts suggests a significant number of short-term migrants resident in the local area.

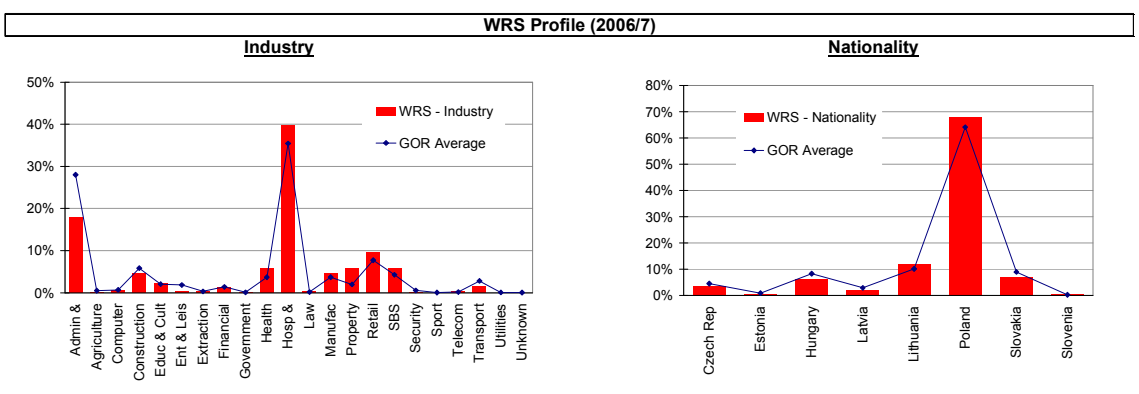
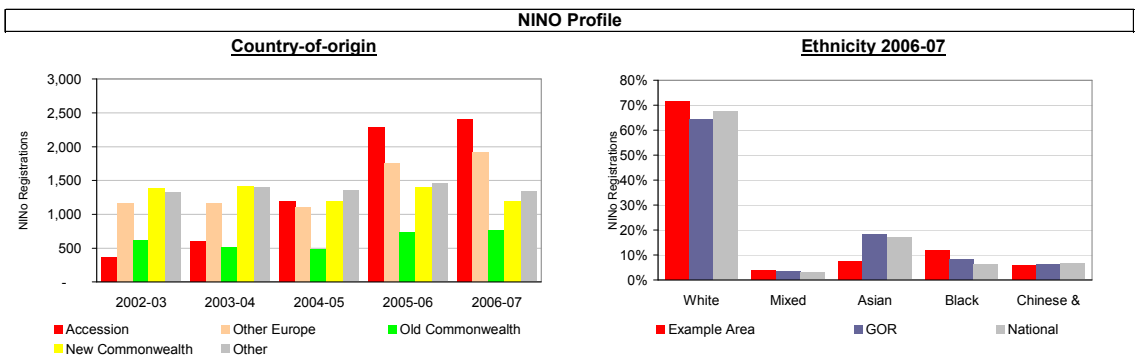
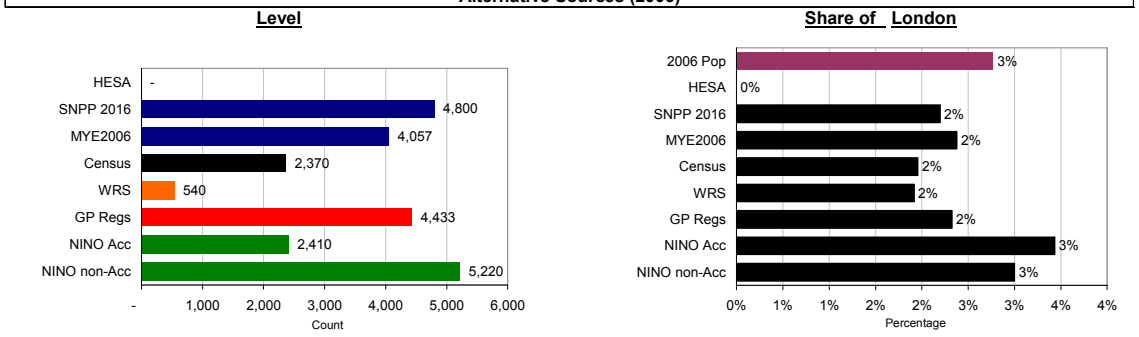
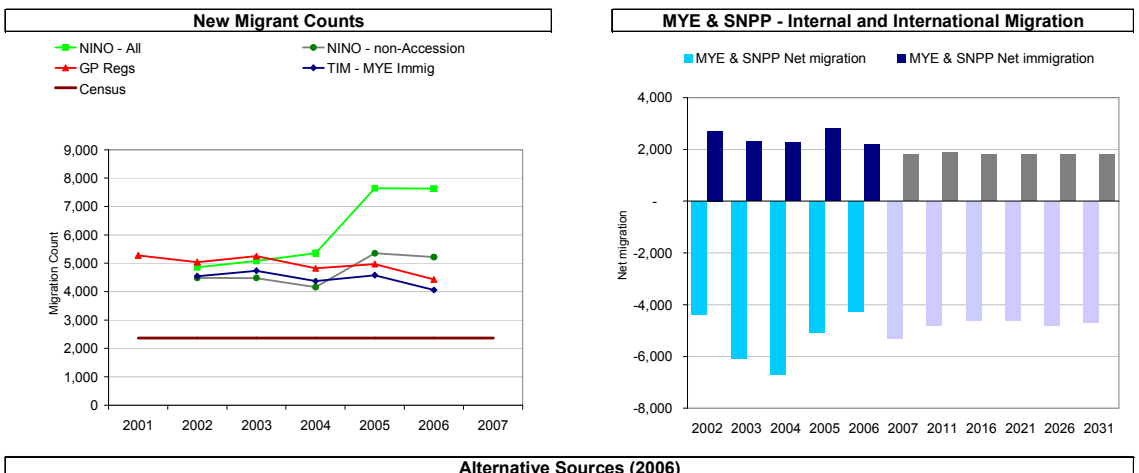
4. NINo Profile

Two charts based on NINo registration data are presented. The first gives an indication of the changing profile of migrant workers registering for a NINO since 2002-03. Registration by Old and New Commonwealth migrants and those from 'other' countries has remained fairly stable, whereas the A8 and other European totals have increased since 2004-05.

The second chart gives an illustration of the ethnic profile of NINo registrations for 2006/07. This profile has been derived by combining NINo country-of-origin data with corresponding data from the 2001 Census on international migration by ethnic group and country of origin. Over 70% of NINo registrations in 2006/07 were classified as 'white' ethnic, reflecting the rise in Accession and 'other Europe' migrant registrations to this local authority.

5. WRS Profile (2006/07)

The WRS profile records Accession migrants who work within the local area. They may live elsewhere. The total number of WRS registrations is relatively small in this area but the large majority are employed in the hospitality sector, with a further 20% in general administration. The majority of these workers (68%) are Polish citizens with a further 12% from Lithuania.



All data are Crown copyright. Sources: 100% data extract from the National Insurance Recording System (NIRS): 2006 Mid-year estimates (ONS, 2007a); 2006-based SNPP, current data (ONS, 2008c); GP registration statistics provided by ONS; Workers Registration Scheme (Home Office, 2008c)

Figure 4: Area Profile: an example illustration from the New Migrant Databank

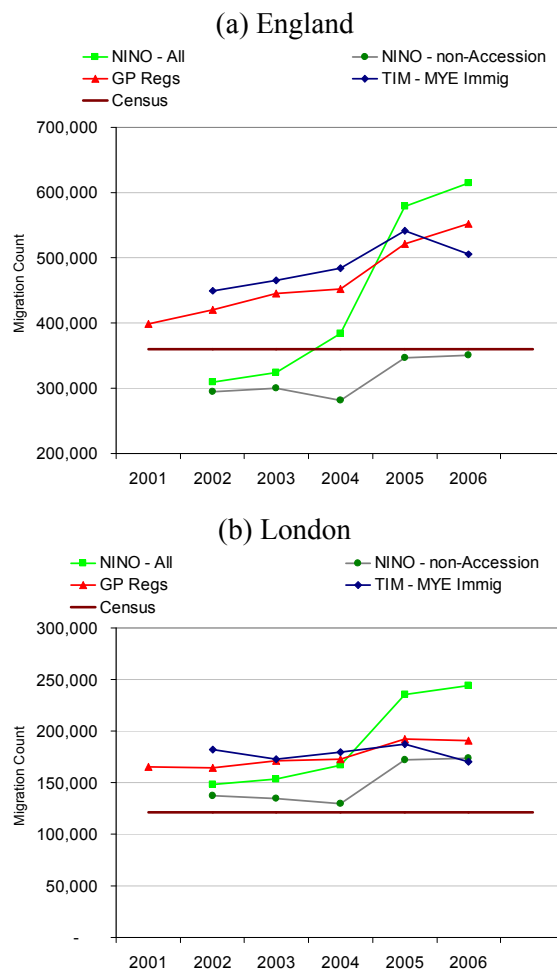
Preliminary Analysis

The creation of the NMD has provided the basis for research and analysis into the patterns and trends in international migration that are evident at a sub-national level, making direct comparisons between datasets to provide a more informed picture of the variations that exist, particularly between TIM statistics and administrative sources.

What do the different datasets tell us about the level and distribution of immigration?

The immigration profile for England demonstrates that the TIM immigration estimates and the GP registrations have followed a similar trend since 2002 (Figure 5). Until 2006, when the TIM estimate dipped below the level of GP registrations, there was an approximate 5% difference between the two datasets. This suggests that although the GP registration data may include a number of short-term migrants, it does appear to provide a comparable indicator of long-term immigration.

NINo registrations to non-Accession migrants also follow a similar overall trend to GP registrations and TIM estimates but at a much lower level, reflecting the fact that this dataset only covers migrant workers, excluding students, dependents and those not in employment but suggesting that they are likely to be predominantly long-term migrants.



All data are Crown copyright. Sources: 100% data extract from the National Insurance Recording System (NIRS); 2006 Mid-year estimates (ONS, 2007a); GP registration statistics provided by ONS

Figure 5: Immigration profiles from alternative sources, England and London

Accession migrants are responsible for the majority of the substantial rise in total NINo registrations since 2004. The consistency in the other datasets suggests that the majority of these Accession registrations have been to migrants with an indeterminate length of stay that have not been captured by the TIM estimation process and have largely not registered with a GP.

The immigration profile for London in Figure 5 is similar to that for England although the peak in total NINo registrations is less significant, reflecting the fact that Accession migrants are dispersed across the UK and not more concentrated in the capital as is the case with non-Accession migrants. The TIM estimate of immigration to London for 2006 again falls below that of the GP registration total suggesting that there may be some under-estimation of flows to London.

Figure 6 provides an illustration of the regional distribution of immigration flows from alternative sources and indicates the corresponding regional share of population (Figure 6a).

In 2001, long-term immigration to London comprised 34% of the total to England (Figure 6b). A further 20% was recorded in the South East and 10% in the East of England. In 2006, the TIM estimate of immigration to London remained at 34% of the total based on a resident population of approximately 15% of the England total (Figure 6c). The South East had reduced its share of immigration to 10% with the East Midlands, Yorkshire and the Humber and the North West increasing from their respective 2001 positions as a result.

GP registration data for London in 2006 showed consistency with the TIM estimates but there were differences of 2% or more in the share of immigration for the South East, West Midlands and Yorkshire and the Humber, suggesting that TIM estimates could be less accurate in these regions (Figure 6d). These differences are explored further in the next section.

The Labour Force Survey in 2006 exhibits a flatter distribution for immigration flows, with only 30% concentrated in London but 17% and 13% in the South East and East of England respectively (Figure 6e). Other regions, with the exception of the North East at 3%, have a share of 7-8% of the LFS total.

The WRS captures A8 migrant registrations by employer location and thus produces a dispersed distribution across the English regions, with only 15% registered in London (Figure 6f). This reflects the spread of migrant employment across the country but hides the additional impact of self-employed migrant workers which are excluded from the WRS scheme.

The NINo profile in 2006 provides a more accurate picture of the distribution of Accession migrants (A8 plus Bulgaria and Romania) by area of residence rather than employment. Only 26% of NINOs were registered in London, with a much more dispersed profile between the regions confirming the impact of Accession migrants throughout England (Figure 6h). By contrast, 50% of non-Accession NINo registrations were to London based migrants, reflecting established migrant streams (Figure 6g).

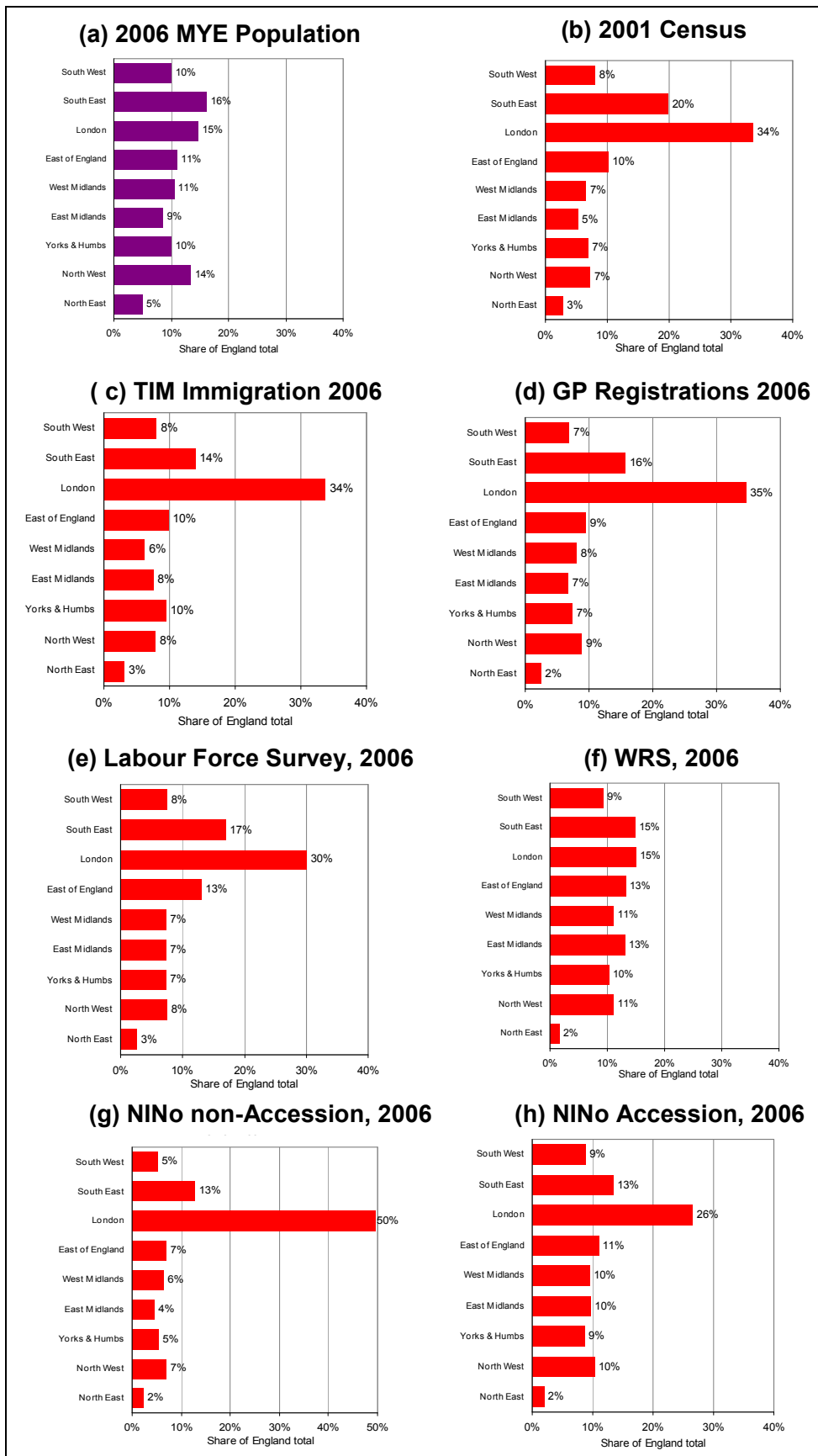


Figure 6: Immigration profiles from alternative sources, GOR England

Can alternative sources help to improve the accuracy of National Statistics?

The TIM estimates of international migration are primarily based on sample data derived from the IPS. To improve the robustness of the sub-national estimation of immigration, the LFS is used to distribute flows to regional level, which are then further allocated to a new ‘intermediate’ geography before distribution to individual local authority areas based upon proportions evident from the 2001 Census.

At present this process of local estimation does not incorporate additional intelligence from administrative sources, although initial analysis and investigation has been completed to compare WRS, NINO and GP registration statistics with those derived from the TIM estimation process (ONS, 2007d). The migrant population covered by the GP registration data was shown to be most comparable with the TIM estimates but inconsistencies in registrations in London and elsewhere were identified as a barrier to the more general application of the administrative data.

The profiles in Figure 5 confirm that although TIM statistics and GP registrations are conceptually different, the general level and trend in their data for both England and London are quite consistent. This suggests that GP registration statistics could provide a useful comparison to the level of long-term immigration estimated by the TIM process. Figure 7 compares aggregate TIM statistics and GP registration data for each of the English regions for the period 2002-2006. One might expect general consistency between the two datasets at a regional level but the graph illustrates that there are significant differences evident, particularly for Yorkshire and the Humber, the South West and the West Midlands. In the South West and Yorkshire and the Humber TIM estimates of immigration were, in aggregate, over 20% higher than the total number of GP registrations in the corresponding period. In the West Midlands they were 14% lower.

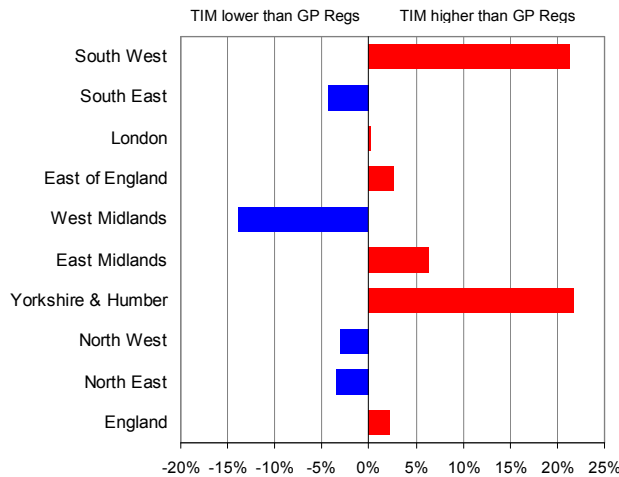
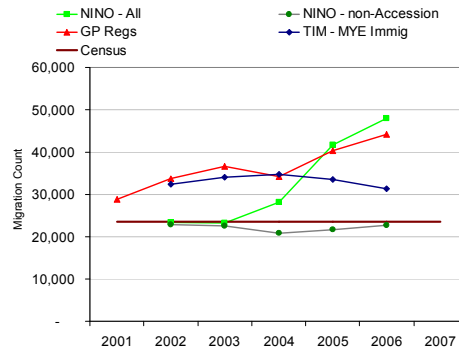


Figure 7: GP registrations and TIM estimates compared, 2002-2006, GOR

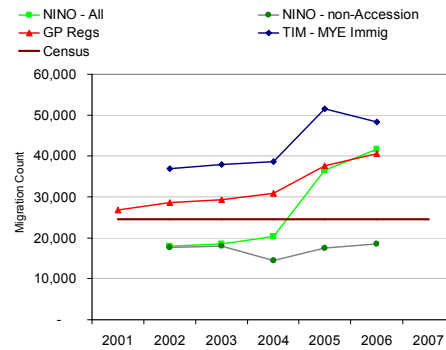
For Yorkshire and the Humber and the West Midlands the differences between the two sources of immigration statistics over time are illustrated in Figure 8. Since 2004, the TIM estimates for the West Midlands have diverged from the total number of GP registrations, following consistency in previous years. This could be due to a large number of short-term migrants registering with a GP and not appearing in TIM estimates. It may also indicate a degree of error in the sub-national allocation of TIM immigration estimates.

In Yorkshire and the Humber the reverse is true with TIM estimates exceeding GP registrations by an average of 9,200 over the 2002-2006 time-series. This again may be due to either non-registration of new migrants with a GP or a potential inaccuracy in the allocation of TIM flows (and possibly a combination of the two).

(a) West Midlands



(b) Yorkshire and the Humber



All data are Crown copyright. Sources: 100% data extract from the National Insurance Recording System (NIRS): 2006 Mid-year estimates (ONS, 2007a); GP registration statistics provided by ONS

Figure 8: GP registrations and TIM estimates compared, 2002-2006, West Midlands and Yorkshire and the Humber

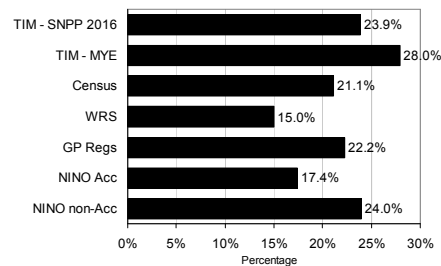
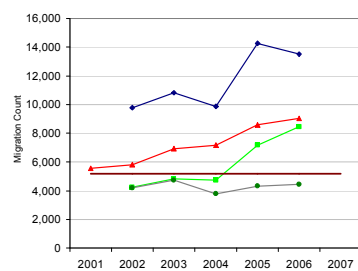
At a local authority level the variation in the pattern and trend in immigration between the data sources becomes more erratic but important differences are evident that can help to inform more accurate estimation. Figure 9 illustrates immigration profiles for three sample local authority areas where differences between sources are particularly significant: an urban district in Yorkshire and the Humber, a rural county in the West Midlands and a London Borough.

For the urban district in Yorkshire and the Humber GP registrations remain higher than total NINo registrations throughout the period, suggesting that short-term migration may be less of an issue in this district and reflecting the presence of a large number of international students. What is more significant, is the large difference between the administrative data sources and the TIM estimate, which in 2006, is approximately 4,000 higher than the equivalent total for GP registrations. This would suggest that the TIM estimate has over-estimated the impact of immigration upon this local authority district. Again this is emphasised by the 'share of region' graph, with 28% of the region's TIM immigration flow allocated to this area, compared to only 22% of GP registrations and 24% of non-Accession NINo registrations.

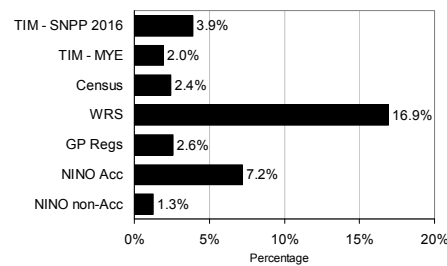
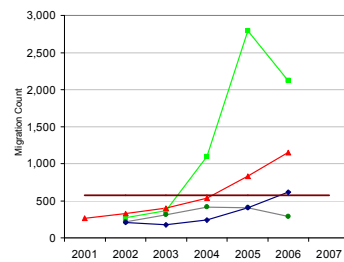
The rural county in the West Midlands has experienced a significant inflow of migrants, with the total NINO registrations peaking at almost 3,000 in 2006. GP registrations have also risen, suggesting that an increasing number of migrants have chosen an extended stay. TIM estimates are consistently below the GP registration total, suggesting that, in this case, there may be a slight undercount in the impact of long-term immigration to the county.

For the London Borough there is reasonable consistency in the trend between the GP registrations and the non-Accession NINO registrations, and the spike in the total NINO is similar to the national trend. However, the trend in the TIM estimate is inconsistent, falling below the totals for each of the other datasets from 2004-2006. This suggests that the TIM estimate may be under-counting the true impact of long-term migration to the Borough. This is further emphasised by the ‘share of region’ graph, which shows that 6.2% of the London region’s GP registrations in 2006 were in the Borough, compared to approximately 4% of the total TIM immigration for the same period.

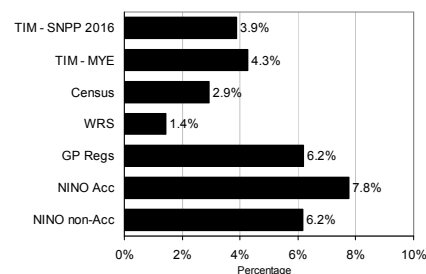
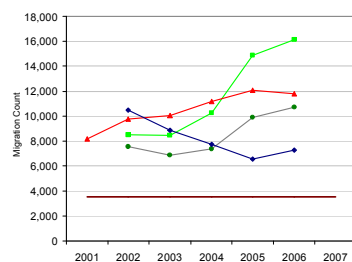
1. Major urban district – Y&H



2. Rural county – West Midlands



3. London Borough



All data are Crown copyright. Sources: 100% data extract from the National Insurance Recording System (NIRS): 2006 Mid-year estimates (ONS, 2007a); 2006-based SNPP, current data (ONS, 2008c); GP registration statistics provided by ONS; Workers Registration Scheme (Home Office, 2008c)

Figure 9: Migration Profiles for selected local authority areas

These analyses are not a definitive assessment of the accuracy of TIM statistics but they do provide an illustration of how the use of data from a number of different sources, regardless of their conceptual and definitional differences, can add significant intelligence to the

estimation of local area migration statistics. It is also evident from this preliminary analysis that there are likely to be ‘clusters’ of local authority areas, which demonstrate similar patterns and trends in their respective migration profiles and similar differences between the migration counts derived from alternative sources: a topic for further research.

Can alternative sources help to better understand the impact of short-term migration?

Throughout the UK there has been considerable debate concerning the impact of short-term migrants; those whose stay in the UK is typically less than twelve months duration. TIM statistics, a key component of population estimation for local authority areas, include only migrants whose duration of stay in the UK exceeds twelve months. They exclude short-term migrants.

Since 2004, the IPS has captured additional information on short-term migrants: those individuals whose intended length of stay is between three and twelve months. Using this data, ONS has produced its first set of experimental statistics on short-term migrants (ONS, 2008c).

Based on exit surveys, the IPS estimates that, in 2005, 335 thousand migrants came to England and Wales for 3-12 months (Figure 10). Of this total, approximately 90 thousand were for employment in the UK, 70 thousand were for study and the remainder were for other reasons such as holiday or visiting friends and relatives. The average length of stay of migrant workers was approximately five months.

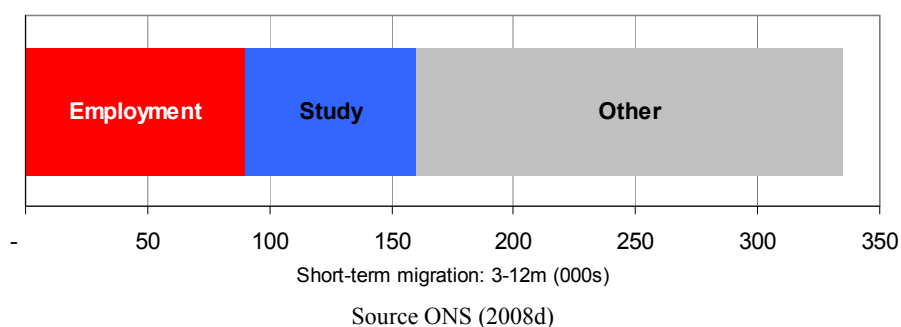


Figure 10: Short-term migration inflows, England and Wales, 2005

Table 2 provides an alternative estimate of the short-term inflow of Accession migrants to England and Wales and to London during the three year period following EU expansion in 2004. The estimates are derived using a combination of NINo registrations data, WRS estimates on dependants, TIM estimates of Accession migrant numbers and ONS evidence on the average length of stay of short-term migrants.

The consistency in the trend between non-Accession NINo registrations and GP registrations in London suggests that the duration of stay of non-Accession migrants is typically longer-term. For this analysis of short-term-migration, it has been assumed that non-Accession migrants are captured by the TIM statistics as part of the long-term inflow. Accession migrants typically have a more indeterminate length of stay, although some will be captured in the long-term migrant counts.

In 2006/07, the total number of NINo registrations to Accession migrants in England and Wales was approximately 274 thousand. NINo statistics are a count of migrant workers; they do not capture data on dependants. The WRS estimates that Accession migrants’ dependants

account for a further 15% of the total migrant inflow. The NINo registrations have been factored accordingly to derive a total estimate of 315 thousand Accession migrants to England and Wales during 2006/07.

Table 2: Short-term migrant estimation, Accession migrants

(a) England & Wales

	NINo Accession Migrants			TIM Accession Migrants	NINo Accession Migrants Av length of stay @ 5months ⁵	
	Registrations ¹	Dependants ²	Total	Long-term migrants ³	Short-term migrants	Long-term migrant equivalent
2004/05	106	16	122	53	69	29
2005/06	241	36	277	76	201	84
2006/07	274	41	315	92	223	93

All numbers are in 000s

(b) London

	NINo Accession Migrants			TIM Accession Migrants	NINo Accession Migrants Av length of stay @ 5months ⁵	
	Registrations ¹	Dependants ²	Total	Long-term migrants ⁴	Short-term migrants	Long-term migrant equivalent
2004/05	38	6	43	19	24	10
2005/06	64	10	73	20	53	22
2006/07	70	11	81	24	57	24

All numbers are in 000s

Notes:

¹ NINo registrations: 100% data extract from the National Insurance Recording System (NIRS).

² WRS records dependants at 15% of all Accession registrations (Home Office, 2008c)

³ TIM estimate of Accession migrants (ONS, 2008b)

⁴ Assumes London has the same distribution as the England and Wales TIM estimates

⁵ Average length of stay of 5 months for all migrants staying 3-12 months (ONS, 2008d)

TIM immigration statistics for 2006 suggest that 92 thousand of the total number of long-term migrants arriving in England and Wales were from Accession countries. Excluding these flows from the total NINo registrations gives an estimated number of short-term flows in 2006/07 of 223 thousand.

The ONS statistics from the IPS suggested that the average length of stay of short-term migrants was approximately five months. Applying this average duration of stay to the short-term flows produces an estimate of short-term migrant 'stock' of 93 thousand for England and Wales in 2006/07. ONS has used the terminology 'long-term migrant equivalent' (LTME) to describe this stock estimate: on average, there were 93 thousand LTME Accession migrants resident in England and Wales during 2006/07.

Similar statistics have been estimated for London, although the TIM estimate of long-term Accession migrants is based on the England Wales proportion, in the absence of any more geographically disaggregate information. In 2006/07, a total of 57 thousand short-term flows from Accession countries were estimated for London. This equates to a LTME of 24

thousand, assuming a five-month average duration of stay. A summary of the estimates for 2006/07 is provided in Figure 11.

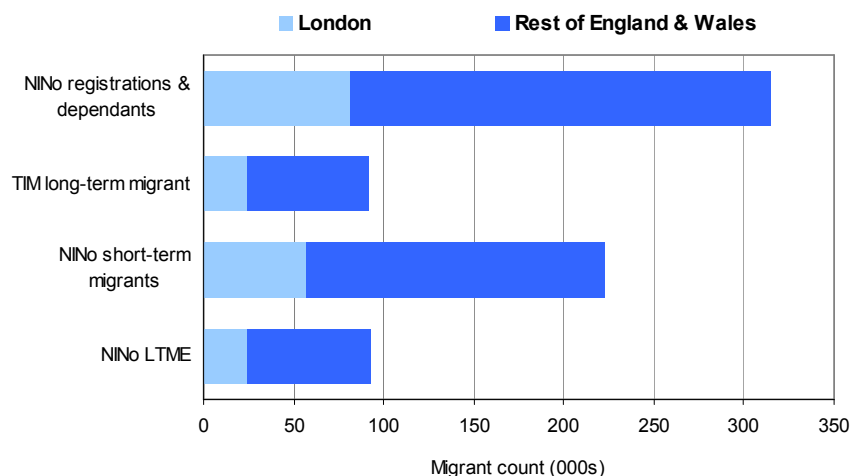


Figure 11: Accession migrants: short-term estimates, London and England & Wales, 2006/7

Once again the methodology used for generating these estimates of short-term migrants is not perfect and there are a number of issues to note. Time-periods present a particular challenge, aligning the period of data capture for each source. In addition, students from Accession countries who do not register for a NINo are excluded from the short-term estimates. Finally, the absence of more disaggregate TIM statistics on the citizenship of migrants makes the estimation of short-term flows and stock at a local authority district level more problematic. However, in the absence of definitive statistics on international migration, these illustrations demonstrate how a combination of sources can derive additional intelligence that is not available when using each data source in isolation.

Can alternative sources help to estimate the changing impact of migration by ethnic group?

The analyses presented above highlight some of the difficulties of accurately measuring international migration at a local level but demonstrate that a combination of sources can serve to highlight inconsistencies in existing estimates whilst not necessarily providing a more accurate alternative. The estimation of migration by ethnic group is even more problematic with only the 2001 Census capturing an ethnic dimension in its migration statistics.

An additional facet of this research project has sought to use evidence from the DWP's NINo registration statistics to derive alternative ethnic profiles for immigration to each local authority. This has been done by applying an ethnic group to each NINo registration based upon the country of origin of the registrant. A commissioned Census table (reference: C0880) has provided a link between ethnic group (16 main groups) and country of origin. Combining the two sources has produced an aggregation of NINo registrations by ethnic group for each local authority (Figure 12).

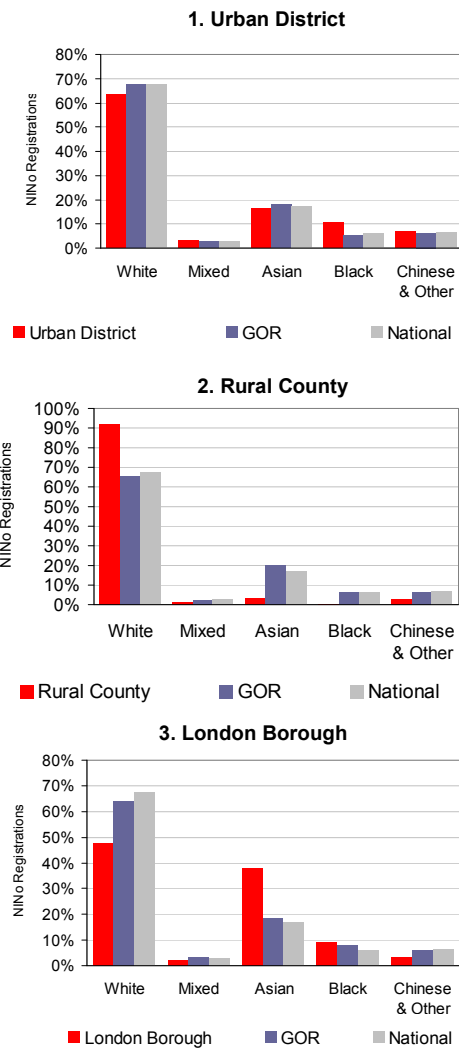


Figure 12: Example ethnic profiles of NINO registrations for selected local authority areas 2006/07

There are a number of issues associated with the more general application of these NINO ethnic profiles and their comparability with equivalent census statistics:

- Ethnicity is typically a ‘self-reported’ classification. In this analysis ethnicity has been assigned based upon historical evidence from previous immigration flows by country-of-origin.
- NINO statistics provide migrant worker registrations and not a count of all immigration flows. They will exclude students who do not register for work. The vast majority of Accession migrants will be classified in the ‘white’ ethnic group.
- NINO statistics do not take account of ‘White-British’ migrants who do not require a NINO registration.
- NINO registrations are associated with migrants whose length of stay is indeterminate.

However, the derived ethnic profile provide a basis for further research into the comparison with census profiles and will be used to inform the estimation of updated ethnic migration profiles for local areas that will underpin the new ethnic population projection methodology.

Future development

This paper has reported on research activity which is part of the ESRC Project ‘What happens when international migrants settle’. The creation of the NMD has provided a focus for the analysis of international migration at a sub-national level, highlighting the issues and difficulties associated with the derivation of accurate estimates of immigration and emigration. Further research is required to establish the most appropriate methodology for producing migration flows by ethnic group for each local authority. This will be the focus in the second year of this two-year research project.

Although conceptual differences exist between alternative data sources, the analysis presented here suggests that the GP registration data, in particular, could provide additional intelligence to the process of migration and population estimation. Further research into the differences that exist across all local authorities is necessary to establish how the allocation of TIM immigration estimates to local areas would be affected by more direct use of the GP registration data.

The NMD will be subject to regular update, integrating new statistics as they are published. There is also scope to extend its content through the integration of data from the National Pupil Dataset, Work Permit Statistics and associated information from the new Points Based System. In addition, the DWP’s NIRS2 labour market database, in combination with linked data from HMRC, is an untapped resource on migration statistics that could potentially provide new intelligence on duration of stay in the UK using information on NI contributions and receipt of benefits.

Given the large volume of research and analysis that has been completed on international migration since 2004, the NMD potentially provides a convenient source of intelligence to a wide range of organisations which continue to rely on ‘snapshot’ surveys and studies to understand a migration process which is subject to rapid change. In 2008, the economic outlook for the UK remains unclear and there is evidence that the peak inflow of migrants from Accession states has been reached. Economic development in Central and Eastern Europe and the relaxation of barriers to movement in Germany and France, could significantly change the dynamics of European labour migration. The requirement for more accurate and timely statistics on local populations has never been greater. The NMD provides a simple but effective mechanism for delivering a consistent picture on international migration based on a range of statistical evidence.

Glossary

A8	Accession 8 countries: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia
APS	Annual Population Survey
DCSF	Department for Children, Schools and Family
DWP	Department of Works and Pensions
EEA	European Economic Area
EFS	Expenditure and Food Survey
ESRC	Economic and Social Research Council
EU	European Union
GHS	General Household Survey
GOR	Government Office Region
GP	General Practitioner
HESA	Higher Education Statistical Authority
HMRC	Her Majesty's Revenue and Customs
HO	Home Office
IFD	Information Directorate
IHS	Integrated Household Survey
IPS	International Passenger Survey
LADUA	Local Authority District / Unitary Authority
LEA	Local Education Authority
LFS	Labour Force Survey
LTME	Long-term migrant equivalent
MYE	Mid Year Estimates
NINo	National Insurance Number
NIRS	National Insurance Recording System
NMD	New Migrant Databank
NPD	National Pupil Dataset
NSOS	National Statistics Omnibus Survey
ONS	Office of National Statistics
PRDS	Patient Registration Data System
TIM	Total International Migration
UK	United Kingdom
WRS	Workers Registration Scheme

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