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**Chair of the UK Statistics Authority, Sir Andrew Dilnot CBE**

Mark Harper MP  
Minister of State for Immigration  
Home Office  
2 Marsham Street  
LONDON  
SW1P 4DF

25 June 2013

Dear Mr Harper

**REVIEW OF THE ROBUSTNESS OF THE INTERNATIONAL PASSENGER SURVEY**

I am pleased to enclose a short report by the Statistics Authority reviewing the International Passenger Survey and the suitability of its use for producing official statistics. The IPS is based on interviews with members of the travelling public at ports. Given the challenges inherent in this methodology, there are concerns about the robustness of the survey statistics in relation to the different purposes for which they are used; and about whether the strengths and limitations of the statistics are currently explained sufficiently clearly when they are published. This Review examines these points, the views of users and the steps being taken by ONS to address the limitations of the survey.

We conclude that the IPS statistics are, in broad terms, sufficient at the level of UK aggregates to meet a range of user needs. However, there is a consensus among users that the survey does not provide sufficient robustness to meet some important needs for more local migration data; for example, at the local authority level or for smaller areas.

We think users of these statistics need to understand more about the processes of survey estimation involved and the nature of the uncertainty associated with the statistics. Without this they may not be able to judge the relevance of trends and patterns in the statistics to the particular use they want to make of them. The onus here must fall on the statisticians to find ways to communicate the strengths and limitations of the statistics more fully.

In the absence of a national population register, the best chance of improving the measurement of migration rests with the improvement of the administrative data collected at ports – the information that travellers are required to provide as part of the border control arrangements. In particular, the Home Office's prospective e-Borders system has the potential to make a real difference to the estimation of migration but its implementation remains some years away and there is uncertainty about the range and quality of data it will produce.

We recommend that ONS should:

- continue the enhancements to the presentation and commentary accompanying the migration statistics;
- review and extend the supporting information about the quality of the IPS-based statistics, and
- make further improvements to the estimation of international migration statistics, such as a greater use of international migration data collected by other countries to understand better the patterns of migration to/from the UK.

We further recommend that the Home Office keep users better informed about the likely nature of its statistical outputs from the e-Borders system and the timescale for their release.

The report was produced for the Statistics Authority under the direction of Richard Alldritt, the Authority's Head of Assessment, and he will be drawing the conclusions to the attention of relevant government departments and external bodies.

I am copying this letter to Bernard Jenkin MP, Chair of the House of Commons Public Administration Select Committee; Keith Vaz MP, Chair of the House of Commons Home Affairs Committee; to Rt. Hon. Francis Maude MP, Minister for the Cabinet Office; and to Jil Matheson, the National Statistician.

Yours sincerely

A handwritten signature in black ink, appearing to read "Andrew Dilnot". The signature is written in a cursive style with a large initial 'A' and 'D'.

**Sir Andrew Dilnot CBE**

# Monitoring Review

Monitoring Review 4/13  
June 2013

## *The Robustness of the International Passenger Survey*

### Introduction

1. Results from the International Passenger Survey (IPS) are used, alongside other sources of data, in the production of several important sets of official statistics, including estimates of: international migration; population; the travel account of the balance of payments; and overseas travel and tourism.
2. The IPS is based on interviews with members of the travelling public at ports. Given the challenges inherent in this methodology, there are concerns about the robustness of the survey statistics in relation to the different purposes for which they are used; and about whether the strengths and limitations of the statistics are currently explained sufficiently clearly when they are published. This Review examines these points, the views of users and the steps being taken by ONS to address the limitations of the survey.

### Summary

3. On the basis of the evidence we have considered, it is clear that the IPS is currently an essential component in the measurement of migration into and out of the UK. Other countries mostly employ methodologies for measuring migration that are not based on sample surveys, but that is not an option in the UK at present. The available administrative data would need to be improved substantially before that can be pursued. However, the IPS has been improved in recent years and that is welcomed by users of the statistics.
4. A sample survey approach has inherent limitations for monitoring migration, not least because of the very small proportion of long-term international migrants among the public travelling to and from the UK. Of some 800,000 people interviewed by IPS staff at ports each year, under 5,000 are identified as migrants. Whilst this sample size does allow estimates of migration at the UK level to be made, these estimates are subject to relatively wide margins of uncertainty (any sample based estimate has some associated uncertainty). The sample estimates of course are also dependent on the accuracy of the information provided by those people interviewed. The UK, with no system of population registration, is one of only two EU countries<sup>1</sup> (Cyprus is the other<sup>2</sup>) to rely on interview surveys of samples of passengers. However, some analysts argue that the IPS provides a relatively rich source of information about migrants, in the sense that it is able to ask questions that go beyond those needed for border control purposes.

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<sup>1</sup> WP.3 'Producing migration data using household surveys and other sources', see link:  
<http://www.unecce.org/stats/documents/2010.04.migration.html>

<sup>2</sup> [http://tourmis2.modul.ac.at/material/etc/definitions\\_CY.pdf](http://tourmis2.modul.ac.at/material/etc/definitions_CY.pdf)

5. The estimation of emigration (including overseas students returning home and UK citizens moving to live abroad) is particularly problematic and contributes to substantial uncertainty in the net migration estimates for the UK and locally.
6. However, and bearing all the limitations in mind, we conclude that the IPS statistics are sufficiently robust to meet the needs of users of statistics at the UK level about overseas travel, visitor expenditure and international migration, although there is scope for further improvement. At the same time, there is consensus among users<sup>3</sup> that the survey does not provide sufficiently robust statistics to meet some important needs for migration data, for example, at a local authority level or in smaller areas.
7. We think users of these statistics need to understand more about the processes of survey estimation involved and the nature of the uncertainty associated with the statistics. Without this they may not be able to judge the relevance of trend and patterns in the statistics to the particular use they want to make of them. The onus here must fall on the statisticians to find ways to communicate the strengths and limitations of the statistics more fully.
8. In the absence of a national population register, the best chance of improving the measurement of migration rests with the improvement of the administrative data collected at ports – the information that travellers are required to provide as part of the border control arrangements. In particular, the Home Office's prospective e-Borders system has the potential to make a real difference to the estimation of migration but its implementation remains some years away and there is uncertainty about the range and quality of data it will produce.

## Findings and conclusions

9. Users have welcomed<sup>4</sup> various improvements to the IPS made by ONS but have highlighted the need for further work to:
  - address the limitations of the estimation of emigration;
  - strengthen the local area migration estimates, and
  - provide greater clarity over the degree of uncertainty in the estimates.
10. There is an evident need for greater clarity over the development of the e-Borders system by the Home Office, as well as for the integration of data from this source with the IPS. Users also highlighted<sup>5</sup> the need for improvements to be made by government departments to other administrative data systems, such as patient register information, higher education and school data, National Insurance number allocations, and tax and benefit data.
11. Recognising that there is ongoing work in these areas, it will be essential that such data sources are developed and optimised for use with the IPS in order to deliver further significant improvements to international migration statistics.

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<sup>3</sup> In written evidence to the Public Administration Select Committee:

<http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpublicadm/writev/migration/contents.htm>

<sup>4</sup> See footnote 1

<sup>5</sup> Analysis of responses to ONS consultation in 2010 on Improvements to Migration and Population Statistics:

<http://www.ons.gov.uk/ons/guide-method/method-quality/imps/msi-programme/communication/improvements-mid-2008/key-documents/index.html>

12. Systematic and comprehensive recording of migration would require Parliament and Government to put in place a framework of legislation and administration that is not presently in existence.
13. The Statistics Authority concludes that:
  - ONS should continue the enhancements to the presentation and commentary accompanying the migration statistics, providing a clear statement of the uncertainty around the estimates and supporting appropriate interpretation of trends (paragraph 24).
  - ONS should review and extend the supporting information about the quality of the IPS-based statistics, and provide a fuller and more coherent explanation of the strengths and limitations in relation to different uses of the data (para 25).
  - The Statistics Authority and National Statistician should encourage other government departments to extend the range and accessibility of information about the characteristics and circumstances of migrants living in the UK (para 26).
  - ONS should make further improvements to the estimation of international migration statistics, including:
    - a greater use of international migration data collected by other countries to understand better the patterns of migration to/from the UK (para 27).
    - an investigation of the feasibility of producing estimates that separate long-term migrants into those who might be regarded as 'non-permanent' (such as those planning to stay for less than five years) and 'permanent' migrants, in consultation with users (para 29).
    - the provision of regular updates for users on the development plans and their progress (para 27).
  - Home Office should keep users better informed about the likely nature of its statistical outputs from the e-Borders system and the timescale for their release (para 28).

## Background

14. The following sections begin with an outline of the nature of the survey and its uses, followed by a review of the strengths and limitations of the IPS-based statistics and the suitability of ONS's accompanying supporting information. Annex A describes the purposes of the IPS in relation to its use in the production of official statistics. Annex B provides further detail about the review of the supporting information. Annex C presents a review of international issues in the measurement of international migration. The full list of recommendations is given in Annex D.
15. IPS is a continuous survey carried out by ONS. It involves face to face interviews with a random sample of passengers as they enter or leave the UK by the principal air, sea and tunnel ports. All interviews are voluntary. Each year around 800,000 passengers are asked if they are migrating to or from the UK (i.e. intending to move for at least a year). Around one in ten passengers is contacted as they pass through the port; if the person is a migrant they are asked the migration questions. Around one in thirty passengers – every third

person screened for migration – is additionally asked the travel and tourism questions, resulting in between 250,000 and 300,000 interviews a year.

16. ONS achieves a sample of between 4,000 and 5,000 long-term migrants each year, which suggests that around one in 200 passengers is a migrant (according to the UN definition of intending to change their usual country of residence for at least a year). The small sample size places limits on the level of disaggregation by characteristics of these migrants or the geographic destination of immigrants. ONS combines the IPS estimates with data from other sources to provide more complete estimates that it calls Long-Term International Migration (LTIM). Adjustments are also made for changes in the migration intention of passengers. The IPS component accounts for around 90 per cent of LTIM.
17. As a sample survey, IPS is subject to some uncertainty – both sampling error and non-sampling error. ONS provides measures of the accuracy of the survey estimates that indicate the scale of variability due to chance (sampling error). But IPS estimates have the potential to be biased due to non-sampling issues such as non-response, for example, if passengers who choose not to participate in the survey have different characteristics to those who do respond, or if passengers deliberately conceal their intention to migrate, or as a result of the practical issues associated with ‘sample selection’ and interviewing on a port environment.
18. ONS has made improvements to the sample design and data processing of the IPS with a view to measuring migration better, following a Port Survey Review<sup>6</sup> in 2006. It undertook further improvements as part of the Migration Statistics Improvement Programme<sup>7</sup> which closed in March 2012.
19. Table 1 summarises the main strengths and limitations of the IPS in relation to its use, based on a review of ONS’s published quality information and users’ feedback. The Authority’s M&A Team contacted a range of users who had been identified through the Assessments<sup>8</sup> of these statistics in relation to the *Code of Practice for Official Statistics*<sup>9</sup>. The Team also sought user views through the Authority’s website<sup>10</sup>, StatsUserNet<sup>11</sup> and the Knowledge Hub<sup>12</sup>, and reviewed the written evidence provided to the Public Administration Committee (PASC) migration study<sup>13</sup>. The following section highlights the main issues identified by the Team.

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<sup>6</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/updates-and-reports/historical/2008/index.html>

<sup>7</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/index.html>

<sup>8</sup> See reports 8, 45, 47, 87, 103: <http://www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/index.html>

<sup>9</sup> <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

<sup>10</sup> <http://www.statisticsauthority.gov.uk/assessment/monitoring/monitoring-reviews/review-outlines/index.html>

<sup>11</sup> <http://www.statsusernet.org.uk/Home>

<sup>12</sup> <https://knowledgehub.local.gov.uk/>

<sup>13</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/contents.htm>

**Table 1: Strengths and limitations of the IPS in relation to the uses of the data**

Strength	Limitation
<p>Optimised design of survey for migration:</p> <ul style="list-style-type: none"> <li>- covers 95% of passengers entering and leaving the UK</li> <li>- with a primary sampling interval (around 1:10) to identify migrants from the travelling population and secondary sampling interval (around 1:30) for conducting travel and tourism interviews</li> <li>- stratified to ensure representative by mode of travel (air, sea or tunnel), port/route and time of day</li> <li>- screening interviews of around 800,000 passengers to identify around 5,000 migrants each year</li> <li>- considerable rise in outflow migrant contacts (from 789 in 2006 to 2,362 in 2007; with 1,824 in 2011) due to increase in interview shifts for emigration</li> </ul>	<p>Does not capture all migration moves or types (asylum seekers, visitor/migrant switchers and moves over the land border with Ireland)</p> <p>5% of travellers not included in sampling</p> <p>Long-term migrants account for a small proportion of all travellers: have to screen a very large number of passengers to identify a sufficient number of migrants</p> <p>Measures intentions not actual moves</p> <p>Sample size too small (immigrant sample around 3,000 and emigrant sample around 2,000) for reliable measure of some aspects of migration:</p> <ul style="list-style-type: none"> <li>- to be confident about interpretation of quarterly changes and longer term trends</li> </ul>
<p>Sample size for travel &amp; tourism is relatively large: target = 250,000; achieved = 300,000 in 2011 survey</p>	<ul style="list-style-type: none"> <li>- to enable a robust estimate of international migration flow at local authority level</li> </ul>
<p>Achieves relatively high level of response (79%) compared with other sample surveys. Only 2% refuse to participate</p>	<ul style="list-style-type: none"> <li>- to produce single year estimates for most individual citizenships or countries of last/next residence</li> </ul>
<p>Uses UN definition of long term migrant so accords with international standards</p>	<p>Different reasons recorded for entering and leaving, leading to problems in estimating net migration by reason eg for foreign students who may arrive as students but leave to find work</p>
<p>Captures information about migrants arriving and leaving the UK:</p> <ul style="list-style-type: none"> <li>- currently is the only data source available to estimate emigration</li> <li>- asks people when leaving who stayed longer than one month what their intended length of stay was on arrival (used to estimate changes in intention)</li> <li>- timely measure of long-term migrants (because based on intentions, on arrival)</li> </ul>	<p>19% of contacts do not complete the questionnaire as they pass through ports at peak times. At risk of different types of non-sampling error such as:</p> <ul style="list-style-type: none"> <li>- non-response bias: <ul style="list-style-type: none"> <li>- if passengers not responding have different characteristics to those that do respond eg do not speak English, or are busy eg on a mobile phone</li> <li>- high volume of passengers can mean that the numbers of interviewers are insufficient to cope with all of the sampled passengers</li> </ul> </li> </ul>
<p>Richer information than available through administrative sources</p>	<ul style="list-style-type: none"> <li>- measurement error:</li> </ul>
<p>Collects information on country of origin/destination and country of birth: enables further analysis at a finer level when using the underlying data set</p>	<ul style="list-style-type: none"> <li>- incorrect information provided by passengers eg deliberately conceal migration intentions; destination(s) of travellers may be inaccurate as details of multi-country visits are not collected</li> </ul>
<p>Extended questionnaire: to record completed journey information and original reason for stay for emigrants - to better measure visitor/migrant switchers and enable identification of emigrating students and other migrant types</p>	<ul style="list-style-type: none"> <li>- if there is a discrepancy between those intending to migrate but subsequently stay, and those not intending to migrate but who stay for a year or more</li> </ul>
<p>Source of travel expenditure information: only source available and able to provide monthly supply to support travel accounts needs</p>	<p>Limited range of information collected about migrants: unmet user interest in language skills, ethnicity, religion, and educational qualifications</p>

20. Users told us that overall they were satisfied that the IPS produces sufficiently robust statistics on overseas travel and tourism and for the travel account in the balance of payments. Several users identified that they would like to receive more timely and detailed information on travel and tourism. Users of migration and population statistics, such as the British Society of Population Studies<sup>14</sup> (BSPS), said that they welcomed ONS's 'responsive' engagement and felt that it had made some substantial improvements to these statistics. However they highlighted some significant weaknesses in the IPS that impact upon the quality and precision of the statistics, particularly for emigration and local area estimates of international migration. The issues identified in relation to the quality of the migration and population statistics are discussed below.
21. Changes in the IPS design and to ONS's methods for producing migration estimates are seen by users as having substantially improved the migration (and population) statistics. The changes included:
- An increase in sample size and port coverage.
  - The development of a new survey design, with a main sample focused on collecting migration data and a sub-sample for expenditure/tourism data.
  - The introduction of questions to improve estimates of migrants and visitors who change their intention to stay, and
  - The use of administrative data sources to estimate immigration at a local level (for inclusion in the mid-year population estimates).
22. A further significant development has been the recent inclusion of questions to identify emigrants' original reason for staying and so enable the better measurement of emigration of particular groups, such as foreign students. This change was made in response to feedback from users such as Home Office, Migration Watch and Universities UK. In its written evidence<sup>15</sup> to the PASC migration study, Universities UK highlighted the '*exaggeration of the contribution that students make to overall net migration*' due to the IPS recording greater numbers of students migrating into the UK, compared with those it records as leaving the country having completed their studies. The questionnaire changes to the survey are expected to lead to improvements in the breakdown of emigration statistics to be published from 2013 onwards.
23. Despite these improvements, the inherent nature of the IPS means that it cannot represent all migration into or from the UK – ONS combines IPS data with data from other sources including the Home Office's data on asylum seekers and the Northern Ireland Statistics and Research Agency's data on Northern Ireland migration flows. The IPS sample size is too small to enable the production of reliable international migration estimates at a local authority level, and cannot realistically be made sufficiently large to achieve robust local estimates. The sample estimates can also lack precision even at the UK level, such as, for some countries of origin/destination.
24. ONS highlights the uncertainty associated with quarterly and longer term trends in *Migration Statistical Quarterly Report (MSQR)*. Users have welcomed the combined presentation of official migration statistics produced by ONS, Home Office and DWP in *MSQR*, and the

<sup>14</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m02.htm>

<sup>15</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m11.htm>

recent introduction of confidence intervals. However, there remains some confusion over the appropriate interpretation of the trends in international migration. One user told us that it is: *'...still hard to be confident about the meaning of quarterly changes and longer-term trends'*. The joint RSS/SUF response<sup>16</sup> to the PASC migration study suggested that the headlines in *MSQR* do not convey the degree of uncertainty in the long-term international migration estimates. The Statistics Authority considers that **ONS should continue the enhancements to the presentation and commentary accompanying the migration statistics, providing a clear statement of the uncertainty around the estimates and supporting appropriate interpretation of the trends.** (See paragraphs: B.10, B.20, B.28.)

25. In their written evidence to PASC, BSPS<sup>17</sup> and the Migration Observatory<sup>18</sup> emphasised the difficulties encountered by non-expert users in understanding and using ONS's migration information. While ONS provides a substantial amount of accompanying information to support the use of its migration statistics and about the IPS itself, improvements could be made by ONS to this supporting information. The Statistics Authority considers that **ONS should review and extend the supporting information about the quality of the IPS-based statistics, and provide a fuller and more coherent explanation of the strengths and limitations in relation to different uses of the data.** (Paras: B.3, B.4, B.6, B.7, B.10, B.15, B.25.)
26. ONS produces IPS-based provisional estimates so that there is a more timely release of statistics about recent patterns of international migration than would otherwise be possible. It also uses the IPS-based estimates to publish cross tabulations for different characteristics of migrants. These are not possible for the LTIM estimates since the other data sources that are combined with the IPS data do not have the equivalent information. Consequently the IPS remains essential for collecting this detailed information. It is also essential because it is the only source<sup>19</sup> to capture information about emigrants as well as immigrants. Without further investment in alternative administrative sources, this will remain the case. Eurostat<sup>20</sup> is encouraging member states to strengthen and widen ('mainstream') their collection of information about migrants in administrative data sources and surveys. **The Statistics Authority and National Statistician should encourage other government departments to extend the range and accessibility of information about the characteristics and circumstances of migrants living in the UK.** (Para C.7.)
27. The RSS/SUF response<sup>21</sup> to the PASC migration study suggested that emigration is the weakest element of the international migration official statistics and that it is particularly misleading at a local level. The M&A team has been told by some expert users that a step change in improving the official international migration statistics will only be achieved by adopting a population register. However, countries with such registers also experience difficulties in measuring migration, particularly emigration. Some users, including the Royal Geographical Society<sup>22</sup>, have queried the potential of further developing existing

<sup>16</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m09.htm>

<sup>17</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m02.htm>

<sup>18</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m06.htm>

<sup>19</sup> The Migration Observatory highlighted that the Labour Force Survey does not collect information about the residence or immigration statuses of migrants (eg whether temporary or permanent; whether staying for work, study or family reasons or if asylum seekers) or their type of visa.

<sup>20</sup> <http://isi2011.congressplanner.eu/pdfs/650162.pdf>

<sup>21</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m09.htm>

<sup>22</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m01.htm>

administrative sources (such as the NHS GP patient register<sup>23</sup>) to better monitor emigration, and requiring the compulsory re-registration after moving. There is scope in the longer term for ONS to use data from e-Borders (see para 28) to help improve the estimation of emigration; however, the Team was also told that additional benefit could be achieved through ONS making greater use of data collected by other countries and collaboration with other national statistical institutes. The Statistics Authority considers that **ONS might make further improvements to the estimation of international migration statistics, including a greater use of international migration data collected by other countries to better understand the patterns of migration to/from the UK.** (Para C.6.)

**ONS might also provide regular updates to users on its development plans and progress.** (Para B.16.)

28. Users are keen to see further improvements in the measurement of migration in the longer term through the use of data from e-Borders. This system is also seen by ONS as important in providing the potential for further significant improvement to the statistics. ONS said<sup>24</sup> that further work is required to determine the feasibility of producing migrant counts from the e-Borders system but, even if feasible, these would not be available before 2018. ONS and the Home Office hold an annual user meeting, to discuss aspects of migration statistics and recent developments. At the last meeting<sup>25</sup> (in December 2012) the Home Office described the nature of the e-Borders system and ONS outlined the potential ways that it could be used in the production of migration statistics. The Home Office, however, has not yet published details about its development plans for producing statistics from the e-Borders system, to make clear the scope and nature of the anticipated statistics and future dissemination plans. The Statistics Authority considers that **Home Office should keep users informed about the likely nature of its statistical outputs from the e-Borders system and the timescale for their release.** (Para B.16.)
29. The Migration Observatory<sup>26</sup> identified that there may be a ‘definitional divergence’ between public understanding and common language of an ‘immigrant’ compared with the definition used by government and in official statistics. Currently the IPS is used to identify migrants according to the UN definitions of long-term (over one year) and short-term (between three months and one year) migrants. Some users, including Universities UK<sup>27</sup>, would like ONS to disaggregate the long-term immigration estimates, to separately identify long-term settlers and those staying to work or study for a temporary period of more than one year (but not intending to stay permanently). ONS currently publishes a data table of intended length of stay<sup>28</sup> giving estimates of immigration, emigration and net migration for the UK and for England and Wales. It gives estimates of the flow of migrants staying for 1-2 years, 3-4 years and 5 or more years, as well as the remaining group unsure of their length of stay, but it does not summarise the trends in these statistics in *MSQR*. It is helpful that ONS and Home Office have brought together the release of their respective migration statistics

<sup>23</sup> <http://www.adls.ac.uk/department-of-health/gp-patient-register-dataset/?detail>

<sup>24</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/latest-news/delivering-statistical-benefits-from-e-borders/index.html>

<sup>25</sup> <https://www.rss.org.uk/site/cms/contentEventViewEvent.asp?chapter=9&e=1419>

<sup>26</sup> <http://migrationobservatory.ox.ac.uk/reports/top-ten-problems-evidence-base-public-debate-and-policy-making-immigration-uk>

<sup>27</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m11.htm>

<sup>28</sup> Table 2.09: LTIM estimates by intended length of stay:

<http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=International+Migration#tab-data-tables>

through *MSQR*, but there may be scope for achieving greater coherence in the detail and timing of the statistics (for example, using the same country/world area breakdown). It would also be helpful to draw on the Home Office findings in the *Migrant Journey* research reports<sup>29</sup> in contextualising the statistics on length of stay. The Statistics Authority considers that **ONS should investigate the feasibility of producing estimates that separate long-term migrants into those who might be regarded as ‘non-permanent’ (such as those planning to stay for less than five years) and ‘permanent’ migrants, in consultation with users.** (Para B.16.)

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<sup>29</sup> <https://www.gov.uk/government/publications/migrant-journey-third-report>

## Annex A:

### The use of IPS data for the production of official statistics

A.1. ONS uses data from the IPS to:

- derive statistics on overseas travel and tourism,
- measure expenditure associated with international visitors while in the UK and by UK residents when travelling abroad,
- estimate international immigration, emigration and net migration, and
- as a key component of population change to inform the mid-year population estimates both nationally and at local authority level<sup>30</sup>.

#### *Overseas travel and tourism*

A.2. *Travel Trends*<sup>31</sup>, produced by ONS, provides trends in overseas travel and tourism based only on IPS interviews. ONS also publishes monthly<sup>32</sup> and quarterly<sup>33</sup> overseas travel and tourism releases and *Travelpac*<sup>34</sup> which is a release of datasets. These outputs were assessed by the Authority in relation to the *Code of Practice for Official Statistics*<sup>35</sup> in Assessment Report 47<sup>36</sup>. Recommendations in the report included to extend engagement beyond the steering group, publish methods information for *Travelpac*, improve commentary and publish quality indicators. The report comments on the £400,000 saving in fieldwork after the Port Survey review in 2006.

A.3. *Travel Trends* and *Overseas Travel and Tourism* are mainly used for to inform tourism policy and strategy; for example, by VisitBritain and VisitEngland. Estimates of visits to and from the UK also form an important element of the qualitative assessment by the media and other commentators of overall economic health of the UK.

#### *Balance of payments*

A.4. The Travel component of *Balance of Payments*<sup>37</sup> (*BoP*) covers trade in goods and services provided to UK residents during trips of less than one year abroad and provided to non-residents during similar trips in the UK. It contains business and personal travel components. IPS asks passengers at the end of their journey how much they spent in the UK or while abroad. This information feeds into the statistics presented in *BoP* on travel imports and exports.

A.5. These outputs were assessed and the outcome reported in Assessment Report 45<sup>38</sup>. The recommendations included to document the needs of users, engage more widely, improve accessibility on the ONS website, include commentary in the Monthly Review of External Trade and publish analysis of UK Trade in Goods by industry.

<sup>30</sup> IPS-based national estimates are disaggregated using administrative data sources to give LA level immigration estimates: <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/improvements-to-local-authority-immigration-estimates/index.html>

<sup>31</sup> <http://www.ons.gov.uk/ons/rel/ott/travel-trends/index.html>

<sup>32</sup> <http://www.ons.gov.uk/ons/rel/ott/overseas-travel-and-tourism---monthly-release/index.html>

<sup>33</sup> <http://www.ons.gov.uk/ons/rel/ott/overseas-travel-and-tourism---quarterly-release/index.html>

<sup>34</sup> <http://www.ons.gov.uk/ons/rel/ott/travelpac/index.html>

<sup>35</sup> <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

<sup>36</sup> <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/index.html>

<sup>37</sup> <http://www.ons.gov.uk/ons/rel/bop/balance-of-payments/index.html>

<sup>38</sup> <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/index.html>

- A.6. The balance of payments estimates are used by the Bank of England and the Treasury to inform decisions on monetary and fiscal policy. The Department for Business, Innovation and Skills also uses *BoP* to establish the importance of trade with particular countries and the importance of trade in particular products or services. Eurostat uses UK figures to compile aggregate EU accounts and the International Monetary Fund collates *BoP* data as part of its role in checking countries' economic stability and sustainability.
- A.7. ONS' user engagement survey for *BoP* in 2010<sup>39</sup> showed that the trade in services data table within the release was one of the most used by those who responded to the survey. Most users who replied were either an analyst or a researcher, and responses were from a mixture of public and private sector companies.

### *International migration*

- A.8. ONS produces international migration estimates using the IPS, together with data on Northern Ireland migration flows, asylum seekers, and information about visitor and migrant switchers – those passengers who change their intention to stay. The suite of migration outputs published by ONS<sup>40</sup> was assessed in July 2009 and the outcome reported in Assessment Report 8<sup>41</sup>. The recommendations included to: publish information about the quality assurance checks carried out on the data, and the quality issues associated with the statistics; to develop and publish a work plan for better meeting EU requirements; and to publish information about development work underway in order to better meet users' needs.
- A.9. The Authority also carried out a review of Migration Statistics in July 2009 and published its findings in *Migration Statistics: the Way Ahead?*<sup>42</sup> The recommendations focused on the need to provide better information to users about quality assurance procedures, to make clear how e-Borders could be used for estimates, to report progress on improvements underway and to make clear how migration statistics produced by different departments relate to one another.
- A.10. Following these reports, ONS now publishes *Migration Statistics Quarterly Report*<sup>43</sup> which brings together data collected by ONS, DWP, Home Office, National Records of Scotland and Northern Ireland Statistics and Research Agency. The aim of this was to bring together into one report statistics produced using different data sources which all provide some information about migration. The report presents provisional and final long term international migration estimates, and information about the number of visa applications and national insurance number allocations. ONS is also developing plausibility ranges around population estimates, quality indicators and measures of uncertainty in the mid-year population estimates (MYE).
- A.11. The Government has set a target to reduce net migration to 'tens of thousands'<sup>44</sup>. It uses ONS statistics based on IPS estimates to monitor net migration. Migration estimates are one of the main components of ONS' mid-year population estimates.

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<sup>39</sup> <http://www.ons.gov.uk/ons/about-ons/user-engagement/consultations-and-surveys/surveys/balance-of-payments-statistical-bulletin-user-engagement-survey-responses.pdf>

<sup>40</sup> <http://www.ons.gov.uk/ons/rel/migration1/long-term-international-migration/index.html>

<sup>41</sup> <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/index.html>

<sup>42</sup> <http://www.statisticsauthority.gov.uk/assessment/monitoring/monitoring-reports/index.html>

<sup>43</sup> <http://www.ons.gov.uk/ons/rel/migration1/migration-statistics-quarterly-report/index.html>

<sup>44</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmbis/425/42505.htm>

### *Population statistics*

- A.12. ONS produces estimates<sup>45</sup> of the population in England and Wales based on information from the latest Census and information about the components of population change: births, deaths and migration. The main release is *Population Estimates (MYE)* which relate to the population on 30 June each year. These national estimates are also the basis of estimates produced by ONS for more detailed sub-groups, such as the very elderly and small areas. It also publishes national and sub-national population projections, using past trends in fertility, mortality and net migration.
- A.13. The Authority assessed the suite of population statistics produced by ONS in April 2011 in Assessment Report 103<sup>46</sup>. The recommendations included to: publish more information about methods and quality for some of the population releases; to explain the extent to which some statistics are comparable with those produced for other UK countries; improve or introduce commentary to some releases.
- A.14. Central and local government use population estimates for planning and monitoring service delivery and resource allocation, and informing the formation of policies. The estimates are used for weighting on social surveys and as denominators in calculating the indices of multiple deprivation<sup>47</sup>. Projections are used for long-term fiscal projections by HM Treasury, developing policies within government, and business planning by insurance firms.

### *Devolved administrations (DAs)*

- A.15. The DAs each publish annual statistical releases giving the estimates of mid-year population and international migration for their respective countries. ONS provides National Records of Scotland<sup>48</sup> and the Welsh Government<sup>49</sup> with data for Scotland and for Wales, respectively, from its preparation of the UK-level MYE and international migration estimates.
- A.16. Since the IPS does not sample passengers who cross the land border between Northern Ireland and the Republic of Ireland, the Northern Ireland Statistics and Research Agency<sup>50</sup> (NISRA) produces estimates for long-term international migration using family doctor registration data<sup>51</sup>. The Central Statistics Office Ireland Quarterly National Household Survey provides the number of people moving from Northern Ireland to the Republic of Ireland. NISRA uses data from this survey, together with de-registrations with family doctors in Northern Ireland, to estimate emigration from Northern Ireland to all countries outside the UK. It provides ONS with migration data for Northern Ireland for use in the LTIM estimates.
- A.17. The inflow data for the UK countries and English regions are adjusted to match the area migrant totals from the Labour Force Survey, since the IPS sample size is too small to allow sufficiently robust estimates from the survey. The outflow totals for Scotland, Wales and the English regions, however, are based directly on the IPS as there are no alternative data sources available to improve the emigration estimates.

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<sup>45</sup> <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-england-and-wales/index.html>

<sup>46</sup> <http://www.statisticsauthority.gov.uk/assessment/assessment-reports/index.html>

<sup>47</sup> <http://www.ons.gov.uk/ons/rel/hsq/health-statistics-quarterly/no--53--spring-2012/uk-indices-of-multiple-deprivation.html#tab-Introduction--Background>

<sup>48</sup> <http://www.gro-scotland.gov.uk/statistics/theme/population/index.html>

<sup>49</sup> <http://wales.gov.uk/topics/statistics/headlines/population2013/migration-statistics-2011/?lang=en>

<sup>50</sup> <http://www.nisra.gov.uk/demography/default.asp18.htm>

<sup>51</sup> Long-term International Migration methodology document 1991 onwards (p11):

<http://www.ons.gov.uk/ons/rel/migration1/migration-statistics-quarterly-report/november-2012/index.html>

## Annex B:

### Information about the quality of the IPS in relation to use

B.1. This annex presents a review of the quality reporting associated with the ONS statistics published in:

- *Overseas Travel and Tourism* statistics<sup>52</sup> (OTT)
- *Balance of Payments*<sup>53</sup> quarterly report (BoP) (in relation to the travel accounts)
- *Migration Statistics Quarterly Report*<sup>54</sup> (MSQR) (in relation to the Long-term International Migration estimates)<sup>55</sup>
- Mid-year population estimates<sup>56</sup>

The published material was considered in relation to Principles 4 and 8 of the *Code of Practice of Official Statistics*<sup>57</sup>.

### Nature of quality reporting

#### Travel and tourism

B.2. ONS provides information about the quality of the IPS and its related statistics within a wide range of supporting documents. The main explanation of the survey is given in the Guidance and Methodology section of the ONS website<sup>58</sup> and in detailed appendices of the statistical release *Travel Trends* (TT). TT includes background information about the survey such as the sample design, the overall response rate, sample size, and the weighting strategy. However TT does not highlight the additional information about the IPS that is available in the Guidance and Methodology section of ONS's website.

B.3. ONS has published a series of summaries about the quality of its statistics, in relation to the European Statistical Systems Quality Framework, in its Quality and Method Information (QMI) papers. ONS has published *IPS QMI*<sup>59</sup> to specifically provide information about the quality of the survey. However, this information paper is not highlighted in TT nor are links provided to it in the monthly<sup>60</sup> and quarterly<sup>61</sup> releases of overseas travel and tourism statistics. Since TT for 2011 was published ONS has published an additional summary of supporting information about the survey in *IPS Overseas Travel and Tourism estimates: Quality information*<sup>62</sup> (IPS OTT QI), designed to be an accessible introduction into the main aspects of the survey quality for a range of users. *Conclusion: it would be helpful if ONS was to provide links in TT to IPS QMI and to the IPS methodology web pages.*

<sup>52</sup> <http://www.ons.gov.uk/ons/rel/ott/travel-trends/index.html>

<sup>53</sup> <http://www.ons.gov.uk/ons/rel/bop/balance-of-payments/index.html>

<sup>54</sup> <http://www.ons.gov.uk/ons/rel/migration1/migration-statistics-quarterly-report/index.html>

<sup>55</sup> ONS publishes short term migration estimates which are currently being assessed for compliance with the Code of Practice for Official Statistics by the Statistics Authority. The Assessment Report will present any issues identified with quality reporting for these statistics.

<sup>56</sup> <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-england-and-wales/index.html>

<sup>57</sup> <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

<sup>58</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/travel-and-transport-methodology/international-passenger-survey/index.html>

<sup>59</sup> See downloadable file: *Quality and Method Information for the IPS* in the link in footnote 2

<sup>60</sup> <http://www.ons.gov.uk/ons/rel/ott/overseas-travel-and-tourism---monthly-release/index.html>

<sup>61</sup> <http://www.ons.gov.uk/ons/rel/ott/overseas-travel-and-tourism---quarterly-release/index.html>

<sup>62</sup> See downloadable file: *IPS Quality Information in relation to OTT estimates* in the link in footnote 2

## Balance of Payments (BoP) – travel account

B.4. ONS's *Balance of Payments* quarterly statistical release is accompanied by an introduction to the UK system of BoP<sup>63</sup>, *BoP QMI*<sup>64</sup> and a detailed method guidance document, *Methodological Notes (MN)*<sup>65</sup>. The travel account is a very small part of the overall National Accounts and is featured in the section on trade in goods and services statistics. *BoP QMI* and *MN* highlight that the IPS is the source of data about travellers' expenditure, with the main explanation about the survey given in the Travel section (p18) of *MN*. This provides definitional descriptions about the data collected and classification used but does not provide information about the quality of the survey data and any issues that may impact the use of IPS data for deriving the travel account component of the balance of payments. *Conclusion: it would be helpful if ONS was to provide information about the quality of the IPS in relation to use for producing BoP statistics and signposts users to further information such as in IPS QMI.*

## Migration

B.5. ONS provides a substantial number of quality documents alongside its migration and population statistical releases. *Migration Statistics Quarterly Release (MSQR)*, the overarching bulletin for the release of ONS and Home Office migration statistics, is accompanied<sup>66</sup> by:

- *Long-term International Migration QMI (LTIM QMI)*
- *Background Notes to Data (LTIM BN)*
- *FAQs – Long-term International Migration (LTIM FAQ)*
- *LTIM methodology*
- *IPS: Quality Information in relation to Migration Flows (IPS QI for Migration)*
- The International Migration Timeline
- *MSQR - User Information*<sup>67</sup>

B.6. *MSQR* and the supporting documents (with the exception of the new *IPS QI for Migration*) do not include some key information about the quality of the survey, including the sample size and response rates; instead, ONS signposts users to the *TT* appendices and to *IPS QMI*. *Conclusion: it would be helpful if ONS extends the main migration statistics supporting information to provide the key measures of IPS quality.*

B.7. In November 2012 ONS published *IPS QI for Migration* which is aimed at providing users with an overview of the main supporting information about the survey, to support their use of ONS's international migration statistics. This document has a clear explanation of the quality issues, including response rates, coverage, non-sampling errors and highlights some possible sources of bias. It also has useful charts; one shows the impact of changing the survey design to include more ports and more sampling on the numbers of inflow and outflow contacts. The main migration statistics quality documents do not provide links or

<sup>63</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/balance-of-payments/index.html>

<sup>64</sup> Summary quality report: <http://www.ons.gov.uk/ons/rel/bop/balance-of-payments/3rd-quarter-2012/stb-bop-q3-2012.html#tab-background-notes>

<sup>65</sup> See link in footnote 12

<sup>66</sup> *MSQR* release web page: <http://www.ons.gov.uk/ons/rel/migration1/migration-statistics-quarterly-report/november-2012/index.html>

<sup>67</sup> Available through links in the *MSQR* and *LTIM QMI*: <http://www.ons.gov.uk/ons/rel/migration1/migration-statistics-quarterly-report/november-2012/msqr.html#tab-8--List-of-products>

highlight this summary paper. *Conclusion: it would be helpful if ONS was to add signposting to IPS QI for Migration in the international migration quality documents.*

- B.8. *IPS QI for OTT* is modelled on this migration document and indeed contains a lot of the same information. These documents are helpful in setting out the basics of the quality of the IPS. However ONS provides a substantial number of different quality documents to accompany the migration statistics. While these are listed in *MSQR* and on the international migration web page, the nature of the content of each document is unclear (particularly for *User Information* which provides a comparison of survey and administrative data sources rather than information about use or users as implied in the title).
- B.9. None of the ONS supporting documents present an overarching explanation of the IPS for both migration and travel and tourism survey components. The ONS supporting information about the IPS and its related statistics could be improved by giving a straightforward explanation of the two samples and their associated sample sizes and response rates. For example, it is unclear whether the ‘overall’ response rate of 79% refers to the initial contacts or to the two component questionnaires (on migration and overseas travel and tourism). A flow chart could be used to explain the relationship between the initial contacts (800,000 screening interviews) to determine the migration sample (5,000), the sample for overseas travel and tourism (300,000) and the sub-sample sample that provides information of expenditure and length of stay (on completion of their visit, around 109,000 in 2011). This diagram could also provide the level of response for each part, as well as highlight other uses of the survey, for example, the use of the OTT sample for producing short-term immigration estimates.
- B.10. ONS releases four sets of international estimates: provisional and final IPS estimates, and provisional and final LTIM. *Background Note* provides some information on the differences between the IPS estimates and LTIM and between the provisional and final estimates but the explanations could be clearer in *LTIM QMI*, *LTIM Methodology*, as well as alongside the statistics in *MSQR*. *LTIM QMI* refers to a new ‘International Migration System (IMS)’ to enable the production of provisional LTIM estimates but gives no further explanation about the system. It also does not signpost users to *Background Notes* which lists the provisional and final LTIM and IPS data tables. *Conclusion: it would be helpful if ONS was to review the range of supporting information about the quality of the IPS and the related statistics, to improve its coherence and accessibility. Furthermore, it would be helpful if ONS was to provide descriptions of each of the IPS samples and develops a flow chart to explain the relationship between the component samples. It also would be helpful if ONS was to make clear the difference between provisional and final IPS-based and LTIM estimates alongside the statistics.*

## Population estimates

- B.11. ONS provided a number of method and quality documents alongside the release of the mid-2011 mid-year population estimates (MYE) and its revised mid-year 2002 to 2010 estimates (ONS adjusted the original mid-year estimates to take account of the 2011 Census to produce these ‘rolled back estimates’):
- population estimates QMI paper<sup>68</sup> (MYE QMI)
  - a method guide for preparing the mid-2011 mid-year estimates<sup>69</sup>
  - a method guide for the rolled back estimates<sup>70</sup>
  - a paper explaining the reconciliation between the 2011 Census and MYE for 2011<sup>71</sup>, and
  - Frequently Asked Questions for the MYE (MYE FAQ)<sup>72</sup>
- B.12. ONS also has a wide range of other supporting information about its population estimates available on its website<sup>73</sup>.
- B.13. *MYE QMI* outlines the data sources and methods for producing the population estimates, including the IPS as the main source of information about international migration. It highlights quality issues in relation to uncertainty associated with the IPS-based migration estimates and states that the impact of uncertainty in the net migration flow accounts for a small percentage of the local authority mid-year population estimates. It includes reference to *LTIM QMI* for further information about the quality of the international migration estimates.
- B.14. The method guide for producing the 2011 MYE describes a new approach for distributing international immigrants to local authorities using administrative data sources. This method was developed by ONS as part of the Migration Statistics Improvement Programme<sup>74</sup>. It is popular with users<sup>75</sup> who had called on ONS to use administrative data sources, rather than the previously developed modelling approach. *MYE QMI* also highlights the new distribution method, as well as the development of plausibility ranges<sup>76</sup> of the MYE and quality indicators<sup>77</sup> for the local level estimates. These indicators are a useful first step in helping users to understand the limitations with some of the estimates. ONS is also developing statistical measures of uncertainty around LA MYEs.
- B.15. ONS states that the new distribution method will only be used for estimating the migration component of the MYE and will not replace the use of the Labour Force Survey to produce

<sup>68</sup> See: *Mid-year national and local authority population estimates* - <http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/social-statistics/index.html>

<sup>69</sup> See: *Mid 2011 population estimates method guide* in the downloadable file list - <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/pop-ests/index.html>

<sup>70</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/population-statistics-research-unit--psru-/latest-publications-from-the-population-statistics-research-unit/index.html>

<sup>71</sup> See link in footnote 18

<sup>72</sup> See link in footnote 17

<sup>73</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/pop-ests/index.html>

<sup>74</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/index.html>

<sup>75</sup> Analysis of responses to ONS consultation in 2010 on Improvements to Migration and Population Statistics: <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/msi-programme/communication/improvements-mid-2008/key-documents/index.html>

<sup>76</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/latest-news/using-administrative-data-to-set-plausibility-ranges/index.html>

<sup>77</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/latest-news/uncertainty-in-la-mypes/index.html>

the international migration statistics at a regional level. ONS does not publish long-term international migration statistics by local authority due to the greater levels of uncertainty that would result. However, in addition to its use for local authority MYE, ONS also uses the new distribution approach for its production of LA short-term immigration estimates<sup>78</sup>. ONS does not make it sufficiently clear that the new distribution method is not applied to the long-term international migration statistics and why. *Conclusion: it would be helpful if ONS was to make clear that the distribution method using administrative sources is not applied to producing long-term international migration estimates (LTIM) and explain the reasons for the choice of distribution methods. It also would be helpful if ONS was to make clear any inconsistencies between the long-term international migration statistics and the migration component of the MYEs.*

- B.16. The joint response<sup>79</sup> from the RSS and Statistics User Forum to the PASC migration study suggested that the current methods used to produce the local level estimates of emigration require further improvement. ONS told us that it is currently reviewing its research plans and development priorities, following the completion of the Migration Statistics Improvement Programme in March 2012. This work includes further research into the use of data from the Home Office's e-Borders system<sup>80</sup> and other administrative data sources (such as DWP's Lifetime Labour Market Database<sup>81</sup>) that may improve the estimation of emigration. *Conclusion: it would be helpful if ONS was to inform users about the nature and progress of the research to further improve migration statistics and related administrative systems. It also would be helpful if ONS and Home Office were to publish details of development plans, outlining deliverables and milestones, with regular updates on progress.*

### Quality measures of uncertainty in migration statistics

- B.17. It is essential for any presentation of statistics to provide an indication of their quality, to assist users in meaningful interpretation and use. The *Code of Practice* requires that official statistics be accompanied by information about the quality of the statistics, such as, in relation to the European Statistical System Quality Framework<sup>82</sup>. 'Accuracy' reflects the degree of closeness of the estimates to the true values. As with other sample surveys, estimates from the IPS involve a degree of uncertainty, partly due to random variation from basing the statistics on a sample of migrants rather than the entire population – sampling error. The statistics can also be affected by other factors that lead to bias – non-sampling errors. There are four main types of non-sampling error:
- Coverage errors – associated with a failure to include some of the target population in the frame used for sample selection.
  - Non-response error – where data are not collected for all the respondents contacted or for all the items in the questionnaire.

<sup>78</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/updates-and-reports/current-updates-and-releases/distributing-short-term-migrants-to-local-authorities/index.html>

<sup>79</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpublicadm/writev/migration/m09.htm>

<sup>80</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/latest-news/delivering-statistical-benefits-from-e-borders/index.html>

<sup>81</sup> <http://research.dwp.gov.uk/asd/index.php?page=tabtool>

<sup>82</sup> The six dimensions of the ESS Quality Framework are: relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, and coherence

- Measurement error – due to factors arising during data collection that cause recorded values to be different from the true ones:
  - Survey questionnaire – eg poor phrasing of questions;
  - Respondent – may consciously or unconsciously give erroneous data;
  - Interviewer – may influence the answers given by respondents.
- Processing error – can occur after the data have been collected, during the processes leading to the final statistical output.

### Sampling error

B.18. *LTIM QMI* and *LTIM Methodology* give guidance about interpreting sampling error and highlight the impact of smaller numbers of survey contacts on the precision of the estimates. ONS provides confidence intervals (CIs) for IPS-based migration estimates in *MSQR* and associated data spreadsheets. It switched in November 2012 to using CIs in place of its previous presentation of the standard error (SE) expressed as a percentage of the estimate, as CIs were thought to be easier for users to understand. The data tables had been colour-coded which helped to give a quick visual impression of the level of the SEs. Users have responded positively to ONS's use of CIs<sup>83</sup>. However the intervals are relatively wide and so make interpretation of the trends and quarterly changes difficult. For example, the Home Affairs Select Committee noted in its report on the UK Border Agency in November 2012<sup>84</sup>:

*The latest quarterly figures show that the government is making progress in meeting its target to reduce immigration. Net migration in the year to December 2011 however still stood at 216,000 which is lower than the previous year, 252,000, but still a long way off from the government's target of a reduction from "hundreds of thousands to tens of thousands". The Office for National Statistics reported that this change was not statistically significant. The fact that a change of such a large magnitude is not statistically significant highlights how inaccurate all immigration figures are, and hence the limits of validity of setting numeric targets. (para 70)*

B.19. The Migration Observatory<sup>85</sup> at the University of Oxford also welcomed the use of confidence intervals. In its commentary report, *Entries, exits and errors*<sup>86</sup>, it highlights two implications for the policy debate resulting from the uncertainty around the estimates. Firstly that the public discussions need to take account of the degree of uncertainty to 'avoid making wrong and misleading statements about the change (or absence of change) in the data'. It also warns that:

*the government could miss the "tens of thousands" target by many tens of thousands and still appear to have hit it – conversely the government could hit it, or even exceed its target and still appear to have missed it by tens of thousands. (p4)*

B.20. The joint RSS/SUF response<sup>87</sup> to the PASC migration study highlighted that the headlines in *MSQR* do not convey the degree of uncertainty in the long-term international migration estimates. BSPS<sup>88</sup>, also in its evidence to PASC, commented that 'the average person

<sup>83</sup> Comments made at the RSS meeting on migration statistics on 6 December 2012 and in written evidence to PASC:

<http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/contents.htm>

<sup>84</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmhaff/603/60302.htm>

<sup>85</sup> <http://migrationobservatory.ox.ac.uk/>

<sup>86</sup> <http://www.migrationobservatory.ox.ac.uk/commentary/entries-exits-and-errors>

<sup>87</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m09.htm>

<sup>88</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m02.htm>

would find the scale of uncertainty difficult to comprehend' in ONS summary migration publications. One user told us that it is 'still hard to be confident about the meaning of quarterly changes and longer-term trends'. While *MSQR* indicates whether a change is statistically significant or not, it does not indicate the extent of uncertainty of the estimates. ONS does give a brief explanation of the degree of uncertainty in *LTIM QMI* and *IPS QI for Migration*; however, it would be helpful to support users' interpretation of the migration estimates if similar information was also given in *MSQR* (for example, in the initial explanation of statistical significance early in the statistical release). *Conclusion: it would be helpful if ONS was to ensure that sufficient information about the uncertainty around the migration estimates is provided alongside the migration statistics to support user interpretation.*

### Non-sampling error

- B.21. *LTIM Methodology* presents an explanation of non-sampling error and provides some examples of potential bias relevant to the IPS, such as passengers deliberately concealing their intention to migrate. *TT* also highlights some examples of non-response bias and outlines what is done to minimise their impact – it refers to respondents who do not speak English and the availability of a self-completion form of the IPS questionnaire in 13 languages for completion by these respondents. These represent around three quarters of potential non-response due to language difficulties. *TT* says that these forms do not cover all the questions in the full interview but 'aim to capture the essential data items which will be needed to produce reliable estimates of tourism', such as the traveller's nationality and country of residence. It is not clear though what the impact is on the migration component of the IPS.
- B.22. *LTIM QMI*, a key background quality document for users, does not provide an explanation of non-sampling errors. It does, however, highlight the specific measurement error issues of respondents not being able to provide precise information, for example, on main destination, and that they may change their migration/visiting intentions. It also provides a full explanation of the approach to adjust the IPS-based estimates to take account of changes in intention in its production of the *LTIM* estimates. However, ONS does not set these issues in the wider context of other forms of non-sampling error in *LTIM QMI*.
- B.23. *TT* describes the weighting strategy applied to the IPS data to produce national estimates of all international travellers to and from the UK on a quarterly basis (see Table B1 for a summary of the weighting stages). ONS has designed the weights to take into account the complex sample design and uses information from other sources, such as the Civil Aviation Authority (CAA), Department for Transport and Eurotunnel, to calibrate the total set of respondents interviewed at a port or route to known passenger traffic for the period in question.
- B.24. There is the potential for coverage error in the IPS due to the exclusion of certain ports/routes and time periods from the sampling frame. *TT* and *LTIM Methodology* highlight that around 5% of travellers entering or leaving the UK are not covered by the IPS, as they travel at night when interviewing is suspended, or routes are too small in volume or too expensive to be covered. ONS applies a coverage weight within the eight-stage weighting scheme for frame under-coverage, to compensate for not covering certain ports and times of day (out of hours traffic) in the survey sample. The weight reflects that some flights are

more likely to arrive or depart at night for certain countries of origin or destination, when no interviewing is conducted at airports.

- B.25. Since spring 2009 ONS has observed an increase in the proportion of respondents in the IPS overseas travel and tourism sample which are starting their visit compared with the proportion ending their visit. It utilises a weighting factor to help compensate for this imbalance when producing its overseas travel and tourism estimates. The weighted profiles were compared with CAA survey data derived from surveying conducted at departure gates at main airports in the UK and with e-borders data. ONS said that it found a general consistency between the datasets but no explanation for the imbalance. It continues to apply the correction factor and says that this is an area of ongoing research. *Conclusion: it would be helpful if ONS was to publish further information about the research undertaken to investigate the imbalance between those arriving and those departing and document the impact on the IPS statistics. It also would be helpful if ONS was to provide details of future research plans to investigate this imbalance and inform users of the outcomes.*
- B.26. *TT* outlines the approach taken to minimise the impact of interviewer bias. The IPS interviews are conducted by a team of over 200 interviewers, recruited specifically to work on the survey. All staff undergo intensive training. Some interviewer teams will cover a single large port such as Heathrow, while others may cover several smaller ports. ONS says that given the design of some of the facilities it is not always possible to interview passengers as they arrive at the port – in some cases interviewers travel to seaports in France and interview either at the departure port or during the journey. It told us that it responds to these challenges, by working with the relevant port authorities, to find ways that prevent an impact on the survey data. IPS interviewers are instructed to not intrude or interrupt passengers, such as when they are speaking on mobile phones. Missed contacts present a potential source of bias. ONS reported an overall 21% non-response rate, of which 19% were contacts missed when all the interviewers were already interviewing, at peak travel times. The remaining 2% comprised the contacts who refused to participate or were unavailable to answer the questions (such as on their mobile phones). ONS says in *IPS QI for Migration* that not contacting passengers because of a lack of interviewers is ‘unlikely to skew the profile of the IPS sample’ due to the weighting according to the CAA travellers data and believes that most non-response is random.
- B.27. Some users are concerned about the risk of interviewer bias. Westminster Council in its response<sup>89</sup> to the PASC migration study highlighted the instructions given to interviewers when encountering difficulties in maintaining an accurate count of travellers (critical to determining the random selection of contacts): ‘There may be times when, owing to a particular flood of passengers, you just cannot keep an accurate count. Do not panic if this happens but keep counting as best you can.’<sup>90</sup> The ONS guidance goes on to say to inform the interviewer team leader but it is not clear from the survey information what steps ONS takes to monitor and correct for the influence of interviewer behaviour. ONS told us that such situations occur very infrequently. We suggest that ONS quantify this and detail what steps it takes to monitor and correct for the influence of interviewer behaviour.

<sup>89</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubadm/writev/migration/m10.htm>

<sup>90</sup> *IPS Interviewer Guide Part 1*, p27: <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/travel-and-transport-methodology/international-passenger-survey-methodology/international-passenger-survey-interviewer-instructions-part-1---standard-manual.pdf>

B.28. *LTIM Methodology* briefly refers to the weighting undertaken on the IPS data, signposting users to *TT* for further information, but this is not made clear in the explanation of how the estimates are compiled in *LTIM QMI*. The data sources used to compensate for the types of migration not captured by the IPS (i.e. asylum seekers, land crossings with Ireland and the changes in intention) are more clearly described. This information is important but the limited explanation of non-sampling error, the steps taken to address it and the associated quality indicators<sup>91,92</sup> (such as unit and item response rates) may exacerbate users' concerns about the statistics. The RSS/SUF response<sup>93</sup> to the PASC emphasised the need for non-sampling error in the IPS to be fully explained. *Conclusion: it would be helpful if ONS was to provide a fuller explanation of non-sampling error alongside the statistics, highlighting potential sources of bias and the steps taken to address the bias, with associated quality indicators.*

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<sup>91</sup> Eurostat Handbook on Data Quality Assessment Methods and Tools p13:

<http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/HANDBOOK%20ON%20DATA%20QUALITY%20ASSESSMENT%20METHODS%20AND%20TOOLS%20%20I.pdf>

<sup>92</sup> ONS Guideline for measuring statistical quality: <http://www.ons.gov.uk/ons/guide-method/method-quality/quality/guidelines-for-measuring-statistical-quality/index.html>

<sup>93</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpublicadm/writev/migration/m09.htm>

**Table B1: IPS weighting scheme<sup>94</sup>**

Stage 1 - design weight
<ul style="list-style-type: none"> <li>to account for the probability of sampling a passenger using the first-stage sampling rate</li> <li>compares the number of shifts or crossings sampled (at each port/route and direction of travel combination) with the number of shifts or crossings that could have been sampled for that combination in the period</li> <li>takes into account the first-stage sampling rate (eg every 20<sup>th</sup> passenger selected)</li> </ul>
Stage 2 - non-response weight factor
<ul style="list-style-type: none"> <li>to take account of contacts selected for interview but who were subsequently not interviewed, either because it was not possible to contact them or they refused to participate</li> <li>applied at each port/route and direction of travel combination and incorporates weekday versus weekend as weighting strata</li> <li>uplifting 'complete' response (full questionnaire completed) and 'minimum' response (limited information only collected such as country of origin) cases by a factor calculated as:                     <ul style="list-style-type: none"> <li>The sum of weights applied to all 'completes', 'minimums' and 'non-response' records,</li> <li>Divided by the sum of 'completes' and 'minimums' at that port/route and direction of travel combination.</li> </ul> </li> </ul>
Stage 3 - design weight relating to the sub-sampling of non-migrants
<ul style="list-style-type: none"> <li>to account for the second-phase of the sample design</li> <li>the weight for this factor is equal to:                     <ul style="list-style-type: none"> <li>The ratio second-stage sample interval: first-stage sample interval for non-migrants, and</li> <li>1 for migrants</li> </ul> </li> </ul>
Stage 4 - weight factor is applied for discarding minimum respondents
<ul style="list-style-type: none"> <li>Minimum interviews are discarded in this step of the weighting, with other cases weighted up to compensate</li> <li>Uses the same principle as the non-response weight - utilises port/route and direction of travel as weighting strata.</li> </ul>
Stage 5 - weighting to the sampling frame
<ul style="list-style-type: none"> <li>the population (that is, passenger traffic) or the ports and routes covered by the sampling frame are used to weight the data</li> <li>excludes those simply changing international flights and out-of-hours traffic</li> <li>applied at each port/route and direction of travel combination</li> </ul>
Stage 6 - weighting for frame under coverage
<ul style="list-style-type: none"> <li>extends the above population weighting to compensate for not covering certain ports and times of day (out-of-hours traffic) in the survey sample</li> <li>utilises port/route and direction of travel as weighting strata and also incorporates region of the world that traffic has come from/gone to</li> </ul>
Stage 7 - weighting for observed imbalance
<ul style="list-style-type: none"> <li>to correct an observed imbalance between the number of non-migrants entering and leaving the UK</li> <li>applied as a series of fixed factors, relating to direction of travel, port/route and country/residence</li> </ul>
Stage 8 - final weight
<ul style="list-style-type: none"> <li>combines each of the weighting stages listed above</li> </ul>

<sup>94</sup> Taken from *Travel Trends 2011, Appendix C: The IPS: Methodology and Coverage*

## Annex C:

### International issues in the measurement of migration

- C.1. Member states of the European Union (EU) are required to provide statistics<sup>95</sup> on migration and international protection (asylum) under Regulation (EC) No 862/2007. Commission Regulation (EU) No 351/2010 sets out the definitions of country groupings for previous/next usual residence and for citizenship that should be applied. ONS told us that it complies with these Regulations but that it has some concerns about the reliability of the data supplied – Eurostat (the statistical office of the EU) requires the IPS data to be disaggregated to a finer level than used by ONS in its own migration statistical releases. For example Eurostat requires single years of age for migrants moving to/from certain country groupings that can mean the IPS estimates are based on very small sample numbers.
- C.2. A combined survey<sup>96</sup> by United Nations Economic Commission for Europe (UNECE) and Eurostat identified the various data collection methods used in 43 UNECE countries (including the UK), as well as seven non-UNECE countries (including Australia and New Zealand) to record international migration. Population registers are the most commonly used but a variety of other approaches were also found, including: registers of foreigners, residence permits, visas, border cards, household surveys (such as Labour Force Survey), and other surveys such as passenger surveys. The UK and Cyprus<sup>97</sup> are the only EU countries to use passenger surveys.
- C.3. The UK is not alone in having difficulties in accurately measuring international migration. For example, population registers also struggle to accurately record emigration as there is often a disincentive to register the move. The range of different data collection methods is only one of the issues affecting the coherence and comparability of the migration statistics in Europe. Other factors are differences in definition – of what constitutes ‘migration’ and the duration of moves, and the indirect measurement of migration – where it is inferred from comparisons in changes in administrative systems, for example, rather than measured directly<sup>98</sup>.
- C.4. Professor James Raymer, with colleagues at the Southampton Statistical Sciences Research Institute<sup>99</sup> at the University of Southampton, has undertaken research for both ONS<sup>100</sup> and Eurostat<sup>101</sup> to identify ways of improving the quality and harmonisation of international migration statistics. This work includes the development of models to improve the estimation of migration. At the heart of it is the recognition that migration reflects the flow between two countries. The Integrated Modelling of European Migration (IMEM) method uses economic, demographic and geographic information for each of the countries to help estimate missing flows. It also uses expert knowledge to shape the measurement

<sup>95</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0528:FIN:EN:HTML>

<sup>96</sup> WP.3 ‘Producing migration data using household surveys and other sources’, see link: <http://www.unece.org/stats/documents/2010.04.migration.html>

<sup>97</sup> [http://tourmis2.modul.ac.at/material/etc/definitions\\_CY.pdf](http://tourmis2.modul.ac.at/material/etc/definitions_CY.pdf)

<sup>98</sup> Discussion paper No 2012-04: <http://www.norface-migration.org/pubrespapers.php>

<sup>99</sup> <http://www.southampton.ac.uk/s3ri/>

<sup>100</sup> <http://www.ons.gov.uk/ons/guide-method/method-quality/imps/latest-news/conceptual-framework/index.html>

<sup>101</sup> [http://cpc.geodata.soton.ac.uk/publications/2011\\_Improving\\_estimates\\_of\\_migration\\_flows\\_WP15\\_Raymer\\_et\\_al.pdf](http://cpc.geodata.soton.ac.uk/publications/2011_Improving_estimates_of_migration_flows_WP15_Raymer_et_al.pdf)

model and overcome the inherent limitations of the existing migration data such as the different definitions used.

- C.5. Similarly, the Global Bilateral Migration Databank<sup>102</sup> has been developed by the World Bank following work initially at Sussex University. Census and population register records have been combined in decennial matrices for the last five completed census rounds for all countries, to compile a comprehensive picture of bilateral global migration over the last half of the twentieth century.
- C.6. Southampton University<sup>103</sup>, in its response to the PASC migration study, recommended that ONS seek to use alternative sources of data and statistical modelling to aid the estimation of international migration. It highlights that in the short term, improvements could be delivered by modelling using other countries' data, as well as for other UK sources (such as from the Home Office, Higher Education Student Agency and DWP). In the longer term it highlights the benefits that could be gained from fully utilising e-Border data. *Conclusion: it would be helpful if ONS was to make further improvements to the estimation of international migration statistics, including a greater use of international migration data collected by other countries to better understand the patterns of migration to/from the UK.*
- C.7. Users told us that there is a limited range of information available about migrants collected in the IPS, as well as other surveys, including the Labour Force Survey, such as about their language skills, ethnicity, religion, educational qualifications. Eurostat<sup>104</sup> is encouraging member states to strengthen and widen ('mainstream') their collection of information about migrants in administrative data sources and surveys. *Conclusion: it would be helpful if the Statistics Authority and National Statistician were to encourage other government departments to extend the range and accessibility of information about the characteristics and circumstances of migrants living in the UK.*

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<sup>102</sup> <http://data.worldbank.org/data-catalog/global-bilateral-migration-database>

<sup>103</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmpublic/writev/migration/m08.htm>

<sup>104</sup> <http://isi2011.congressplanner.eu/pdfs/650162.pdf>

## Annex D:

### List of recommendations

- Rec 1: ONS should continue the enhancements to the presentation and commentary accompanying the migration statistics, providing a clear statement of the uncertainty around the estimates and supporting appropriate interpretation of the trends [para 24]:
- a) Provide descriptions of each of the IPS samples and develop a flow chart to explain the relationship between the component samples [para B.10]
  - b) Make clear the difference between provisional and final IPS-based and LTIM estimates alongside the statistics [para B.10]
  - c) Ensure sufficient information about the uncertainty around the migration estimates is provided alongside the migration statistics to support user interpretation [para B.20]
  - d) Provide a fuller explanation of non-sampling error alongside the statistics, highlighting potential sources of bias and the steps taken to address the bias, with associated quality indicators [para B.28]
- Rec 2: ONS should review and extend the supporting information about the quality of the IPS-based statistics, and provide a fuller and more coherent explanation of the strengths and limitations in relation to different uses of the data [para 25]:
- a) Provide links in *Travel Trends* to *IPS QMI* and to the IPS methodology web pages [para B.3]
  - b) Provide information about the quality of the IPS in relation to use for producing balance of payments statistics and signpost users to further information such as in *IPS QMI* [para B.4]
  - c) Extend the main migration statistics supporting information to provide the key measures of IPS quality [para B.6]
  - d) Add signposting to *IPS QI for Migration* in the international migration quality documents [para B.7]
  - e) Review the range of supporting information about the quality of the IPS and the related statistics, to improve its coherence and accessibility [para B.10]
  - f) Make clear that the distribution method using administrative sources is not applied to producing long-term international migration estimates and explain the reasons for the choice of distribution methods [para B.15]
  - g) Make clear any inconsistencies between the long-term international migration statistics and the migration component of the mid-year population estimates [para B.15]
  - h) Publish further information about the research undertaken to investigate the imbalance between those arriving and those departing and document the impact on the IPS statistics [para B.25]
  - i) Provide details of future research plans to investigate this imbalance and inform users of the outcomes [para B.25]
- Rec 3: The Statistics Authority and National Statistician should encourage other government departments to extend the range and accessibility of information about the characteristics and circumstances of migrants living in the UK [para 26 and para C.7]

- Rec 4: ONS should make further improvements to the estimation of international migration statistics, including a greater use international migration data collected by other countries to better understand the patterns of migration to/from the UK [para 20 and para C.6]
- Rec 5: ONS should provide regular updates for users on the development plans and their progress [para 27]:
- a) Inform users about the nature and progress of the research to further improve migration statistics and related administrative systems [para B.16]
  - b) Publish details of development plans, outlining deliverables and milestones, with regular updates on progress [para B.16]
- Rec 6: Home Office should keep users informed about the likely nature of its statistical outputs from the e-Borders system and the timescale for their release [para 28]:
- a) Publish details of development plans, outlining deliverables and milestones, with regular updates on progress [para B.16]
- Rec 7: ONS should investigate the feasibility of producing estimates that separate long-term migrants into those who might be regarded as ‘non-permanent’ (such as those planning to stay for less than five years) and ‘permanent’ migrants, in consultation with users [para 29]