

Technical Appendix

This report covers the detail of the methodology. It draws on a paper entitled 'Multinational Companies in Comparative Context', presented at Cornell University in September 2010.

We set out to realize a co-ordinated set of parallel, nationally representative surveys of employment policies and practices in MNCs that would lend themselves to comparative analysis. The issues described below are summarized in Table 1.

Research Design

A number of features of the surveys were agreed at the outset. Crucially, each survey sought to be comprehensive in its coverage of the private sector and of the countries of origin of MNCs and, hence, to be representative of the wider population of MNC operations in that country. All the surveys focused on medium- and large-sized MNCs, defined in terms of common employment-size thresholds, with the unit of analysis being the national operation of the MNC and the respondent being a senior HR executive at this level of the company. In every survey an initial 'screening' check to verify the population was carried out prior to the main stage of the fieldwork. All the surveys used a structured questionnaire instrument, which had a particular focus on four aspects of employment policy and practice (pay and performance, training, employee involvement and employee representation) and distinguished between policies towards managerial employees and those towards the largest occupational group (LOG) of non-managerial employees. The surveys use some established questions and measures – such as those employed by the Workplace Employment Relations Surveys (WERS) in Britain and the Company Level Industrial Relations Surveys (CLIRS) in which some of the UK project team were involved (Marginson et al. 1993) – but also broke new ground in developing questions based on our extensive case study-based research into MNCs. These questions tackled such issues as the integration of production or service provision across borders and the level of discretion enjoyed by the national operations of MNCs.

Several additional aspects of the research are noteworthy. First, each survey initially established a population listing of all but the smallest MNCs. Medium- and large-sized MNCs were defined by employment size criteria, for foreign-owned MNCs of at least 500 employees worldwide and at least 100 in the host country, and for domestically-owned MNCs of at least 500 employees worldwide with at least 100 in one or more countries outside the country of origin. In order to compile a comprehensive listing, we investigated various sources of company information. We found that no single database adequately covered all MNCs. In the UK, for example, we began with two well-known databases and used our size criteria to generate two lists. While

these lists produced similar numbers of firms, there were some that appeared on one listing but not on the other and vice versa. Moreover, some MNCs, such as those in financial services, did not appear on either. It quickly became apparent that there was going to be no substitute for using multiple listings and resolving discrepancies through labour-intensive cross-checking. Even when multiple listings had been reviewed, however, we still had reservations concerning their reliability. In many cases employment data were missing, and it was often not clear whether some of the companies were part of another firm or not. Thus all four teams carried out a 'screening' exercise to check crucial aspects of the listing. This was a time-consuming and expensive process, involving a combination of telephone interviews and web-based checks. Many companies 'screened out' at this stage because they were smaller than the initial listing had suggested, they were part of another 'ultimate controlling company', or they had closed down or moved. As we were unable to carry out a screening interview with every single firm, even after this process some uncertainty remained over the true size of the population. In the UK, where this was a notable problem, this led us to estimate an upper and lower bound for the population. The details of how the populations were constructed are set out in the first section of Table 1.

Second, the survey covers both foreign-owned and home-owned MNCs. Therefore, the level of the company at which the interview was conducted was not quite equivalent in the two types of firm: whereas it was the national subsidiary level (the HQ of the operations in the given country) in foreign MNCs, it was the global corporate HQ in domestic MNCs. The rationale for the inclusion of both was partly that the latter provided a benchmark of domestically owned firms against which the policies and practices of foreign MNCs could be judged, and also that the inclusion of domestic MNCs generated data of substantial interest in its own right. However, this aspect of the design did mean that the questionnaire needed to be adapted for the questions to make sense, and for some issues this means that the data are not identical across both sets of firms. We draw attention to this in the written summaries of the results where relevant.

Third, a key part of the planned data analysis was to explore differences between MNCs. One aspect of this was to analyse differences by nationality and we were anxious to contribute to and extend our understanding of this issue. Thus we considered stratifying the screened population listing to ensure that the companies surveyed contained sufficient numbers of firms from different national groups. Stratification could also make sure that we had adequate numbers of firms from the key sectors and different size groupings. In the UK, Canada and Spain the teams judged the population to be sufficiently large for it to be highly likely that the companies that took part in the survey contained reasonably high numbers in each of the categories. In Ireland, in contrast, the listing was stratified by ownership, size and sector (see the third section of Table 1).

Fourth, our research design placed importance on seeking information from an individual who was able to speak for the national operations in question. Thus we sought to carry out the survey with a senior HR respondent at the national HQ, asking questions about the nature of employment policies and practices in the country and about the structure and nature of the wider firm internationally. One challenge in this respect was that some MNCs do not have an operational HQ at national level. While there is almost always some sort of national HQ, in some cases it is very small, dealing only with tax issues for example, with major functions such as HR having no presence. The absence of an operational national HQ was more common in firms with several divisions in very different sectors and in those in which regional HQs have become more influential recently. The pragmatic solution was to seek a respondent at the largest division or site in those firms where there was no national HQ or no HR specialist. The second section of Table 1 demonstrates that the data relate to all of the operations in the country in between 80% and 95% of cases across the surveys.

Fifth, the surveys relied on a single respondent per firm. Seeking two or more respondents in each firm to answer a lengthy questionnaire would inevitably have significantly increased the cost and adversely affected the response rate, something that was demonstrated in the experience of the second CLIRS, which was based on matched pairs of interviews with senior HR and finance executives (Marginson et al. 1993). However, this can lead to the problem of common method variance (CMV) in which bias is introduced through key variables being derived from the same respondent (Chang et al. 2010). As Podsakoff et al. (2003) note, this is likely to be 'particularly problematic in those situations in which respondents are asked to provide retrospective accounts of their attitudes, perceptions and/or behaviors' (2003:881). We judge that CMV is unlikely to be a problem in this research, partly because the data were collected in two stages (with the variables derived both from the initial 'screener' interviews or checks and from the main stage) and partly because the scales and anchors differed across our key variables. Both of these factors are recommendations of Chang et al. (2010) as ways of avoiding CMV. Perhaps even more importantly, most of the variables are derived from questions about contemporary aspects of the organization, particularly its basic features, structures and the existence of certain HR policies and practices, and are consequently not primarily retrospective, attitudinal or perceptual measures. However, it is still necessary to be sensitive to the likelihood of measurement error. Following Wright et al. (2001) we took a number of steps to minimize such error by: ensuring that the most knowledgeable and authoritative respondent was used; being sensitive to the information demands on the respondent; communicating in advance the kind of information we would require; and devoting considerable time to the wording of the items through exhaustive development and piloting of the questionnaire. In addition, we drew extensively on our own collective qualitative experience of interviewing such respondents in designing the questions.

Sixth, we were sensitive to the challenges of gathering accurate data about the national operations of MNCs which were in many cases large and varied. One aspect of this is variation in the pattern of control and practices according to workforce group. To ensure that we gathered meaningful data about particular groups of staff, as opposed to general statements about an entire workforce which inevitably would have masked considerable variation, we distinguished between managers and non-managerial employees and then within the latter we asked about the largest occupational group (LOG), making clear throughout the survey to which group each question referred. We also faced the challenge of being sensitive to variation in practices between sites. We dealt with this partly by asking about the existence of policies across sites and on some issues by asking explicitly about variations in practice between sites.

Seventh, we needed to translate the questionnaire into two languages. The questionnaire was designed in English (the working language of the international research team) and subsequently translated into the home language of the survey country. These translations were carefully checked in order to assess the equivalence in meaning had not been distorted through language translation (cf. Brewster et al. 1996; Hult et al. 2008). The Canadian team translated it into French with respondents able to choose which language they wanted to use. This was relatively straightforward as all of the team members are bilingual and are used to working with dual language research instruments. The translation into Spanish required rather more collaboration between national teams, with one of the UK team members, Anthony Ferner, who is fluent in Spanish, helping the team through this process and checking the equivalence of terms (see the seventh section of Table 1).

Eighth, all of the surveys were carried out with guarantees of confidentiality to the participating firms. In all cases this included an assurance that nothing would get into the public domain that led to the firm being identified. However, confidentiality took on additional forms across the countries, with the UK data being supplied to the research team with an anonymous identifier instead of the company name in accordance with the code of conduct of the firm that was contracted to carry out the survey. This limits our ability to analyse how particular firms behave in different institutional contexts, although the restriction was relaxed in order to allow the research team to create a datafile (with access limited to two individuals) which contained an identifier on firms that participated in two, three or four of the surveys (see below and in Table 2).

Process

The project relied on a comparative parallel design. The survey design and instrument in each country were created collaboratively. Equivalent questions were devised where necessary to allow the same phenomena to be explored whilst taking account of national context. This comparative parallel design, which is elaborated upon below, represents an alternative to integrated or post-hoc designs: integrated designs emphasize the

framing of near identical questions and thus tend to focus on structures and practices that lend themselves more readily to transnational comparison (e.g. the 'Cranet' project which now covers over 30 countries); post-hoc comparative designs attempt to align questions from similar national surveys at the point of data analysis (e.g. WERS in Britain and REPOSE in France), which constrains the scope of comparisons. Our comparative parallel design is an innovative way of carrying out bottom-up yet coordinated comparative research and involved a high degree of collaboration and conceptual exchange in the co-construction of the questionnaire, a process which provided a way of integrating institutional variation into the conception of the instrument.

The surveys yielded a total of 1100 responses from MNCs operating in the UK (n=302), Ireland (n=260), Spain (n=330) and Canada (n=208). The response rates varied across the four surveys, from just over 14% to just over 50%. The lower response rates were in the countries with the larger populations, meaning that the overall numbers of participating firms in each national survey did not vary as much as the response rates. In all the surveys the teams carried out checks of the representativeness of the responding firms in relation to the population according to the three criteria of nationality, size and sector available in the population listings. In Canada and Ireland the profile of the responding firms was in line with the population. In Spain, larger and home-based MNCs were over-represented and weights were constructed to adjust for this. In the UK the firms taking part in the main survey were found to be mildly skewed towards manufacturing compared with those in the 'screening' stage. This was adjusted for through weighting the data. (See the eighth and ninth sections of Table 1.) In the analysis the data are weighted when presenting descriptive findings and left unweighted in the multivariate analysis reported in papers that have been produced from the project.

The survey instrument contains a set of questions, such as those relating to country of origin and size levels, which were phrased in exactly the same way in each survey. A further set of questions were almost identical but national teams added or reduced response options because of institutional differences, question saliency or variations in filters according to method of survey administration (see below). Thus, data transformation was required to produce equivalent data. A third set of questions were functionally equivalent in that questions were asked about the same issue, but because the institutions governing this activity varied across countries the question was adapted. For example, in exploring the influence of unions the survey instrument needed to reflect different national arrangements underpinning union presence within firms. Here again data transformations were required. A fourth set of questions were thematically equivalent; questions asked about the same phenomenon, but due to institutional differences the structures and practices examined were unique to each country. These questions provided valuable national contextual insights that expand upon some of the functionally equivalent and identical data. Considerations of functional equivalence and, for non-core

questions, data availability in each national data set, mean that some transformed variables could be specified for two or three countries only rather than all four.

Given that the research involved a comparative parallel design, with many questions that were not identical, the task of integrating the datasets was not straightforward. Substantial and painstaking work was undertaken by an international working group that identified the identical and equivalent questions, produced a code book defining the SPSS transformations to be undertaken, and wrote syntax which converted the original national variables into new comparative variables. The international working group consisted of members of each of the national teams that met periodically through face-to-face meetings and virtually. The process of identifying potentially comparable questions involved detailed discussion to identify whether questions were directly comparable and to establish the boundaries of equivalence. For example, in some areas of employee voice, equivalence could be established through the presence or absence of a mechanism but did not extend beyond this as the way in which the mechanism was constituted and utilised differed across country contexts. In other instances, some countries chose to explore a practice in great detail while others had only been concerned with its existence. Therefore recoding needed to be undertaken to ensure direct comparisons could be made. Another deviation arose in the sequence of questions and as a result care was taken to ensure no filters remained or that questions related to the same occupational groups across the different country contexts. To ensure these detailed changes and decisions were captured, the original variable structures, new variable structures and explanatory notes were recorded in an Excel format which became the code book for the data file. This code book was then used by each national team to extract and recode the variables which would form part of the integrated database. Each national team checked their newly constructed comparative variables against their original variables to detect any errors. Once these national datasets were validated they were forwarded to the international working group for integration. The process of integrating the national data into one comparative international dataset was centralized, to minimize error, with an expert located in the UK undertaking the merging process and the work overseen by the international working group. Substantial cross-checking was carried out to ensure the integrity of the international data, with subject experts taking responsibility for each section. This had the advantage of checking data across countries rather than solely within countries. The data were also checked on a national basis by each national team. The checking process involved variable-by-variable checks between the merged and unmerged data. As the members of the national teams were all experienced researchers they recognised that errors or misinterpretations may arise in the future as the teams began to use the data for analysis. The teams also recognised that as they worked with the data they may create new comparative variables reflecting the operationalisation of theoretical concepts which would be of value to add to the integrated dataset. Therefore processes were put into play by the international working group to cope with how new variables could be added subsequently and to deal with correcting any error found in the future. This process involved the teams

sending a summary note to all the teams to consult on views about including new variables or to highlight potential problems. In the case of adding new variables, all national teams were asked to agree to any additional inclusions with the key criterion being the value of the comparative variable. In the case of errors, once the problem was resolved the solution and action on the data was communicated to all members. Any changes to the integrated database were undertaken by the centralised resource overseen by the UK team. This was imperative to prevent the proliferation of datasets and protect the integrity of the data. These processes have proved effective to date.

One issue that integrated analysis raises is the unit of analysis, i.e. the national operations of the multinational. It was highly probable that some MNCs would appear in more than one national survey and we were conscious that the integrated dataset would contain information from two or more parts of the same parent firm in some cases. In explaining variation across firms, therefore, we faced the prospect of encountering constrained variation. In one respect this was not a problem: the primary focus was on policies and practices at national level and there is no reason why these should not vary across countries within the same firms; indeed, we know from case study research that they often do. However, constrained variation in an integrated analysis can affect the standard errors of regression estimates. We have investigated the scale of the problem, and found that 140 of the 1100 cases are affected. At 13% of the dataset, this is not large but is not small enough to ignore and we devised a strategy to address the issue, involving the creation of an identifier for such cases. This enabled data analysis to be re-run omitting the relevant cases to establish whether findings are affected. The outcome of undertaking this procedure for each of the papers indicates that the removal of the duplicates makes little difference to the results reported. Overall significance and explanatory power are unchanged. The signs of Beta coefficients remain the same, and there are minor changes in magnitude for some coefficients only. In several instances standard errors increase slightly, which was to be anticipated given the reduction in the number of observations.

Comparability

The resulting comparability of the surveys was high, but not complete. Below we detail three challenges in this regard.

a. Method of Survey Administration

One challenge in the research design concerned how to administer the questionnaire. Previous experience of surveys highlighted some advantages to using a personal interview, notably that it allows the use of a longer questionnaire since once respondents have agreed to an interview they tend to feel obliged to continue to the

end. For similar reasons, they tend not to skip questions that are demanding or complex (McKnight et al. 2007). This was pursued in the three countries where it was feasible: the UK, Ireland and Spain. The exception was Canada where the huge geographical distances involved made face-to-face interviews prohibitively expensive. A choice of completing the questionnaire through a paper version or online was presented to respondents (see the fourth section of Table 1). In the Canadian survey, it is possible to check whether the profile of companies responding was the same in each mode. Reassuringly, there were no significant differences by country of origin, sector or size in the companies that took part through the web-based questionnaire as opposed to the postal version. In addition, there is other research that confirms the measurement equivalence of internet-based and paper-and-pen modes of data collection (De Beuckelaer and Lievens 2009). Moreover, non-response to questions in the Canadian survey was not significantly higher than in the other three. Nonetheless, the difference between face-to-face administration in three countries and self-completion in the fourth remains.

b. Conduct of Interviews

For the three countries that used personal interviews as the mode of administration, an additional issue to resolve was who was to carry out these interviews. There are some advantages to contracting out the interviews to a professional survey firm, particularly the infrastructure to support large surveys that such firms possess and the use of Computer Assisted Personal Interviewing (CAPI). On the other hand, the use of survey firms is expensive and means the interviews are carried out by individuals with little expertise in the subject matter. There was variation on this issue: the UK team contracted the professional survey firm GfKNOP to carry out the survey using CAPI but were also closely involved in the process e.g. through interviewer briefings; in Spain the research team conducted the interviews themselves; and in Ireland there was a mix of professional interviewers and research team members carrying out the interviews (see the fifth section of Table 1). In the latter case, checks have indicated that there were not systematic differences in relation to missing values or key variables between those companies where a professional interviewer carried out the data collection and those where a research team member did so.

c. Timing

A further issue to consider in assessing the comparability is the timing of the surveys. The research teams secured the resources at different times and so there was some limited variation in this respect; the bulk of the fieldwork in the UK, Canada and Ireland was completed during 2006 but in Spain the survey was in the field until the end of 2008 (see the tenth section of Table 1). Such a time lag between surveys used in comparative analysis is not unusual (e.g. Whitfield, Marginson and Brown 1994; Coutrot 1998; Schnabel, Zagelmeyer and

Kohaut 2006). Evidence suggests (cf. Tregaskis and Brewster 2006) small temporal variation as in the case of the UK, Canada and Ireland, is likely to have an insignificant impact on a wide range of variables and even a two-year time lag may have only a marginal impact. One factor that makes this time difference less significant in this study is that many of the questions concerned phenomena that tend not to change quickly, such as structures for employee representation. However, we carried out checks on whether the data gathered towards the end of the fieldwork period in Spain are significantly different from those gathered earlier. This is particularly important given the sharp change in economic conditions which characterized the final phase of the fieldwork in Spain. Reassuringly, there were very few areas in which the pattern of responses differed over time. More generally, we are able to control for the timing of the survey. Including time dummies as a check in analysis undertaken in each of the papers revealed no significant time-related differences.

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Table 1

1. CONSTRUCTION AND CHECKING OF THE POPULATION LISTING				
Experience shows the inadequacies of a single listing, pointing to the need to use multiple listings and to carry out extensive checks of the resulting amalgamated listing before carrying out the survey				
	Canada	Ireland	Spain	UK
a. primary data sources	Dun & Bradstreet proprietary database	IDA Ireland Enterprise Ireland	SABI, AMADEUS, HOOVERS ORBIS	FAME AMADEUS
b. data checking	databases (Lexis-Nexis, Mergent Online, Fortune's Global 500, Financial Post 500); internet searches, co. websites, annual reports; direct telephone or internet inquiries; Conference Board links	Údarás naGaeltachta; Shannon Development; Irish Times List of Top Co's; Kompass; Major Companies of Europe; M'ship lists of 2 Irish bodies; D&B 'Who Owns Whom'; International Financial Services Centre Companies list; <i>Top 5000 Companies</i> ; Irish manufacturing cos list; Irish cos listed on UK SE; Irish Stock Exchange; use of private consultant; website and direct phone checking	<i>Actualidad Económica</i> ; Bolsa de Madrid; <i>Expansión</i> ; <i>For certain sectors</i> : Asociación Española de Banca Dirección general de seguros Multinacional Marketing list; <i>other</i> UNCTAD, <i>World Investment Report</i> 2005; Spain-US Chamber of Commerce; website checks; IESE contacts	FT Top 500 companies; Personnel Managers' Yearbook 2001/2; ETUI MNCs Database 2000; Hoover Online; Lexis-Nexis Professional; Global Access; FT company online facility; Datastream; individual company websites <u>updating</u> through: <i>Acquisitions Monthly</i> UKTI database Pers. Managers H'book 2004-5
c. due diligence challenges	multiple listing of same co.; establishing real UCC; establishing employment size of foreign ops of Can. MNCs; establishing nationality	lack of comprehensiveness of databases, missing firms and sectors; difficulty of identifying Irish owned firms; duplication of firms; discrepancies between lists; inaccuracy of data; multiple firm levels in Ireland	establishing employment size; identifying HQ/UCC; country of location of UCC; firm duplication through multiple names and levels; missing sectors in principal database (SABI); companies missing from d-base; establishing key contact	incomplete and discrepant database listings (many firms not common); UCC unclear; duplication of firm entries; nationality of 'flag of convenience' firms, questionable attributions (e.g. NL);
d. screening	Telephone screener with polling co Echo Sondages, telephone follow up to remove doubts	Research team carried out telephone and web-based checks	Random telephone screening by survey team	Telephone screener of population carried out by survey firm (GfKNOP)
e. final population total	1398	517	1083	2148 (upper), 1729 (estimated), see Edwards et al., 2008)

2. ABSENCE OF A COUNTRY HQ

Previous experience and the screening process revealed that many MNCs do not have an operational HQ at national subsidiary level, raising the issue of establishing the most appropriate level at which to carry out the main interview

	Canada	Ireland	Spain	UK
Approach taken and outcome	<p>identification of key individuals through tel. screener – confirmation of org level of respondent through q're;</p> <p>respondents asked whether answering for all ops or their own; 86% of respondents reporting multiple ops in Canada could answer for all ops</p>	<p>where no Irish HQ, sought to interview senior HR respondent from largest Irish op;</p> <p>respondents asked whether answering for all ops or their own; in foreign MNCs, 80% of respondents able to provide response for whole of Irish ops</p>	<p>where no Spanish HQ, contact with senior HR respondent for largest Spanish operation</p> <p>respondents asked whether answering for all ops or their own; 95% of respondents able to provide data for the whole of the Spanish ops</p>	<p>where no British HQ, respondent asked whether respondent could answer for all UK ops or only part</p> <p>respondents asked whether answering for all ops or their own; 81% able to provide data for all ops in the UK</p>

3. STRATIFICATION

The national teams considered the merits of stratifying the population in order to make sure that the key categories (e.g. by nationality) had sufficient cell size

	Canada	Ireland	Spain	UK
Approach taken	stratification not needed given population size	stratified sample of 414 drawn up by ownership and size	stratification not needed given population size	stratification not needed given population size

4. METHOD OF SURVEY ADMINISTRATION

Choice between face-to-face and self administration

	Canada	Ireland	Spain	UK
Method chosen	<p>paper copy mailed to every company in database; possibility to complete questionnaire through web (54.8%) or by mail (45.2%)</p> <p>No significant differences are observed in the method of response by major control variables: country-of-origin, size, sector, etc.</p>	<p>face-to-face paper-based survey by researchers from study team and interviewers from Economic and Social Research Institute (ESRI) (research team did 47% while ESRI did 53%)</p>	<p>face-to-face, not using CAPI, administered by survey team members</p>	<p>Face-to-face CAPI by survey firm contract interviewers (GfKNOP)</p>

5. SOURCING OF INTERVIEWS				
The guidance given to respondents and training of interviewers where they were used				
	Canada	Ireland	Spain	UK
Approach taken	self-administered with option of having a team member to talk the respondent through the questionnaire	ESRI + survey team with common ½ day training for interviewers	survey team	GfK NOP survey firm with survey team supervision of interviewer training
6. STRUCTURE AND CONTENT OF QUESTIONNAIRE				
The structure and content of the questionnaire needed to vary slightly to take account of national context				
	Canada	Ireland	Spain	UK
Structure adopted	<ul style="list-style-type: none"> - same basic structure as UK relative to HR areas, discretion and company structures - additional sections on Canadian operations in the global value chain and additional questions on institutional context - sequencing adjusted to balance response burden and ensure logical links in the light of pilots 	Follows UK model with some differences: <ul style="list-style-type: none"> - screener Qs integrated into q're - section on coll. repr. adapted to Irish context (esp. re central p'ship agreements) - additional Qs on experience of MNCs in IRL, and their mandate 	near identical to UK version <ul style="list-style-type: none"> - added section on diversity; - significant differences in employee representation section 	Base
7. TRANSLATION				
The questionnaire needed to be translated into French for Quebec and Spanish for Spain				
	Canada	Ireland	Spain	UK
Procedure adopted	team members have capability in both languages; test interviews conducted with French respondents to validate translation of terms	NA	translation checked by Anthony Ferner who is bilingual, with subsequent revisions emerging from equivalence exercise; changes incorporated into q're; problems minimised by involvement of team members in interviewing	NA

8. RESPONSE RATE AND N

The number of responses and the proportion of the population

	Canada	Ireland	Spain	UK
Outcome	N = 208 14.9% of total population	N = 260 50.3% of total population (62.8% of the stratified sample)	N = 330 30.2% of total population	N = 302 14.1% of upper limit of population; 17.5% of estimated population (33.4% of 'screened' population)

9. REPRESENTATIVENESS

Checks were carried out to ensure that the responding companies were representative of the population

	Canada	Ireland	Spain	UK
Checks and action taken	Profile of the responding firms is in line with the population	Profile of the responding firms is in line with the population	Initial over-representation of large US co's – corrected for during data collection process. Outcome is that the profile of responding firms is in line with the population	Concordance checks screener → database (response bias not detected); representativeness checks main response → screener under-representation of services → adjusted through weighting so that profile of responding firms is in line with the population

10. TIMING

The carrying out of the compilation of the population, screening of the population and carrying out of the fieldwork differed slightly from one country to the next

	Canada	Ireland	Spain	UK
a. database compilation	Sept 2004 - Dec 2005	Nov 2004, updated to start of fieldwork in May 2006	2005, updated 2007	2002, updated 2004
b database checking/screening	Aug – Dec 2005	Continuous screening of database through to fieldwork stage	Jan-Mar 2006	screener May 2005 – March 2006
c. start/end fieldwork	Dec 2005 – Dec 2006	Feb 2006 – Feb 2007	June 2006 – Aug 2008	Nov 2005 – June 2006

Table 2The Number of Companies in Multiple Combinations Across the National Surveys

Country Combinations	No of cases	% of Possible Cases
Canada – Spain	20	9.7
Canada – Ireland	12	5.8
Canada – UK	12	5.8
UK – Ireland	13	5.0
UK – Spain	22	7.3
Ireland – Spain	40	15.4
Canada – Spain – Ireland	7	3.4
Spain – Ireland – UK	5	1.9
Ireland – UK – Canada	3	1.5
Spain – Canada – UK	3	1.5
UK – Canada – Spain – Ireland	3	1.5

The percentage overlap is calculated by dividing the number of cases by the number of companies that could be a part of the combination (the denominator is the smallest N of the surveys concerned).

The Number of Companies in Pairs of Countries Across the National Surveys

Country Combinations	No of cases	% of Possible Cases
Canada – Spain	33	16.0
Canada – Ireland	25	12.1
Canada – UK	21	10.2
UK – Ireland	24	9.2
UK – Spain	33	10.9
Ireland – Spain	53	20.4

In this table the number of cases is calculated by combining the two, three and four country combinations together, giving the total number of cases featuring in the six pairs of national surveys.