

Off-shore and off work: The future of Australia's service industries in a global economy

AN UPDATE

**A report for the
Australian Services Union and the Finance Sector Union**

**Prepared by the
National Institute of Economic and Industry Research**

ABN: 72 006 234 626

416 Queens Parade, Clifton Hill, Victoria, 3068

Telephone: (03) 9488 8444; Facsimile: (03) 9482 3262

Email: admin@nieir.com.au

September 2012

While the National Institute endeavours to provide reliable forecasts and believes the material is accurate it will not be liable for any claim by any party acting on such information.

Contents

| | Page no. |
|--|-----------------|
| 1. Introduction | 1 |
| 1.1 Terms of trade in selected services | 1 |
| 1.2 Job losses since 2008 | 3 |
| 1.3 Occupations 'at risk' | 4 |
| 1.4 Finance industry jobs high risk | 5 |
| 1.5 Professional, scientific and technical services | 6 |
| 1.6 Other sectors | 8 |
| 1.7 Clever country in retreat? | 8 |
| 1.8 Next steps | 9 |
| 2. Background to this report | 10 |
| 3. Off-shoring: Estimating the impact | 12 |
| 3.1 The methodology for the 2008 study | 12 |
| 3.2 A two-step estimating procedure | 13 |
| 3.3 The update | 13 |
| 3.4 Estimates of out-sourcing since 2006 | 15 |
| Appendix A: Per cent of service industry occupations from off-shoring over next two to three decades – Occupations and industry methodology | 18 |
| Appendix B: Concordance between ANZSCO and ASCO | 43 |
| Appendix C: The ABS on services classifications | 51 |

1. Introduction

In our 2008 study on off-shoring and the Australian services industries, NIEIR posed the question, in the context of the developing mining boom that was seen by most commentators as the source of Australia's future prosperity: "*Without Plan B – a strong services sector – what is Australia's future should China stumble?*" Today the question is no longer **whether** China will stumble but whether the stumble will become a free fall. This report indicates that there has been no apparent progress on Plan B. The 2008 report predicted that the pace of off-shoring was likely to continue to grow as new technology made new forms of remote work possible. In 2012 there is evidence that that is the case. The pace at which jobs have been moved off-shore has been roughly in line with the NIEIR base case (20,000 year) and the proportion of service sector jobs exposed to off-shoring has moved up from 9.7 per cent in 2007 to 10.2 per cent in 2012 (Base Case). NIEIR's concern at the time was not just for the jobs being lost but that a "vicious cycle of off-shoring jobs, losing skills and competencies from the domestic economy and as a result losing more jobs off-shore" could become institutionalised. The consequence for Australia would be that transfers to other countries offset price benefits to Australian customers from lower cost services and that we see increased inequality in incomes and between inner urban and rural regions.

Key points of this update:

- **Forecasts from the 2008 study are on track to be realised in the absence of policy intervention**
- **More than 80,000 service sector jobs have moved off-shore since previous report**
- **With more than 20,000 jobs moving off-shore each year we would expect between 700,000 and 1 million jobs to move off-shore in the next three decades**
- **Action is needed to address service sector off-shoring crisis and boost competitive position of Australian service industries.**

1.1 Terms of trade in selected services

Since NIEIR's 2008 report there has been a marked deterioration in the terms of trade for those services which NIEIR identified as being at risk of off-shoring (Figure 1). Trends identified in 2008 have been compounded by the impact of the mining boom on the rest of Australia's trade exposed industries. As NIEIR has pointed out elsewhere, the benefits of the mining boom have been overstated because of the import of both equipment and labour for the construction phase of new projects, the rise in the Australian dollar and crowding-out impacts (the so-called Dutch disease). The high dollar has undoubtedly influenced the competitiveness of services and this has given fuel to the trends identified in the 2008 report. Figure 2 shows the trend has been driven by both increased imports and reduced exports of services. The picture highlights the failure of policy makers to develop a clear strategy for the services sector to deal with the combined impact of the mining boom and greater transferability of jobs to off-shore locations. Indeed the government appears to have been unwilling so far to respond to union requests to increase transparency in relation to where services are performed so that consumers can exercise choice in purchasing decisions.

Figure 1: Trade balance of services at risk of off-shoring

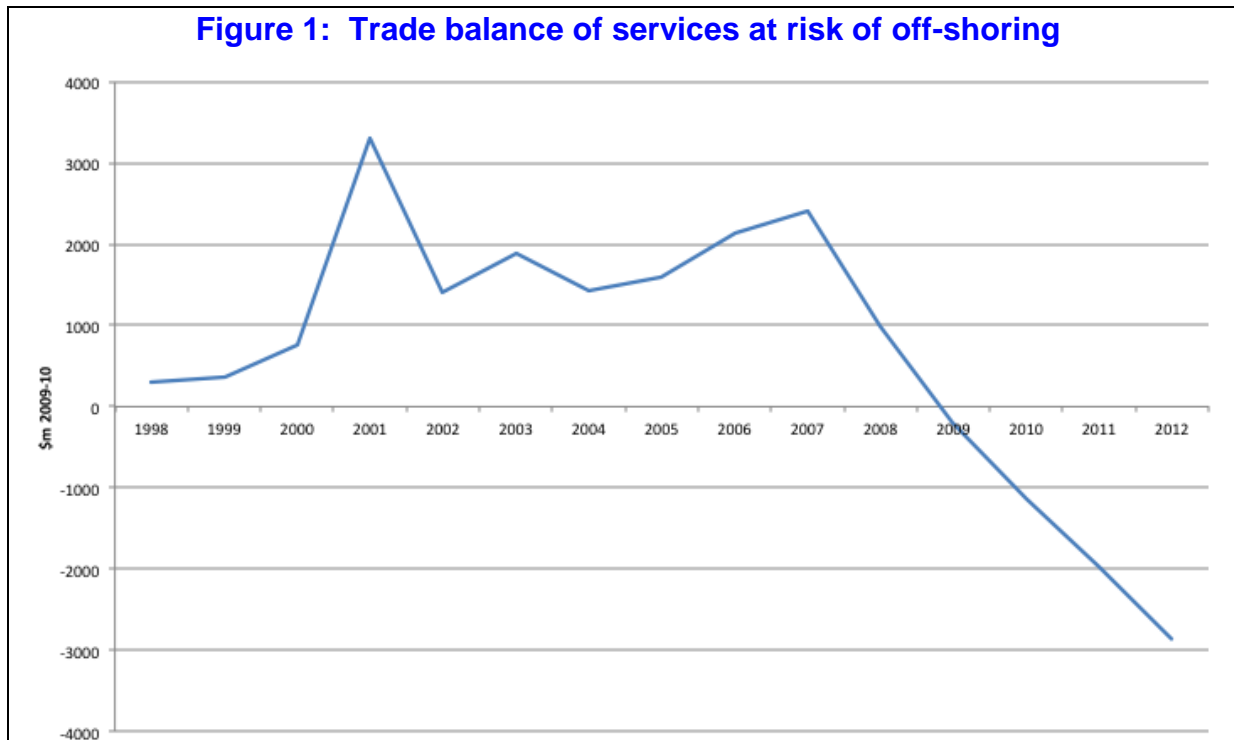
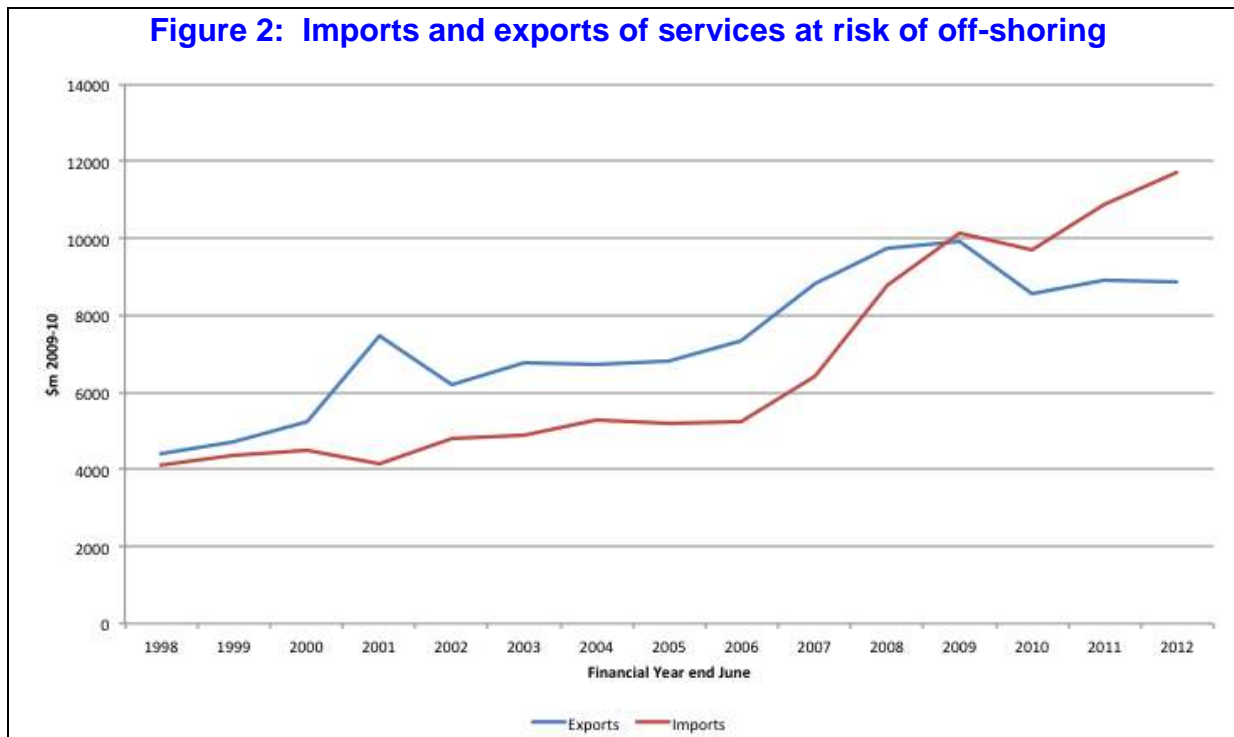


Figure 2: Imports and exports of services at risk of off-shoring

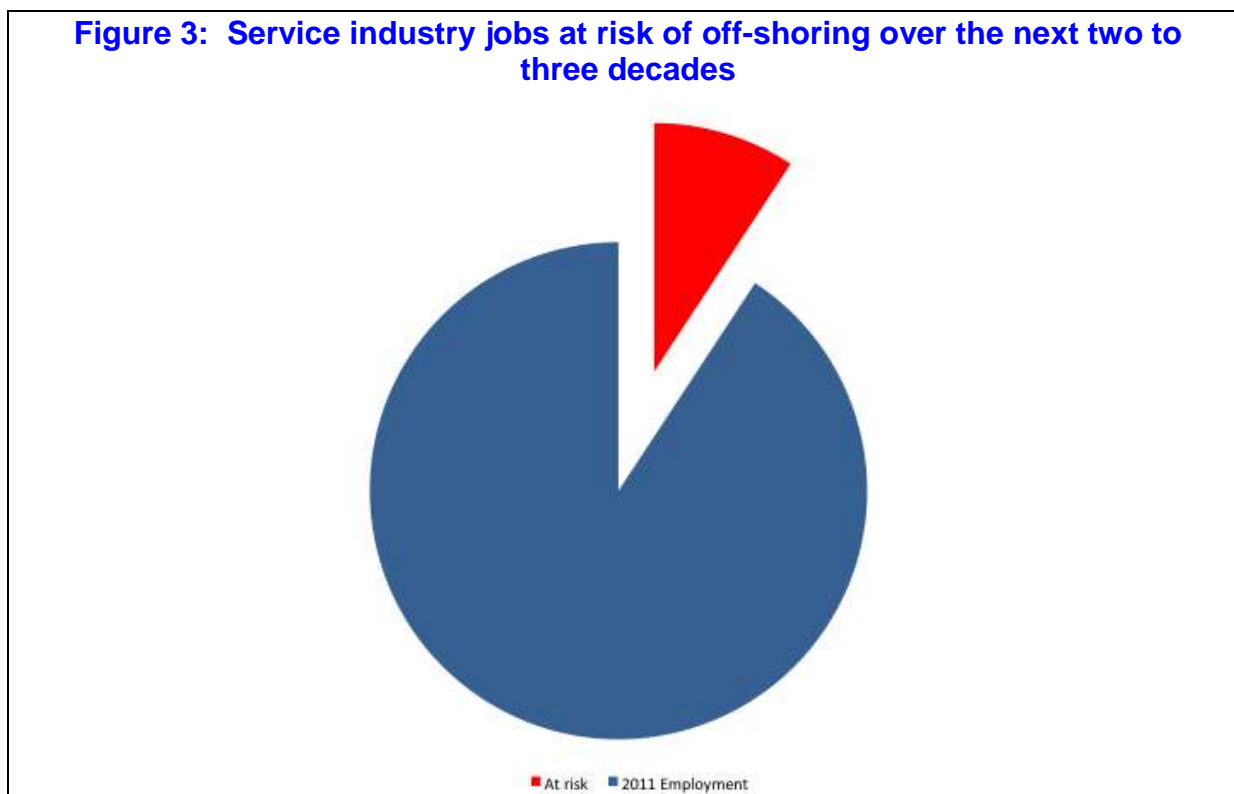


1.2 Job losses since 2008

This report estimates that the loss of jobs due to off-shoring is running at a rate in excess of 20,000 per year. This rate is approximately the rate required to reach the Base Case scenario of the 2008 report, which estimated jobs 'at risk' of off-shoring at 849,646 over the next two to three decades (29,000 per annum).

The revised estimate for this report is slightly higher at 880,842 service sector jobs (Base Case) reflecting the higher rate of 10.2 per cent of service sector jobs being 'at risk' (Figure 3) compared to 9.7 per cent in 2007. The Low Case scenario in this report is 704,848 and the High Case 1,051,118 jobs over the next two to three decades.

Figure 3: Service industry jobs at risk of off-shoring over the next two to three decades



1.3 Occupations 'at risk'

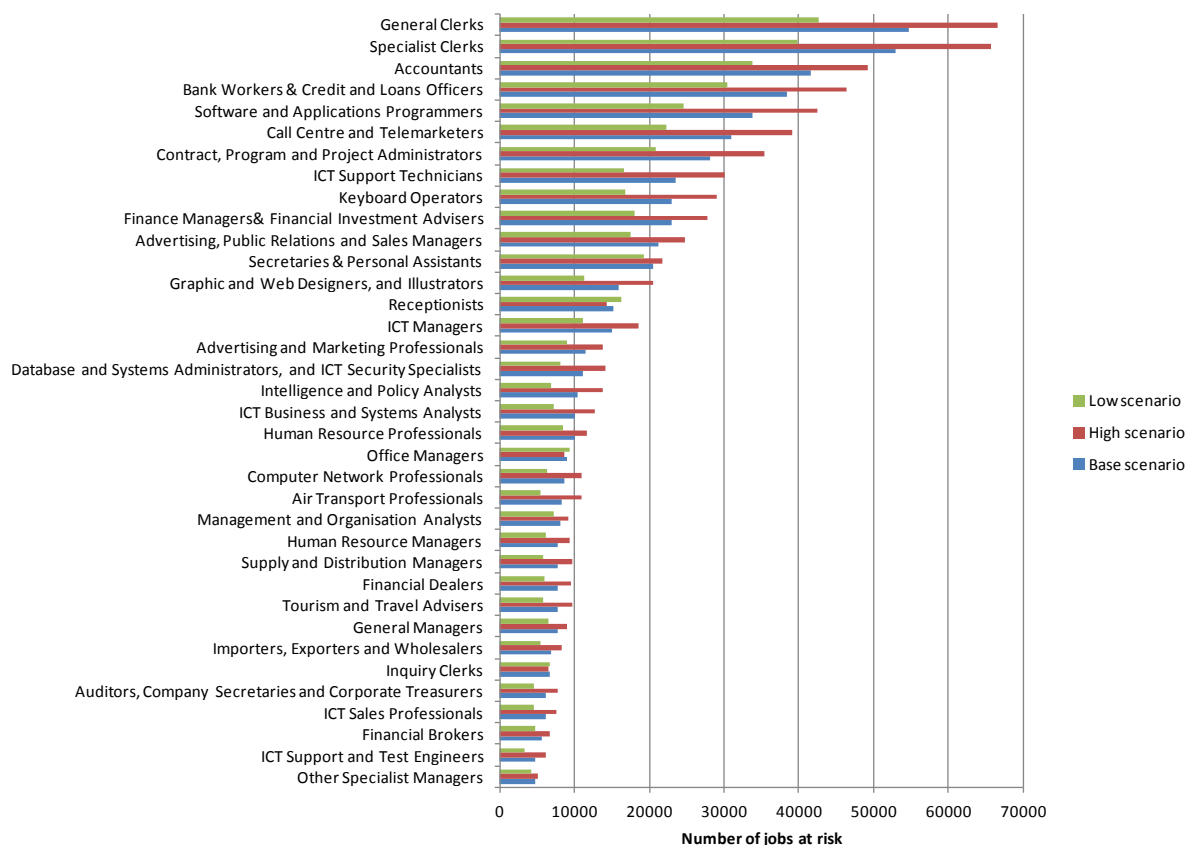
Occupations experiencing high rates of off-shoring are in ICT and administrative occupations such as data processing and clerical workers (including bank workers, law clerks, payroll, accounting, data entry). The finance and insurance sector and professional, scientific and technical services sector have high proportions of jobs 'at risk'.

Figure 4 below lists the occupations most 'at risk' of off-shoring. As explained elsewhere in this report and in NIEIR's 2008 report, this list is compiled using a two-stage methodology. The first step applies an industry indicator of off-shoring (based on existing patterns of concentration of service delivery) and the second stage applies an occupation indicator.

Across all service industries, the occupations most at risk of future off-shoring are; clerical workers, accounting staff, software applications and programming and bank workers. The potential for a range of functions to be undertaken remotely with existing or emerging technology is evident in all occupations listed.

The occupations listed in Figure 4 account for 68 per cent of occupations 'at risk' of being off-shored.

Figure 4: Occupations at risk from off-shoring over the next 20 to 30 years

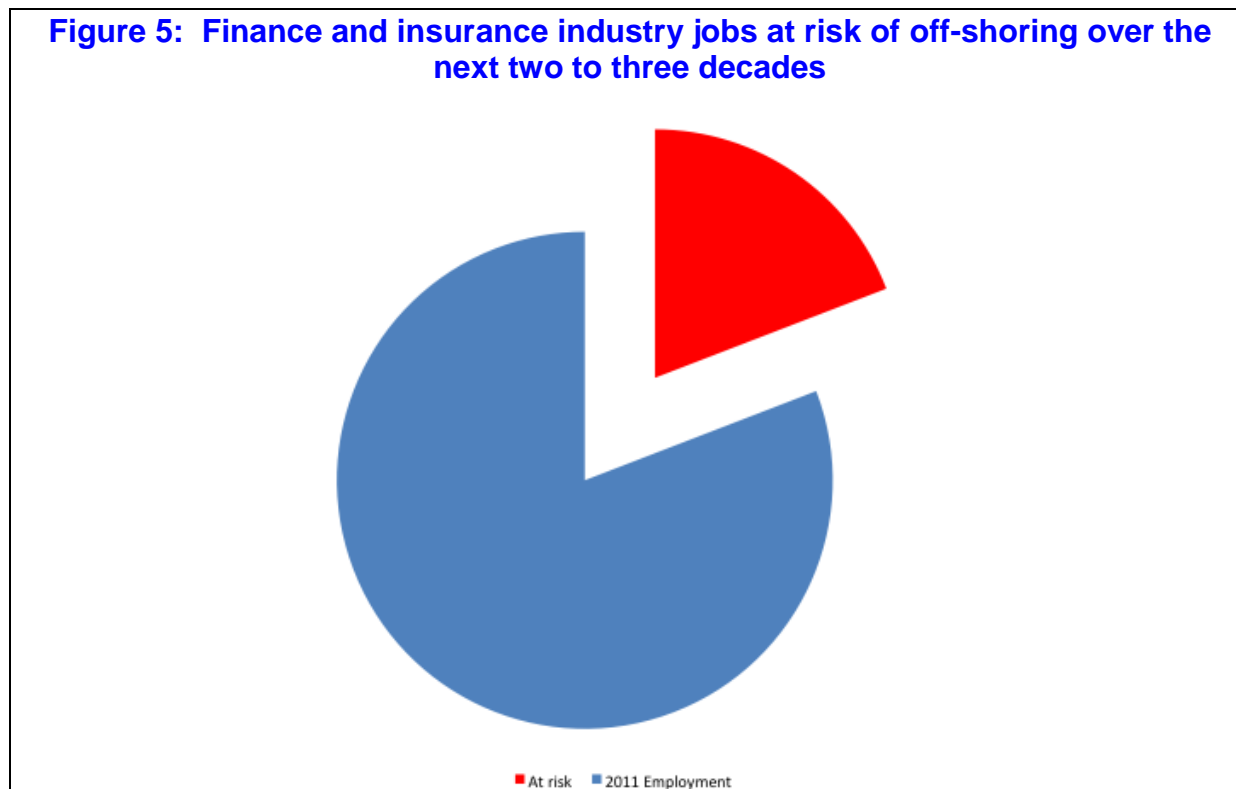


Note: In the above chart Specialist Clerks include accounting clerks, purchasing and supply logistics clerks and payroll clerks.

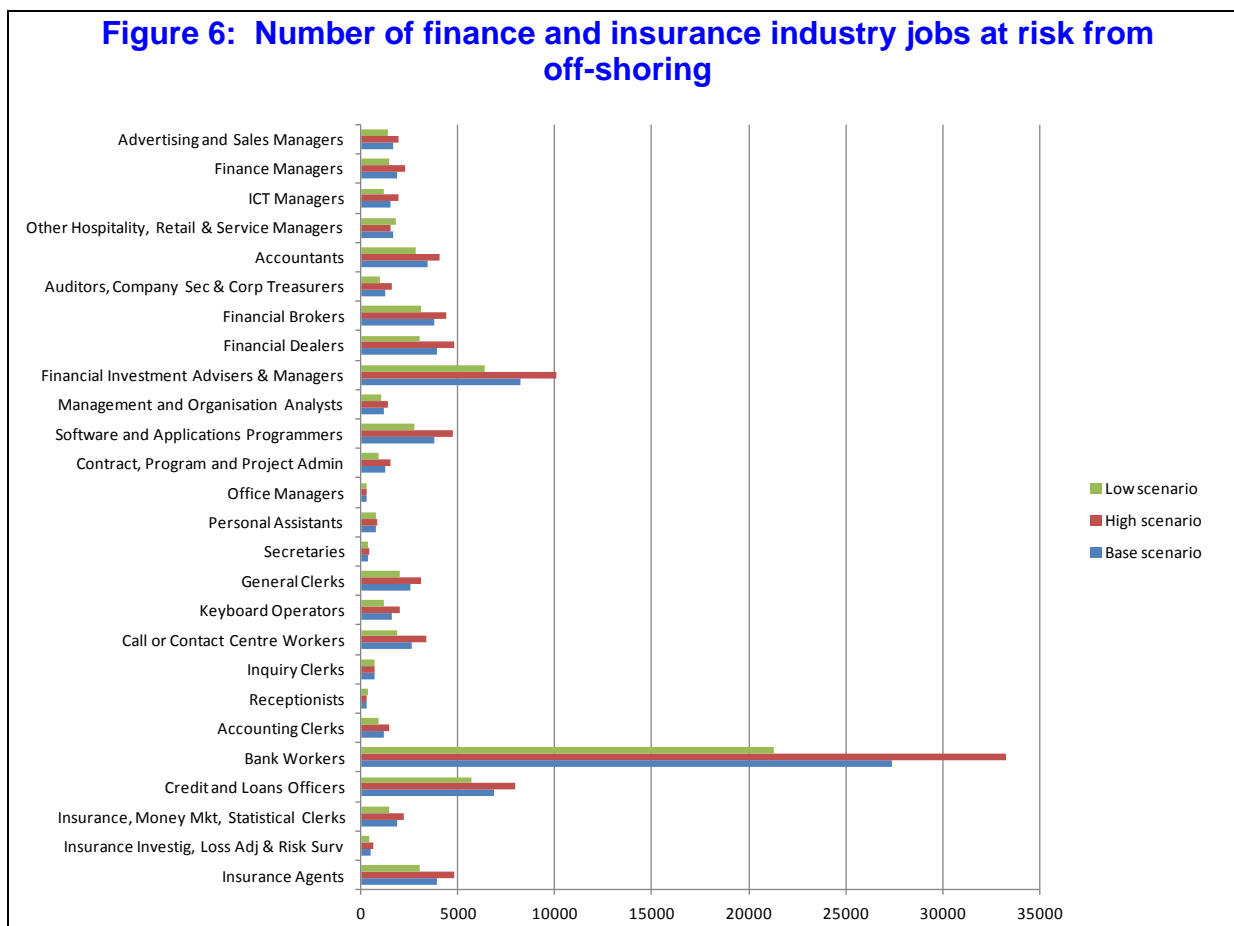
1.4 Finance industry jobs high risk

For the finance and insurance sector the proportion of jobs 'at risk' is almost twice the rate for service industries as a whole. Figure 5 shows that 24 per cent of jobs are at risk of off-shoring representing 97,000 jobs (Base Scenario) or more than 3,000 jobs a year over the next two to three decades.

Figure 5: Finance and insurance industry jobs at risk of off-shoring over the next two to three decades



The impact of off-shoring is much higher when particular occupational categories are examined (Figure 6). Three quarters of finance and insurance industry occupations are in the top one third of occupations at risk of off-shoring while more than one third of jobs are in the top 10 per cent. Occupations at most immediate risk are call or contact centre workers, bank workers (17 per cent of finance industry jobs) and software and applications programmers.



1.5 Professional, scientific and technical services

Another industry sector with a high proportion of jobs ‘at risk’ is professional, scientific and technical services. In this sector, which includes professional services such as legal, engineering and specialist ICT services, 20 per cent of jobs are ‘at risk’ of off-shoring. This sector represents almost 20 per cent of all jobs ‘at risk’ in the service industries. Major occupations impacted are ICT workers (managerial, technical and support roles) and clerical workers (including legal clerks, accounting clerks and keyboard operators). About 170,000 jobs are ‘at risk’ (Base Case) in this industry sector.

Figure 7: Professional, scientific and technical services jobs at risk of off-shoring over the next two to three decades



Table 1 shows occupations with the highest number of jobs at risk in this sector.

Table 1 Employment by selected four digit ASCO occupations 'at risk' from off-shoring over next two decades – based on occupational employment levels 2011 – Professional, Scientific and Technical Services (ANZSIC Division M)

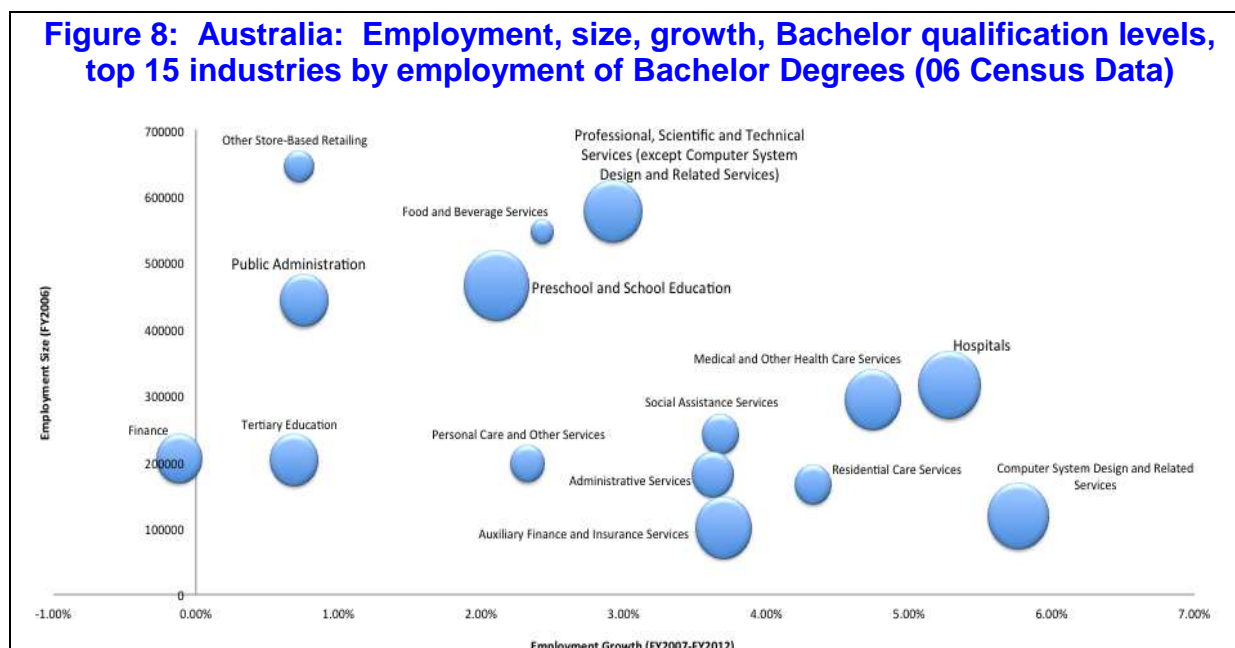
| ANZSCO | Occupation | Base scenario | High scenario | Low scenario |
|--------|---|---------------|---------------|--------------|
| 2613 | Software and Applications Programmers | 19324 | 24295 | 14044 |
| 3131 | ICT Support Technicians | 7809 | 9988 | 5510 |
| 1351 | ICT Managers | 5692 | 7065 | 4244 |
| 5311 | General Clerks | 4315 | 5254 | 3366 |
| 2611 | ICT Business and Systems Analysts | 4092 | 5190 | 2933 |
| 2621 | Database and Systems Administrators, and ICT Security Specialists | 3469 | 4381 | 2518 |
| 2631 | Computer Network Professionals | 3440 | 4316 | 2517 |
| 5212 | Secretaries | 3433 | 3644 | 3222 |
| 5991 | Conveyancers and Legal Executives | 2996 | 3484 | 2493 |
| 5615 | Survey Interviewers | 2664 | 3379 | 1881 |
| 5111 | Contract, Program and Project Administrators | 2647 | 3316 | 1967 |
| 5321 | Keyboard Operators | 2610 | 3297 | 1907 |
| 5511 | Accounting Clerks | 2608 | 3248 | 1957 |
| 5619 | Other Clerical and Office Support Workers | 2076 | 2434 | 1708 |

1.6 Other sectors

Other sectors with a high proportion of jobs 'at risk' of off-shoring include Information, Media and Telecommunication (20 per cent of total employment in that sector) and Public Administration and Safety (11.7 per cent). In the case of the latter, while it is less likely that government would off-shore services directly, it would be quite possible that out-sourced services could be off-shored. This points to a two-stage process discussed in NIEIR's original report where first the service is out-sourced and then the outsourced service provider substitutes local employment with off-shore employment.

1.7 Clever country in retreat?

There is evidence that failure to deal with competitiveness of Australia's services industries is impacting the government's ambition to move toward being a knowledge-based economy and undermining the significant investment being made in education and training services. For example, of 15 industries that are major employers of people holding a Bachelor degree (Figure 8) the most consistent growth in employment is in domestically-focused services that need to be delivered face-to-face (for the time-being at least) such as hospitals, health and other care services. Services related to new technology such as computer systems design are more erratic and, as noted above, will be increasingly prone to off-shoring. The mining industry's uptake of professional services is expected to decline with the slowdown in investment. The finance sector has exhibited negative employment growth over the period from 2007 to 2012 while Tertiary Education and Public Administration have grown at below the rate of population growth. In the Figure 8 the size of the ball represents the relative proportion of people with a Bachelor's degree to the total number of people employed in that industry. The position on the horizontal axis represents employment growth and the position on the vertical axis the size of the workforce. The number of employees with a Bachelors degree is derived from 2006 Census data.



1.8 Next steps

In our last report, NIEIR advocated the need for a comprehensive service sector strategy led by a high level task force reporting directly to relevant Cabinet Ministers. The goal was to support creating a strong place for the Australian workforce in the domestic service sector while creating a place for the Australian sector in the global traded services economy. The window to build a place in the global industry is closing as other players occupy strategic positions. Unlike manufacturing, these players are not from low-wage countries but rather capitalise on the skills and experience of their people. There is a danger facing Australia now that not only will we fail to take a role in the global market but that we will de-skill our workforce by moving key parts of the service sector off-shore. Four years have been lost since this matter was raised in our previous report.

2. Background to this report

In 2008 NIEIR was asked to:

- provide advice on the likely impact of off-shoring based on at least three different scenarios; Base Case, High and Low scenarios;
- provide advice on how the impact of those scenarios will be distributed through the Australian economy and workforce; and
- develop policy options that could be proposed to governments and industry to ensure Australian workers are not disadvantaged by these global trends.

In this update we focus on particular selected services and occupations in the services sector highlighting the three different scenarios again – base case, high and low scenarios.

In the 2008 study NIEIR determined that in the short-term the following seven characteristics identify the types of service jobs more likely than others to be off-shored.

1. Heavy reliance on information technology and routine or rule-based work.
2. Lack of need for personal contact with customers.
3. Wage cost savings in low-wage countries that outweigh productivity losses.
4. Tradability.
5. Availability of skills abroad.
6. Labour intensiveness, ease of physical relocation and separability of jobs tasks from other parts of the production process.
7. Absence of cultural, institutional and legal barriers.

In the longer term, the potential for off-shoring will increase because the speed, capability and coverage of broadband infrastructure will steadily improve and international service centres will continue to develop scale and skills that provide global competitive advantage.

At some point in the future, the virtual office will become a reality. Only services that require face to face contact (nursing, wait staff) will be tied to a particular location. Services industries will be based on a global workforce with firms seeking to maximise efficiency and competitive advantage based on global availability of skills, scale, quality, innovation and cost competitiveness. At this point, employment in many parts of the sector will be premised on globally contestable remuneration and costs.

Nothing has occurred since our 2008 report to change this thesis. In fact, experience since has confirmed these findings.

Our 2008 Study and this update take a rigorous quantitative approach based on the following simple concept: Existing patterns of service delivery (within a country) are an indicator of services and occupations that can be outsourced to foreign countries. If an industry or occupation is not strongly concentrated by region, then it is an indication that proximity to clients and markets is a competitive advantage. If, on the other hand, after adjustment for industry structure, it is found that industries or occupations are concentrated by region then it is an indication that within a national economy these industries and occupations are capable of a high level of inter-regional trade. If services of industries and occupations can be internally traded in an economy, it is a good indication that they could be traded internationally. There has to be adjustments to the results because for some services, even if they are technically capable of being traded, for example a Government service, the reality is that they will not be traded. However, all adjustments made to the outcomes of the application of the methodology in the study are transparent.

3. Off-shoring: Estimating the impact

The objective of NIEIR's 2008 study "*Off-shore and off work: The future of Australian service industries in a global economy – A call to action*" was to estimate the potential for the substitution of domestic employment in the Australian Services Sector with workers located outside Australia or from "off-shore".

Traditionally service oriented occupations, either employed in the service industries directly or as inputs into the goods (agriculture, mining and manufacturing) industries were not easily traded. That is, effective work performance required proximity to the place of employment, whether it is the factory, mine or office. The post 1980s information and communications technology (ICT) increasingly allowed more and more services to be provided remotely from the enterprise's place of location. As the ICT revolution has progressed, the potential for this has increased and over the next decade the potential for off-shoring will again increase significantly once a national high speed broadband network is in place.

3.1 The methodology for the 2008 study

The methodology employed in the 2008 study was based on the recognition that the impact of off-shoring operated at two different levels, namely:

- (i) the replacement of whole business units (firms, establishments, subsidiaries) by imported services by off-shore located business units; and
- (ii) the replacement of parts of business services provided to an on-going business unit either in-house or out-sourced to Australian residents by services provided off-shore.

The core methodology to assess the potential for this for Australian data was based on the following premises. Economic development within nations over the last century has been characterised by the concentration of those industries and occupation where services are tradeable across distance at a relatively small number of locations. These industries and occupations are the same industries and occupations that will be at risk of being off-shored.

The basic methodology was to identify those industries and occupations that were concentrated. This was done by measuring a GINI coefficient across Australian Local Government Areas (LGAs) in order to measure the concentration of industries and occupations. A GINI coefficient of zero means an industry or occupation is perfectly distributed across all LGAs and, therefore, at no risk of being off-shored. A GINI coefficient of 1 means the industry or occupation is concentrated in one LGA and, therefore, at 100 per cent risk of being off-shored.

After a set threshold, which was a GINI coefficient of 0.1, the higher the GINI coefficient the greater the risk, or in the language of the report, the higher the potential for an industry or occupation to be off-shored. The maximum potential for off-shoring was 0.6. That is, an industry or occupation that produced a GINI coefficient of 0.6 or above a 100 per cent potential for off-shoring was assigned to the industry. The potential for off-shoring of an industry or occupation was, therefore, proportional to the value of the industry and occupation GINI coefficient (less 0.1), with a 0 to 0.5 range. That is, after deducting the 0.1 threshold from the minimum and maximum value. This basic case constituted the Base scenario estimates for the potential for off-shored employment.

The High and Low scenario estimates vary the influence of the change in the GINI from the 0.1 threshold. The High scenario multiplies the change by 1.33 and the Low scenario 0.66. The idea here is that for the Low scenario the risks of off-shoring only rise when the GINI coefficient reaches high values and, therefore, industries and occupations with GINI coefficients in the 0.1 to 0.2 range, for example, have relatively little risk of off-shoring. The High scenario takes the opposite approach and assumes the risk of off-shoring increases disproportionately as the GINI coefficient measure of the 0.1 threshold compared to the case where the GINI coefficient is high at 0.3 to 0.4. In effect, the High scenario lowers the GINI coefficient per 100 per cent risk of off-shoring from 0.6 to 0.45.

3.2 A two-step estimating procedure

A two-step estimating procedure is applied to obtain the total estimates for the potential of off-shoring Australian employment. The first was to estimate the industry employment that was at risk using the calculated industry GINI coefficients. The next step was to apply the occupation GINI to the remaining industry employment to estimate the occupation employment that was likely to be out-sourced.

3.3 The update

This study updates the previous study by recalculating the 2006 ANZSIC06 estimates based on the ANZSCO definitions. The 2006 study was based on the old ASCO and ANZSIC93 definitions.

The concordance between the two classifications is given in Appendix A. There are more ANZSCO occupations than ASCO occupations and the reclassification of occupations in more detail is the key reason why the estimates for out-sourced employment potential for 2006 in his update is greater than the previous 2006 estimates. The reason for this is straight forward. If only aggregate data was used then Australia would have little risk of out-sourcing as the GINI coefficient across LGAs would be less than 0.1. The greater the level of disaggregation and the more actual industry definitions compared to like for like (or homogenous) industries and occupations, then the greater is likely to be the potential for out-sourcing. A point will be reached when this effect will not occur because the statistics will describe homogenous industry and occupations. This point was not reached with the old ASCO classifications. The ANZSIC93 classifications, however, were close to describing like for like industries.

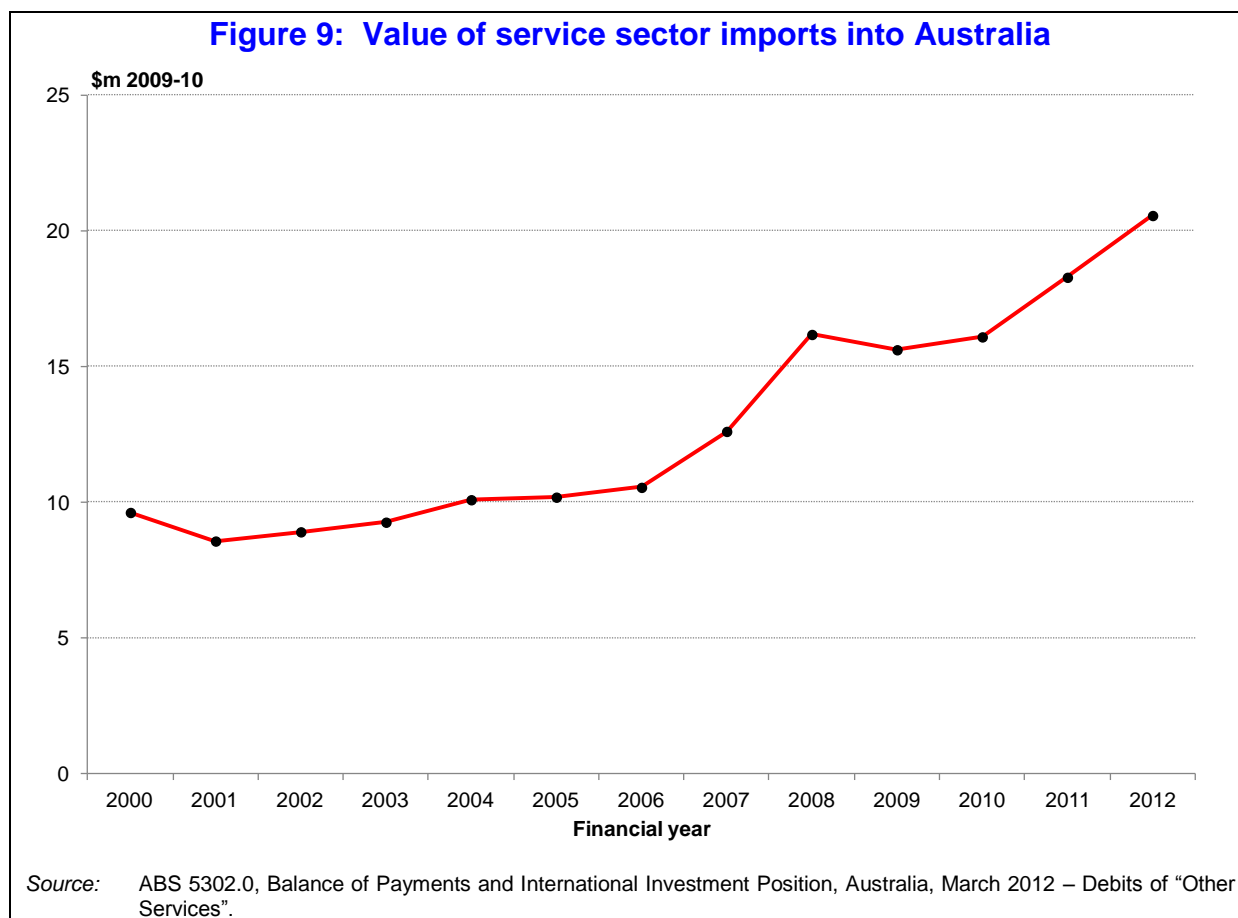
The 2006 estimates are updated to 2011 using NIEIR's estimates of ANZSCO and ANZSIC06 employment estimates by LGA and industry. This database is described in NIEIR/ALGA "*State of the Regions – 2012-13*" report.

| Table 2 Per cent of service industry occupations from off-shoring over next two to three decades – Occupations and industry methodology – Comparisons | | | | | | | | | |
|--|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| 2006 estimates from 2007 report | | | | | | | | | |
| Total (of service sector employment) | 3.2 | 3.9 | 2.5 | 6.5 | 7.5 | 5.5 | 9.7 | 11.4 | 8 |
| Per cent of total employment | 2.7 | 3.3 | 2.1 | 5.5 | 6.3 | 4.7 | 8.2 | 9.7 | 6.8 |
| Total 2006 – number | 279707 | 344069 | 215345 | 569939 | 653495 | 481096 | 849646 | 997564 | 696440 |
| 2006 estimates from 2011 report | | | | | | | | | |
| Total (of service sector employment) | 3.0 | 3.8 | 2.3 | 7.8 | 9.3 | 6.2 | 10.8 | 13 | 8.5 |
| Per cent of total employment | 2.3 | 2.8 | 1.7 | 5.8 | 6.9 | 4.7 | 8.1 | 9.7 | 6.4 |
| Total 2006 – number | 228619 | 284834 | 172405 | 589644 | 699756 | 473382 | 818264 | 984590 | 645787 |
| 2011 estimates from 2011 report | | | | | | | | | |
| Total (of service sector employment) | 2.7 | 3.3 | 2.1 | 7.5 | 8.8 | 6.1 | 10.2 | 12.2 | 8.1 |
| Per cent of total employment | 2.1 | 2.5 | 1.6 | 5.7 | 6.7 | 4.6 | 7.7 | 9.2 | 6.2 |
| Total 2011 – number | 234477 | 287450 | 181505 | 646365 | 763668 | 523344 | 880842 | 1051118 | 704848 |

3.4 Estimates of out-sourcing since 2006

This update includes an estimate of out-sourcing since 2006 by using Australian import of services statistics published by the Australian Bureau of Statistics (ABS). Table 3 shows the classifications of the service import statistics. Figure 9 shows the growth in the value of service sector imports to Australia.

| Table 3 The import service categories where payments for off-shored services are most likely to be made | |
|--|--|
| Import category | |
| 1. | Computer services |
| 2. | Information and other services |
| 3. | Research and development services |
| 4. | Professional and management consulting services |
| 5. | Technical, trade related and other business services |
| 6. | Audio/visual and related services |



To estimate the employment losses the impact to domestic supply ratio for the following industries:

- (i) professional services;
- (ii) administrative services;
- (iii) public administrative services;
- (iv) education and training;
- (v) health;
- (vi) arts and recreation; and
- (vii) other services,

were estimated using that part of imports that was relevant to capturing off-shored service components.

Next, the import to supply rate was adjusted to reflect employment equivalent dollar for dollar expenditures. This involved estimating the cost of savings for employment in Australia vis-a-vis employment overseas. In the 2006 report the employment equivalent cost differential was estimated at 40 per cent. Hence, the import to supply ratio was divided by 0.6.

The increase in the adjusted import to supply ratio from 2006 was calculated next. For a given quarter, the increase in the import to supply ratio translates into a loss of domestic production. The loss of domestic production is then multiplied by the employment to gains output ratio for the quarter for the industry estimated from NIEIR's data base.

The results of the calculation are given in Table 4. The results show that since 2006 the increase in the employment loss from outsourcing over the last two years is running at a rate of in excess of 20,000 per year. This rate is approximately the rate required to reach the base scenario off-shoring employment loss of 880,000 over the next three decades. This rate is 29,000 per annum.

The major assumption of this analysis is that all increases in the import share in total supply for the nominated industries reflect off-shoring payments.

That is, non off-shoring payments for services are captured in the growth in domestic supply multiplied by the 2006 import ratio. This will not be the case for all payments. However, the estimates in Table 4 are likely to under-estimate significantly the off-shoring service payments because of:

- (i) some off-shoring payments would have been included in the 2006 import estimates; and
- (ii) all off-shoring service payments are unlikely to be captured in the ABS statistics, even if the sample used to collect the statistics was reliable.

| Table 4 Estimates of employment loss from off-shoring services since 2006 ('000) | | | | | | | | | |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | 2009.3 | 2009.4 | 2010.1 | 2010.2 | 2010.3 | 2010.4 | 2011.1 | 2011.2 | 2011.3 |
| Employment losses from increase in import penetration – since 2006 | | | | | | | | | |
| Professional services – \$cvm | 11 | 17 | 14 | 13 | 16 | 22 | 22 | 22 | 20 |
| Administrative services | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| Public administrative services – \$cvm | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Education and training – \$cvm | 13 | 13 | 10 | 11 | 19 | 20 | 18 | 25 | 30 |
| Health – \$cvm | 5 | 5 | 4 | 4 | 8 | 8 | 7 | 10 | 13 |
| Arts and recreation – \$cvm | 5 | 5 | 5 | 5 | 9 | 8 | 7 | 10 | 13 |
| Other services – \$cvm | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 3 | 3 |
| Total | 38 | 47 | 38 | 39 | 59 | 67 | 62 | 76 | 85 |

Notes: This is only a partial analysis of the full extent of off-shoring. The direct estimates of finance sector losses probably need to be added, or at least a portion of them.
cvm = chain volume measure.

Appendix A: Per cent of service industry occupations from off-shoring over next two to three decades – Occupations and industry methodology

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Chief Executives and Managing Directors | 3.8 | 4.7 | 2.9 | 0.0 | 0.0 | 0.0 | 3.8 | 4.7 | 2.9 |
| General Managers | 4.3 | 5.5 | 3.1 | 11.1 | 12.6 | 9.5 | 15.4 | 18.2 | 12.6 |
| Legislators | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Aquaculture Farmers | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Crop Farmers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Livestock Farmers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Mixed Crop and Livestock Farmers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advertising, Public Relations and Sales Managers | 6.0 | 7.5 | 4.5 | 11.6 | 13.4 | 9.8 | 17.7 | 20.9 | 14.3 |
| Corporate Services Managers | 3.1 | 3.8 | 2.3 | 9.8 | 10.8 | 8.8 | 12.9 | 14.6 | 11.1 |
| Finance Managers | 4.9 | 6.0 | 3.7 | 15.7 | 18.9 | 12.4 | 20.6 | 24.9 | 16.1 |
| Human Resource Managers | 3.9 | 4.8 | 3.0 | 15.7 | 18.9 | 12.4 | 19.6 | 23.8 | 15.4 |
| Policy and Planning Managers | 1.9 | 2.4 | 1.4 | 19.0 | 22.8 | 15.2 | 20.9 | 25.2 | 16.5 |
| Research and Development Managers | 6.8 | 9.1 | 4.5 | 15.1 | 17.7 | 12.3 | 21.9 | 26.7 | 16.8 |
| Construction Managers | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Engineering Managers | 1.6 | 2.1 | 1.1 | 8.3 | 9.9 | 6.7 | 10.0 | 12.0 | 7.9 |
| Importers, Exporters and Wholesalers | 8.8 | 9.8 | 7.7 | 23.9 | 29.8 | 17.9 | 32.7 | 39.6 | 25.5 |
| Manufacturers | 0.5 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.4 |
| Production Managers | 1.2 | 1.5 | 0.9 | 1.7 | 2.1 | 1.4 | 3.0 | 3.6 | 2.4 |
| Supply and Distribution Managers | 2.2 | 2.6 | 1.8 | 22.4 | 28.4 | 16.3 | 24.6 | 31.0 | 18.0 |
| Child Care Centre Managers | 0.0 | 0.1 | 0.0 | 4.1 | 4.9 | 3.3 | 4.1 | 4.9 | 3.3 |
| Health and Welfare Services Managers | 0.4 | 0.5 | 0.3 | 5.4 | 6.5 | 4.4 | 5.9 | 7.1 | 4.7 |
| School Principals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other Education Managers | 0.4 | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.6 | 0.3 |
| ICT Managers | 10.5 | 13.7 | 7.4 | 24.2 | 29.5 | 18.4 | 34.8 | 43.2 | 25.7 |
| Commissioned Officers (Management) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Senior Non-commissioned Defence Force Members | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Other Specialist Managers | 2.7 | 3.4 | 2.0 | 7.6 | 8.1 | 7.1 | 10.3 | 11.6 | 9.1 |
| Cafe and Restaurant Managers | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Caravan Park and Camping Ground Managers | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Hotel and Motel Managers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Licensed Club Managers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Other Accommodation and Hospitality Managers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Retail Managers | 1.2 | 1.4 | 1.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.4 | 1.0 |
| Amusement, Fitness and Sports Centre Managers | 1.8 | 2.5 | 1.0 | 0.0 | 0.0 | 0.0 | 1.8 | 2.5 | 1.0 |
| Call or Contact Centre and Customer Service Managers | 4.6 | 5.9 | 3.3 | 20.6 | 25.3 | 15.7 | 25.2 | 31.3 | 19.0 |
| Conference and Event Organisers | 5.9 | 7.4 | 4.4 | 8.8 | 8.6 | 9.1 | 14.8 | 16.0 | 13.5 |
| Transport Services Managers | 2.0 | 2.8 | 1.3 | 0.0 | 0.0 | 0.0 | 2.0 | 2.8 | 1.3 |
| Other Hospitality, Retail and Service Managers | 5.3 | 6.4 | 4.3 | 4.5 | 3.0 | 6.0 | 9.8 | 9.4 | 10.3 |
| Actors, Dancers and Other Entertainers | 2.2 | 3.1 | 1.3 | 29.2 | 36.7 | 21.6 | 31.4 | 39.8 | 22.9 |
| Music Professionals | 0.4 | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.6 | 0.3 |
| Photographers | 2.7 | 3.6 | 1.8 | 0.9 | 1.0 | 0.7 | 3.6 | 4.5 | 2.5 |
| Visual Arts and Crafts Professionals | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Artistic Directors, and Media Producers and Presenters | 1.7 | 2.3 | 1.0 | 21.5 | 26.1 | 16.9 | 23.2 | 28.5 | 17.9 |
| Authors, and Book and Script Editors | 7.0 | 9.5 | 4.4 | 39.2 | 49.8 | 28.0 | 46.2 | 59.3 | 32.4 |
| Film, Television, Radio and Stage Directors | 1.1 | 1.5 | 0.8 | 5.3 | 3.5 | 7.1 | 6.4 | 5.0 | 7.8 |
| Journalists and Other Writers | 12.4 | 16.9 | 7.8 | 20.8 | 24.4 | 16.7 | 33.2 | 41.3 | 24.5 |
| Accountants | 8.3 | 10.1 | 6.6 | 15.2 | 17.9 | 12.4 | 23.6 | 28.0 | 19.0 |
| Auditors, Company Secretaries and Corporate Treasurers | 6.7 | 8.1 | 5.2 | 28.1 | 35.3 | 20.5 | 34.7 | 43.4 | 25.7 |
| Financial Brokers | 4.9 | 6.0 | 3.9 | 16.9 | 19.9 | 13.8 | 21.8 | 25.9 | 17.7 |
| Financial Dealers | 6.1 | 7.3 | 4.9 | 24.8 | 30.7 | 18.7 | 30.9 | 38.0 | 23.6 |
| Financial Investment Advisers and Managers | 4.7 | 5.6 | 3.7 | 23.7 | 29.2 | 18.1 | 28.4 | 34.8 | 21.8 |
| Human Resource Professionals | 5.8 | 6.5 | 5.2 | 11.5 | 13.7 | 9.3 | 17.4 | 20.2 | 14.5 |
| ICT Trainers | 7.6 | 9.8 | 5.4 | 5.6 | 4.3 | 7.0 | 13.2 | 14.1 | 12.4 |
| Training and Development Professionals | 3.6 | 4.5 | 2.7 | 8.5 | 8.6 | 8.4 | 12.1 | 13.2 | 11.1 |
| Actuaries, Mathematicians and Statisticians | 8.3 | 10.9 | 5.8 | 0.0 | 0.0 | 0.0 | 8.3 | 10.9 | 5.8 |
| Archivists, Curators and Records Managers | 3.4 | 4.3 | 2.6 | 46.8 | 51.0 | 37.8 | 50.2 | 55.2 | 40.3 |
| Economists | 6.2 | 8.1 | 4.4 | 19.8 | 23.7 | 15.6 | 26.0 | 31.8 | 20.0 |
| Intelligence and Policy Analysts | 1.1 | 1.4 | 0.7 | 58.4 | 77.6 | 39.0 | 59.4 | 78.9 | 39.8 |
| Land Economists and Valuers | 3.2 | 4.2 | 2.2 | 7.8 | 8.3 | 7.3 | 11.0 | 12.5 | 9.6 |
| Librarians | 4.6 | 5.4 | 3.9 | 5.1 | 3.3 | 6.9 | 9.7 | 8.7 | 10.7 |
| Management and Organisation Analysts | 9.3 | 11.8 | 6.7 | 8.0 | 7.9 | 8.1 | 17.3 | 19.7 | 14.8 |
| Other Information and Organisation Professionals | 3.4 | 4.5 | 2.4 | 20.7 | 25.2 | 16.1 | 24.2 | 29.7 | 18.5 |
| Advertising and Marketing Professionals | 7.1 | 9.2 | 5.1 | 15.5 | 18.1 | 12.6 | 22.6 | 27.3 | 17.7 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| ICT Sales Professionals | 15.4 | 20.3 | 10.5 | 23.5 | 27.9 | 18.3 | 38.9 | 48.2 | 28.8 |
| Public Relations Professionals | 5.5 | 7.2 | 3.9 | 17.8 | 21.1 | 14.4 | 23.4 | 28.3 | 18.3 |
| Technical Sales Representatives | 6.0 | 7.0 | 5.0 | 11.3 | 13.2 | 9.3 | 17.3 | 20.3 | 14.3 |
| Air Transport Professionals | 0.1 | 0.1 | 0.1 | 55.5 | 74.0 | 37.0 | 55.6 | 74.1 | 37.1 |
| Marine Transport Professionals | 0.5 | 0.7 | 0.4 | 34.6 | 45.4 | 23.8 | 35.1 | 46.1 | 24.1 |
| Architects and Landscape Architects | 0.3 | 0.4 | 0.2 | 19.8 | 24.3 | 15.3 | 20.1 | 24.7 | 15.6 |
| Surveyors and Spatial Scientists | 1.2 | 1.6 | 0.8 | 13.6 | 14.9 | 11.0 | 14.8 | 16.5 | 11.8 |
| Fashion, Industrial and Jewellery Designers | 3.1 | 3.8 | 2.4 | 20.1 | 26.1 | 14.0 | 23.2 | 29.8 | 16.4 |
| Graphic and Web Designers, and Illustrators | 5.0 | 6.7 | 3.4 | 32.6 | 41.7 | 23.1 | 37.6 | 48.4 | 26.5 |
| Interior Designers | 0.6 | 0.7 | 0.4 | 30.8 | 40.5 | 21.1 | 31.4 | 41.2 | 21.5 |
| Urban and Regional Planners | 0.7 | 0.8 | 0.5 | 0.0 | 0.0 | 0.0 | 0.7 | 0.8 | 0.5 |
| Chemical and Materials Engineers | 1.0 | 1.4 | 0.7 | 6.7 | 7.9 | 5.4 | 7.7 | 9.3 | 6.1 |
| Civil Engineering Professionals | 0.3 | 0.4 | 0.2 | 5.4 | 4.9 | 6.0 | 5.7 | 5.3 | 6.2 |
| Electrical Engineers | 1.2 | 1.6 | 0.8 | 5.2 | 5.7 | 4.8 | 6.4 | 7.3 | 5.6 |
| Electronics Engineers | 4.1 | 5.5 | 2.8 | 7.3 | 7.8 | 6.0 | 11.5 | 13.3 | 8.8 |
| Industrial, Mechanical and Production Engineers | 0.9 | 1.2 | 0.7 | 3.9 | 4.3 | 3.2 | 4.9 | 5.5 | 3.9 |
| Mining Engineers | 0.5 | 0.7 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.4 |
| Other Engineering Professionals | 2.1 | 2.7 | 1.5 | 11.0 | 12.0 | 8.9 | 13.1 | 14.7 | 10.4 |
| Agricultural and Forestry Scientists | 4.5 | 6.0 | 3.0 | 0.0 | 0.0 | 0.0 | 4.5 | 6.0 | 3.0 |
| Chemists, and Food and Wine Scientists | 2.3 | 3.1 | 1.6 | 9.8 | 12.1 | 7.3 | 12.1 | 15.2 | 8.9 |
| Environmental Scientists | 3.3 | 4.3 | 2.3 | 0.0 | 0.0 | 0.0 | 3.3 | 4.3 | 2.3 |
| Geologists and Geophysicists | 1.4 | 1.9 | 1.0 | 10.4 | 12.8 | 7.9 | 11.8 | 14.7 | 8.8 |
| Life Scientists | 7.7 | 10.6 | 4.8 | 38.7 | 49.2 | 27.4 | 46.4 | 59.8 | 32.2 |
| Medical Laboratory Scientists | 6.2 | 8.6 | 3.8 | 23.0 | 27.8 | 17.9 | 29.2 | 36.4 | 21.7 |
| Veterinarians | 0.4 | 0.5 | 0.2 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.2 |
| Other Natural and Physical Science Professionals | 3.3 | 4.4 | 2.1 | 14.4 | 17.1 | 11.6 | 17.7 | 21.5 | 13.7 |
| Early Childhood (Pre-primary School) Teachers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Primary School Teachers | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Middle School Teachers (Aus) / Intermediate School Teachers (NZ) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Secondary School Teachers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Special Education Teachers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| University Lecturers and Tutors | 0.1 | 0.1 | 0.0 | 20.5 | 24.7 | 16.3 | 20.5 | 24.8 | 16.3 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Vocational Education Teachers (Aus) / Polytechnic Teachers (NZ) | 0.5 | 0.6 | 0.4 | 3.0 | 3.3 | 2.4 | 3.5 | 3.9 | 2.8 |
| Education Advisers and Reviewers | 2.1 | 2.8 | 1.5 | 3.6 | 3.9 | 2.9 | 5.7 | 6.7 | 4.4 |
| Private Tutors and Teachers | 0.3 | 0.3 | 0.2 | 2.6 | 2.9 | 2.1 | 2.9 | 3.2 | 2.3 |
| Teachers of English to Speakers of Other Languages | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Dieticians | 0.6 | 0.8 | 0.4 | 3.0 | 3.3 | 2.4 | 3.6 | 4.1 | 2.8 |
| Medical Imaging Professionals | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Occupational and Environmental Health Professionals | 2.4 | 3.0 | 1.8 | 15.8 | 19.3 | 12.2 | 18.2 | 22.3 | 14.1 |
| Optometrists and Orthopaedists | 0.2 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.1 |
| Pharmacists | 0.7 | 0.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.7 | 0.9 | 0.4 |
| Other Health Diagnostic and Promotion Professionals | 1.0 | 1.3 | 0.6 | 0.0 | 0.0 | 0.0 | 1.0 | 1.3 | 0.6 |
| Chiropractors and Osteopaths | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Complementary Health Therapists | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Dental Practitioners | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Occupational Therapists | 0.5 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.4 |
| Physiotherapists | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Podiatrists | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Speech Professionals and Audiologists | 0.2 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.1 |
| Generalist Medical Practitioners | 0.1 | 0.2 | 0.1 | 2.4 | 2.9 | 1.9 | 2.5 | 3.1 | 2.0 |
| Anaesthetists | 0.1 | 0.1 | 0.0 | 10.2 | 10.2 | 10.1 | 10.2 | 10.3 | 10.1 |
| Specialist Physicians | 0.5 | 0.6 | 0.3 | 10.5 | 10.7 | 10.3 | 11.0 | 11.3 | 10.6 |
| Psychiatrists | 0.1 | 0.1 | 0.0 | 8.6 | 8.0 | 9.1 | 8.6 | 8.1 | 9.2 |
| Surgeons | 0.2 | 0.3 | 0.2 | 9.1 | 8.8 | 9.5 | 9.4 | 9.1 | 9.7 |
| Other Medical Practitioners | 0.3 | 0.4 | 0.2 | 8.9 | 8.5 | 9.3 | 9.2 | 8.9 | 9.6 |
| Midwives | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Nurse Educators and Researchers | 1.3 | 1.8 | 0.8 | 13.2 | 14.4 | 11.9 | 14.5 | 16.2 | 12.7 |
| Nurse Managers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Registered Nurses | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| ICT Business and Systems Analysts | 9.7 | 12.4 | 7.0 | 36.0 | 45.7 | 25.5 | 45.7 | 58.1 | 32.6 |
| Multimedia Specialists and Web Developers | 12.3 | 16.1 | 8.5 | 32.1 | 39.7 | 23.6 | 44.3 | 55.7 | 32.1 |
| Software and Applications Programmers | 11.4 | 14.6 | 8.2 | 33.7 | 42.3 | 24.3 | 45.1 | 56.9 | 32.5 |
| Database and Systems Administrators, and ICT Security Specialists | 7.7 | 10.0 | 5.5 | 30.2 | 38.0 | 21.8 | 37.9 | 48.0 | 27.3 |
| Computer Network Professionals | 9.6 | 12.6 | 6.7 | 28.9 | 35.9 | 21.2 | 38.5 | 48.5 | 27.9 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| ICT Support and Test Engineers | 10.0 | 12.9 | 7.2 | 46.0 | 59.0 | 31.8 | 56.0 | 71.9 | 39.0 |
| Telecommunications Engineering Professionals | 19.4 | 26.7 | 12.0 | 15.0 | 16.3 | 13.2 | 34.4 | 43.0 | 25.2 |
| Barristers | 11.7 | 14.6 | 8.7 | 13.8 | 15.2 | 12.2 | 25.4 | 29.8 | 20.9 |
| Judicial and Other Legal Professionals | 6.8 | 8.6 | 5.1 | 0.0 | 0.0 | 0.0 | 6.8 | 8.6 | 5.1 |
| Solicitors | 14.1 | 17.6 | 10.5 | 5.2 | 3.8 | 6.8 | 19.3 | 21.4 | 17.3 |
| Counsellors | 1.2 | 1.4 | 1.0 | 4.8 | 5.3 | 3.9 | 6.0 | 6.7 | 4.8 |
| Ministers of Religion | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Psychologists | 1.1 | 1.4 | 0.8 | 0.0 | 0.0 | 0.0 | 1.1 | 1.4 | 0.8 |
| Social Professionals | 4.1 | 5.5 | 2.8 | 7.7 | 7.1 | 8.4 | 11.9 | 12.5 | 11.2 |
| Social Workers | 0.3 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.3 |
| Welfare, Recreation and Community Arts Workers | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Agricultural Technicians | 4.5 | 6.2 | 2.8 | 0.0 | 0.0 | 0.0 | 4.5 | 6.2 | 2.8 |
| Medical Technicians | 0.7 | 1.0 | 0.5 | 6.3 | 5.0 | 7.7 | 7.1 | 6.0 | 8.1 |
| Primary Products Inspectors | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Science Technicians | 2.3 | 3.1 | 1.5 | 0.0 | 0.0 | 0.0 | 2.3 | 3.1 | 1.5 |
| Architectural, Building and Surveying Technicians | 0.3 | 0.3 | 0.2 | 3.9 | 4.2 | 3.7 | 4.2 | 4.5 | 3.9 |
| Civil Engineering Draftspersons and Technicians | 0.3 | 0.4 | 0.2 | 13.0 | 15.2 | 10.7 | 13.2 | 15.6 | 10.9 |
| Electrical Engineering Draftspersons and Technicians | 0.6 | 0.8 | 0.5 | 3.7 | 4.2 | 3.3 | 4.4 | 4.9 | 3.8 |
| Electronic Engineering Draftspersons and Technicians | 4.0 | 5.4 | 2.6 | 11.6 | 13.6 | 9.5 | 15.6 | 19.0 | 12.2 |
| Mechanical Engineering Draftspersons and Technicians | 0.8 | 1.0 | 0.6 | 9.2 | 10.8 | 7.5 | 10.0 | 11.8 | 8.2 |
| Safety Inspectors | 1.2 | 1.4 | 0.9 | 0.0 | 0.0 | 0.0 | 1.2 | 1.4 | 0.9 |
| Other Building and Engineering Technicians | 0.7 | 0.9 | 0.5 | 3.5 | 3.9 | 3.1 | 4.3 | 4.8 | 3.7 |
| ICT Support Technicians | 9.5 | 12.5 | 6.5 | 40.4 | 51.4 | 28.5 | 49.9 | 63.9 | 35.0 |
| Telecommunications Technical Specialists | 16.9 | 23.1 | 10.6 | 39.3 | 47.5 | 28.7 | 56.1 | 70.6 | 39.3 |
| Automotive Electricians | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 |
| Motor Mechanics | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Metal Casting, Forging and Finishing Trades Workers | 0.1 | 0.1 | 0.1 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 |
| Sheet Metal Trades Workers | 0.3 | 0.3 | 0.2 | 1.9 | 2.4 | 1.4 | 2.1 | 2.7 | 1.6 |
| Structural Steel and Welding Trades Workers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Aircraft Maintenance Engineers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Metal Fitters and Machinists | 0.7 | 0.8 | 0.6 | 0.0 | 0.0 | 0.0 | 0.7 | 0.8 | 0.6 |
| Precision Metal Trades Workers | 1.5 | 1.7 | 1.3 | 15.7 | 19.2 | 12.3 | 17.2 | 20.8 | 13.5 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Toolmakers and Engineering Patternmakers | 0.5 | 0.6 | 0.4 | 5.9 | 7.6 | 4.0 | 6.4 | 8.2 | 4.5 |
| Panel Beaters | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Vehicle Body Builders and Trimmers | 0.2 | 0.2 | 0.1 | 4.3 | 4.6 | 4.0 | 4.5 | 4.8 | 4.2 |
| Vehicle Painters | 0.1 | 0.2 | 0.1 | 17.9 | 21.7 | 14.1 | 18.0 | 21.8 | 14.2 |
| Bricklayers and Stonemasons | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Carpenters and Joiners | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Floor Finishers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Painting Trades Workers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Glaziers | 0.2 | 0.2 | 0.2 | 0.8 | 1.0 | 0.6 | 1.0 | 1.2 | 0.8 |
| Plasterers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Roof Tilers | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 |
| Wall and Floor Tilers | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| Plumbers | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Electricians | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Air Conditioning and Refrigeration Mechanics | 0.2 | 0.2 | 0.2 | 8.7 | 10.8 | 6.6 | 8.8 | 11.0 | 6.7 |
| Electrical Distribution Trades Workers | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Electronics Trades Workers | 4.4 | 5.5 | 3.3 | 7.6 | 7.7 | 7.5 | 12.0 | 13.2 | 10.8 |
| Telecommunications Trades Workers | 14.5 | 19.8 | 9.2 | 0.0 | 0.0 | 0.0 | 14.5 | 19.8 | 9.2 |
| Bakers and Pastry Cooks | 0.6 | 0.5 | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.5 | 0.6 |
| Butchers and Smallgoods Makers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Chefs | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Cooks | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 |
| Animal Attendants and Trainers | 0.6 | 0.8 | 0.4 | 0.0 | 0.0 | 0.0 | 0.6 | 0.8 | 0.4 |
| Shearers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Veterinary Nurses | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Florists | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gardeners | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Greenkeepers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Nurserypersons | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Hairdressers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Print Finishers and Screen Printers | 2.2 | 3.0 | 1.4 | 0.0 | 0.0 | 0.0 | 2.2 | 3.0 | 1.4 |
| Graphic Pre-press Trades Workers | 5.2 | 7.0 | 3.5 | 16.4 | 20.4 | 12.0 | 21.7 | 27.4 | 15.5 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Printers | 2.4 | 3.2 | 1.6 | 0.0 | 0.0 | 0.0 | 2.4 | 3.2 | 1.6 |
| Canvas and Leather Goods Makers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Clothing Trades Workers | 0.8 | 1.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.8 | 1.0 | 0.6 |
| Upholsterers | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 |
| Cabinetmakers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Wood Machinists and Other Wood Trades Workers | 0.4 | 0.5 | 0.4 | 4.2 | 5.1 | 3.2 | 4.6 | 5.6 | 3.6 |
| Boat Builders and Shipwrights | 0.6 | 0.8 | 0.4 | 0.9 | 1.0 | 0.9 | 1.5 | 1.7 | 1.3 |
| Chemical, Gas, Petroleum and Power Generation Plant Operators | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.3 |
| Gallery, Library and Museum Technicians | 4.2 | 4.8 | 3.7 | 0.0 | 0.0 | 0.0 | 4.2 | 4.8 | 3.7 |
| Jewellers | 3.8 | 4.1 | 3.6 | 6.9 | 8.0 | 5.7 | 10.7 | 12.1 | 9.3 |
| Performing Arts Technicians | 1.7 | 2.1 | 1.2 | 20.9 | 25.6 | 16.2 | 22.6 | 27.8 | 17.4 |
| Sign Writers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Other Miscellaneous Technicians and Trades Workers | 0.6 | 0.8 | 0.5 | 8.0 | 9.4 | 6.7 | 8.7 | 10.2 | 7.2 |
| Ambulance Officers and Paramedics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Dental Hygienists, Technicians and Therapists | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Diversional Therapists | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Enrolled and Mothercraft Nurses | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Indigenous Health Workers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Massage Therapists | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Welfare Support Workers | 0.7 | 0.8 | 0.6 | 0.0 | 0.0 | 0.0 | 0.7 | 0.8 | 0.6 |
| Child Carers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Education Aides | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Aged and Disabled Carers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Dental Assistants | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Nursing Support and Personal Care Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Special Care Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Bar Attendants and Baristas | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Cafe Workers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Gaming Workers | 0.0 | 0.0 | 0.0 | 15.8 | 18.1 | 13.5 | 15.8 | 18.2 | 13.5 |
| Hotel Service Managers | 0.2 | 0.3 | 0.1 | 3.5 | 4.2 | 2.8 | 3.7 | 4.5 | 3.0 |
| Waiters | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Other Hospitality Workers | 0.8 | 1.1 | 0.4 | 0.0 | 0.0 | 0.0 | 0.8 | 1.1 | 0.4 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Defence Force Members - Other Ranks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fire and Emergency Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Police | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Prison Officers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Security Officers and Guards | 0.7 | 0.9 | 0.5 | 0.0 | 0.0 | 0.0 | 0.7 | 0.9 | 0.5 |
| Beauty Therapists | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Driving Instructors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Funeral Workers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gallery, Museum and Tour Guides | 0.8 | 1.1 | 0.5 | 24.2 | 30.0 | 18.4 | 25.0 | 31.1 | 19.0 |
| Personal Care Consultants | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Tourism and Travel Advisers | 0.7 | 0.8 | 0.5 | 27.8 | 34.9 | 20.7 | 28.5 | 35.8 | 21.2 |
| Travel Attendants | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other Personal Service Workers | 0.6 | 0.8 | 0.4 | 0.0 | 0.0 | 0.0 | 0.6 | 0.8 | 0.4 |
| Fitness Instructors | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Outdoor Adventure Guides | 0.5 | 0.7 | 0.3 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.3 |
| Sports Coaches, Instructors and Officials | 0.2 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.1 |
| Sportspersons | 0.6 | 0.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.6 | 0.9 | 0.4 |
| Contract, Program and Project Administrators | 3.0 | 3.9 | 2.1 | 21.4 | 26.8 | 15.9 | 24.4 | 30.7 | 18.0 |
| Office Managers | 2.8 | 3.4 | 2.1 | 4.6 | 4.1 | 5.2 | 7.4 | 7.5 | 6.7 |
| Practice Managers | 1.5 | 1.9 | 1.1 | 6.8 | 5.6 | 8.0 | 8.3 | 7.5 | 9.2 |
| Personal Assistants | 4.6 | 5.8 | 3.4 | 7.4 | 7.2 | 7.6 | 12.0 | 13.0 | 11.1 |
| Secretaries | 4.1 | 5.1 | 3.1 | 6.5 | 6.7 | 6.3 | 10.6 | 11.7 | 9.5 |
| General Clerks | 2.4 | 3.0 | 1.9 | 17.8 | 21.9 | 13.7 | 20.3 | 25.0 | 15.5 |
| Keyboard Operators | 4.5 | 5.8 | 3.3 | 27.4 | 34.7 | 19.8 | 31.9 | 40.5 | 23.1 |
| Call or Contact Centre Workers | 12.2 | 16.6 | 7.7 | 36.7 | 45.5 | 26.6 | 48.8 | 62.1 | 34.3 |
| Inquiry Clerks | 7.0 | 9.4 | 4.6 | 3.2 | 1.3 | 5.3 | 10.3 | 10.7 | 9.9 |
| Receptionists | 2.1 | 2.5 | 1.6 | 7.1 | 6.6 | 7.7 | 9.2 | 9.1 | 9.3 |
| Accounting Clerks | 3.3 | 4.0 | 2.5 | 19.2 | 24.1 | 14.1 | 22.4 | 28.1 | 16.6 |
| Bookkeepers | 3.2 | 3.9 | 2.5 | 0.0 | 0.0 | 0.0 | 3.2 | 3.9 | 2.5 |
| Payroll Clerks | 2.4 | 2.9 | 1.8 | 20.9 | 26.4 | 15.4 | 23.3 | 29.3 | 17.2 |
| Bank Workers | 11.7 | 13.5 | 9.9 | 28.5 | 35.7 | 21.1 | 40.2 | 49.2 | 31.0 |
| Credit and Loans Officers (Aus) / Finance Clerks (NZ) | 10.1 | 11.9 | 8.3 | 16.8 | 19.7 | 13.9 | 27.0 | 31.6 | 22.2 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Insurance, Money Market and Statistical Clerks | 7.8 | 9.5 | 6.1 | 0.0 | 0.0 | 0.0 | 7.8 | 9.5 | 6.1 |
| Betting Clerks | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Couriers and Postal Deliverers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Filing and Registry Clerks | 3.1 | 3.9 | 2.4 | 14.9 | 17.5 | 12.2 | 18.0 | 21.4 | 14.6 |
| Mail Sorters | 1.5 | 2.1 | 1.0 | 0.0 | 0.0 | 0.0 | 1.5 | 2.1 | 1.0 |
| Survey Interviewers | 16.8 | 22.0 | 11.6 | 49.5 | 61.8 | 35.1 | 66.3 | 83.9 | 46.7 |
| Switchboard Operators | 5.6 | 7.5 | 3.8 | 33.1 | 42.0 | 23.7 | 38.7 | 49.5 | 27.5 |
| Other Clerical and Office Support Workers | 11.5 | 14.9 | 8.1 | 13.1 | 14.5 | 11.5 | 24.6 | 29.5 | 19.6 |
| Purchasing and Supply Logistics Clerks | 3.4 | 4.0 | 2.8 | 19.0 | 24.0 | 14.0 | 22.5 | 28.0 | 16.8 |
| Transport and Despatch Clerks | 1.7 | 2.0 | 1.3 | 12.0 | 13.8 | 10.1 | 13.6 | 15.8 | 11.4 |
| Conveyancers and Legal Executives | 13.3 | 16.6 | 9.9 | 16.3 | 18.6 | 13.7 | 29.6 | 35.3 | 23.6 |
| Court and Legal Clerks | 8.4 | 10.6 | 6.2 | 20.0 | 23.8 | 16.0 | 28.3 | 34.3 | 22.2 |
| Debt Collectors | 9.9 | 13.4 | 6.4 | 0.0 | 0.0 | 0.0 | 9.9 | 13.4 | 6.4 |
| Human Resource Clerks | 3.0 | 3.7 | 2.3 | 7.1 | 6.6 | 7.7 | 10.2 | 10.4 | 10.0 |
| Inspectors and Regulatory Officers | 0.5 | 0.7 | 0.4 | 7.1 | 6.2 | 8.0 | 7.6 | 6.9 | 8.4 |
| Insurance Investigators, Loss Adjusters and Risk Surveyors | 9.6 | 11.6 | 7.6 | 0.0 | 0.0 | 0.0 | 9.6 | 11.6 | 7.6 |
| Library Assistants | 3.7 | 4.2 | 3.2 | 0.0 | 0.0 | 0.0 | 3.7 | 4.2 | 3.2 |
| Other Miscellaneous Clerical and Administrative Workers | 4.9 | 6.4 | 3.4 | 12.8 | 14.2 | 11.3 | 17.7 | 20.6 | 14.7 |
| Auctioneers, and Stock and Station Agents | 1.0 | 1.1 | 0.9 | 0.0 | 0.0 | 0.0 | 1.0 | 1.1 | 0.9 |
| Insurance Agents | 10.2 | 12.3 | 8.0 | 25.5 | 31.4 | 19.3 | 35.7 | 43.6 | 27.4 |
| Sales Representatives | 6.1 | 7.3 | 4.8 | 4.4 | 3.6 | 5.2 | 10.5 | 10.9 | 10.1 |
| Real Estate Sales Agents | 0.6 | 0.8 | 0.4 | 6.4 | 5.3 | 7.6 | 7.1 | 6.1 | 8.0 |
| Sales Assistants (General) | 1.0 | 1.1 | 0.8 | 0.0 | 0.0 | 0.0 | 1.0 | 1.1 | 0.8 |
| ICT Sales Assistants | 13.1 | 17.5 | 8.7 | 0.0 | 0.0 | 0.0 | 13.1 | 17.5 | 8.7 |
| Motor Vehicle and Vehicle Parts Salespersons | 1.6 | 1.7 | 1.5 | 0.0 | 0.0 | 0.0 | 1.6 | 1.7 | 1.5 |
| Pharmacy Sales Assistants | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Retail Supervisors | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Service Station Attendants | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 |
| Street Vendors and Related Salespersons | 1.9 | 2.2 | 1.6 | 0.0 | 0.0 | 0.0 | 1.9 | 2.2 | 1.6 |
| Other Sales Assistants and Salespersons | 6.7 | 8.6 | 4.8 | 0.0 | 0.0 | 0.0 | 6.7 | 8.6 | 4.8 |
| Checkout Operators and Office Cashiers | 0.3 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.3 |
| Models and Sales Demonstrators | 3.1 | 3.6 | 2.5 | 4.4 | 3.5 | 5.2 | 7.5 | 7.2 | 7.8 |

Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued)

| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
|--|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Retail and Wool Buyers | 2.7 | 3.2 | 2.2 | 19.0 | 22.8 | 15.2 | 21.8 | 26.1 | 17.4 |
| Telemarketers | 10.5 | 14.3 | 6.7 | 39.6 | 49.8 | 28.2 | 50.2 | 64.2 | 34.9 |
| Ticket Salespersons | 0.9 | 1.2 | 0.6 | 16.4 | 19.0 | 13.8 | 17.3 | 20.2 | 14.4 |
| Visual Merchandisers | 2.6 | 3.1 | 2.0 | 14.2 | 16.8 | 11.6 | 16.8 | 19.9 | 13.6 |
| Other Sales Support Workers | 6.3 | 7.5 | 5.2 | 0.0 | 0.0 | 0.0 | 6.3 | 7.5 | 5.2 |
| Clay, Concrete, Glass and Stone Processing Machine Operators | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 |
| Industrial Spray Painters | 0.2 | 0.3 | 0.2 | 0.3 | 0.0 | 0.6 | 0.6 | 0.3 | 0.8 |
| Paper and Wood Processing Machine Operators | 0.9 | 1.1 | 0.8 | 0.0 | 0.0 | 0.0 | 0.9 | 1.1 | 0.8 |
| Photographic Developers and Printers | 1.0 | 1.3 | 0.7 | 2.3 | 2.7 | 1.8 | 3.3 | 4.0 | 2.6 |
| Plastics and Rubber Production Machine Operators | 0.3 | 0.3 | 0.3 | 0.3 | 0.1 | 0.4 | 0.6 | 0.5 | 0.7 |
| Sewing Machinists | 0.6 | 0.7 | 0.5 | 0.5 | 0.6 | 0.4 | 1.1 | 1.3 | 0.9 |
| Textile and Footwear Production Machine Operators | 0.4 | 0.5 | 0.3 | 0.4 | 0.2 | 0.6 | 0.8 | 0.7 | 0.9 |
| Other Machine Operators | 2.4 | 3.5 | 1.4 | 1.2 | 1.4 | 1.0 | 3.6 | 4.9 | 2.4 |
| Crane, Hoist and Lift Operators | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.4 |
| Drillers, Miners and Shot Firers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Engineering Production Workers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Other Stationary Plant Operators | 0.5 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.4 |
| Agricultural, Forestry and Horticultural Plant Operators | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Earthmoving Plant Operators | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Forklift Drivers | 1.9 | 2.2 | 1.6 | 0.0 | 0.0 | 0.0 | 1.9 | 2.2 | 1.6 |
| Other Mobile Plant Operators | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Automobile Drivers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Bus and Coach Drivers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Train and Tram Drivers | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Delivery Drivers | 1.8 | 1.9 | 1.7 | 0.0 | 0.0 | 0.0 | 1.8 | 1.9 | 1.7 |
| Truck Drivers | 0.5 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.4 |
| Storepersons | 3.4 | 3.9 | 2.9 | 0.0 | 0.0 | 0.0 | 3.4 | 3.9 | 2.9 |
| Car Detailers | 1.8 | 2.4 | 1.2 | 0.0 | 0.0 | 0.0 | 1.8 | 2.4 | 1.2 |
| Commercial Cleaners | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Domestic Cleaners | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Housekeepers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Laundry Workers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Other Cleaners | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Building and Plumbing Labourers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Concreters | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fencers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Insulation and Home Improvement Installers | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Paving and Surfacing Labourers | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Railway Track Workers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Structural Steel Construction Workers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Other Construction and Mining Labourers | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Food and Drink Factory Workers | 0.6 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.5 |
| Meat Boners and Slicers, and Slaughterers | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.3 |
| Meat, Poultry and Seafood Process Workers | 0.6 | 0.7 | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.6 |
| Packers | 1.3 | 1.5 | 1.1 | 0.0 | 0.0 | 0.0 | 1.3 | 1.5 | 1.1 |
| Product Assemblers | 0.6 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.5 |
| Metal Engineering Process Workers | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.3 |
| Plastics and Rubber Factory Workers | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.4 |
| Product Quality Controllers | 1.6 | 2.0 | 1.2 | 0.6 | 0.7 | 0.5 | 2.3 | 2.8 | 1.7 |
| Timber and Wood Process Workers | 1.5 | 1.8 | 1.2 | 0.0 | 0.0 | 0.0 | 1.5 | 1.8 | 1.2 |
| Other Factory Process Workers | 1.0 | 1.2 | 0.8 | 0.0 | 0.0 | 0.0 | 1.0 | 1.2 | 0.8 |
| Aquaculture Workers | 1.2 | 1.2 | 1.1 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 1.1 |
| Crop Farm Workers | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.3 |
| Forestry and Logging Workers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Garden and Nursery Labourers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Livestock Farm Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Mixed Crop and Livestock Farm Workers | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Other Farm, Forestry and Garden Workers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Fast Food Cooks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Food Trades Assistants | 0.5 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.5 |
| Kitchenhands | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Freight and Furniture Handlers | 0.7 | 0.8 | 0.6 | 0.0 | 0.0 | 0.0 | 0.7 | 0.8 | 0.6 |
| Shelf Fillers | 0.3 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.3 |
| Caretakers | 0.5 | 0.7 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.4 |

| Table A.1 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2006 (continued) | | | | | | | | | |
|---|-----------------|---------------|---------------|---|---------------|---------------|---------------|---------------|---------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Deck and Fishing Hands | 0.5 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.4 |
| Handy Persons | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Motor Vehicle Parts and Accessories Fitters | 0.6 | 0.5 | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.5 | 0.6 |
| Printing Assistants and Table Workers | 4.3 | 5.8 | 2.8 | 0.0 | 0.0 | 0.0 | 4.3 | 5.8 | 2.8 |
| Recycling and Rubbish Collectors | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 |
| Vending Machine Attendants | 0.6 | 0.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.6 | 0.9 | 0.4 |
| Other Miscellaneous Labourers | 1.3 | 1.7 | 1.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.7 | 1.0 |
| Total (of service sector employment) | 3.0 | 3.8 | 2.3 | 7.8 | 9.2 | 6.2 | 10.8 | 13.0 | 8.5 |
| Per cent of total employment | 2.3 | 2.8 | 1.7 | 5.8 | 6.9 | 4.7 | 8.1 | 9.7 | 6.4 |
| Total 2006 – number | 228619 | 284834 | 172405 | 589644 | 699756 | 473382 | 818264 | 984590 | 645787 |

| Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Chief Executives and Managing Directors | 3.5 | 4.3 | 2.7 | 0.0 | 0.0 | 0.0 | 3.5 | 4.3 | 2.7 |
| General Managers | 3.8 | 4.8 | 2.7 | 10.8 | 12.1 | 9.4 | 14.5 | 16.9 | 12.1 |
| Legislators | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Aquaculture Farmers | 0.5 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.5 |
| Crop Farmers | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 |
| Livestock Farmers | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Mixed Crop and Livestock Farmers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advertising, Public Relations and Sales Managers | 5.6 | 6.9 | 4.3 | 11.5 | 13.1 | 9.8 | 17.1 | 20.1 | 14.1 |
| Corporate Services Managers | 2.8 | 3.4 | 2.2 | 9.4 | 10.2 | 8.6 | 12.2 | 13.6 | 10.8 |
| Finance Managers | 4.5 | 5.5 | 3.5 | 15.4 | 18.4 | 12.3 | 19.9 | 23.9 | 15.7 |
| Human Resource Managers | 3.5 | 4.3 | 2.8 | 15.4 | 18.4 | 12.2 | 18.9 | 22.7 | 15.0 |
| Policy and Planning Managers | 1.7 | 2.1 | 1.3 | 18.6 | 22.3 | 14.9 | 20.3 | 24.5 | 16.2 |
| Research and Development Managers | 6.5 | 8.6 | 4.5 | 15.2 | 17.8 | 12.4 | 21.7 | 26.4 | 16.9 |
| Construction Managers | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Engineering Managers | 1.5 | 1.9 | 1.1 | 8.2 | 9.8 | 6.7 | 9.7 | 11.7 | 7.7 |
| Importers, Exporters and Wholesalers | 8.4 | 9.4 | 7.5 | 22.0 | 27.1 | 16.7 | 30.4 | 36.5 | 24.2 |
| Manufacturers | 0.6 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.5 |
| Production Managers | 1.2 | 1.5 | 0.9 | 1.7 | 2.0 | 1.4 | 2.9 | 3.5 | 2.3 |
| Supply and Distribution Managers | 2.0 | 2.3 | 1.6 | 21.3 | 26.9 | 15.7 | 23.3 | 29.2 | 17.3 |
| Child Care Centre Managers | 0.0 | 0.0 | 0.0 | 3.6 | 4.3 | 2.9 | 3.6 | 4.3 | 2.9 |
| Health and Welfare Services Managers | 0.3 | 0.4 | 0.2 | 4.8 | 5.8 | 3.8 | 5.1 | 6.1 | 4.1 |
| School Principals | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other Education Managers | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| ICT Managers | 9.9 | 12.6 | 7.2 | 24.8 | 30.4 | 18.7 | 34.6 | 43.0 | 25.8 |
| Commissioned Officers (Management) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Senior Non-commissioned Defence Force Members | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Other Specialist Managers | 2.5 | 3.1 | 1.8 | 7.5 | 7.9 | 7.1 | 9.9 | 10.9 | 9.0 |
| Cafe and Restaurant Managers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Caravan Park and Camping Ground Managers | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Hotel and Motel Managers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Licensed Club Managers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |

Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued)

| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
|--|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Other Accommodation and Hospitality Managers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Retail Managers | 0.9 | 1.1 | 0.7 | 0.0 | 0.0 | 0.0 | 0.9 | 1.1 | 0.7 |
| Amusement, Fitness and Sports Centre Managers | 1.4 | 2.1 | 0.8 | 0.0 | 0.0 | 0.0 | 1.4 | 2.1 | 0.8 |
| Call or Contact Centre and Customer Service Managers | 4.2 | 5.3 | 3.1 | 19.5 | 23.8 | 15.0 | 23.7 | 29.1 | 18.1 |
| Conference and Event Organisers | 5.5 | 6.8 | 4.1 | 8.6 | 8.2 | 8.9 | 14.0 | 15.0 | 13.1 |
| Transport Services Managers | 1.8 | 2.4 | 1.2 | 0.0 | 0.0 | 0.0 | 1.8 | 2.4 | 1.2 |
| Other Hospitality, Retail and Service Managers | 4.8 | 5.7 | 4.0 | 4.2 | 2.6 | 5.9 | 9.1 | 8.4 | 9.9 |
| Actors, Dancers and Other Entertainers | 1.9 | 2.7 | 1.1 | 28.3 | 35.5 | 21.0 | 30.2 | 38.1 | 22.1 |
| Music Professionals | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Photographers | 2.1 | 2.8 | 1.4 | 0.8 | 0.9 | 0.7 | 3.0 | 3.7 | 2.1 |
| Visual Arts and Crafts Professionals | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.3 |
| Artistic Directors, and Media Producers and Presenters | 1.5 | 2.1 | 0.9 | 20.9 | 25.3 | 16.5 | 22.4 | 27.4 | 17.5 |
| Authors, and Book and Script Editors | 5.7 | 7.7 | 3.6 | 37.7 | 48.0 | 26.9 | 43.3 | 55.6 | 30.5 |
| Film, Television, Radio and Stage Directors | 1.1 | 1.4 | 0.8 | 5.1 | 3.3 | 7.0 | 6.2 | 4.7 | 7.8 |
| Journalists and Other Writers | 11.0 | 14.9 | 7.0 | 20.4 | 24.0 | 16.4 | 31.4 | 38.9 | 23.4 |
| Accountants | 7.9 | 9.4 | 6.5 | 15.8 | 18.7 | 12.8 | 23.7 | 28.0 | 19.3 |
| Auditors, Company Secretaries and Corporate Treasurers | 6.3 | 7.5 | 5.1 | 27.5 | 34.7 | 20.1 | 33.8 | 42.2 | 25.2 |
| Financial Brokers | 4.8 | 5.9 | 3.8 | 16.2 | 19.0 | 13.4 | 21.1 | 24.8 | 17.3 |
| Financial Dealers | 5.7 | 6.8 | 4.6 | 24.2 | 30.0 | 18.4 | 29.9 | 36.8 | 23.0 |
| Financial Investment Advisers and Managers | 4.4 | 5.3 | 3.6 | 22.9 | 28.1 | 17.6 | 27.3 | 33.4 | 21.2 |
| Human Resource Professionals | 5.5 | 6.0 | 5.0 | 11.2 | 13.3 | 9.0 | 16.7 | 19.3 | 14.0 |
| ICT Trainers | 6.8 | 8.6 | 5.1 | 5.5 | 4.1 | 6.9 | 12.3 | 12.6 | 12.0 |
| Training and Development Professionals | 3.1 | 3.9 | 2.4 | 8.1 | 8.0 | 8.2 | 11.2 | 11.9 | 10.6 |
| Actuaries, Mathematicians and Statisticians | 7.8 | 10.0 | 5.6 | 0.0 | 0.0 | 0.0 | 7.8 | 10.0 | 5.6 |
| Archivists, Curators and Records Managers | 2.9 | 3.6 | 2.2 | 45.5 | 49.7 | 36.7 | 48.4 | 53.2 | 38.9 |
| Economists | 5.9 | 7.5 | 4.3 | 19.4 | 23.3 | 15.4 | 25.3 | 30.9 | 19.7 |
| Intelligence and Policy Analysts | 1.0 | 1.3 | 0.7 | 58.3 | 77.5 | 39.0 | 59.3 | 78.8 | 39.7 |
| Land Economists and Valuers | 3.2 | 4.1 | 2.2 | 7.4 | 7.8 | 7.0 | 10.6 | 11.9 | 9.2 |
| Librarians | 4.4 | 5.2 | 3.6 | 4.8 | 3.0 | 6.7 | 9.2 | 8.2 | 10.3 |
| Management and Organisation Analysts | 8.6 | 10.7 | 6.5 | 7.9 | 7.7 | 8.0 | 16.5 | 18.4 | 14.5 |
| Other Information and Organisation Professionals | 3.1 | 3.9 | 2.2 | 20.0 | 24.3 | 15.7 | 23.1 | 28.2 | 17.9 |
| Advertising and Marketing Professionals | 6.6 | 8.4 | 4.8 | 15.4 | 18.1 | 12.6 | 22.0 | 26.5 | 17.5 |

| Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| ICT Sales Professionals | 14.4 | 18.6 | 10.2 | 23.1 | 27.7 | 18.0 | 37.6 | 46.3 | 28.2 |
| Public Relations Professionals | 5.0 | 6.3 | 3.6 | 17.3 | 20.5 | 14.1 | 22.3 | 26.8 | 17.7 |
| Technical Sales Representatives | 5.6 | 6.5 | 4.7 | 10.8 | 12.5 | 9.1 | 16.4 | 19.0 | 13.8 |
| Air Transport Professionals | 0.1 | 0.1 | 0.1 | 56.3 | 75.1 | 37.6 | 56.4 | 75.2 | 37.6 |
| Marine Transport Professionals | 0.5 | 0.6 | 0.4 | 34.4 | 45.0 | 23.7 | 34.9 | 45.6 | 24.1 |
| Architects and Landscape Architects | 0.3 | 0.3 | 0.2 | 19.5 | 23.8 | 15.2 | 19.8 | 24.1 | 15.4 |
| Surveyors and Spatial Scientists | 1.0 | 1.3 | 0.7 | 12.2 | 13.4 | 9.8 | 13.3 | 14.7 | 10.5 |
| Fashion, Industrial and Jewellery Designers | 3.1 | 3.8 | 2.4 | 23.2 | 30.0 | 16.2 | 26.3 | 33.8 | 18.6 |
| Graphic and Web Designers, and Illustrators | 5.0 | 6.5 | 3.5 | 33.3 | 42.5 | 23.6 | 38.2 | 49.0 | 27.1 |
| Interior Designers | 0.5 | 0.6 | 0.4 | 31.2 | 40.9 | 21.5 | 31.7 | 41.5 | 21.8 |
| Urban and Regional Planners | 0.6 | 0.8 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.8 | 0.5 |
| Chemical and Materials Engineers | 1.0 | 1.3 | 0.7 | 6.8 | 8.0 | 5.5 | 7.8 | 9.4 | 6.3 |
| Civil Engineering Professionals | 0.3 | 0.4 | 0.2 | 5.1 | 4.5 | 5.8 | 5.5 | 4.9 | 6.0 |
| Electrical Engineers | 1.0 | 1.2 | 0.7 | 4.9 | 5.2 | 4.5 | 5.8 | 6.5 | 5.2 |
| Electronics Engineers | 4.1 | 5.4 | 2.9 | 7.4 | 8.0 | 6.1 | 11.5 | 13.3 | 9.0 |
| Industrial, Mechanical and Production Engineers | 1.0 | 1.2 | 0.7 | 4.2 | 4.6 | 3.4 | 5.1 | 5.8 | 4.1 |
| Mining Engineers | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Other Engineering Professionals | 2.0 | 2.5 | 1.5 | 11.2 | 12.3 | 9.1 | 13.2 | 14.8 | 10.5 |
| Agricultural and Forestry Scientists | 5.1 | 6.7 | 3.5 | 0.0 | 0.0 | 0.0 | 5.1 | 6.7 | 3.5 |
| Chemists, and Food and Wine Scientists | 2.6 | 3.4 | 1.8 | 10.6 | 13.0 | 8.0 | 13.1 | 16.4 | 9.8 |
| Environmental Scientists | 3.0 | 3.8 | 2.2 | 0.0 | 0.0 | 0.0 | 3.0 | 3.8 | 2.2 |
| Geologists and Geophysicists | 1.1 | 1.4 | 0.8 | 8.4 | 10.3 | 6.4 | 9.5 | 11.8 | 7.2 |
| Life Scientists | 7.3 | 10.0 | 4.7 | 38.6 | 49.2 | 27.4 | 46.0 | 59.1 | 32.1 |
| Medical Laboratory Scientists | 5.0 | 6.8 | 3.2 | 22.9 | 27.8 | 17.8 | 27.9 | 34.6 | 21.0 |
| Veterinarians | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Other Natural and Physical Science Professionals | 3.0 | 4.1 | 2.0 | 14.0 | 16.5 | 11.4 | 17.0 | 20.6 | 13.4 |
| Early Childhood (Pre-primary School) Teachers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Primary School Teachers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Middle School Teachers (Aus) / Intermediate School Teachers (NZ) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Secondary School Teachers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Special Education Teachers | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| University Lecturers and Tutors | 0.1 | 0.1 | 0.0 | 19.9 | 23.8 | 15.9 | 19.9 | 23.9 | 16.0 |

| Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Vocational Education Teachers (Aus) / Polytechnic Teachers (NZ) | 0.4 | 0.5 | 0.3 | 2.7 | 3.0 | 2.2 | 3.1 | 3.5 | 2.5 |
| Education Advisers and Reviewers | 1.9 | 2.4 | 1.3 | 3.4 | 3.7 | 2.7 | 5.3 | 6.1 | 4.1 |
| Private Tutors and Teachers | 0.1 | 0.2 | 0.1 | 2.3 | 2.5 | 1.8 | 2.4 | 2.7 | 1.9 |
| Teachers of English to Speakers of Other Languages | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Dieticians | 0.5 | 0.6 | 0.3 | 2.9 | 3.2 | 2.3 | 3.3 | 3.7 | 2.6 |
| Medical Imaging Professionals | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Occupational and Environmental Health Professionals | 2.2 | 2.7 | 1.7 | 14.6 | 17.7 | 11.5 | 16.9 | 20.4 | 13.3 |
| Optometrists and Orthopaedists | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Pharmacists | 0.7 | 0.9 | 0.5 | 0.0 | 0.0 | 0.0 | 0.7 | 0.9 | 0.5 |
| Other Health Diagnostic and Promotion Professionals | 0.7 | 1.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.7 | 1.0 | 0.5 |
| Chiropractors and Osteopaths | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Complementary Health Therapists | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Dental Practitioners | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Occupational Therapists | 0.3 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.3 |
| Physiotherapists | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Podiatrists | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Speech Professionals and Audiologists | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Generalist Medical Practitioners | 0.1 | 0.1 | 0.1 | 2.2 | 2.6 | 1.8 | 2.3 | 2.7 | 1.8 |
| Anaesthetists | 0.0 | 0.0 | 0.0 | 9.8 | 9.7 | 9.9 | 9.8 | 9.7 | 9.9 |
| Specialist Physicians | 0.3 | 0.4 | 0.2 | 10.1 | 10.2 | 10.1 | 10.5 | 10.6 | 10.3 |
| Psychiatrists | 0.0 | 0.1 | 0.0 | 8.1 | 7.4 | 8.9 | 8.2 | 7.5 | 8.9 |
| Surgeons | 0.2 | 0.2 | 0.1 | 8.8 | 8.3 | 9.2 | 8.9 | 8.5 | 9.4 |
| Other Medical Practitioners | 0.2 | 0.3 | 0.2 | 8.5 | 7.9 | 9.1 | 8.7 | 8.2 | 9.3 |
| Midwives | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Nurse Educators and Researchers | 1.0 | 1.3 | 0.6 | 12.6 | 13.6 | 11.6 | 13.6 | 15.0 | 12.2 |
| Nurse Managers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Registered Nurses | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| ICT Business and Systems Analysts | 9.4 | 11.8 | 7.1 | 35.6 | 45.3 | 25.2 | 45.0 | 57.1 | 32.3 |
| Multimedia Specialists and Web Developers | 11.4 | 14.5 | 8.3 | 31.5 | 39.2 | 23.1 | 43.0 | 53.8 | 31.5 |
| Software and Applications Programmers | 11.2 | 14.0 | 8.4 | 33.7 | 42.4 | 24.2 | 44.8 | 56.4 | 32.6 |
| Database and Systems Administrators, and ICT Security Specialists | 7.3 | 9.2 | 5.4 | 29.6 | 37.4 | 21.4 | 36.9 | 46.6 | 26.8 |
| Computer Network Professionals | 9.1 | 11.6 | 6.6 | 28.5 | 35.5 | 20.9 | 37.5 | 47.1 | 27.5 |

| Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| ICT Support and Test Engineers | 9.7 | 12.2 | 7.2 | 46.7 | 60.3 | 32.1 | 56.4 | 72.4 | 39.3 |
| Telecommunications Engineering Professionals | 17.9 | 24.5 | 11.3 | 14.7 | 16.0 | 12.9 | 32.6 | 40.5 | 24.1 |
| Barristers | 10.2 | 11.9 | 8.5 | 13.8 | 15.4 | 12.1 | 24.0 | 27.4 | 20.6 |
| Judicial and Other Legal Professionals | 6.1 | 7.3 | 5.3 | 0.0 | 0.0 | 0.0 | 6.1 | 7.3 | 5.3 |
| Solicitors | 11.9 | 13.9 | 9.8 | 5.4 | 4.0 | 6.9 | 17.3 | 18.0 | 20.6 |
| Counsellors | 0.9 | 1.1 | 0.8 | 4.4 | 4.8 | 3.5 | 5.3 | 5.9 | 4.3 |
| Ministers of Religion | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Psychologists | 0.8 | 1.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.8 | 1.0 | 0.6 |
| Social Professionals | 3.7 | 4.9 | 2.6 | 7.4 | 6.6 | 8.2 | 11.1 | 11.4 | 10.8 |
| Social Workers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Welfare, Recreation and Community Arts Workers | 0.5 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.4 |
| Agricultural Technicians | 5.1 | 6.9 | 3.2 | 0.0 | 0.0 | 0.0 | 5.1 | 6.9 | 3.2 |
| Medical Technicians | 0.5 | 0.7 | 0.4 | 6.0 | 4.5 | 7.5 | 6.5 | 5.2 | 7.9 |
| Primary Products Inspectors | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Science Technicians | 2.3 | 3.0 | 1.5 | 0.0 | 0.0 | 0.0 | 2.3 | 3.0 | 1.5 |
| Architectural, Building and Surveying Technicians | 0.2 | 0.3 | 0.2 | 3.7 | 3.8 | 3.6 | 3.9 | 4.1 | 3.7 |
| Civil Engineering Draftspersons and Technicians | 0.2 | 0.3 | 0.2 | 12.5 | 14.5 | 10.4 | 12.7 | 14.8 | 10.6 |
| Electrical Engineering Draftspersons and Technicians | 0.5 | 0.6 | 0.4 | 3.3 | 3.6 | 3.0 | 3.8 | 4.2 | 3.4 |
| Electronic Engineering Draftspersons and Technicians | 3.7 | 4.9 | 2.5 | 11.1 | 12.9 | 9.2 | 14.8 | 17.8 | 11.7 |
| Mechanical Engineering Draftspersons and Technicians | 0.8 | 1.0 | 0.6 | 9.3 | 10.8 | 7.8 | 10.1 | 11.8 | 8.4 |
| Safety Inspectors | 1.0 | 1.3 | 0.8 | 0.0 | 0.0 | 0.0 | 1.0 | 1.3 | 0.8 |
| Other Building and Engineering Technicians | 0.6 | 0.7 | 0.4 | 3.0 | 3.3 | 2.7 | 3.6 | 4.0 | 3.1 |
| ICT Support Technicians | 8.6 | 11.1 | 6.2 | 39.7 | 50.8 | 27.9 | 48.4 | 61.9 | 34.1 |
| Telecommunications Technical Specialists | 15.4 | 21.1 | 9.7 | 37.1 | 45.1 | 27.1 | 52.5 | 66.2 | 36.8 |
| Automotive Electricians | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 |
| Motor Mechanics | 0.5 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.4 |
| Metal Casting, Forging and Finishing Trades Workers | 0.1 | 0.1 | 0.1 | 0.7 | 0.7 | 0.7 | 0.8 | 0.9 | 0.8 |
| Sheet Metal Trades Workers | 0.3 | 0.3 | 0.2 | 2.1 | 2.7 | 1.5 | 2.4 | 3.0 | 1.8 |
| Structural Steel and Welding Trades Workers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Aircraft Maintenance Engineers | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Metal Fitters and Machinists | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Precision Metal Trades Workers | 0.9 | 1.1 | 0.8 | 14.3 | 17.1 | 11.5 | 15.2 | 18.2 | 12.2 |

Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued)

| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
|--|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Toolmakers and Engineering Patternmakers | 0.6 | 0.7 | 0.5 | 6.8 | 8.8 | 4.7 | 7.4 | 9.5 | 5.2 |
| Panel Beaters | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Vehicle Body Builders and Trimmers | 0.2 | 0.2 | 0.1 | 4.9 | 5.1 | 4.7 | 5.0 | 5.3 | 4.8 |
| Vehicle Painters | 0.1 | 0.2 | 0.1 | 15.6 | 18.5 | 12.7 | 15.7 | 18.6 | 12.9 |
| Bricklayers and Stonemasons | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Carpenters and Joiners | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Floor Finishers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Painting Trades Workers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Glaziers | 0.2 | 0.2 | 0.2 | 0.7 | 0.8 | 0.5 | 0.9 | 1.0 | 0.7 |
| Plasterers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Roof Tilers | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.3 | 0.2 |
| Wall and Floor Tilers | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 |
| Plumbers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Electricians | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Air Conditioning and Refrigeration Mechanics | 0.2 | 0.2 | 0.1 | 7.7 | 9.4 | 6.0 | 7.9 | 9.6 | 6.1 |
| Electrical Distribution Trades Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Electronics Trades Workers | 4.2 | 5.2 | 3.3 | 6.9 | 6.8 | 7.0 | 11.1 | 12.0 | 10.3 |
| Telecommunications Trades Workers | 12.9 | 17.6 | 8.1 | 0.0 | 0.0 | 0.0 | 12.9 | 17.6 | 8.1 |
| Bakers and Pastry Cooks | 0.5 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.5 |
| Butchers and Smallgoods Makers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Chefs | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Cooks | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Animal Attendants and Trainers | 0.5 | 0.8 | 0.3 | 0.0 | 0.0 | 0.0 | 0.5 | 0.8 | 0.3 |
| Shearers | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Veterinary Nurses | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Florists | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Gardeners | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Greenkeepers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Nurserypersons | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Hairdressers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Print Finishers and Screen Printers | 2.5 | 3.4 | 1.6 | 0.0 | 0.0 | 0.0 | 2.5 | 3.4 | 1.6 |
| Graphic Pre-press Trades Workers | 5.5 | 7.3 | 3.7 | 18.4 | 22.9 | 13.5 | 23.8 | 30.2 | 17.1 |

| Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Printers | 2.7 | 3.6 | 1.8 | 0.0 | 0.0 | 0.0 | 2.7 | 3.6 | 1.8 |
| Canvas and Leather Goods Makers | 0.3 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.3 |
| Clothing Trades Workers | 1.0 | 1.2 | 0.7 | 0.0 | 0.0 | 0.0 | 1.0 | 1.2 | 0.7 |
| Upholsterers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Cabinetmakers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Wood Machinists and Other Wood Trades Workers | 0.5 | 0.6 | 0.4 | 4.7 | 5.6 | 3.8 | 5.2 | 6.2 | 4.2 |
| Boat Builders and Shipwrights | 0.7 | 1.0 | 0.5 | 1.2 | 1.3 | 1.2 | 2.0 | 2.2 | 1.7 |
| Chemical, Gas, Petroleum and Power Generation Plant Operators | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 |
| Gallery, Library and Museum Technicians | 4.1 | 4.8 | 3.4 | 0.0 | 0.0 | 0.0 | 4.1 | 4.8 | 3.4 |
| Jewellers | 0.7 | 0.9 | 0.5 | 8.2 | 9.5 | 6.9 | 8.9 | 10.4 | 7.5 |
| Performing Arts Technicians | 1.6 | 2.1 | 1.2 | 20.1 | 24.5 | 15.7 | 21.8 | 26.6 | 16.9 |
| Sign Writers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Other Miscellaneous Technicians and Trades Workers | 0.6 | 0.7 | 0.4 | 7.8 | 8.8 | 6.7 | 8.3 | 9.5 | 7.2 |
| Ambulance Officers and Paramedics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Dental Hygienists, Technicians and Therapists | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Diversional Therapists | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Enrolled and Mothercraft Nurses | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Indigenous Health Workers | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Massage Therapists | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Welfare Support Workers | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Child Carers | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Education Aides | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Aged and Disabled Carers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Dental Assistants | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Nursing Support and Personal Care Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Special Care Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Bar Attendants and Baristas | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Cafe Workers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Gaming Workers | 0.0 | 0.0 | 0.0 | 15.6 | 17.8 | 13.3 | 15.6 | 17.9 | 13.4 |
| Hotel Service Managers | 0.2 | 0.2 | 0.1 | 3.4 | 4.1 | 2.7 | 3.6 | 4.4 | 2.9 |
| Waiters | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Other Hospitality Workers | 0.7 | 1.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.7 | 1.0 | 0.4 |

| Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Defence Force Members - Other Ranks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fire and Emergency Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Police | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Prison Officers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Security Officers and Guards | 0.7 | 0.8 | 0.5 | 0.0 | 0.0 | 0.0 | 0.7 | 0.8 | 0.5 |
| Beauty Therapists | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Driving Instructors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Funeral Workers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gallery, Museum and Tour Guides | 0.7 | 1.0 | 0.5 | 23.4 | 28.8 | 17.9 | 24.1 | 29.7 | 18.4 |
| Personal Care Consultants | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Tourism and Travel Advisers | 0.6 | 0.8 | 0.5 | 26.6 | 33.2 | 19.9 | 27.2 | 34.0 | 20.4 |
| Travel Attendants | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other Personal Service Workers | 0.4 | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.6 | 0.3 |
| Fitness Instructors | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Outdoor Adventure Guides | 0.4 | 0.6 | 0.2 | 0.0 | 0.0 | 0.0 | 0.4 | 0.6 | 0.2 |
| Sports Coaches, Instructors and Officials | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Sportspersons | 0.5 | 0.7 | 0.3 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.3 |
| Contract, Program and Project Administrators | 2.6 | 3.3 | 1.9 | 20.9 | 26.1 | 15.5 | 23.5 | 29.4 | 17.5 |
| Office Managers | 2.6 | 3.1 | 2.0 | 4.3 | 3.5 | 5.1 | 6.8 | 6.5 | 7.1 |
| Practice Managers | 1.1 | 1.3 | 0.8 | 6.2 | 4.8 | 7.7 | 7.3 | 6.1 | 8.5 |
| Personal Assistants | 4.3 | 5.3 | 3.3 | 7.3 | 7.0 | 7.6 | 11.5 | 12.2 | 10.8 |
| Secretaries | 3.8 | 4.5 | 3.1 | 6.1 | 6.0 | 6.2 | 9.9 | 10.5 | 9.3 |
| General Clerks | 2.2 | 2.7 | 1.7 | 16.8 | 20.5 | 13.1 | 19.0 | 23.2 | 14.8 |
| Keyboard Operators | 4.0 | 5.0 | 3.0 | 26.5 | 33.6 | 19.3 | 30.5 | 38.6 | 22.3 |
| Call or Contact Centre Workers | 11.1 | 15.1 | 7.1 | 35.6 | 44.3 | 25.8 | 46.7 | 59.4 | 32.9 |
| Inquiry Clerks | 6.0 | 7.9 | 4.0 | 3.1 | 1.1 | 5.2 | 9.1 | 9.0 | 9.2 |
| Receptionists | 1.7 | 2.0 | 1.3 | 6.6 | 5.8 | 7.5 | 8.3 | 7.7 | 8.8 |
| Accounting Clerks | 3.0 | 3.6 | 2.3 | 18.4 | 23.0 | 13.7 | 21.4 | 26.7 | 16.1 |
| Bookkeepers | 3.1 | 3.7 | 2.6 | 0.0 | 0.0 | 0.0 | 3.1 | 3.7 | 2.6 |
| Payroll Clerks | 2.2 | 2.6 | 1.7 | 20.3 | 25.5 | 15.1 | 22.5 | 28.2 | 16.8 |
| Bank Workers | 11.5 | 13.1 | 9.8 | 27.1 | 33.8 | 20.1 | 38.6 | 46.9 | 30.0 |
| Credit and Loans Officers (Aus) / Finance Clerks (NZ) | 9.8 | 11.5 | 8.2 | 16.3 | 18.9 | 13.5 | 26.1 | 30.4 | 21.7 |

| Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued) | | | | | | | | | |
|---|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Insurance, Money Market and Statistical Clerks | 7.6 | 9.2 | 6.0 | 0.0 | 0.0 | 0.0 | 7.6 | 9.2 | 6.0 |
| Betting Clerks | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Couriers and Postal Deliverers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Filing and Registry Clerks | 2.9 | 3.5 | 2.3 | 14.3 | 16.7 | 11.8 | 17.2 | 20.2 | 14.1 |
| Mail Sorters | 1.4 | 1.9 | 0.9 | 0.0 | 0.0 | 0.0 | 1.4 | 1.9 | 0.9 |
| Survey Interviewers | 15.4 | 19.6 | 11.2 | 50.5 | 63.9 | 35.3 | 65.8 | 83.5 | 46.5 |
| Switchboard Operators | 4.6 | 6.1 | 3.1 | 31.9 | 40.5 | 22.9 | 36.5 | 46.6 | 26.1 |
| Other Clerical and Office Support Workers | 10.6 | 13.3 | 7.8 | 11.7 | 12.8 | 10.5 | 22.3 | 26.1 | 18.3 |
| Purchasing and Supply Logistics Clerks | 3.1 | 3.7 | 2.6 | 17.9 | 22.4 | 13.4 | 21.1 | 26.1 | 16.0 |
| Transport and Despatch Clerks | 1.4 | 1.7 | 1.1 | 11.9 | 13.7 | 10.2 | 13.3 | 15.3 | 11.3 |
| Conveyancers and Legal Executives | 11.3 | 13.3 | 9.4 | 16.1 | 18.6 | 13.4 | 27.4 | 31.9 | 22.8 |
| Court and Legal Clerks | 7.4 | 8.7 | 6.1 | 19.7 | 23.6 | 15.7 | 27.1 | 32.3 | 21.8 |
| Debt Collectors | 9.5 | 12.8 | 6.1 | 0.0 | 0.0 | 0.0 | 9.5 | 12.8 | 6.1 |
| Human Resource Clerks | 2.7 | 3.2 | 2.1 | 6.8 | 6.2 | 7.5 | 9.5 | 9.5 | 9.6 |
| Inspectors and Regulatory Officers | 0.5 | 0.6 | 0.3 | 6.7 | 5.7 | 7.8 | 7.2 | 6.3 | 8.1 |
| Insurance Investigators, Loss Adjusters and Risk Surveyors | 9.5 | 11.5 | 7.5 | 0.0 | 0.0 | 0.0 | 9.5 | 11.5 | 7.5 |
| Library Assistants | 3.5 | 4.1 | 3.0 | 0.0 | 0.0 | 0.0 | 3.5 | 4.1 | 3.0 |
| Other Miscellaneous Clerical and Administrative Workers | 4.2 | 5.5 | 3.0 | 12.3 | 13.5 | 11.0 | 16.5 | 18.9 | 14.0 |
| Auctioneers, and Stock and Station Agents | 0.9 | 1.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.9 | 1.0 | 0.8 |
| Insurance Agents | 10.1 | 12.2 | 8.0 | 24.8 | 30.5 | 18.9 | 34.9 | 42.6 | 26.9 |
| Sales Representatives | 5.7 | 6.9 | 4.6 | 4.2 | 3.3 | 5.2 | 10.0 | 10.1 | 9.8 |
| Real Estate Sales Agents | 0.6 | 0.8 | 0.4 | 5.8 | 4.5 | 7.2 | 6.5 | 5.3 | 7.7 |
| Sales Assistants (General) | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| ICT Sales Assistants | 12.3 | 16.2 | 8.4 | 0.0 | 0.0 | 0.0 | 12.3 | 16.2 | 8.4 |
| Motor Vehicle and Vehicle Parts Salespersons | 1.6 | 1.6 | 1.5 | 0.0 | 0.0 | 0.0 | 1.6 | 1.6 | 1.5 |
| Pharmacy Sales Assistants | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Retail Supervisors | 0.5 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.4 |
| Service Station Attendants | 0.4 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.4 |
| Street Vendors and Related Salespersons | 1.5 | 1.7 | 1.3 | 0.0 | 0.0 | 0.0 | 1.5 | 1.7 | 1.3 |
| Other Sales Assistants and Salespersons | 6.2 | 7.9 | 4.5 | 0.0 | 0.0 | 0.0 | 6.2 | 7.9 | 4.5 |
| Checkout Operators and Office Cashiers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Models and Sales Demonstrators | 2.9 | 3.4 | 2.4 | 4.3 | 3.3 | 5.4 | 7.2 | 6.7 | 7.7 |

Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued)

| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
|--|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Retail and Wool Buyers | 2.3 | 2.8 | 1.9 | 18.4 | 21.9 | 14.8 | 20.7 | 24.7 | 16.7 |
| Telemarketers | 9.5 | 12.9 | 6.1 | 39.1 | 49.3 | 27.7 | 48.5 | 62.2 | 33.8 |
| Ticket Salespersons | 0.8 | 1.1 | 0.6 | 15.8 | 18.2 | 13.5 | 16.7 | 19.3 | 14.0 |
| Visual Merchandisers | 2.4 | 2.9 | 1.9 | 14.0 | 16.4 | 11.5 | 16.4 | 19.3 | 13.4 |
| Other Sales Support Workers | 6.1 | 7.2 | 5.0 | 0.0 | 0.0 | 0.0 | 6.1 | 7.2 | 5.0 |
| Clay, Concrete, Glass and Stone Processing Machine Operators | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 |
| Industrial Spray Painters | 0.2 | 0.3 | 0.2 | 0.3 | 0.0 | 0.7 | 0.6 | 0.3 | 0.9 |
| Paper and Wood Processing Machine Operators | 1.0 | 1.2 | 0.9 | 0.0 | 0.0 | 0.0 | 1.0 | 1.2 | 0.9 |
| Photographic Developers and Printers | 0.9 | 1.1 | 0.7 | 2.1 | 2.5 | 1.7 | 3.0 | 3.6 | 2.3 |
| Plastics and Rubber Production Machine Operators | 0.3 | 0.4 | 0.3 | 0.3 | 0.1 | 0.5 | 0.6 | 0.5 | 0.8 |
| Sewing Machinists | 0.7 | 0.9 | 0.6 | 0.7 | 0.8 | 0.5 | 1.4 | 1.7 | 1.1 |
| Textile and Footwear Production Machine Operators | 0.6 | 0.7 | 0.4 | 0.5 | 0.3 | 0.8 | 1.1 | 0.9 | 1.2 |
| Other Machine Operators | 2.2 | 3.2 | 1.3 | 1.3 | 1.5 | 1.0 | 3.5 | 4.7 | 2.3 |
| Crane, Hoist and Lift Operators | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Drillers, Miners and Shot Firers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Engineering Production Workers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Other Stationary Plant Operators | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.3 |
| Agricultural, Forestry and Horticultural Plant Operators | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 |
| Earthmoving Plant Operators | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Forklift Drivers | 1.8 | 2.0 | 1.5 | 0.0 | 0.0 | 0.0 | 1.8 | 2.0 | 1.5 |
| Other Mobile Plant Operators | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Automobile Drivers | 0.2 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.1 |
| Bus and Coach Drivers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Train and Tram Drivers | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Delivery Drivers | 1.5 | 1.6 | 1.4 | 0.0 | 0.0 | 0.0 | 1.5 | 1.6 | 1.4 |
| Truck Drivers | 0.4 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.4 |
| Storepersons | 3.2 | 3.6 | 2.7 | 0.0 | 0.0 | 0.0 | 3.2 | 3.6 | 2.7 |
| Car Detailers | 1.7 | 2.2 | 1.2 | 0.0 | 0.0 | 0.0 | 1.7 | 2.2 | 1.2 |
| Commercial Cleaners | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Domestic Cleaners | 0.2 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.1 |
| Housekeepers | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Laundry Workers | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |

Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued)

| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
|--|-----------------|---------------|--------------|---|---------------|--------------|---------------|---------------|--------------|
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Other Cleaners | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Building and Plumbing Labourers | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |
| Concreters | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Fencers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Insulation and Home Improvement Installers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Paving and Surfacing Labourers | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Railway Track Workers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Structural Steel Construction Workers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Other Construction and Mining Labourers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Food and Drink Factory Workers | 0.6 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.5 |
| Meat Boners and Slicers, and Slaughterers | 0.4 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.3 |
| Meat, Poultry and Seafood Process Workers | 0.6 | 0.7 | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.6 |
| Packers | 1.2 | 1.4 | 1.1 | 0.0 | 0.0 | 0.0 | 1.2 | 1.4 | 1.1 |
| Product Assemblers | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Metal Engineering Process Workers | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.3 |
| Plastics and Rubber Factory Workers | 0.5 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.4 |
| Product Quality Controllers | 1.7 | 2.1 | 1.3 | 0.7 | 0.8 | 0.5 | 2.4 | 2.9 | 1.8 |
| Timber and Wood Process Workers | 1.7 | 2.0 | 1.3 | 0.0 | 0.0 | 0.0 | 1.7 | 2.0 | 1.3 |
| Other Factory Process Workers | 1.0 | 1.1 | 0.8 | 0.0 | 0.0 | 0.0 | 1.0 | 1.1 | 0.8 |
| Aquaculture Workers | 0.8 | 0.8 | 0.7 | 0.0 | 0.0 | 0.0 | 0.8 | 0.8 | 0.7 |
| Crop Farm Workers | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.4 |
| Forestry and Logging Workers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Garden and Nursery Labourers | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Livestock Farm Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Mixed Crop and Livestock Farm Workers | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Other Farm, Forestry and Garden Workers | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.2 |
| Fast Food Cooks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Food Trades Assistants | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.4 |
| Kitchenhands | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Freight and Furniture Handlers | 0.6 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.5 |
| Shelf Fillers | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 |
| Caretakers | 0.5 | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.3 |

Table A.2 Per cent of service industry occupations from off-shoring over next two to three decades – occupations and industry methodology – 2011 (continued)

| | Industry impact | | | Occupational impact in remaining industry | | | Total impact | | |
|---|-----------------|---------------|---------------|---|---------------|---------------|---------------|----------------|---------------|
| | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario | Base scenario | High scenario | Low scenario |
| Deck and Fishing Hands | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.4 |
| Handy Persons | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.2 |
| Motor Vehicle Parts and Accessories Fitters | 0.5 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.5 |
| Printing Assistants and Table Workers | 4.7 | 6.3 | 3.1 | 0.0 | 0.0 | 0.0 | 4.7 | 6.3 | 3.1 |
| Recycling and Rubbish Collectors | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| Vending Machine Attendants | 0.5 | 0.7 | 0.3 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.3 |
| Other Miscellaneous Labourers | 1.1 | 1.4 | 0.9 | 0.0 | 0.0 | 0.0 | 1.1 | 1.4 | 0.9 |
| Total (of service sector employment) | 2.7 | 3.3 | 2.1 | 7.5 | 8.8 | 6.1 | 10.2 | 12.2 | 8.1 |
| Per cent of total employment | 2.1 | 2.5 | 1.6 | 5.7 | 6.7 | 4.6 | 7.7 | 9.2 | 6.2 |
| Total 2011 – number | 234477 | 287450 | 181505 | 646365 | 763668 | 523344 | 880842 | 1051118 | 704848 |

Appendix B: Concordance between ANZSCO and ASCO

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO)

| ANZSCO 2006 | ASCO 1996 |
|---|--|
| 1111 Chief Executives and Managing Directors | 1112 General Managers |
| 1112 General Managers | 1112 General Managers |
| 1113 Legislators | 1111 Legislators and Government Appointed Officials |
| 1211 Aquaculture Farmers | 1314 Aquaculture Farmers |
| 1212 Crop Farmers | 1313 Crop Farmers |
| 1213 Livestock Farmers | 1312 Livestock Farmers |
| 1214 Mixed Crop and Livestock Farmers | 1311 Mixed Crop and Livestock Farmers |
| 1311 Advertising, Public Relations and Sales Managers | 1231 Sales and Marketing Managers |
| 1321 Corporate Services Managers | 1211 Finance Managers |
| 1322 Finance Managers | 1211 Finance Managers |
| 1323 Human Resource Managers | 1213 Human Resource Managers |
| 1324 Policy and Planning Managers | 1291 Policy and Planning Managers |
| 1325 Research and Development Managers | 1299 Other Specialist Managers |
| 1331 Construction Managers | 1191 Building and Construction Managers |
| 1332 Engineering Managers | 1221 Engineering Managers |
| 1333 Importers, Exporters and Wholesalers | 1192 Importers, Exporters and Wholesalers |
| 1334 Manufacturers | 1193 Manufacturers |
| 1335 Production Managers | 1222 Production Managers |
| 1336 Supply and Distribution Managers | 1223 Supply and Distribution Managers |
| 1341 Child Care Centre Managers | 1295 Child Care Co-ordinators |
| 1342 Health and Welfare Services Managers | 1292 Health Services Managers |
| 1343 School Principals | 1293 Education Managers |
| 1344 Other Education Managers | 1293 Education Managers |
| 1351 ICT Managers | 1224 Information Technology Managers |
| 1391 Commissioned Officers (Management) | 1294 Commissioned Officers (Management) |
| 1392 Senior Non-commissioned Defence Force Members | 3994 Senior Non-Commissioned Defence Force Officers |
| 1399 Other Specialist Managers | 1299 Other Specialist Managers |
| 1411 Cafe and Restaurant Managers | 3321 Restaurant and Catering Managers |
| 1412 Caravan Park and Camping Ground Managers | 3325 Caravan Park and Camping Ground Managers |
| 1413 Hotel and Motel Managers | 3323 Hotel and Motel Managers |
| 1414 Licensed Club Managers | 3324 Club Managers (Licensed Premises) |
| 1419 Other Accommodation and Hospitality Managers | 3329 Other Hospitality and Accommodation Managers |
| 1421 Retail Managers | 3311 Shop Managers |
| 1491 Amusement, Fitness and Sports Centre Managers | 3391 Sport and Recreation Managers |
| 1492 Call or Contact Centre and Customer Service Managers | 3392 Customer Service Managers |
| 1493 Conference and Event Organisers | 3292 Project and Program Administrators |
| 1494 Transport Services Managers | 3393 Transport Company Managers |
| 1499 Other Hospitality, Retail and Service Managers | 3211 Branch Accountants and Managers (Financial Institution) |
| 2111 Actors, Dancers and Other Entertainers | 2538 Actors, Dancers and Related Professionals |
| 2112 Music Professionals | 2537 Musicians and Related Professionals |

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO) – continued

| ANZSCO 2006 | ASCO 1996 |
|---|---|
| 2113 Photographers | 2532 Photographers |
| 2114 Visual Arts and Crafts Professionals | 2531 Visual Arts and Crafts Professionals |
| 2121 Artistic Directors, and Media Producers and Presenters | 1296 Media Producers and Artistic Directors |
| 2122 Authors, and Book and Script Editors | 2535 Authors and Related Professionals |
| 2123 Film, Television, Radio and Stage Directors | 2536 Film, Television, Radio and Stage Directors |
| 2124 Journalists and Other Writers | 2534 Journalists and Related Professionals |
| 2211 Accountants | 2211 Accountants |
| 2212 Auditors, Company Secretaries and Corporate Treasurers | 1212 Company Secretaries |
| 2221 Financial Brokers | 3212 Financial Dealers and Brokers |
| 2222 Financial Dealers | 3212 Financial Dealers and Brokers |
| 2223 Financial Investment Advisers and Managers | 3213 Financial Investment Advisers |
| 2231 Human Resource Professionals | 2291 Human Resource Professionals |
| 2232 ICT Trainers | 2491 Extra-Systemic Teachers |
| 2233 Training and Development Professionals | 2291 Human Resource Professionals |
| 2241 Actuaries, Mathematicians and Statisticians | 2293 Mathematicians, Statisticians and Actuaries |
| 2242 Archivists, Curators and Records Managers | 2299 Other Business and Information Professionals |
| 2243 Economists | 2522 Economists |
| 2244 Intelligence and Policy Analysts | 2299 Other Business and Information Professionals |
| 2245 Land Economists and Valuers | 2295 Property Professionals |
| 2246 Librarians | 2292 Librarians |
| 2247 Management and Organisation Analysts | 2294 Business and Organisation Analysts |
| 2249 Other Information and Organisation Professionals | 2549 Other Professionals |
| 2251 Advertising and Marketing Professionals | 2221 Marketing and Advertising Professionals |
| 2252 ICT Sales Professionals | 2222 Technical Sales Representatives |
| 2253 Public Relations Professionals | 2221 Marketing and Advertising Professionals |
| 2254 Technical Sales Representatives | 2222 Technical Sales Representatives |
| 2311 Air Transport Professionals | 2541 Air Transport Professionals |
| 2312 Marine Transport Professionals | 2542 Sea Transport Professionals |
| 2321 Architects and Landscape Architects | 2121 Architects and Landscape Architects |
| 2322 Surveyors and Spatial Scientists | 2123 Cartographers and Surveyors |
| 2323 Fashion, Industrial and Jewellery Designers | 2533 Designers and Illustrators |
| 2324 Graphic and Web Designers, and Illustrators | 2533 Designers and Illustrators |
| 2325 Interior Designers | 2533 Designers and Illustrators |
| 2326 Urban and Regional Planners | 2523 Urban and Regional Planners |
| 2331 Chemical and Materials Engineers | 2129 Other Building and Engineering Professionals |
| 2332 Civil Engineering Professionals | 2122 Quantity Surveyors |
| 2333 Electrical Engineers | 2125 Electrical and Electronics Engineers |
| 2334 Electronics Engineers | 2125 Electrical and Electronics Engineers |
| 2335 Industrial, Mechanical and Production Engineers | 2126 Mechanical, Production and Plant Engineers |
| 2336 Mining Engineers | 2127 Mining and Materials Engineers |
| 2339 Other Engineering Professionals | 2128 Engineering Technologists |
| 2341 Agricultural and Forestry Scientists | 2114 Environmental and Agricultural Science Professionals |
| 2342 Chemists, and Food and Wine Scientists | 2111 Chemists |
| 2343 Environmental Scientists | 2114 Environmental and Agricultural Science Professionals |
| 2344 Geologists and Geophysicists | 2112 Geologists and Geophysicists |
| 2345 Life Scientists | 2113 Life Scientists |
| 2346 Medical Laboratory Scientists | 2115 Medical Scientists |

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO) – continued

| ANZSCO 2006 | ASCO 1996 |
|--|--|
| 2347 Veterinarians | 2392 Veterinarians |
| 2349 Other Natural and Physical Science Professionals | 2119 Other Natural and Physical Science Professionals |
| 2411 Early Childhood (Pre-primary School) Teachers | 2411 Pre-Primary School Teachers |
| 2412 Primary School Teachers | 2412 Primary School Teachers |
| 2413 Middle School Teachers (Aus) / Intermediate School Teachers (NZ) | 2412 Primary School Teachers |
| 2414 Secondary School Teachers | 2413 Secondary School Teachers |
| 2415 Special Education Teachers | 2414 Special Education Teachers |
| 2421 University Lecturers and Tutors | 2421 University Lecturers and Tutors |
| 2422 Vocational Education Teachers (Aus) / Polytechnic Teachers (NZ) | 2422 Vocational Education Teachers |
| 2491 Education Advisers and Reviewers | 2493 Education Officers |
| 2492 Private Tutors and Teachers | 2491 Extra-Systemic Teachers |
| 2493 Teachers of English to Speakers of Other Languages | 2492 English as a Second Language Teachers |
| 2511 Dietitians | 2393 Dietitians |
| 2512 Medical Imaging Professionals | 2391 Medical Imaging Professionals |
| 2513 Occupational and Environmental Health Professionals | 2543 Occupational and Environmental Health Professionals |
| 2514 Optometrists and Orthopaedists | 2384 Optometrists |
| 2515 Pharmacists | 2382 Pharmacists |
| 2519 Other Health Diagnostic and Promotion Professionals | 2512 Welfare and Community Workers |
| 2521 Chiropractors and Osteopaths | 2387 Chiropractors and Osteopaths |
| 2522 Complementary Health Therapists | 2394 Natural Therapy Professionals |
| 2523 Dental Practitioners | 2381 Dental Practitioners |
| 2524 Occupational Therapists | 2383 Occupational Therapists |
| 2525 Physiotherapists | 2385 Physiotherapists |
| 2526 Podiatrists | 2388 Podiatrists |
| 2527 Speech Professionals and Audiologists | 2386 Speech Pathologists |
| 2531 Generalist Medical Practitioners | 2311 Generalist Medical Practitioners |
| 2532 Anaesthetists | 2312 Specialist Medical Practitioners |
| 2533 Specialist Physicians | 2312 Specialist Medical Practitioners |
| 2534 Psychiatrists | 2312 Specialist Medical Practitioners |
| 2535 Surgeons | 2312 Specialist Medical Practitioners |
| 2539 Other Medical Practitioners | 2312 Specialist Medical Practitioners |
| 2541 Midwives | 2324 Registered Midwives |
| 2542 Nurse Educators and Researchers | 2322 Nurse Educators and Researchers |
| 2543 Nurse Managers | 2321 Nurse Managers |
| 2544 Registered Nurses | 2325 Registered Mental Health Nurses |
| 2611 ICT Business and Systems Analysts | 2231 Computing Professionals |
| 2612 Multimedia Specialists and Web Developers | 2231 Computing Professionals |
| 2613 Software and Applications Programmers | 2231 Computing Professionals |
| 2621 Database and Systems Administrators, and ICT Security Specialists | 2231 Computing Professionals |
| 2631 Computer Network Professionals | 2231 Computing Professionals |
| 2632 ICT Support and Test Engineers | 3294 Computing Support Technicians |
| 2633 Telecommunications Engineering Professionals | 2125 Electrical and Electronics Engineers |
| 2711 Barristers | 2521 Legal Professionals |
| 2712 Judicial and Other Legal Professionals | 1111 Legislators and Government Appointed Officials |
| 2713 Solicitors | 2521 Legal Professionals |
| 2721 Counsellors | 2513 Counsellors |

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO) – continued

| ANZSCO 2006 | ASCO 1996 |
|---|--|
| 2722 Ministers of Religion | 2515 Ministers of Religion |
| 2723 Psychologists | 2514 Psychologists |
| 2724 Social Professionals | 2529 Other Social Professionals |
| 2725 Social Workers | 2511 Social Workers |
| 2726 Welfare, Recreation and Community Arts Workers | 2512 Welfare and Community Workers |
| 3111 Agricultural Technicians | 3112 Science Technical Officers |
| 3112 Medical Technicians | 3111 Medical Technical Officers |
| 3113 Primary Products Inspectors | 3991 Primary Products Inspectors |
| 3114 Science Technicians | 3112 Science Technical Officers |
| 3121 Architectural, Building and Surveying Technicians | 3121 Building, Architectural and Surveying Associate Professionals |
| 3122 Civil Engineering Draftspersons and Technicians | 3122 Civil Engineering Associate Professionals |
| 3123 Electrical Engineering Draftspersons and Technicians | 3123 Electrical Engineering Associate Professionals |
| 3124 Electronic Engineering Draftspersons and Technicians | 3124 Electronics Engineering Associate Professionals |
| 3125 Mechanical Engineering Draftspersons and Technicians | 3125 Mechanical Engineering Associate Professionals |
| 3126 Safety Inspectors | 3992 Safety Inspectors |
| 3129 Other Building and Engineering Technicians | 3129 Other Building and Engineering Associate Professionals |
| 3131 ICT Support Technicians | 3294 Computing Support Technicians |
| 3132 Telecommunications Technical Specialists | 3124 Electronics Engineering Associate Professionals |
| 3211 Automotive Electricians | 4212 Automotive Electricians |
| 3212 Motor Mechanics | 4211 Motor Mechanics |
| 3221 Metal Casting, Forging and Finishing Trades Workers | 4123 Forging Tradespersons |
| 3222 Sheet Metal Trades Workers | 4124 Sheet Metal Tradespersons |
| 3223 Structural Steel and Welding Trades Workers | 4121 General Fabrication Engineering Tradespersons |
| 3231 Aircraft Maintenance Engineers | 4114 Aircraft Maintenance Engineers |
| 3232 Metal Fitters and Machinists | 4111 General Mechanical Engineering Tradespersons |
| 3233 Precision Metal Trades Workers | 4115 Precision Metal Tradespersons |
| 3234 Toolmakers and Engineering Patternmakers | 4113 Toolmakers |
| 3241 Panel Beaters | 4213 Panel Beaters |
| 3242 Vehicle Body Builders and Trimmers | 4215 Vehicle Body Makers |
| 3243 Vehicle Painters | 4214 Vehicle Painters |
| 3311 Bricklayers and Stonemasons | 4414 Bricklayers |
| 3312 Carpenters and Joiners | 4411 Carpentry and Joinery Tradespersons |
| 3321 Floor Finishers | 4423 Floor Finishers |
| 3322 Painting Trades Workers | 4421 Painters and Decorators |
| 3331 Glaziers | 4982 Glass Tradespersons |
| 3332 Plasterers | 4412 Fibrous Plasterers |
| 3333 Roof Tilers | 4413 Roof Slaters and Tilers |
| 3334 Wall and Floor Tilers | 4416 Wall and Floor Tilers and Stonemasons |
| 3341 Plumbers | 4431 Plumbers |
| 3411 Electricians | 4311 Electricians |
| 3421 Air Conditioning and Refrigeration Mechanics | 4312 Refrigeration and Air Conditioning Mechanics |
| 3422 Electrical Distribution Trades Workers | 4313 Electrical Distribution Tradespersons |
| 3423 Electronics Trades Workers | 4315 Electronic and Office Equipment Tradespersons |
| 3424 Telecommunications Trades Workers | 4316 Communications Tradespersons |
| 3511 Bakers and Pastry Cooks | 4512 Bakers and Pastry Cooks |
| 3512 Butchers and Smallgoods Makers | 4511 Meat Tradespersons |

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO) – continued

| ANZSCO 2006 | ASCO 1996 |
|--|---|
| 3513 Chefs | 3322 Chefs |
| 3514 Cooks | 4513 Cooks |
| 3611 Animal Attendants and Trainers | 4614 Animal Trainers |
| 3612 Shearers | 4612 Shearers |
| 3613 Veterinary Nurses | 6392 Veterinary Nurses |
| 3621 Florists | 4984 Florists |
| 3622 Gardeners | 4623 Gardeners |
| 3623 Greenkeepers | 4622 Greenkeepers |
| 3624 Nurserypersons | 4621 Nurserypersons |
| 3911 Hairdressers | 4931 Hairdressers |
| 3921 Print Finishers and Screen Printers | 4913 Binders and Finishers |
| 3922 Graphic Pre-press Trades Workers | 4911 Graphic Pre-Press Tradespersons |
| 3923 Printers | 4912 Printing Machinists and Small Offset Printers |
| 3931 Canvas and Leather Goods Makers | 4943 Footwear Tradespersons |
| 3932 Clothing Trades Workers | 4941 Clothing Tradespersons |
| 3933 Upholsterers | 4942 Upholsterers and Bedding Tradespersons |
| 3941 Cabinetmakers | 4922 Cabinetmakers |
| 3942 Wood Machinists and Other Wood Trades Workers | 4921 Wood Machinists and Turners |
| 3991 Boat Builders and Shipwrights | 4981 Marine Construction Tradespersons |
| 3992 Chemical, Gas, Petroleum and Power Generation Plant Operators | 4987 Chemical, Petroleum and Gas Plant Operators |
| 3993 Gallery, Library and Museum Technicians | 3997 Library Technicians |
| 3994 Jewellers | 4983 Jewellers and Related Tradespersons |
| 3995 Performing Arts Technicians | 4992 Performing Arts Support Workers |
| 3996 Sign Writers | 4422 Sign Writers |
| 3999 Other Miscellaneous Technicians and Trades Workers | 4613 Wool, Hide and Skin Classers |
| 4111 Ambulance Officers and Paramedics | 3491 Ambulance Officers and Paramedics |
| 4112 Dental Hygienists, Technicians and Therapists | 3492 Dental Associate Professionals |
| 4113 Diversional Therapists | 2399 Other Health Professionals |
| 4114 Enrolled and Mothercraft Nurses | 3411 Enrolled Nurses |
| 4115 Indigenous Health Workers | 3493 Aboriginal and Torres Strait Islander Health Workers |
| 4116 Massage Therapists | 3494 Massage Therapists |
| 4117 Welfare Support Workers | 3421 Welfare Associate Professionals |
| 4211 Child Carers | 6312 Children's Care Workers |
| 4221 Education Aides | 6311 Education Aides |
| 4231 Aged and Disabled Carers | 6313 Special Care Workers |
| 4232 Dental Assistants | 6391 Dental Assistants |
| 4233 Nursing Support and Personal Care Workers | 6314 Personal Care and Nursing Assistants |
| 4234 Special Care Workers | 6313 Special Care Workers |
| 4311 Bar Attendants and Baristas | 6322 Bar Attendants |
| 4312 Cafe Workers | 6213 Retail and Checkout Supervisors |
| 4313 Gaming Workers | 6394 Gaming Workers |
| 4314 Hotel Service Managers | 6321 Hotel Service Supervisors |
| 4315 Waiters | 6323 Waiters |
| 4319 Other Hospitality Workers | 6324 Hospitality Trainees |
| 4411 Defence Force Members - Other Ranks | 4991 Defence Force Members Not Elsewhere Included |
| 4412 Fire and Emergency Workers | 3995 Senior Fire Fighters |
| 4413 Police | 3911 Police Officers |

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO) – continued

| ANZSCO 2006 | ASCO 1996 |
|---|---|
| 4421 Prison Officers | 6393 Prison Officers |
| 4422 Security Officers and Guards | 8311 Guards and Security Officers |
| 4511 Beauty Therapists | 6395 Personal Care Consultants |
| 4512 Driving Instructors | 6399 Other Intermediate Service Workers |
| 4513 Funeral Workers | 3399 Other Managing Supervisors (Sales and Service) |
| 4514 Gallery, Museum and Tour Guides | 6397 Travel and Tourism Agents |
| 4515 Personal Care Consultants | 6395 Personal Care Consultants |
| 4516 Tourism and Travel Advisers | 6397 Travel and Tourism Agents |
| 4517 Travel Attendants | 5996 Travel Attendants |
| 4518 Other Personal Service Workers | 6399 Other Intermediate Service Workers |
| 4521 Fitness Instructors | 6396 Fitness Instructors and Related Workers |
| 4522 Outdoor Adventure Guides | 6396 Fitness Instructors and Related Workers |
| 4523 Sports Coaches, Instructors and Officials | 3993 Sportspersons, Coaches and Related Support Workers |
| 4524 Sportspersons | 3993 Sportspersons, Coaches and Related Support Workers |
| 5111 Contract, Program and Project Administrators | 3292 Project and Program Administrators |
| 5121 Office Managers | 3291 Office Managers |
| 5122 Practice Managers | 3291 Office Managers |
| 5211 Personal Assistants | 5111 Secretaries and Personal Assistants |
| 5212 Secretaries | 5111 Secretaries and Personal Assistants |
| 5311 General Clerks | 6111 General Clerks |
| 5321 Keyboard Operators | 6121 Keyboard Operators |
| 5411 Call or Contact Centre Workers | 6191 Inquiry and Admissions Clerks |
| 5412 Inquiry Clerks | 6191 Inquiry and Admissions Clerks |
| 5421 Receptionists | 6131 Receptionists |
| 5511 Accounting Clerks | 6141 Accounting Clerks |
| 5512 Bookkeepers | 5911 Bookkeepers |
| 5513 Payroll Clerks | 6142 Payroll Clerks |
| 5521 Bank Workers | 6143 Bank Workers |
| 5522 Credit and Loans Officers (Aus) / Finance Clerks (NZ) | 5912 Credit and Loans Officers |
| 5523 Insurance, Money Market and Statistical Clerks | 6145 Money Market and Statistical Clerks |
| 5611 Betting Clerks | 8115 Betting Clerks |
| 5612 Couriers and Postal Deliverers | 8114 Messengers |
| 5613 Filing and Registry Clerks | 8111 Registry and Filing Clerks |
| 5614 Mail Sorters | 8112 Mail Sorting Clerks |
| 5615 Survey Interviewers | 8119 Other Elementary Clerks |
| 5616 Switchboard Operators | 8113 Switchboard Operators |
| 5619 Other Clerical and Office Support Workers | 8116 Office Trainees |
| 5911 Purchasing and Supply Logistics Clerks | 6151 Production Recording Clerks |
| 5912 Transport and Despatch Clerks | 6152 Transport and Despatching Clerks |
| 5991 Conveyancers and Legal Executives | 5991 Advanced Legal and Related Clerks |
| 5992 Court and Legal Clerks | 5991 Advanced Legal and Related Clerks |
| 5993 Debt Collectors | 6199 Other Intermediate Clerical Workers |
| 5994 Human Resource Clerks | 6193 Personnel Clerks |
| 5995 Inspectors and Regulatory Officers | 6194 Intermediate Inspectors and Examiners |
| 5996 Insurance Investigators, Loss Adjusters and Risk Surveyors | 5994 Insurance Risk Surveyors, Investigators and Loss Adjusters |
| 5997 Library Assistants | 6192 Library Assistants |

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO) – continued

| ANZSCO 2006 | ASCO 1996 |
|---|--|
| 5999 Other Miscellaneous Clerical and Administrative Workers | 5999 Other Miscellaneous Advanced Clerical and Service Workers |
| 6111 Auctioneers, and Stock and Station Agents | 5999 Other Miscellaneous Advanced Clerical and Service Workers |
| 6112 Insurance Agents | 5993 Insurance Agents |
| 6113 Sales Representatives | 6211 Sales Representatives |
| 6121 Real Estate Sales Agents | 3293 Real Estate Associate Professionals |
| 6211 Sales Assistants (General) | 8297 Sales and Service Trainees |
| 6212 ICT Sales Assistants | 8211 Sales Assistants |
| 6213 Motor Vehicle and Vehicle Parts Salespersons | 6212 Motor Vehicle and Related Products Salespersons |
| 6214 Pharmacy Sales Assistants | 8211 Sales Assistants |
| 6215 Retail Supervisors | 6213 Retail and Checkout Supervisors |
| 6216 Service Station Attendants | 8296 Service Station Attendants |
| 6217 Street Vendors and Related Salespersons | 8293 Street Vendors and Related Workers |
| 6219 Other Sales Assistants and Salespersons | 8299 Other Elementary Sales Workers |
| 6311 Checkout Operators and Office Cashiers | 8291 Checkout Operators and Cashiers |
| 6391 Models and Sales Demonstrators | 8295 Sales Demonstrators and Models |
| 6392 Retail and Wool Buyers | 3996 Retail Buyers |
| 6393 Telemarketers | 8294 Telemarketers |
| 6394 Ticket Salespersons | 8292 Ticket Salespersons |
| 6395 Visual Merchandisers | 5999 Other Miscellaneous Advanced Clerical and Service Workers |
| 6399 Other Sales Support Workers | 3399 Other Managing Supervisors (Sales and Service) |
| 7111 Clay, Concrete, Glass and Stone Processing Machine Operators | 7296 Glass Production Machine Operators |
| 7112 Industrial Spray Painters | 7299 Other Intermediate Machine Operators |
| 7113 Paper and Wood Processing Machine Operators | 7294 Wood Processing Machine Operators |
| 7114 Photographic Developers and Printers | 7298 Photographic Developers and Printers |
| 7115 Plastics and Rubber Production Machine Operators | 7292 Rubber Production Machine Operators |
| 7116 Sewing Machinists | 7211 Sewing Machinists |
| 7117 Textile and Footwear Production Machine Operators | 7212 Textile and Footwear Production Machine Operators |
| 7119 Other Machine Operators | 7293 Chemical Production Machine Operators |
| 7121 Crane, Hoist and Lift Operators | 7122 Crane, Hoist and Lift Operators |
| 7122 Drillers, Miners and Shot Firers | 4986 Drillers |
| 7123 Engineering Production Workers | 7123 Engineering Production Systems Workers |
| 7129 Other Stationary Plant Operators | 7121 Engine and Boiler Operators |
| 7211 Agricultural, Forestry and Horticultural Plant Operators | 7119 Other Mobile Plant Operators |
| 7212 Earthmoving Plant Operators | 7111 Mobile Construction Plant Operators |
| 7213 Forklift Drivers | 7112 Forklift Drivers |
| 7219 Other Mobile Plant Operators | 7119 Other Mobile Plant Operators |
| 7311 Automobile Drivers | 7313 Automobile Drivers |
| 7312 Bus and Coach Drivers | 7312 Bus and Tram Drivers |
| 7313 Train and Tram Drivers | 7315 Train Drivers and Assistants |
| 7321 Delivery Drivers | 7314 Delivery Drivers |
| 7331 Truck Drivers | 7311 Truck Drivers |
| 7411 Storepersons | 7993 Storepersons |
| 8111 Car Detailers | 9111 Cleaners |
| 8112 Commercial Cleaners | 9111 Cleaners |
| 8113 Domestic Cleaners | 9111 Cleaners |

Table B.1 Simple concordance between the Australian and New Zealand Standard Classification of Occupation (ANZSCO) and its predecessor the Australian Standard Classification of Occupation (ASCO) – continued

| ANZSCO 2006 | ASCO 1996 |
|--|--|
| 8114 Housekeepers | 8313 Domestic Housekeepers |
| 8115 Laundry Workers | 8315 Laundry Workers |
| 8116 Other Cleaners | 9111 Cleaners |
| 8211 Building and Plumbing Labourers | 9912 Earthmoving Labourers |
| 8212 Concreters | 9917 Concreters |
| 8213 Fencers | 9919 Other Mining, Construction and Related Labourers |
| 8214 Insulation and Home Improvement Installers | 7914 Insulation and Home Improvements Installers |
| 8215 Paving and Surfacing Labourers | 9913 Paving and Surfacing Labourers |
| 8216 Railway Track Workers | 9915 Railway Labourers |
| 8217 Structural Steel Construction Workers | 7913 Structural Steel Construction Workers |
| 8219 Other Construction and Mining Labourers | 9911 Mining Support Workers and Driller's Assistants |
| 8311 Food and Drink Factory Workers | 4519 Other Food Tradespersons |
| 8312 Meat Boners and Slicers, and Slaughterers | 9213 Meat and Fish Process Workers |
| 8313 Meat, Poultry and Seafood Process Workers | 9213 Meat and Fish Process Workers |
| 8321 Packers | 9221 Hand Packers |
| 8322 Product Assemblers | 9212 Product Assemblers |
| 8391 Metal Engineering Process Workers | 9211 Engineering Production Process Workers |
| 8392 Plastics and Rubber Factory Workers | 9219 Other Process Workers |
| 8393 Product Quality Controllers | 7992 Product Quality Controllers |
| 8394 Timber and Wood Process Workers | 9215 Wood Products Factory Hands |
| 8399 Other Factory Process Workers | 9219 Other Process Workers |
| 8411 Aquaculture Workers | 9929 Other Agricultural and Horticultural Labourers |
| 8412 Crop Farm Workers | 9921 Farm Hands |
| 8413 Forestry and Logging Workers | 7995 Forestry and Logging Workers |
| 8414 Garden and Nursery Labourers | 9922 Nursery and Garden Labourers |
| 8415 Livestock Farm Workers | 9921 Farm Hands |
| 8416 Mixed Crop and Livestock Farm Workers | 9921 Farm Hands |
| 8419 Other Farm, Forestry and Garden Workers | 9929 Other Agricultural and Horticultural Labourers |
| 8511 Fast Food Cooks | 9932 Fast Food Cooks |
| 8512 Food Trades Assistants | 9933 Food Trades Assistants |
| 8513 Kitchenhands | 9931 Kitchenhands |
| 8911 Freight and Furniture Handlers | 9992 Freight and Furniture Handlers |
| 8912 Shelf Fillers | 7993 Storepersons |
| 8991 Caretakers | 8314 Caretakers |
| 8992 Deck and Fishing Hands | 7994 Seafarers and Fishing Hands |
| 8993 Handypersons | 9993 Handypersons |
| 8994 Motor Vehicle Parts and Accessories Fitters | 7991 Motor Vehicle Parts and Accessories Fitters |
| 8995 Printing Assistants and Table Workers | 7996 Printing Hands |
| 8996 Recycling and Rubbish Collectors | 9991 Garbage Collectors |
| 8997 Vending Machine Attendants | 9999 Other Miscellaneous Labourers and Related Workers |
| 8999 Other Miscellaneous Labourers | 9918 Electrical and Telecommunications Trades Assistants |

Appendix C: The ABS on services classifications

ABS 5368055004, imports of services by state and detailed services category, is a major part of the balance of trade statistics. Unfortunately the relevant sources and methods document has been withdrawn for rewriting. However, it would appear that:

- transport imports are sourced from the airlines and shipping lines and from port and customs data;
- travel data derives from arrival and departure forms and surveys of incoming Australian passengers (for expenditures of Australians abroad);
- insurance and finance is constructed as part of the general coverage of these industries by the ABS and RBA; and
- the other items are survey based.

The International Trade in Services Survey was inaugurated in 1988. The methodology would appear to be a major survey from time to time with small surveys of major contributors to update the estimates. The scope of the survey is enterprises which engage in international service trade or receive or pay royalties, excluding transport, travel, insurance, financial services and government services. The initial survey base was developed from the foreign investment survey, business directories and the financial press. The survey base and other parts of the methodology were revised in the early 1990s. There have been further revisions and the sample now includes major firms operating in the area plus smaller businesses believed to be active, though here the sample frame may not have complete coverage. The ABS is working towards achieving such coverage.

The relative standard errors are fairly low (say 1-2 per cent) for large items, but can become large for small items and for net items. Non-sample or respondent error can also occur. A subjective assessment made in 1996 was that the published estimates of services flows are likely to be within 10 per cent of the true value. The current view is that data quality has improved since then.

The categories used in ABS 5368055004 are closely related to those recommended in the IMF document BPM6. The Manual on Statistics of International Trade in Services is also relevant.

According to BPM6, 'outsourcing' occurs when functions formerly carried out in-house are contracted to a specialist service provider. Such services are not distinguished from services which have never been carried out in-house, and are classified according to type of service provided. Thus a call centre selling products is a trade-related service while a call centre providing computing support is a computer service.

In the following notes on the classification, only the most detailed headings are listed.

Manufacturing services on physical inputs owned by others

Covers assembly, packing and other processes on goods owned by others, including such services as liquefaction of natural gas and refining of oil where not owned by the refiner. The data source is mainly customs, the same as that used for goods. Australia does not import much under this heading.

Maintenance and repair services NEI

This comprises the value of work done overseas on Australian-owned equipment. It is a rather small category for Australia, probably because of the transport costs of sending equipment other than aircraft overseas for repair.

Passenger transport

Imports are defined as the costs of carrying residents by non-resident carriers and comprise principally fares paid to overseas transport providers, including commissions and taxes. Fares paid to cruise liners are excluded, being defined as travel.

Freight

Values of goods exported are calculated FOB; freights paid by the exporter are included as an import of freight services. Data comes from returns of physical trade and there are many rules to ensure consistent treatment.

Other transport

Comprise fees and charges incurred in transport but not on freight waybills or included in fares. Not of great importance.

Postal and courier services

Covers payments to overseas post offices, DHL and the like.

Business travel

Overseas expenditures (excl fares) on trips for which the main purpose is business as estimated from surveys of returning Australians. Items purchased overseas and brought back to Australia are included.

Personal travel, education

Overseas expenditures (excl fares) on trips for personal education as estimated from surveys of returning Australians, defined as people who have not changed their place of residence while overseas.

Personal travel, other

Overseas expenditures (excl fares) on non-business non-educational travel as estimated from surveys of returning Australians. There is considerable discussion of the treatment of time-share arrangements but these are probably of marginal importance.

Other travel

This is a fairly substantial item and BPM6 does not give much guidance as to what it is.

Construction

This is defined as construction within Australia by non-resident construction enterprises. However the item is negligible. It would seem that there are no such enterprises.

Direct insurance

This item covers insurance premiums paid overseas on the same definition as those paid domestically. BPM6 recommends that freight insurance be covered separately but it isn't so presumably occurs here. The valuation methods mirror those used for domestic valuation.

Reinsurance

This item can only be reported by insurance companies.

Auxiliary insurance services

Covers charges for commissions, brokerage, actuarial assessment and related consultancy and monitoring.

Pension services

Covers payments into overseas pension schemes where these can be distinguished from life insurance.

Standardised guarantee services

Whatever these are, they are negligible.

Financial services

These are payments for services to overseas banks, other financial institutions, brokers and financial advisers. They include payments of direct charges to these bodies, asset management costs taken out of income and asset management costs financed by margins, including the overseas-provided component of Financial Intermediation Service Charges Indirectly Measured – as in the domestic national accounts. These amounts presumably come out of the same source as the measurement of financial value added for GDP.

Licences to reproduce and/or distribute computer services

There appears to be a fine distinction between this subhead and computer services, below. The difference is that this is a payment which allows reproduction and/or distribution.

Licences to reproduce and/or distribute audiovisual and related services

Same problem as the item above, save that the ABS seem to have solved it by identifying no such transactions.

Outcomes of research and development

This would include formal patent charges for the use of intellectual property.

Franchise and trademarks licensing fees

Once again, formal fees for the use of intellectual property.

Other charges for the use of intellectual property

Fees for the use of intellectual property other than the above.

Telecommunications services

Payments to overseas providers of broadcast or transmission services, not including payments for content transmitted.

Computer services

Concentrates on payments for software (purchase or licence) but also includes maintenance and repair of computers, data recovery, programming, website hosting and data processing.

Information services

Not a large item in Australia. Includes newsagency services, subscriptions but not by individuals, and downloads but not of software.

Other computer and information services

This is a bit vague, but thankfully not large.

Research and development services

R&D contracted out overseas – not a large item.

Legal, accounting, management consulting, public relations and other professional services

Though some imports under this heading are arm's length, it can be used to record inputs from related overseas businesses.

Advertising, market research and public opinion polling

Presumably means what it says.

Architectural, engineering, scientific and other technical services

BPM6 does not expand on this one, which presumably means what it says. It is significant and has been expanding rapidly.

Waste treatment and de-pollution, agricultural and mining services

Includes environmental services (including carbon offsets NEI) and also such items as veterinary services and technical services to mining.

Operational leasing services

Essentially equipment rental where the lessee is not responsible for breakdown repairs and the like. Typical items are aircraft and physical computers (not software, which is covered above).

Trade-related commission services

Commissions to brokers, merchants and the like where the broker does not own the item sold. Financial intermediary and transport charges are excluded, being covered elsewhere.

Other business services NEI

Although this item grew very rapidly in the year or two to 2008 it is not enormous. This meant as a residual category to cover payments for such items as personnel recruitment, security services, translation, photography, publishing, building cleaning and real estate services. There is a danger that it will also be used to cover 'outsourcing' narrowly defined, where a business employs an overseas contractor who in turn subcontracts actual professional, accounting, marketing, back-office and other services. However, the intention is that these services be identified and allocated to the appropriate category in the above list and not included here.

Audiovisual and related services

Chiefly personal downloads of audiovisual material.

Other personal, cultural and recreational services

Includes health and education services which do not involve travel to the providing country and such items as fees and prizes for athletes. Also includes the service charge element of overseas gambling – the losses element is covered as a transfer rather than an import.

Government goods and services NIE

Service transactions by governments are allocated as far as possible to the headings above. This category is reserved for transactions which only government undertake, such as those associated with diplomacy, policing and the military. However, some other government items which are hard to classify may find their way here.

