



## Survey of Employers who have Recently Advertised (SERA) 2007

➤ SKILL SHORTAGES: OCCUPATIONS IN SHORTAGE IN  
NEW ZEALAND





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## Executive summary

This report presents a summary of key findings from the 2007 Survey of Employers who have Recently Advertised (SERA). Where possible, the report compares the 2007 findings to those of the 2005 and 2006 surveys.

### Widespread skill and labour shortages in New Zealand

Overall in 2007, widespread skill and labour shortages existed in New Zealand. Only 54% of the advertised vacancies included in SERA 2007 were filled within 10 weeks of advertising, which is a 54% fill rate.

### Shortages in all major occupational groups

The survey found that shortages existed for each of the nine major occupational groups<sup>1</sup> in 2007. Fill rates for the major occupational groups were:

- Trades workers - 37%
- Service and sales workers - 51%
- Professionals - 54%
- Plant and machine operators and assemblers - 54%
- Technicians and associate professionals - 57%
- Clerks - 57%
- Legislators, administrators, and managers - 61%
- Elementary occupations (such as labourers and freight handlers) - 63%
- Agriculture and fishery workers — 65%

### Focus on three major occupational groups

The 2007 survey focused on three major occupational groups: professionals, technicians and associate professionals, and trades workers.

- Professionals: Fill rates were calculated for 25 individual occupations, of which 22 (88%) were in shortage including 5 in extreme shortage (section 6).
- Technicians and associate professionals: Fill rates were calculated for 23 individual occupations, of which 22 (96%) were in shortage including 6 in extreme shortage (section 7).
- Trades: Fill rates were calculated for 21 individual occupations, all of which were in shortage including over half in extreme shortage (section 11).

Between 2006 and 2007, skill shortages became worse for clerks, service and sales workers, and trades workers, while the remaining major occupational groups showed little or no change.

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<sup>1</sup> In this survey occupations have been classified according to the New Zealand Standard Classification of Occupations (NZSCO). See Appendix A for details. For a copy of NZSCO, see <http://www.stats.govt.nz/statistical-methods/classifications/nz-standard-class-of-occupations-1999.htm>.

# 1 Purpose of this report

This report presents a summary of key findings from the 2007 Survey of Employers who have Recently Advertised (SERA). Where possible, the report compares the 2007 findings to those of the 2005 and 2006 surveys.

## Structure of this report

The report provides background about the SERA in section 2 and a brief overview of the New Zealand labour market in section 3.

Section 4 contains information from the 2007 SERA about major occupational groups. The remaining sections of the report focus on more specific findings about particular occupational groups.

Appendix A outlines the New Zealand Standard Classification of Occupations (NZSCO), while Appendix B sets out the methodology used for the survey.

## Scope of the analysis provided in this report

The results of the SERA provide useful information for assessing whether skill shortages exist for each occupation. However, the survey results do not show:

- the type of shortage that exists (that is, a genuine skill shortage or recruitment and retention difficulties)
- the reasons why the shortage exists (which may affect the types of responses needed to address the shortage).

This report does not contain detailed analysis of the demand and supply forces impacting on individual occupations, as the report aims to make the latest SERA information publicly available as quickly as possible. For detailed analysis of skill shortages, see, for example, the Department of Labour's skill shortage assessment reports.<sup>2</sup>

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<sup>2</sup> See: <http://www.dol.govt.nz/publications/jvm/professionals/index.asp> and <http://www.dol.govt.nz/publications/jvm/trades/index.asp>.

## 2 What is the SERA?

The SERA is a short telephone survey of over 6,500 employers between June and November who had recently advertised job vacancies. The response rate for the SERA was 63%.

The survey collects information on whether employers have been able to fill the vacancies they have advertised. This report provides analysis of 'fill rates' (the proportion of vacancies that were filled within 10 weeks of advertising).

### Why do this survey?

The Department of Labour (the Department) conducts the yearly survey to identify occupations in which employers are having difficulty filling vacancies (occupations with skill shortages).

With ongoing skill shortages in New Zealand, information on which areas of the economy have difficult-to-fill vacancies has become increasingly important. Unemployment is at historically low levels, which means we cannot rely on more people working longer hours to drive economic growth into the future. Instead, we must focus on lifting productivity through providing businesses with the skilled workers they need.

This information can help agencies that influence the supply of skills in the New Zealand labour market (such as the Tertiary Education Commission, economic development agencies, and Immigration New Zealand) to achieve a better match between skills supply and the demands of the labour market.

### Earlier surveys

The Department conducted earlier versions of the SERA in 2003, 2005, and 2006. These surveys focused on skill shortages in three major occupational groups: professionals, technicians and associate professionals, and trades workers.

The scope of the SERA was expanded in 2006 and 2007 to collect information on skill and labour shortages across all major occupational groups, while retaining the focus on the three major occupational groups.<sup>3</sup>

### Interpreting the results of the survey

#### What is a fill rate?

A fill rate is the proportion of vacancies included in the SERA sample that were filled by a suitably qualified and experienced person within 10 weeks of advertising.

See Appendix B for more information about the methodology used in the SERA.

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<sup>3</sup> In this survey occupations have been grouped according to the New Zealand Standard Classification of Occupations (NZSCO) at a 5-digit level and grouped up to 2-digit occupations and 1-digit occupations. See Appendix A for details. For a copy of NZSCO, see <http://www.stats.govt.nz/statistical-methods/classifications/nz-standard-class-of-occupations-1999.htm>

### **Describing the fill rate**

For the purposes of this report, a fill rate of lower than 40% is described as an 'extreme' shortage. A fill rate between 40% and 59% is described as a 'severe' shortage. A fill rate between 60% and 79% is described as a 'moderate' shortage.

Statistical margins of error have been calculated for each occupation. If the margin of error for an occupation means a fill rate could cross the boundary from one category of shortage to another, then that occupation has been described as being 'on the margin'.

### **Reasons why vacancies may not be filled**

Some vacancies may go unfilled for a range of reasons. For any one occupation this may be because it is more difficult to recruit people to some locations. For some occupations the work environment or conditions are less attractive than for roles requiring similar skills, or vacancies may be unfilled because there is no one available who can do the job.

### **Number of vacancies sampled**

The sample for the SERA is drawn from the job vacancy monitor (JVM) which collects job advertisements from all daily newspapers in New Zealand. Tables in this report include the number of job vacancies from the JVM for each occupation to show the share of each individual occupation within the sub-major occupation groups (see Appendix A). Tables also include the number of vacancies sampled from the JVM to show how representative the sample is.

This report discusses only statistically significant results. Population and sample information is provided to give the reader an indication of statistical confidence in the results. See Appendix B for information on the sample and sample error.

In this report fill rates have been calculated only for occupations where more than 10 employers responded to the survey.

It is useful to note that the survey does not set out to identify all vacancies at any point in time. There is, however, a strong correlation between changes in advertised vacancies and changes in employment, even though employers use a range of approaches to recruiting, including word of mouth, putting a sign in the shop window, and shoulder tapping.

### **3 Overview of New Zealand's labour market**

#### **Labour market remained tight in 2007**

In 2007 the labour market remained extremely tight resulting in no significant easing of skill shortages.

- The unemployment rate fell to a record low of 3.4% in the December 2007 quarter.
- Net migration inflows fell in each month of 2007.

The labour market is expected to remain tight in the future with continuing low levels of unemployment. Skill shortages are therefore likely to be a long-term feature of New Zealand's labour market.

#### **Skill shortages are becoming more widespread**

Rapid growth in the prevalence of skill shortages has been a defining feature of the New Zealand labour market over the past 8 years. The country's workforce has grown substantially over this period, largely due to record high rates of participation in work and record net migration inflows. Even so, the workforce has not been able to match the strong growth in demand for labour. As a result, employers are having more and more difficulty finding both highly skilled and less-skilled staff. Skill and labour shortages have reached record highs.

Skill shortages can impede business growth and innovation and hamper the quality and quantity of production in the economy. Skill shortages can also affect the reliability and quality of key services such as health and education.

#### **SERA results in the labour market context**

To better understand SERA results, it is useful to see them in the context of how the labour market works. The labour market is how the supply of labour is matched to employers' demand for labour.

##### **Demand for labour**

Demand for labour arises an employer needs to fill an existing position or when an employer creates a new position. The demand for labour is measured by the number of people that employers are willing and able to employ at current wage rates. The main factors that influence demand for labour are:

- economic growth
- industry trends
- productivity
- changing work patterns
- consumption patterns.

##### **Supply of labour**

The overall supply of labour is the number of people who are willing to work. It is affected by the size of the population, the number of people retiring, the number of people not in the labour market for other reasons, and the number of migrants.

For an individual occupation, the supply of labour is affected by:

- the number of people who have the relevant training for that occupation
- movement of people from one occupation to another.

**SERA fill rates indicate match between supply and demand**

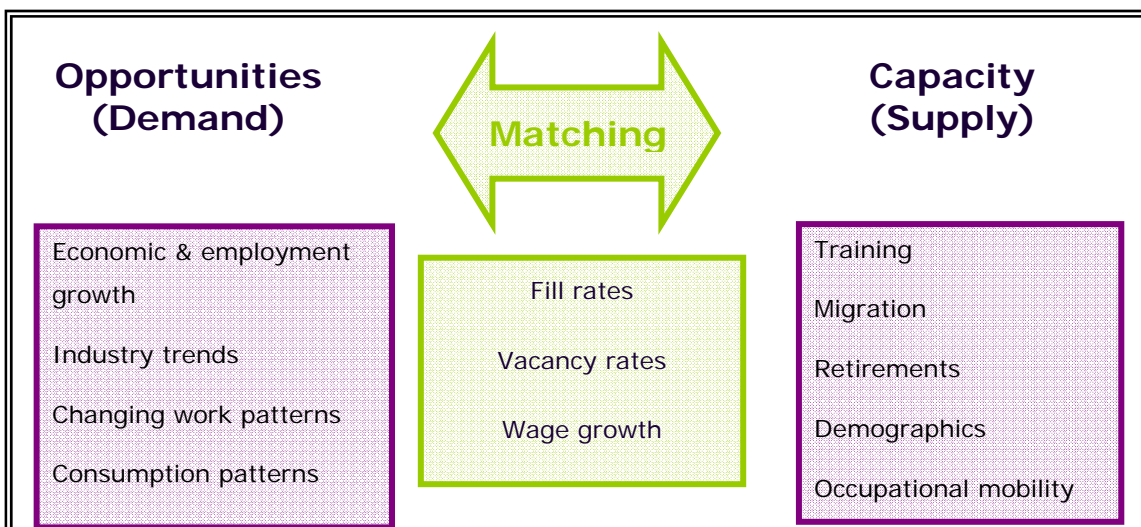
The match between labour supply and demand indicates whether employers can get the workers they need and workers can get the employment they want.

The match between supply and demand can be measured by looking at fill rates from the SERA. A high fill rate suggests that sufficient workers are available with the necessary skills and experience to meet employer demand for that occupation. A low fill rate suggests that employers want more people than are available. This may be due to a skill shortage, although some vacancies may go unfilled because the wages and conditions on offer are unattractive.

Vacancy rates, based on the number of jobs advertised for each occupation, and wage growth can also help to indicate the match between supply and demand.

Fill rates, when viewed alongside vacancy rates and wage growth, provide information about the match between labour market supply and demand for employers, industry and policy makers.

**Figure 1: Matching labour supply and demand**



## 4 Shortages by major occupational group

This section presents the SERA 2007 findings for the major occupational groups.

Figure 2 shows fill rates for each major occupational group. Each of these major occupational groups showed some degree of shortage: that is, each had a fill rate lower than 80%<sup>4</sup>.

### Extreme shortage in the trades workers group

Only 37% of all trades worker vacancies included in SERA 2007 were filled within 10 weeks of advertising, indicating that this occupational group is in extreme shortage.

### Occupational groups in severe shortage

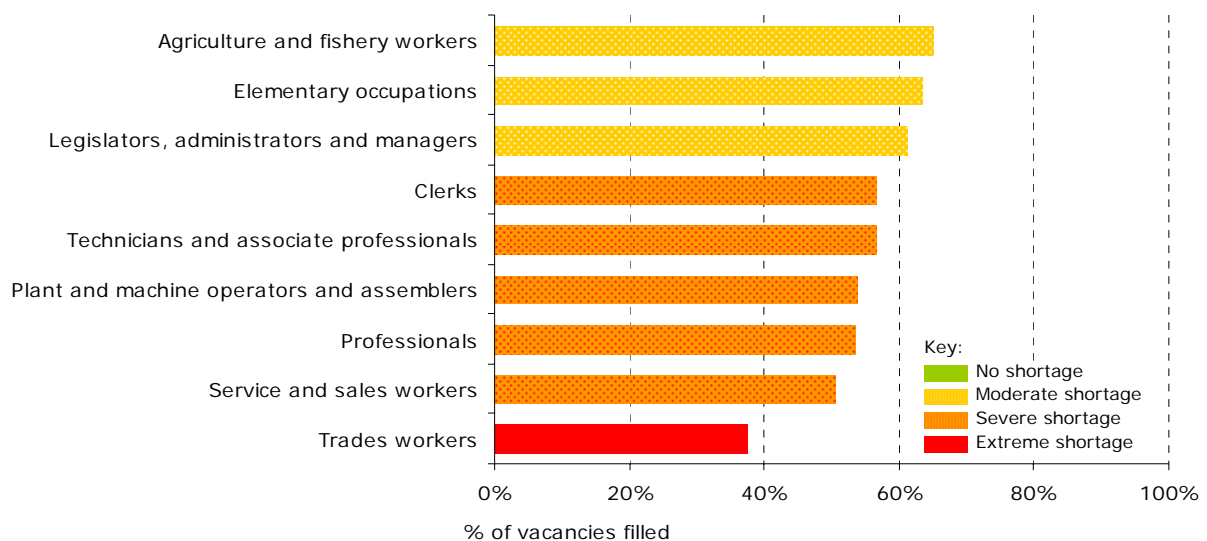
The following occupational groups showed severe shortage

- Service and sales workers - 51%
- Professionals - 54%
- Plant and machine operators and assemblers - 54%
- Technicians and associate professionals (for example, surveyors, inspectors, therapists) - 57%
- Clerks - 57%

### Occupational groups in moderate shortage

Legislators, administrators, and managers (61%) fell on the margin of severe and moderate shortage. Elementary occupations (for example, labourers, couriers, and freight handlers) (at 63%) and agriculture and fishery workers (at 65%) showed moderate shortages.

**Figure 2: Fill rates for each major occupational group, 2007**



Source: Department of Labour, 2008

<sup>4</sup> For major occupational groups, fill rates were weighted to compensate for any under- or over-sampling of individual occupations included in the surveys. See Appendix B for further details.

Figure 3 shows fill rates from SERA 2007 for each major occupational group compared to from earlier SERA surveys. In 2007 the New Zealand labour market showed widespread skill and labour shortages, with only 54% of all advertised vacancies being filled, compared to 61% in 2006.

Between 2006 and 2007, skill shortages worsened for clerks, service and sales workers, and trades workers. The remaining major occupational groups showed little or no change.

While shortages for trades workers eased between 2005 and 2006, in 2007 the fill rate for trades workers fell back to the 2005 level. The fill rate for professional occupations in 2007 was 54% (close to the 2006 rate of 56%), but remains above the rate recorded in 2005 (48%).

**Figure 3: Fill rates for major occupational groups, 2005 to 2007**

| NZSCO code | NZSCO description                                     | 2005                          |                        | 2006             |            | 2007             |            |
|------------|---|-------------------------------|------------------------|------------------|------------|------------------|------------|
|            |   | No. of vacancies <sup>1</sup> | Fill rate <sup>2</sup> | No. of vacancies | Fill rate  | No. of vacancies | Fill rate  |
| 1          | Legislators, administrators and managers <sup>3</sup> | -                             | -                      | 219              | 67%        | 317              | 61%        |
| 2          | Professionals   | 1,150                         | 48%                    | 1,525            | 56%        | 1,139            | 54%        |
| 3          | Technicians and associate professionals               | -                             | -                      | 1,217            | 54%        | 1,258            | 57%        |
| 4          | Clerks  | -                             | -                      | 193              | 75%        | 577              | 57%        |
| 5          | Service and sales workers                             | -                             | -                      | 338              | 63%        | 863              | 51%        |
| 6          | Agriculture and fishery workers                       | -                             | -                      | 195              | 70%        | 319              | 65%        |
| 7          | Trades workers  | 1,465                         | 36%                    | 1,209            | 48%        | 1,513            | 37%        |
| 8          | Plant and machine operators and assemblers            | -                             | -                      | 398              | 54%        | 676              | 54%        |
| 9          | Elementary occupations                                | -                             | -                      | 192              | 61%        | 303              | 63%        |
|            | <b>Total</b>  | -                             | -                      | <b>5,486</b>     | <b>61%</b> | <b>6,930</b>     | <b>54%</b> |

Source: Department of Labour, 2008

Notes:

- 1 Number of advertised vacancies included in the survey.
- 2 Percentage of vacancies filled with an adequately qualified and experienced person within 10 weeks of advertising.
- 3 Fill rates are not shown for some occupations in 2005 because different sampling means the figures cannot be compared to the 2006 and 2007. See Appendix B for further details about the methodology.

## 5 Shortages for legislators, administrators, and managers

The overall fill rate for legislator, administrator, and manager vacancies in 2007 was 61%. Only two sub-major groups exist within this group: 'legislators and administrators' and 'corporate managers'. Fill rates could not be calculated for 'legislators and administrators' because of the small sample size.

### Moderate to severe shortage of corporate managers

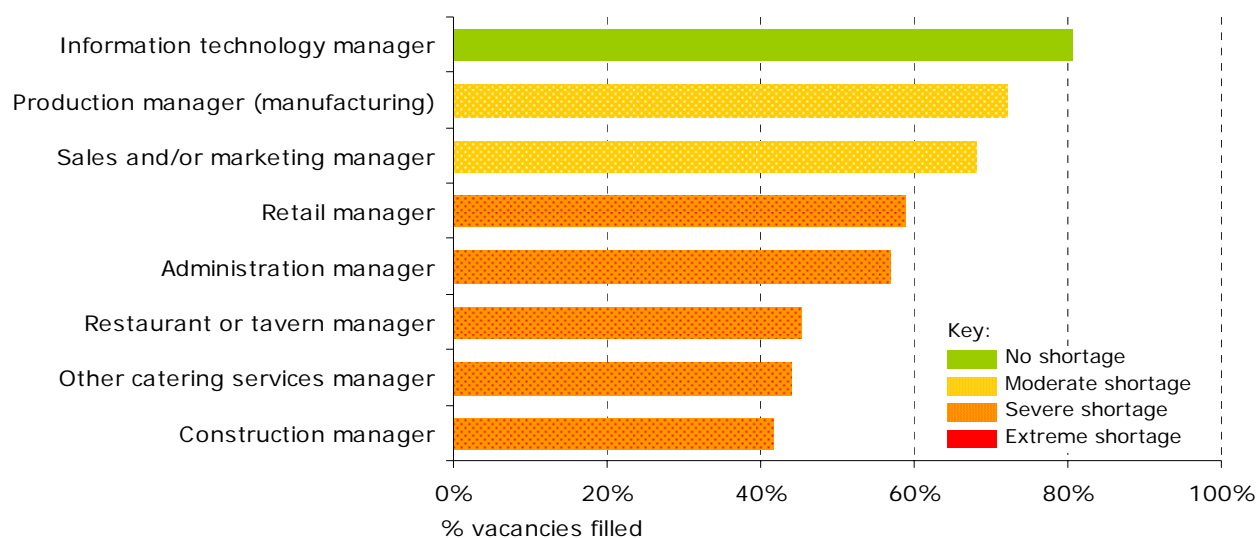
Corporate managers include general managers and specialised managers. However, fill rates could not be calculated for general managers due to small sample sizes. Overall, corporate managers (NZSCO sub-major group 12) are on the margin of moderate and severe shortage, with 62% of vacancies filled within 10 weeks of advertising.

### Groups with severe shortage

Within this sub-major group, vacancies for each of the following occupations were particularly difficult to fill (see Figure 4).

- Restaurant or tavern managers — 45%
- Other catering services managers — 44%
- Construction managers — 42%.

**Figure 4: Fill rates for corporate manager occupations, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Between 2006 and 2007, administration managers showed a marked decrease in fill rate, from 84% (indicating no shortage) to 57% (indicating a severe shortage). Conversely, sales and/or marketing managers showed a marked increase in fill rate from less than half the vacancies being filled to over two-thirds during the same period.

Figure 5 compares fill rates from the 2006 and 2007 SERA, and includes the number of advertised vacancies from the job vacancy monitor (JVM) to show the share of vacancies each individual occupation has within the sub-major occupation groups. The number of vacancies the SERA sampled from the JVM is also shown to indicate how representative the sample is. See Appendix B for more information about the survey methodology.

Fill rates could not be calculated for 15 individual corporate manager occupations in 2007 due to the small sample size associated with these occupations. These occupations are omitted from the table, but details are available on request.

**Figure 5: Fill rates for corporate manager occupations, 2006 to 2007**

| NZSCO Code | NZSCO description                    | Fill rate |           | 2007 vacancies |              |
|------------|--------------------------------------|-----------|-----------|----------------|--------------|
|            |                                      | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 12213      | Production manager (manufacturing)   | -         | 72        | 80             | 18           |
| 12218      | Construction manager                 | 53        | 42        | 97             | 24           |
| 12222      | Administration manager               | 84        | 57        | 572            | 37           |
| 12241      | Sales and/or marketing manager       | 47        | 68        | 322            | 25           |
| 12263      | Retail manager                       | 67        | 59        | 390            | 34           |
| 12265      | Restaurant or tavern manager         | 50        | 45        | 171            | 31           |
| 12267      | Other catering services manager      | -         | 44        | 59             | 25           |
| 12271      | Information technology manager       | -         | 81        | 54             | 26           |
| <b>122</b> | <b>Specialised managers subtotal</b> | <b>67</b> | <b>61</b> | <b>2,760</b>   | <b>303</b>   |
| <b>12</b>  | <b>Corporate managers total</b>      | <b>67</b> | <b>62</b> | <b>2,851</b>   | <b>311</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## 6 Shortages for professionals

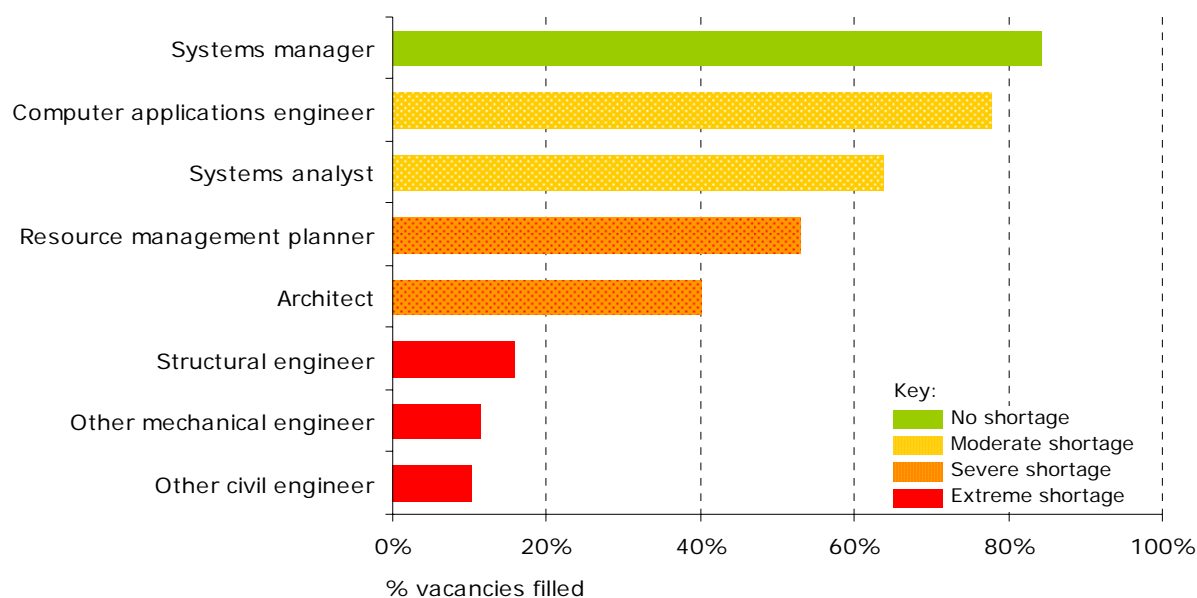
The overall fill rate for professional vacancies in 2007 was 54%. Fill rates were calculated for 25 individual professional occupations in 2007 of which 22 (88%) were in shortage, including six (24%) in extreme shortage.

### Physical, mathematical, and engineering science professionals

Physical, mathematical, and engineering science professionals (NZSCO sub-major group 21) remain on the margin of severe and extreme shortage, with a 43% fill rate in 2007. This result is similar to the 2006 result of 41%.

Structural engineers (16%), other mechanical engineers (12%), and other civil engineers (10%) remain in extreme shortage in 2007 (see Figure 6). Architects were on the margin of severe and extreme shortage with only 40% of vacancies filled.

**Figure 6: Fill rates for physical, mathematical, and engineering science professionals, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Skill shortages for computer applications engineers have eased considerably, with the fill rate increasing from 44% in 2006 to 78% in 2007 (see Figure 7).

Fill rates for systems managers and resource management planners have increased since 2005 by 38 and 25 percentage points, respectively. However, the extreme shortage of other mechanical engineers in 2005 has worsened from a 28% fill rate to only 12% in 2007.

**Figure 7: Fill rates for physical, mathematical, and engineering science professionals, 2005 to 2007**

| NZSCO code | NZSCO description  | Fill rate |           |           | 2007 vacancies |              |
|------------|--|-----------|-----------|-----------|----------------|--------------|
|            |  | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 21311      | Systems analyst  | 67        | 51        | 64        | 117            | 33           |
| 21312      | Computer applications engineer   | 78        | 44        | 78        | 118            | 36           |
| 21313      | Systems manager  | 46        | 85        | 84        | 47             | 19           |
| <b>213</b> | <b>Computing professionals subtotal</b>                                    | <b>68</b> | <b>53</b> | <b>73</b> | <b>282</b>     | <b>88</b>    |
| 21411      | Architect  | -         | 39        | 40        | 81             | 15           |
| 21412      | Resource management planner  | 28        | 52        | 53        | 82             | 17           |
| 21425      | Structural engineer  | 18        | 0         | 16        | 51             | 25           |
| 21426      | Other civil engineer   | -         | 13        | 10        | 101            | 29           |
| 21455      | Other mechanical engineer  | 28        | 26        | 12        | 68             | 26           |
| <b>214</b> | <b>Architects, engineers, and related professionals subtotal</b>           | <b>20</b> | <b>32</b> | <b>31</b> | <b>639</b>     | <b>164</b>   |
| <b>21</b>  | <b>Physical, mathematical, and engineering science professionals total</b> | <b>45</b> | <b>41</b> | <b>43</b> | <b>954</b>     | <b>265</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Life science and health professionals

Life science and health professionals (NZSCO sub-major group 22) remain in severe shortage in 2007, with about half the advertised vacancies being filled. Note that due to small sample sizes, fill rates were calculated for only 3 of the 21 individual occupations within this sub-major group in 2007.

Fewer than half of all vacancies for registered nurses (48%) and principal nurses (44%) were filled in 2007, indicating severe shortages in these occupations (see Figure 8).

Skill shortages for psychiatric nurses have eased markedly since 2005, from only 13% of vacancies filled to 69% filled in 2007.

**Figure 8: Fill rates for life science and health professionals occupations, 2005 to 2007**

| NZSCO code | NZSCO description                                     | Fill rate |           |           | 2007 vacancies |              |
|------------|---|-----------|-----------|-----------|----------------|--------------|
|            |   | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| <b>221</b> | <b>Life science professionals subtotal</b>            | <b>91</b> | <b>64</b> | <b>71</b> | <b>80</b>      | <b>18</b>    |
| <b>222</b> | <b>Health professionals (except nursing) subtotal</b> | <b>37</b> | <b>41</b> | <b>39</b> | <b>74</b>      | <b>23</b>    |
| 22311      | Principal nurse                                       | 58        | 50        | 44        | 65             | 27           |
| 22312      | Registered nurse                                      | 30        | 54        | 48        | 908            | 108          |
| 22313      | Psychiatric nurse                                     | 13        | 44        | 69        | 26             | 16           |
| <b>223</b> | <b>Nursing and midwifery professionals subtotal</b>   | <b>30</b> | <b>54</b> | <b>48</b> | <b>1,067</b>   | <b>172</b>   |
| <b>22</b>  | <b>Life science and health professionals total</b>    | <b>33</b> | <b>54</b> | <b>49</b> | <b>1,221</b>   | <b>213</b>   |

Source: Department of Labour, 2008

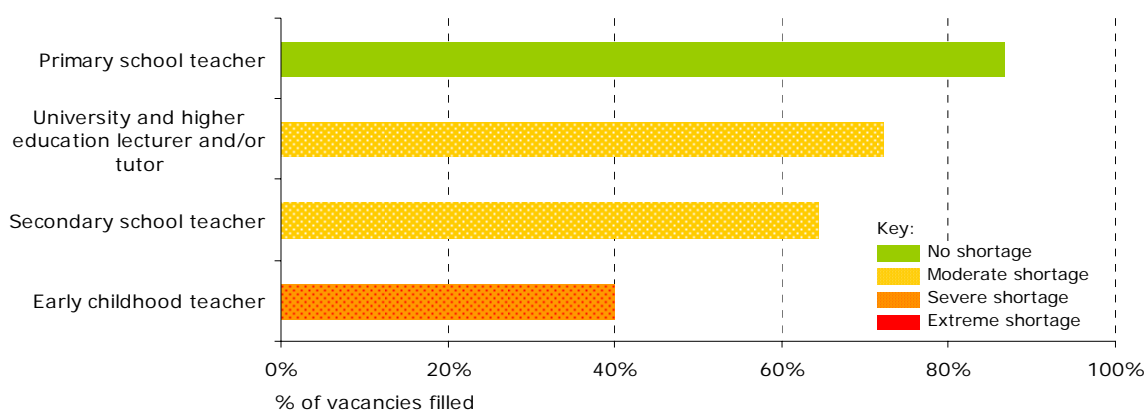
Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Teaching professionals

In 2007 teaching professionals (NZSCO sub-major group 23) were on the margin between moderate and severe shortage, with 62% of vacancies being filled. Note that fill rates could only be calculated for 4 of the 10 individual occupations within this sub-major group due to small sample sizes in 2007.

Early childhood teachers (40%) were on the margin between severe and extreme shortage in 2007. Tertiary teaching professionals and secondary school teachers showed moderate shortages. In contrast, primary school teachers showed no shortage with nearly 9 out of 10 vacancies being filled in 2007. Figure 9 shows fill rates for teaching professionals in 2007.

**Figure 9: Fill rates for teaching professionals, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

In 2005 tertiary teaching professions showed a severe shortage (48%), which eased to a moderate shortage (72%) by 2007 (see Figure 10).

**Figure 10: Fill rates for teaching professionals, 2005 to 2007**

| NZSCO code | NZSCO Description  | Fill rate |           |           | 2007 vacancies |              |
|------------|--|-----------|-----------|-----------|----------------|--------------|
|            |  | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 23111      | University and higher education lecturer and/or tutor              | 48        | 63        | 72        | 242            | 61           |
| <b>231</b> | <b>Tertiary teaching professionals subtotal</b>                    | <b>48</b> | <b>63</b> | <b>72</b> | <b>242</b>     | <b>61</b>    |
| 23211      | Secondary school teacher   | 83        | 70        | 64        | 149            | 28           |
| <b>232</b> | <b>Secondary teaching professionals subtotal</b>                   | <b>83</b> | <b>70</b> | <b>64</b> | <b>149</b>     | <b>28</b>    |
| 23311      | Primary school teacher   | 100       | 89        | 87        | 200            | 45           |
| 23321      | Early childhood teacher  | 43        | 46        | 40        | 357            | 96           |
| <b>233</b> | <b>Primary and early childhood teaching professionals subtotal</b> | <b>62</b> | <b>63</b> | <b>56</b> | <b>564</b>     | <b>142</b>   |
| <b>234</b> | <b>Special education teaching professionals subtotal</b>           | <b>67</b> | <b>75</b> | <b>63</b> | <b>63</b>      | <b>17</b>    |
| <b>23</b>  | <b>Teaching professionals total</b>                                | <b>61</b> | <b>66</b> | <b>62</b> | <b>1,070</b>   | <b>257</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

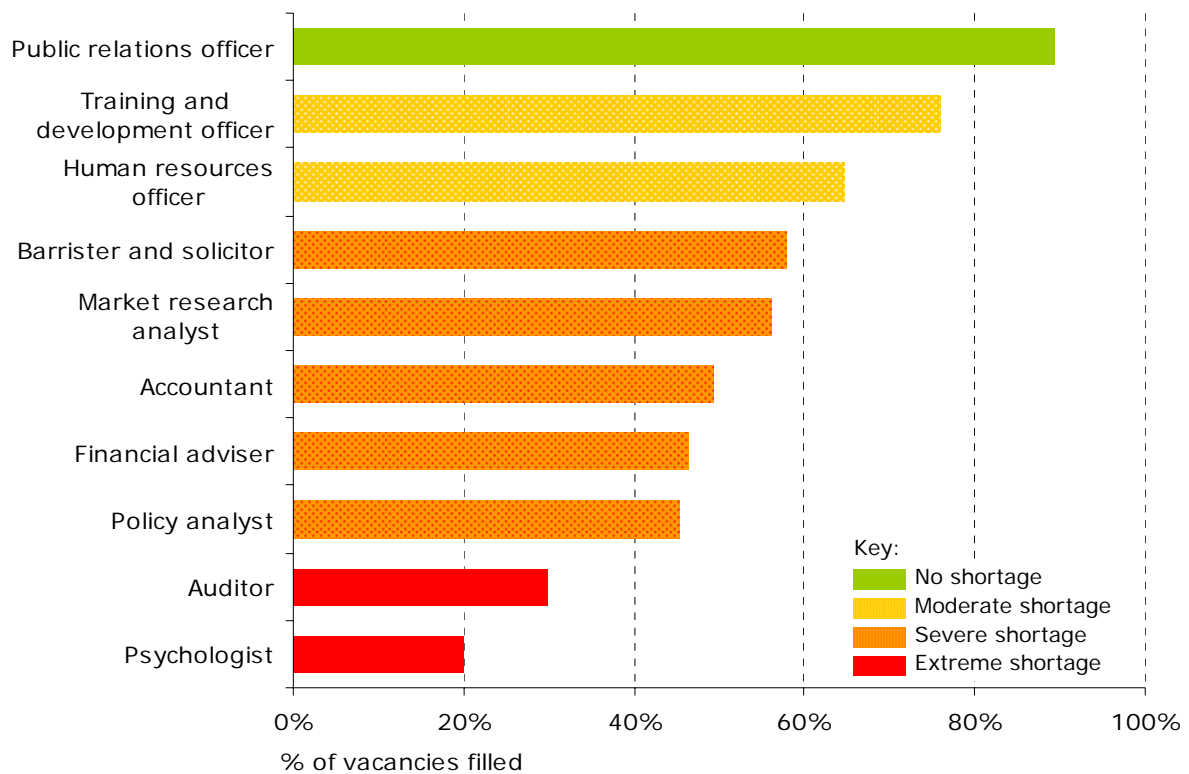
## Other professionals

Other professionals (NZSCO sub-major group 24) continued to be in severe shortage overall in 2007, with just under 6 out of every 10 such vacancies being filled.

Most individual occupations within this sub-major group were also in shortage in 2007, with psychologists (20%) and auditors (30%) showing extreme shortage (see Figure 11). In contrast, public relations officers were not in shortage, with 9 out of 10 of such vacancies being filled within 10 weeks of advertising.

Employers had some difficulty in finding suitable barristers and solicitors (fill rate 58%) and market research analysts (fill rate 56%), both of which were on the margin between moderate and severe shortage in 2007. Accountants (fill rate 49%), financial advisers (fill rate 46%), and policy analysts (fill rate 45%) were in severe shortage in 2007.

**Figure 11: Fill rates for other professionals, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Suitably qualified and experienced financial advisers already appeared to be in shortage in 2006 and have become increasingly difficult for employers to find in 2007. The fill rate for financial advisers declined 22 percentage points between 2006 and 2007, to 46% (see Figure 12). However, the 2007 figure is an improvement on 2005 (fill rate 28%).

Training and development officers and public relations officers were both in shortage in 2005. However, between 2005 and 2007, fill rates for these occupations increased. Training and development officers now show only moderate shortage, and public relations officers show no shortage at all.

**Figure 12: Fill rates for other professional occupations, 2005 to 2007**

| NZSCO code | NZSCO description  | Fill rate |           |           | 2007 vacancies |              |
|------------|--|-----------|-----------|-----------|----------------|--------------|
|            |  | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 24111      | Accountant   | 60        | 61        | 49        | 401            | 73           |
| 24113      | Auditor  | -         | 18        | 30        | 47             | 30           |
| 24121      | Human resources officer                                  | 58        | 63        | 65        | 156            | 34           |
| 24122      | Training and development officer                         | 55        | 85        | 76        | 89             | 25           |
| 24131      | Market research analyst                                  | 62        | 65        | 56        | 65             | 25           |
| 24132      | Public relations officer                                 | 55        | 77        | 90        | 89             | 19           |
| 24133      | Financial adviser  | 28        | 68        | 46        | 117            | 41           |
| <b>241</b> | <b>Business professionals subtotal</b>                   | <b>52</b> | <b>60</b> | <b>57</b> | <b>1,030</b>   | <b>256</b>   |
| 24211      | Barrister and solicitor                                  | 45        | 60        | 58        | 101            | 19           |
| <b>242</b> | <b>Legal professionals subtotal</b>                      | <b>48</b> | <b>62</b> | <b>68</b> | <b>136</b>     | <b>23</b>    |
| 24422      | Policy analyst   | 53        | 36        | 45        | 176            | 64           |
| 24441      | Psychologist   | -         | 30        | 20        | 37             | 25           |
| <b>244</b> | <b>Social and related science professionals subtotal</b> | <b>61</b> | <b>47</b> | <b>49</b> | <b>318</b>     | <b>117</b>   |
| <b>22</b>  | <b>Other professionals total</b>                         | <b>33</b> | <b>58</b> | <b>57</b> | <b>1,529</b>   | <b>404</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## 7 Shortages for technicians and associate professionals

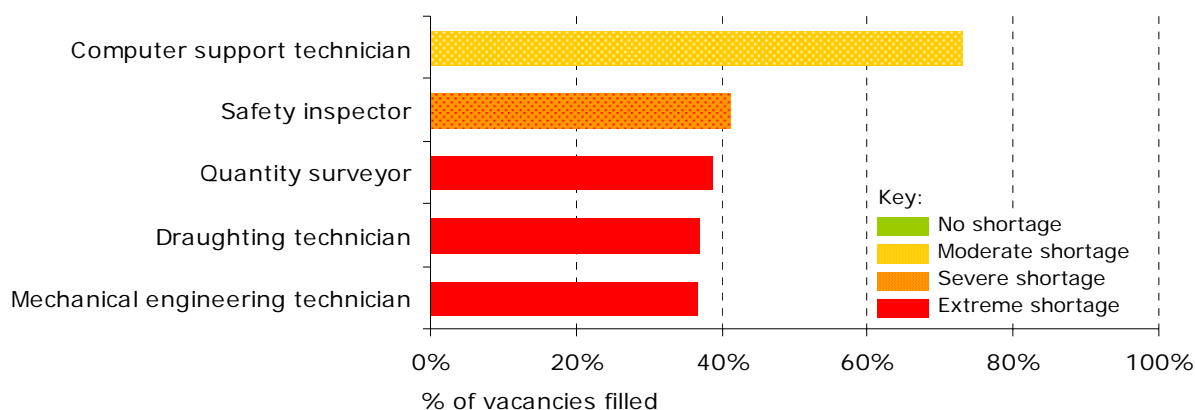
The overall fill rate for technicians and associate professional vacancies was 57% in 2007, indicating a severe shortage. Fill rates were calculated for 23 individual technician and associate professional occupations in 2007. Of these, 22 (96%) were found to be in shortage, including 5 (22%) that were in extreme shortage. Only teacher aides were not in shortage in 2007.

### Physical science and engineering associate professionals

Physical science and engineering technicians (NZSCO sub-major group 31) remained on the margin between severe and extreme shortage in 2007, with a 42% fill rate overall.

Employers seeking quantity surveyors, draughting technicians, and mechanical engineering technicians filled only about 40% of their vacancies. In other words, these occupations are on the margin between severe and extreme shortage (see Figure 13)

**Figure 13: Fill rates for physical science and engineering associate professionals, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Quantity surveyors remain difficult to find in 2007; however, there has been a marked easing of skill shortage for this occupation, with the fill rate increasing 19 percentage points since 2006 (see Figure 14).

**Figure 14: Fill rates for physical science and engineering associate professionals occupations, 2005 to 2007**

| NZSCO code | NZSCO description   | Fill rate |           |           | 2007 vacancies |              |
|------------|---|-----------|-----------|-----------|----------------|--------------|
|            |   | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 31121      | Quantity surveyor   | 25        | 20        | 39        | 136            | 31           |
| 31151      | Mechanical engineering technician                                     | 29        | 61        | 37        | 99             | 19           |
| 31181      | Draughting technician   | 31        | 27        | 37        | 263            | 62           |
| <b>311</b> | <b>Physical science and engineering technicians subtotal</b>          | <b>29</b> | <b>32</b> | <b>39</b> | <b>711</b>     | <b>190</b>   |
| 31213      | Computer support technician   | 74        | 88        | 73        | 73             | 26           |
| <b>312</b> | <b>Computer equipment controllers subtotal</b>                        | <b>56</b> | <b>72</b> | <b>59</b> | <b>109</b>     | <b>43</b>    |
| 31511      | Safety inspector  | 53        | 48        | 41        | 83             | 17           |
| <b>315</b> | <b>Safety and health inspectors subtotal</b>                          | <b>43</b> | <b>61</b> | <b>41</b> | <b>128</b>     | <b>33</b>    |
| <b>31</b>  | <b>Physical science and engineering associate professionals total</b> | <b>37</b> | <b>42</b> | <b>42</b> | <b>1,066</b>   | <b>289</b>   |

Source: Department of Labour, 2008

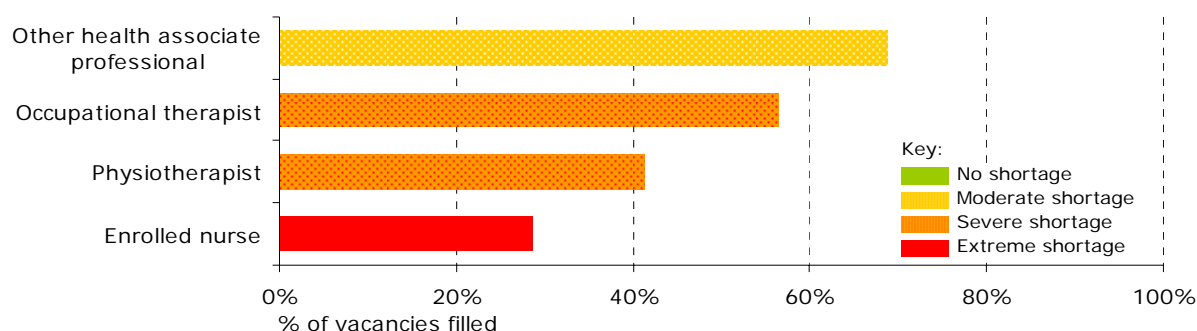
Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### **Life science and health associate professionals**

Life science and health associate professionals (NZSCO sub-major group 32) were on the margin between a moderate and severe shortage overall in 2007, with a 56% fill rate.

Within this sub-major group, enrolled nurses (29%) showed an extreme shortage, while physiotherapists (41%) were on the margin between a severe to extreme shortage (see Figure 15). Occupational therapists (56%) were on the margin between moderate and severe shortage.

**Figure 15: Fill rates for life science and health associate professionals, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Enrolled nurses showed a marked decline in fill rate. In 2006 three-quarters of the enrolled nurse vacancies were filled compared with less than one-third in 2007 (see Figure 16)

Conversely, occupational therapists showed a marked decrease in skill shortage in the last 2 years. In 2005 this occupation was in extreme shortage, with a 21% fill rate, which eased to 56% in 2007.

**Figure 16: Fill rates for life science and health associate professionals occupations, 2005 to 2007**

| NZSCO Code | Description  | Fill rate |           |           | 2007 vacancies |              |
|------------|--|-----------|-----------|-----------|----------------|--------------|
|            |  | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| <b>321</b> | <b>Life science technicians and related workers subtotal</b> | <b>83</b> | <b>80</b> | <b>81</b> | <b>99</b>      | <b>20</b>    |
| 32231      | Physiotherapist  | 44        | 44        | 41        | 48             | 17           |
| 32232      | Occupational therapist                                       | 21        | 55        | 56        | 47             | 16           |
| 32261      | Other health associate professional                          | -         | 61        | 69        | 32             | 16           |
| <b>322</b> | <b>Health associate professionals subtotal</b>               | <b>42</b> | <b>51</b> | <b>62</b> | <b>180</b>     | <b>60</b>    |
| 32311      | Enrolled nurse   | 21        | 76        | 29        | 128            | 28           |
| <b>323</b> | <b>Nursing associate professionals subtotal</b>              | <b>21</b> | <b>76</b> | <b>29</b> | <b>128</b>     | <b>28</b>    |
| <b>32</b>  | <b>Life science and health associate professionals total</b> | <b>43</b> | <b>63</b> | <b>56</b> | <b>407</b>     | <b>108</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## Other associate professionals

Other associate professionals (NZSCO sub-major group 33) were in moderate shortage in 2007, with a 62% fill rate. Comparable figures are not available for 2005 because of sampling issues (see Appendix B for further details).

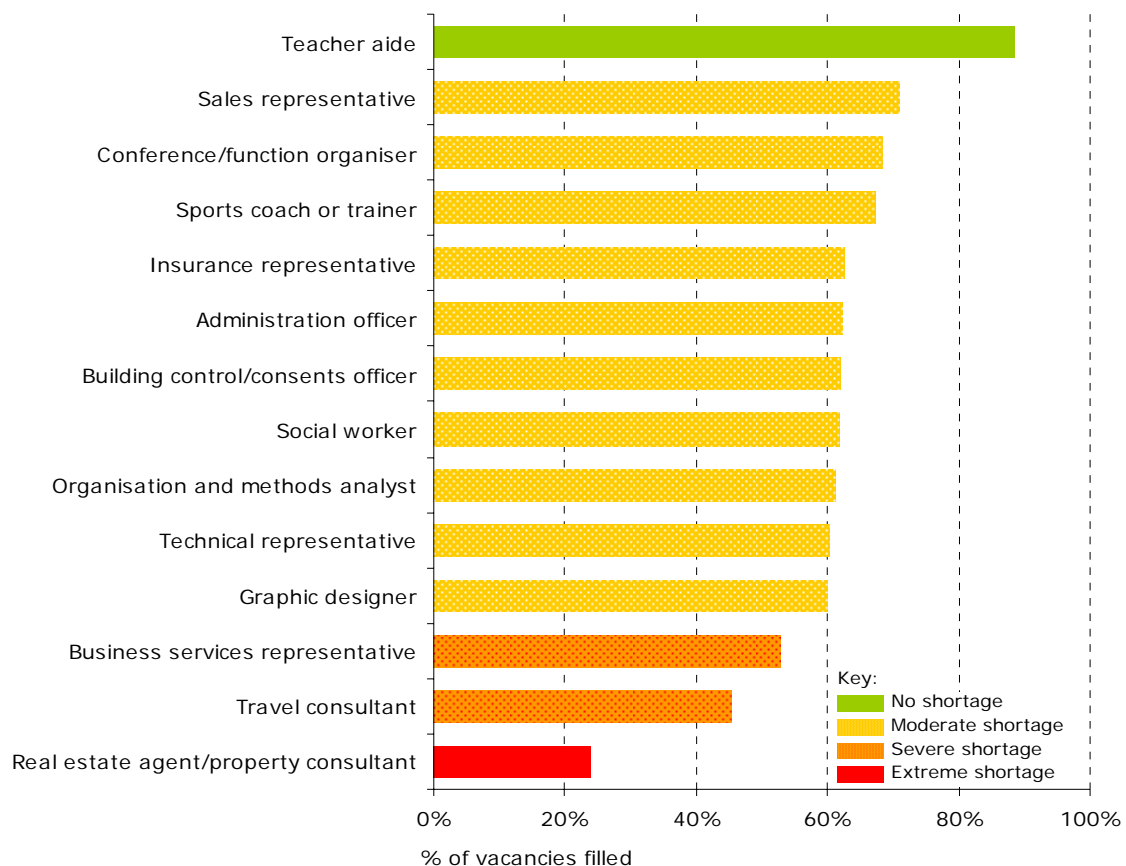
Employers were able to fill only one-quarter of vacancies for real estate agents/property consultants and about half the vacancies for travel consultants (see Figure 17).

Teacher aides showed no shortage in 2007, with close to 9 out of every 10 vacancies being filled.

Note that fill rates could not be calculated for the following NZSCO minor groups because of small sample sizes.

- 333 (government associate professionals)
- 335 (careers and employment advisers)
- 337 (non-ordained religious associate professionals)
- 338 (environmental protection associate professionals)

**Figure 17: Fill rates for other associate professionals, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Technical representatives were on the margin between severe and moderate shortage in 2007, with a 60% fill rate. However, the fill rate for this occupation has fallen by 18 percentage points since 2006 (see Figure 18), showing that vacancies in this occupation have become more difficult to fill.

Conversely, several occupations in the 'other associate professionals' group have shown an easing of skill shortage. In particular, travel consultants, graphic designers, and sports coaches or trainers all showed an increase in fill rate of around 30 percentage points between 2005 and 2007. Sales representatives showed a 24 percentage point increase in fill rate between 2006 and 2007.

**Figure 18: Fill rates for other associate professionals occupations, 2005 to 2007**

| NZSCO Code | NZSCO description   | Fill rate |           |           | 2007 vacancies |              |
|------------|---|-----------|-----------|-----------|----------------|--------------|
|            |   | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 33121      | Insurance representative  | -         | -         | 63        | 119            | 32           |
| 33131      | Real estate agent/property consultant   | -         | -         | 24        | 286            | 200          |
| 33141      | Travel consultant   | 20        | -         | 46        | 50             | 22           |
| 33151      | Business services representative  | -         | -         | 53        | 83             | 17           |
| 33152      | Technical representative  | -         | 79        | 60        | 257            | 68           |
| 33153      | Sales representative  | -         | 47        | 71        | 713            | 96           |
| <b>331</b> | <b>Finance and sales associate professionals subtotal</b>                           | <b>-</b>  | <b>49</b> | <b>58</b> | <b>1,639</b>   | <b>472</b>   |
| 33211      | Administration officer  | -         | -         | 62        | 211            | 45           |
| 33212      | Conference/function organiser   | -         | -         | 68        | 71             | 19           |
| 33241      | Organisation and methods analyst  | 65        | 79        | 61        | 105            | 18           |
| 33242      | Building control/consents officer   | -         | -         | 62        | 39             | 21           |
| <b>332</b> | <b>Administrative associate professionals subtotal</b>                              | <b>54</b> | <b>84</b> | <b>63</b> | <b>486</b>     | <b>122</b>   |
| 33411      | Social worker   | 52        | 59        | 62        | 304            | 107          |
| 33422      | Teacher aide  | 79        | 83        | 89        | 80             | 26           |
| <b>334</b> | <b>Social work associate professionals subtotal</b>                                 | <b>61</b> | <b>63</b> | <b>67</b> | <b>417</b>     | <b>142</b>   |
| 33631      | Graphic designer  | 25        | 71        | 60        | 49             | 25           |
| 33692      | Sports coach or trainer   | 41        | 59        | 67        | 116            | 46           |
| <b>336</b> | <b>Writers, artists, entertainment, and sports associate professionals subtotal</b> | <b>41</b> | <b>61</b> | <b>70</b> | <b>363</b>     | <b>114</b>   |
| <b>33</b>  | <b>Other associate professionals</b>  | <b>-</b>  | <b>58</b> | <b>62</b> | <b>2,969</b>   | <b>861</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

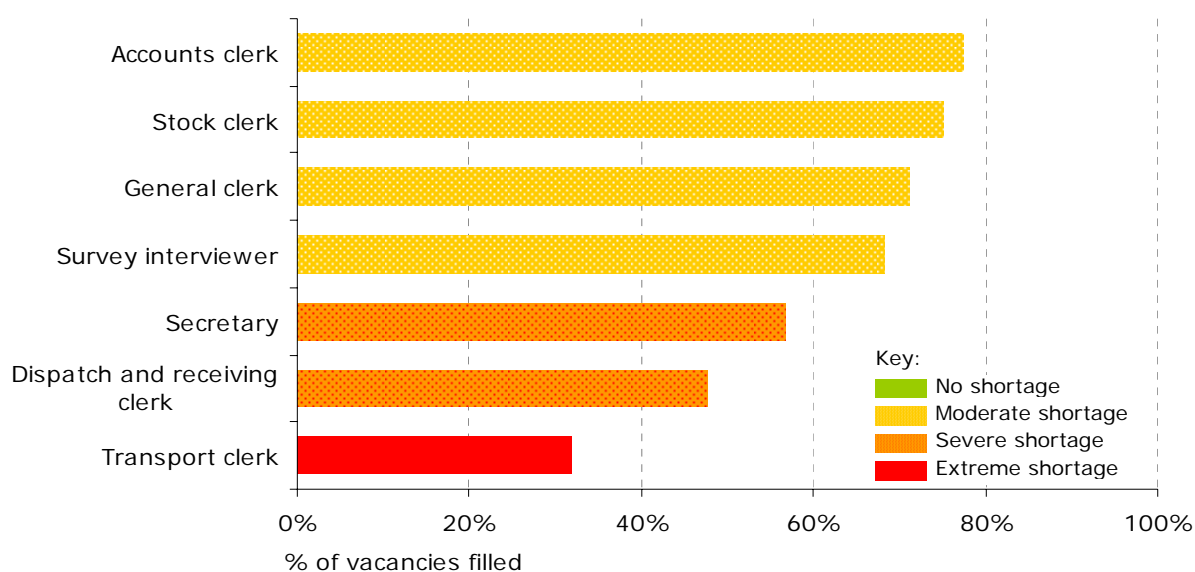
## 8 Shortages for clerks

Between 2006 and 2007 the fill rate for clerical vacancies decreased from 75% to 57%, indicating clerks are now in severe shortage.

### Office clerks

Sixty three percent of the office clerk vacancies (NZSCO sub-major group 41) included in SERA 2007 were filled, indicating a moderate to severe shortage of this occupation overall. However, at a more detailed level, transport clerks showed extreme shortages with only one-third of vacancies being filled (see Figure 19). Dispatch and receiving clerks (48%) showed a severe shortage.

**Figure 19: Fill rates for office clerks, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Fill rates for office clerk vacancies showed a marked decrease (17 percentage points) between 2006 and 2007. This level of decrease also occurred in the minor groups 413 (material recording and transport clerks) and 414 (library, mail, and related clerks) (see Figure 20).

**Figure 20: Fill rates for office clerk occupations, 2006 to 2007**

| NZSCO Code | NZSCO description   | Fill rate |           | 2007 vacancies |              |
|------------|---|-----------|-----------|----------------|--------------|
|            |   | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 41141      | Secretary   | 83        | 57        | 958            | 60           |
| <b>411</b> | <b>Secretaries and keyboard operating clerks subtotal</b> | <b>66</b> | <b>59</b> | <b>1,126</b>   | <b>79</b>    |
| 41211      | Accounts clerk  | 100       | 78        | 505            | 40           |
| 41223      | Survey interviewer  | -         | 68        | 159            | 41           |
| <b>412</b> | <b>Numerical clerks subtotal</b>                          | <b>69</b> | <b>68</b> | <b>841</b>     | <b>100</b>   |
| 41311      | Stock clerk   | -         | 75        | 330            | 24           |
| 41312      | Dispatch and receiving clerk                              | -         | 48        | 267            | 44           |
| 41331      | Transport clerk   | -         | 32        | 92             | 50           |
| <b>413</b> | <b>Material recording and transport clerks subtotal</b>   | <b>85</b> | <b>53</b> | <b>746</b>     | <b>121</b>   |
| 41443      | General clerk   | 96        | 71        | 693            | 45           |
| <b>414</b> | <b>Library, mail, and related clerks subtotal</b>         | <b>97</b> | <b>71</b> | <b>885</b>     | <b>59</b>    |
| <b>41</b>  | <b>Office clerks total</b>                                | <b>80</b> | <b>63</b> | <b>3,598</b>   | <b>359</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Customer services clerks

Figure 21 shows that only 43% of customer services clerk vacancies (NZSCO sub-major group 42) were filled, down from 65% in 2006.

Employers had particular difficulty filling the minor group 'client information clerk', which was on the margin between severe and extreme shortage with a 40% fill rate. There was also a marked drop (42 percentage points) in the fill rate for information clerks and other receptionists between 2006 and 2007.

**Figure 21: Fill rates for customer services clerk occupations, 2006 to 2007**

| NZSCO code | NZSCO description                                     | Fill rate |           | 2007 vacancies |              |
|------------|---|-----------|-----------|----------------|--------------|
|            |   | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| <b>421</b> | <b>Cashiers, tellers, and related clerks subtotal</b> | <b>81</b> | <b>59</b> | <b>211</b>     | <b>49</b>    |
| 42213      | Information clerk and other receptionist              | 74        | 32        | 1,065          | 76           |
| 42221      | Telephone switchboard operator                        | -         | 45        | 268            | 87           |
| <b>422</b> | <b>Client information clerks subtotal</b>             | <b>61</b> | <b>40</b> | <b>1,424</b>   | <b>169</b>   |
| <b>42</b>  | <b>Customer services clerks total</b>                 | <b>65</b> | <b>43</b> | <b>1,635</b>   | <b>218</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## 9 Shortages for service and sales workers

SERA 2007 showed an overall fill rate for service and sales workers of 51% (a severe shortage), down from 63% in 2006.

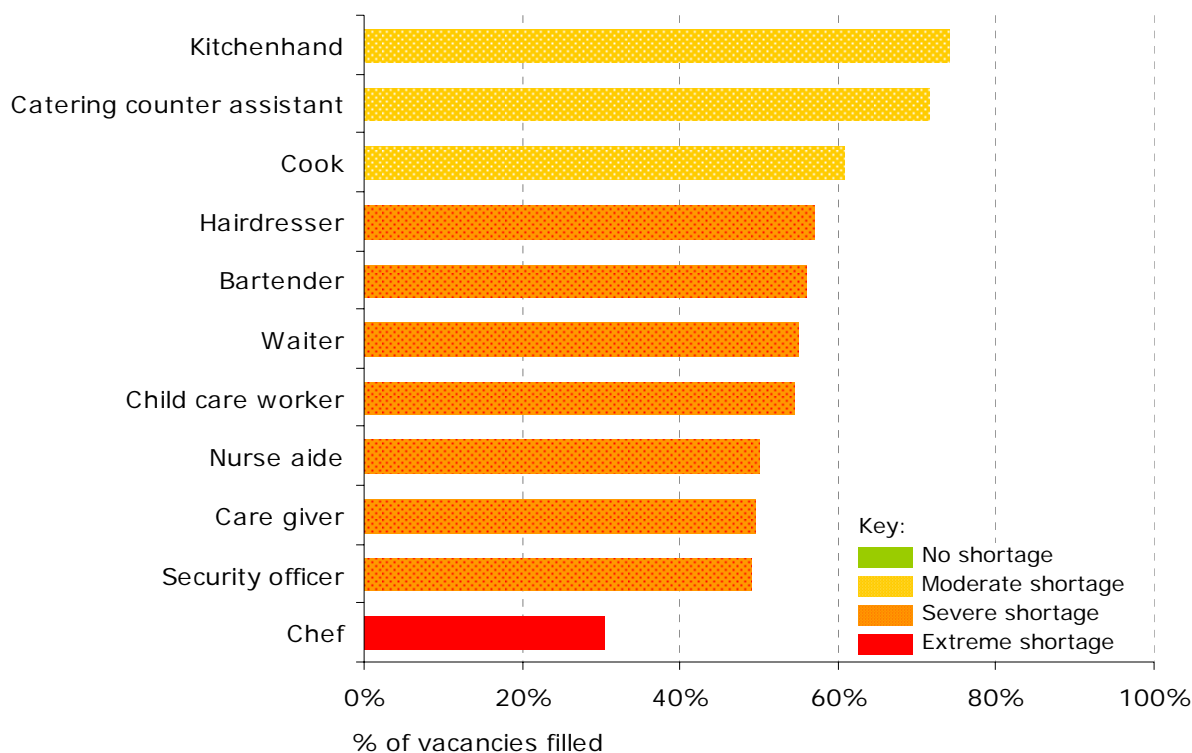
### Personal and protective services workers

Personal and protective services workers (NZSCO sub-major group 51) were in severe shortage, with just over a half of such vacancies included in SERA 2007 being filled within 10 weeks of advertising.

In particular, chefs were in extreme shortage with less than one-third of vacancies being filled in 2007 (see Figure 22).

Care givers and security officers were in severe shortage (fill rates 50% and 49%, respectively).

**Figure 22: Fill rates for personal and protective services workers, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

While kitchenhands showed only a moderate shortage (74%) in 2007, this occupation showed a marked decrease in the fill rate (nearly 20 percentage points) since 2006 (see Figure 23). Chefs showed a similar decrease from 52% in 2006 (already a severe shortage) to under one-third in 2007.

**Figure 23: Fill rates for personal and protective services worker occupations, 2006 to 2007**

| NZSCO Code | NZSCO description  | Fill rate |           | 2007 vacancies |              |
|------------|--|-----------|-----------|----------------|--------------|
|            |  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 51221      | Chef   | 52        | 30        | 657            | 69           |
| 51222      | Cook   | 69        | 61        | 222            | 23           |
| 51231      | Bartender  | -         | 56        | 370            | 50           |
| 51233      | Waiter   | -         | 55        | 589            | 109          |
| 51234      | Catering counter assistant                                   | -         | 72        | 550            | 74           |
| 51235      | Kitchen hand   | 92        | 74        | 363            | 50           |
| <b>512</b> | <b>Housekeeping and restaurant services workers subtotal</b> | <b>68</b> | <b>57</b> | <b>2,887</b>   | <b>390</b>   |
| 51314      | Nurse aide   | -         | 50        | 106            | 30           |
| 51316      | Care giver   | 64        | 50        | 1,103          | 125          |
| <b>513</b> | <b>Personal care workers subtotal</b>                        | <b>60</b> | <b>49</b> | <b>1,315</b>   | <b>166</b>   |
| 51411      | Hairdresser  | 56        | 57        | 379            | 35           |
| 51421      | Child care worker  | -         | 55        | 231            | 22           |
| <b>514</b> | <b>Other personal services workers subtotal</b>              | <b>50</b> | <b>58</b> | <b>725</b>     | <b>66</b>    |
| 51542      | Security Officer   | -         | 49        | 204            | 51           |
| <b>515</b> | <b>Protective services workers subtotal</b>                  | <b>-</b>  | <b>43</b> | <b>260</b>     | <b>60</b>    |
| <b>51</b>  | <b>Personal and protective services workers total</b>        | <b>63</b> | <b>55</b> | <b>5,255</b>   | <b>723</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Salespersons, demonstrators, and models

Figure 24 shows that salespersons, demonstrators, and models (NZSCO sub-major group 52) appear on the margin between severe and extreme shortage, with only 41% of these vacancies being filled within 10 weeks of advertising. This fill rate is over 20 percentage points lower than that shown in 2006.

**Figure 24: Fill rates for salesperson, demonstrator, and model occupations, 2006 to 2007**

| NZSCO code | NZSCO description                                    | Fill rate |           | 2007 vacancies |              |
|------------|--|-----------|-----------|----------------|--------------|
|            |  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 52111      | Sales assistant                                      | 65        | 51        | 1,800          | 82           |
| 52112      | Demonstrator   | -         | 14        | 210            | 49           |
| <b>521</b> | <b>Salespersons and demonstrators subtotal</b>       | <b>63</b> | <b>41</b> | <b>2,094</b>   | <b>138</b>   |
| <b>52</b>  | <b>Salespersons, demonstrators, and models total</b> | <b>63</b> | <b>41</b> | <b>2,100</b>   | <b>140</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## 10 Shortages for agriculture and fishery workers

SERA 2007 showed an overall fill rate for agriculture and fishery workers of 65%, indicating a moderate level of shortage.

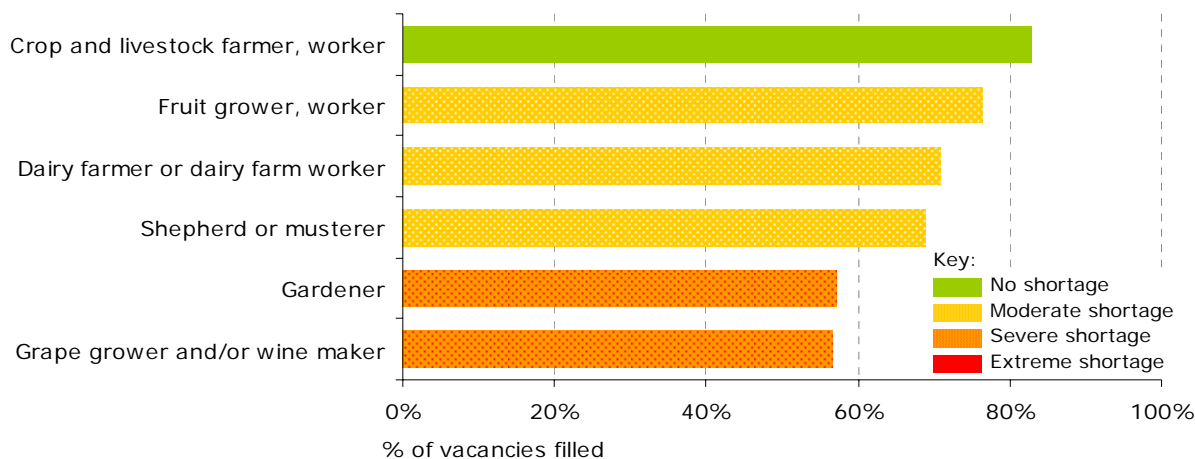
### Market-oriented agricultural and fishery workers

Market-oriented agricultural and fishery workers (NZSCO sub-major group 61) were in moderate shortage overall, with 65% of such vacancies being filled in 2007.

Gardeners and grape growers and/or wine makers were on the margin between moderate and severe shortages, with 57% fill rates (see Figure 25).

Note that a fill rate could not be calculated for NZSCO minor group 614 (fishery workers, hunters, and trappers) because of a small sample size.

**Figure 25: Fill rates for market-oriented agricultural and fishery workers, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

The minor group 613 (forestry and related workers) showed a marked drop in fill rate, from 67% in 2006 to 44% in 2007 (see Figure 26).

Grape growers and/or wine maker vacancies were also markedly more difficult to fill in 2007, with a fill rate over 20 percentage points lower than in 2006.

**Figure 26: Fill rates for market-oriented agricultural and fishery workers, 2006 to 2007**

| NZSCO code | NZSCO description   | Fill rate |           | 2007 Vacancies |              |
|------------|---|-----------|-----------|----------------|--------------|
|            |   | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 61121      | Fruit grower, worker  | -         | 76        | 146            | 38           |
| 61122      | Grape grower and/or wine maker, worker                        | 79        | 57        | 79             | 30           |
| 61134      | Gardener  | -         | 57        | 91             | 28           |
| <b>611</b> | <b>Market farmers and crop growers subtotal</b>               | <b>68</b> | <b>64</b> | <b>509</b>     | <b>123</b>   |
| 61211      | Dairy farmer, dairy farm worker                               | 74        | 71        | 596            | 41           |
| 61251      | Crop and livestock farmer, worker                             | 85        | 83        | 108            | 29           |
| 61261      | Shepherd or musterer  | -         | 69        | 53             | 29           |
| <b>612</b> | <b>Market-oriented animal producers subtotal</b>              | <b>72</b> | <b>70</b> | <b>1,060</b>   | <b>152</b>   |
| <b>613</b> | <b>Forestry and related workers subtotal</b>                  | <b>67</b> | <b>44</b> | <b>297</b>     | <b>41</b>    |
| <b>61</b>  | <b>Market-oriented agricultural and fishery workers total</b> | <b>70</b> | <b>65</b> | <b>1,911</b>   | <b>319</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## 11 Shortages for trades workers

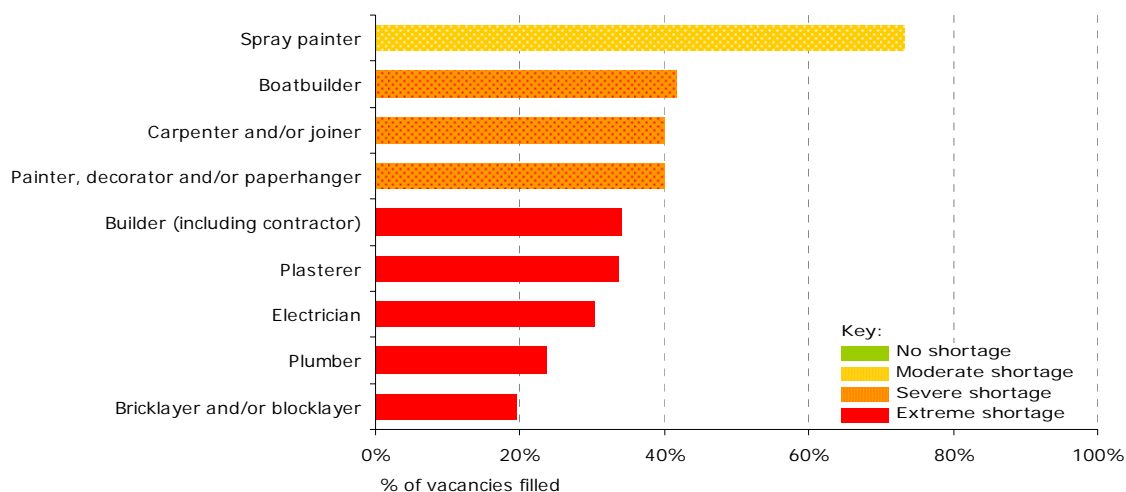
SERA 2007 showed an overall fill rate for trades worker vacancies of 37%, which is the lowest fill rate among the nine major occupational groups. Fill rates were calculated for 21 individual trade occupations in 2007. All occupations were in shortage, and over half were in extreme shortage.

### Building trades workers

Building trades workers (NZSCO sub-major group 71) were in extreme shortage overall, with a 36% fill rate in 2007.

Builders (34%), plasterers (34%), electricians (30%), plumbers (24%), and bricklayers and/or blocklayers (20%) were all in extreme shortage in 2007 (see Figure 27). Carpenters and/or joiners (40%) and painter, decorator, and/or paperhanger workers (40%) were on the margin between severe and extreme shortage.

**Figure 27: Fill rates for building trades workers, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Employers found it markedly more difficult to fill jobs for bricklayers and/or blocklayers, plumbers, and electricians in 2007 compared to 2006. Fill rates for these occupations decreased by about 20 percentage point from 2006 to 2007 (see Figure 28). However, fill rates for plumbers and electricians remain at levels similar to those recorded in 2005.

Shortages for boatbuilders eased markedly in 2007, and the fill rate increased by more than 20 percentage points. However, boatbuilders remain on the margin between severe and extreme shortage with only 42% of such vacancies being filled.

**Figure 28: Fill rates for building trades workers, 2005 to 2007**

| NZSCO code | NZSCO description   | Fill rate |           |           | 2007 vacancies |              |
|------------|---|-----------|-----------|-----------|----------------|--------------|
|            |   | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 71111      | Bricklayer and/or blocklayer                                  | 42        | 43        | 20        | 80             | 51           |
| 71121      | Carpenter and/or joiner                                       | 34        | 47        | 40        | 744            | 174          |
| 71122      | Builder (including contractor)                                | 45        | 36        | 34        | 230            | 138          |
| 71123      | Boatbuilder   | 39        | 20        | 42        | 40             | 36           |
| <b>711</b> | <b>Building frame and related trades workers subtotal</b>     | <b>38</b> | <b>42</b> | <b>37</b> | <b>1,102</b>   | <b>402</b>   |
| 71211      | Plasterer   | 45        | 47        | 34        | 107            | 83           |
| 71231      | Plumber   | 29        | 46        | 24        | 124            | 55           |
| 71241      | Painter, decorator, and/or paperhanger                        | 53        | 49        | 40        | 263            | 129          |
| 71242      | Spray painter   | 60        | 59        | 73        | 70             | 26           |
| <b>712</b> | <b>Building finishers and related trades workers subtotal</b> | <b>47</b> | <b>49</b> | <b>38</b> | <b>618</b>     | <b>311</b>   |
| 71311      | Electrician   | 30        | 46        | 30        | 306            | 89           |
| <b>713</b> | <b>Electricians subtotal</b>                                  | <b>32</b> | <b>43</b> | <b>29</b> | <b>334</b>     | <b>105</b>   |
| <b>71</b>  | <b>Building trades workers total</b>                          | <b>39</b> | <b>44</b> | <b>36</b> | <b>2,054</b>   | <b>818</b>   |

Source: Department of Labour, 2008

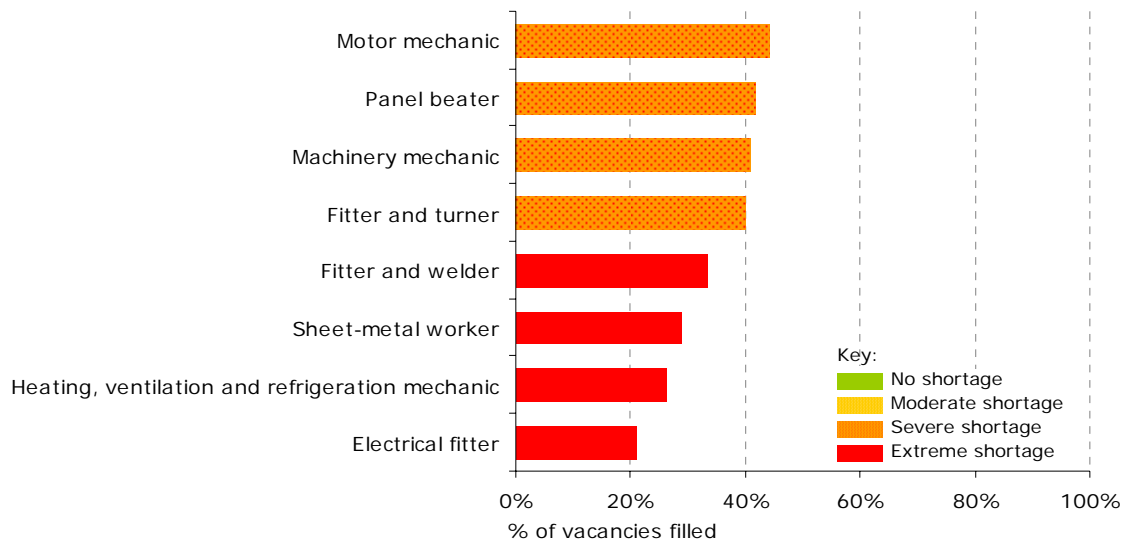
Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### **Metal and machinery trades workers**

Metal and machinery trades workers (NZSCO sub-major group 72) were in extreme shortage in 2007, with only 36% of vacancies filled.

Fill rates for fitter welders (33%), sheet-metal workers (29%), heating, ventilation, and refrigeration mechanics (26%) and electrical fitters (21%) showed extreme shortages for these occupations (see Figure 29). Fitters and turners were on the margin between severe and extreme shortage, with a 40% fill rate.

**Figure 29: Fill rates for metal and machinery trades workers, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Skill shortages in most of the metal and machinery trade worker occupations appear to have worsened since 2006. Fitters and turners showed the most marked decrease in fill rate, from 79% in 2006 to 40% in 2007 (see Figure 30). From 2006 to 2007 fill rates decreased for:

- sheet-metal workers by 29 percentage points
- fitters and welders by 26 percentage points
- electrical fitters by 19 percentage points.

**Figure 30: Fill rates for metal and machinery trades worker occupations, 2005 to 2007**

| NZSCO code | NZSCO description  | Fill rate |           |           | 2007 vacancies |              |
|------------|--|-----------|-----------|-----------|----------------|--------------|
|            |  | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 72122      | Sheet-metal worker   | 23        | 58        | 29        | 194            | 76           |
| 72124      | Fitter and welder  | 44        | 59        | 33        | 170            | 54           |
| 72125      | Panel beater   | 30        | 55        | 42        | 85             | 24           |
| <b>721</b> | <b>Metal moulders, sheet-metal, and related workers subtotal</b>           | <b>31</b> | <b>56</b> | <b>33</b> | <b>501</b>     | <b>181</b>   |
| 72231      | Fitter and turner  | 27        | 79        | 40        | 154            | 50           |
| <b>722</b> | <b>Blacksmiths, toolmakers, and related workers subtotal</b>               | <b>25</b> | <b>69</b> | <b>39</b> | <b>175</b>     | <b>59</b>    |
| 72311      | Machinery mechanic   | 21        | 42        | 41        | 238            | 88           |
| 72312      | Motor mechanic   | 43        | 43        | 44        | 251            | 84           |
| 72314      | Heating, ventilation, and refrigeration mechanic                           | 48        | 30        | 26        | 53             | 19           |
| <b>723</b> | <b>Machinery mechanics and fitters subtotal</b>                            | <b>35</b> | <b>42</b> | <b>40</b> | <b>584</b>     | <b>204</b>   |
| 72411      | Electrical fitter  | -         | 40        | 21        | 64             | 43           |
| <b>724</b> | <b>Electrical and electronic instrument mechanics and fitters subtotal</b> | <b>14</b> | <b>38</b> | <b>33</b> | <b>116</b>     | <b>73</b>    |
| <b>72</b>  | <b>Metal and machinery trades total</b>                                    | <b>31</b> | <b>50</b> | <b>36</b> | <b>1,376</b>   | <b>517</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Precision trades workers

Figure 31 shows that precision trades workers (NZSCO sub-major group 73) remain in severe shortage, with a 49% fill rate in 2007.

Printing machinist was the only occupation in this group that a fill rate could be calculated for. This occupation appears on the margin between severe and extreme shortage in 2007, with only 39% of the advertised vacancies included in the survey filled — a fill rate 25 percentage points lower than that of 2006.

**Figure 31: Fill rates for precision trades worker occupations, 2005 to 2007**

| NZSCO code | NZSCO description                       | Fill rate |           |           | 2007 vacancies |              |
|------------|---|-----------|-----------|-----------|----------------|--------------|
|            |   | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 73317      | Printing machinist                      | 61        | 64        | 39        | 46             | 26           |
| <b>733</b> | <b>Printing trades workers subtotal</b> | <b>58</b> | <b>61</b> | <b>50</b> | <b>75</b>      | <b>34</b>    |
| <b>73</b>  | <b>Precision trades workers total</b>   | <b>54</b> | <b>56</b> | <b>49</b> | <b>88</b>      | <b>38</b>    |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Other craft and related trades workers

Figure 32 shows that other craft and related trades workers (NZSCO sub-major group 74) remained in severe shortage with an overall fill rate of 45% in 2007, which is lower than the 2006 fill rate of 57%.

In 2007 the fill rate for butchers was 48%, which fell by 29 percentage points since 2006 (see Figure 32).

Only one-quarter of the cabinet maker vacancies included in SERA 2007 were filled, which is a marked decrease on 2006 when half of cabinetmaker vacancies were filled.

The 2007 fill rate for bakers is markedly higher (up 22 percentage points) than in 2005 when this occupation was in extreme shortage.

**Figure 32: Fill rates for other craft and related trades worker occupations, 2005 to 2007**

| NZSCO code | NZSCO description  | Fill rate |           |           | 2007 vacancies |              |
|------------|--|-----------|-----------|-----------|----------------|--------------|
|            |  | 2005 (%)  | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 74111      | Butcher  | 62        | 77        | 48        | 53             | 27           |
| 74121      | Baker  | 37        | 64        | 59        | 78             | 27           |
| <b>741</b> | <b>Food and related products processing trades workers</b> | <b>44</b> | <b>69</b> | <b>55</b> | <b>131</b>     | <b>54</b>    |
| 74211      | Cabinet maker  | 40        | 50        | 25        | 120            | 36           |
| <b>742</b> | <b>Cabinet makers and related workers</b>                  | <b>40</b> | <b>51</b> | <b>25</b> | <b>133</b>     | <b>36</b>    |
| <b>743</b> | <b>Tailors and dressmakers</b>                             | <b>40</b> | <b>42</b> | <b>68</b> | <b>52</b>      | <b>15</b>    |
| <b>74</b>  | <b>Other craft and related trades workers</b>              | <b>41</b> | <b>57</b> | <b>45</b> | <b>316</b>     | <b>105</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## 12 Shortages for plant and machine operators and assemblers

SERA 2007 showed an overall fill rate for plant and machine operator and assembler vacancies of 54%, indicating a severe shortage.

### Industrial plant operators

Figure 33 shows that industrial plant operators (NZSCO sub-major group 81) were on the margin between severe and moderate shortage with a 58% fill rate in 2007.<sup>5</sup>

**Figure 33: Fill rates for industrial plant operator occupations, 2006 to 2007**

| NZSCO code | NZSCO description                       | Fill rate |           | 2007 Vacancies |              |
|------------|---|-----------|-----------|----------------|--------------|
|            |   | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 81231      | Welder and flame-cutter                 | -         | 47        | 180            | 17           |
| <b>812</b> | <b>Metal-processing plant operators</b> | <b>-</b>  | <b>46</b> | <b>219</b>     | <b>28</b>    |
| <b>81</b>  | <b>Industrial plant operators</b>       | <b>61</b> | <b>58</b> | <b>404</b>     | <b>49</b>    |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Stationary machine operators and assemblers

Table 20 shows that stationary machine operators and assemblers (NZSCO sub-major group 82) were in moderate shortage, with a 55% fill rate in 2007.<sup>6</sup>

The minor group 829 (assemblers) remain in extreme shortage with only one-quarter of vacancies being filled in 2007 (see Figure 34). Comparing changes in fill rates over time is difficult because few of the occupations identified as being in shortage in SERA 2007 were reported on in 2006. The comparisons that can be made between 2006 and 2007 do not appear to be statistically significant.

<sup>5</sup> Note that fill rates could not be calculated for NZSCO minor groups 811 and 813 to 816 because of small sample sizes.

<sup>6</sup> Note that fill rates could not be calculated for NZSCO minor groups 822, 824 to 826, and 828 because of small sample sizes.

**Figure 34: Fill rates for stationary machine operator and assembler occupations, 2006 to 2007**

| NZSCO code | NZSCO description   | Fill rate |           | 2007 vacancies |              |
|------------|---|-----------|-----------|----------------|--------------|
|            |   | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 82111      | Machine tool operator   | -         | 56        | 264            | 36           |
| <b>821</b> | <b>Metal and mineral products processing machine operators subtotal</b> | -         | <b>57</b> | <b>403</b>     | <b>53</b>    |
| 82322      | Plastics machine operator   | -         | 59        | 35             | 22           |
| <b>823</b> | <b>Rubber and plastics products machine operators subtotal</b>          | -         | <b>47</b> | <b>66</b>      | <b>25</b>    |
| <b>827</b> | <b>Food and related products processing machine operators subtotal</b>  | <b>73</b> | <b>79</b> | <b>262</b>     | <b>39</b>    |
| 82923      | Linesperson   | 47        | 36        | 63             | 28           |
| <b>829</b> | <b>Assemblers subtotal</b>  | <b>40</b> | <b>25</b> | <b>191</b>     | <b>43</b>    |
| <b>82</b>  | <b>Stationary machine operators and assemblers total</b>                | <b>64</b> | <b>55</b> | <b>1,176</b>   | <b>195</b>   |

Source: Department of Labour, 2008

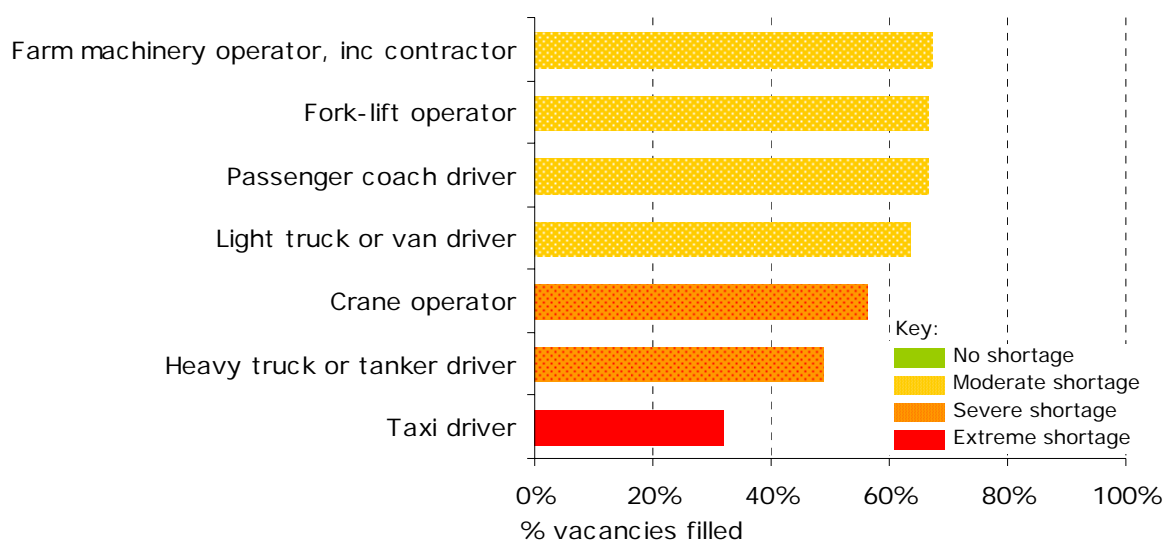
Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Drivers and mobile machinery operators

Drivers and mobile machinery operators (NZSCO sub-major group 83) remain in severe shortage with a 55% fill rate in 2007.

Taxi drivers were in extreme shortage in 2007, with one-third of vacancies being filled (see Figure 35).

**Figure 35: Fill rates for driver and mobile machinery operator occupations, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Comparing changes in fill rates over time is difficult because few of the occupations identified as being in shortage in SERA 2007 were reported on in 2006 (see Figure 36). The comparisons that can be made between 2006 and 2007 do not appear to be statistically significant.

**Figure 36: Fill rates for driver and mobile machinery operator occupations, 2006 to 2007**

| NZSCO code | NZSCO description   | Fill rate |           | 2007 vacancies |              |
|------------|---|-----------|-----------|----------------|--------------|
|            |   | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 83211      | Taxi driver   | -         | 32        | 46             | 25           |
| 83212      | Light truck or van driver   | -         | 64        | 489            | 55           |
| 83221      | Passenger coach driver  | -         | 67        | 42             | 18           |
| 83231      | Heavy truck or tanker driver  | 40        | 49        | 649            | 49           |
| <b>832</b> | <b>Motor vehicle drivers subtotal</b>   | <b>47</b> | <b>56</b> | <b>1,230</b>   | <b>147</b>   |
| 83311      | Farm machinery operator, including contractor   | 67        | 67        | 98             | 49           |
| 83331      | Crane operator  | -         | 56        | 18             | 16           |
| 83341      | Fork-lift operator  | -         | 67        | 211            | 21           |
| <b>833</b> | <b>Agricultural earthmoving and other materials/handling equipment operators subtotal</b> | <b>45</b> | <b>53</b> | <b>642</b>     | <b>140</b>   |
| <b>83</b>  | <b>Drivers &amp; Mobile Machinery Operators total</b>                                     | <b>46</b> | <b>55</b> | <b>1,888</b>   | <b>289</b>   |

Source: Department of Labour, 2008

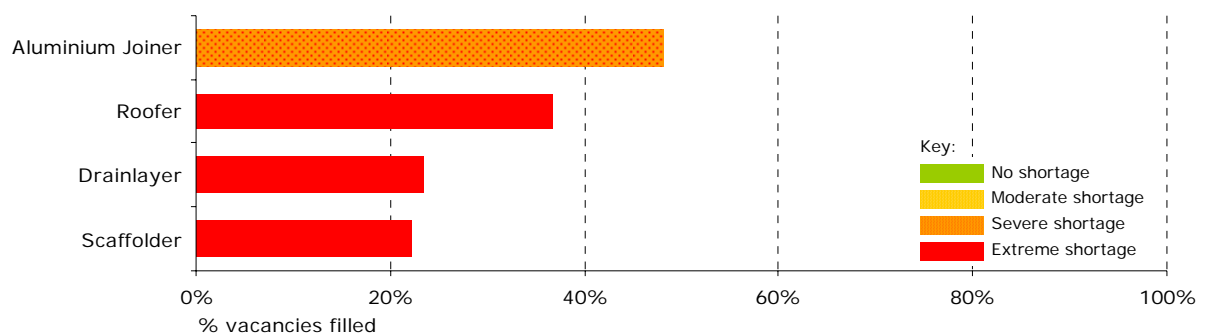
Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### Building and related workers

Building and related workers (NZSCO sub-major group 84) were on the margin between severe and extreme shortage overall, with a 37% fill rate in 2007.

Of the occupations within building and related workers, drainlayers (24%) and scaffolders (22%) showed extreme shortages in 2007 (see Figure 37).

**Figure 37: Fill rates for building and related worker occupations, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Roofers, who were on the margin between severe and moderate shortage in 2006, decreased markedly in fill rate, by 20 percentage points in 2007 (see Figure 38).

**Figure 38: Fill rates for building and related worker occupations, 2006 to 2007**

| NZSCO code | NZSCO description                   | Fill rate |           | 2007 vacancies |              |
|------------|-------------------------------------|-----------|-----------|----------------|--------------|
|            |                                     | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 84111      | Drainlayer                          | 36        | 24        | 94             | 34           |
| 84114      | Scaffolder                          | -         | 22        | 30             | 18           |
| 84117      | Roofer                              | 57        | 37        | 100            | 60           |
| 84118      | Aluminium joiner                    | 46        | 48        | 49             | 27           |
| <b>84</b>  | <b>Building and related workers</b> | <b>47</b> | <b>37</b> | <b>375</b>     | <b>143</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

### 13 Shortages for elementary occupations

SERA 2007 showed an overall fill rate for elementary worker vacancies of 61%.

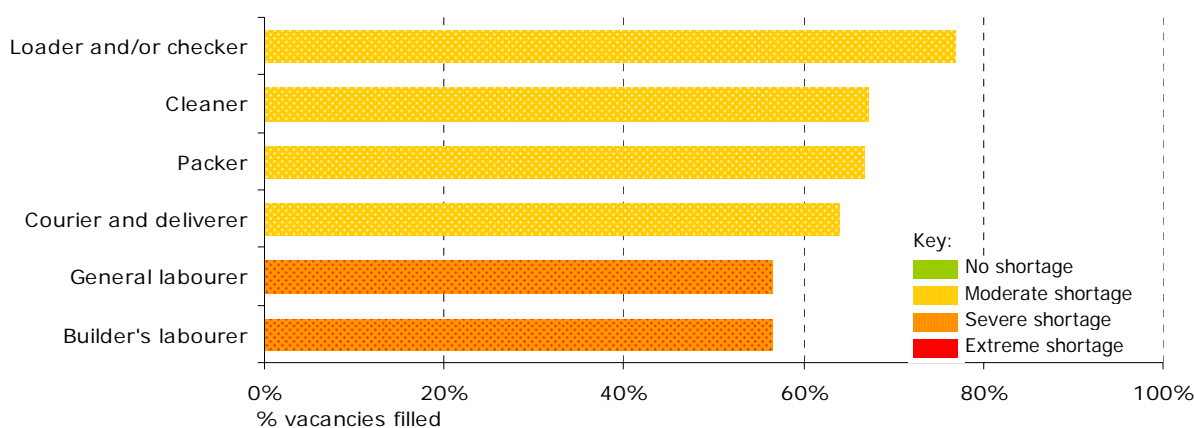
#### Labourers and related elementary service workers

Labourers and related elementary service workers (NZSCO sub-major group 91) were on the margin of severe and moderate shortage overall, with a 63% fill rate in 2007.

Employers had some difficulty finding general labourers and builder's labourers in 2007, with both occupations on the margin between severe and moderate shortage (see Figure 39).

Packers (of food and other articles), cleaners and couriers and deliverers also were on the margin between severe and moderate shortage in 2007, with about two-thirds of advertised vacancies for these occupations being filled.

**Figure 39: Fill rates for labourer and related elementary service worker occupations, 2007**



Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are omitted from this graph.

Skill shortages for labourers (minor group 915) appear to have eased a little. Since 2006 the fill rate for this occupation has increased from 45% to 57% (see Figure 40).

In 2007 the fill rate for packers was 67%, having decreased by 19 percentage points since 2006.

**Figure 40: Fill rates for labourer and related elementary service workers, 2006 to 2007**

| NZSCO code | NZSCO description   | Fill rate |           | 2007 vacancies |              |
|------------|---|-----------|-----------|----------------|--------------|
|            |   | 2006 (%)  | 2007 (%)  | JVM (no.)      | Sample (no.) |
| 91111      | Cleaner   | 69        | 67        | 908            | 67           |
| <b>911</b> | <b>Building caretakers and cleaners subtotal</b>              | <b>70</b> | <b>66</b> | <b>946</b>     | <b>68</b>    |
| 91211      | Courier and deliverer   | -         | 64        | 307            | 36           |
| <b>912</b> | <b>Messengers and doorkeepers subtotal</b>                    | <b>-</b>  | <b>67</b> | <b>338</b>     | <b>39</b>    |
| 91411      | Packer  | 86        | 67        | 409            | 39           |
| 91412      | Loader and/or checker   | -         | 77        | 255            | 26           |
| <b>914</b> | <b>Packers and freight handlers subtotal</b>                  | <b>82</b> | <b>71</b> | <b>664</b>     | <b>65</b>    |
| 91512      | Builder's labourer  | -         | 57        | 364            | 46           |
| 91514      | General labourer  | 49        | 57        | 758            | 83           |
| <b>915</b> | <b>Labourers subtotal</b>                                     | <b>45</b> | <b>57</b> | <b>1192</b>    | <b>130</b>   |
| <b>91</b>  | <b>Labourers and related elementary service workers total</b> | <b>61</b> | <b>63</b> | <b>3158</b>    | <b>303</b>   |

Source: Department of Labour, 2008

Note: Occupations for which fewer than 10 employers were interviewed in the SERA are not shown in the table. Caution is needed when interpreting fill rates based on small sample sizes (see Appendix B for further discussion of sample errors). Some (sub)totals may exceed the sum of the rows above as they include data from occupations not shown in the table.

## Appendix A: New Zealand Standard Classification of Occupations (NZSCO)

### A skills-based classification system

The New Zealand Standard Classification of Occupations (NZSCO) is a skills-based, hierarchical classification system that categorises the type of work that is performed in a job. Occupational groupings are differentiated from each other according to the responsibilities, tasks, training required, and experience common to that group.

Skills in the NZSCO are defined according to 'skill level' and 'skill specialisation'. These two definitions are used to classify occupations within the NZSCO structure. Occupations are assigned to the highest level, known as 'major groups', based on their required skill level. Occupations are assigned to lower levels, known as 'sub-major' and 'minor groups', based on progressively finer interpretations of skill specialisation.

*Skill level* reflects the complexity and range of tasks involved. *Skill specialisation* reflects the field of knowledge required to perform the tasks, the tools and equipment used, the materials worked with, and goods and services produced. Skill specialisation allows the major groups to be subdivided into sub-major groups, minor groups, and unit groups.

### Using the five-level hierarchical structure

The NZSCO uses a five-level hierarchical structure of classification. At the highest level there are nine major groups. Major groups are loosely organised from highly skilled (major group 1) to less skilled (major group 9). Each major group can be further subdivided into four other levels (see appendix table 1):

- sub-major group
- minor group
- unit group
- occupation.

The more digits a classification level has, the more detailed the occupational group is. Occupations are most detailed at the 5-digit level.

**Appendix table 1: NZSCO classification structure**

| Major groups                                 | Sub-major groups | Minor groups | Unit groups | Occupations |
|--|------------------|--------------|-------------|-------------|
| 1 Legislators, administrators, and managers  | 2                | 6            | 14          | 34          |
| 2 Professionals                              | 4                | 17           | 46          | 99          |
| 3 Technicians and associate professionals    | 3                | 16           | 54          | 119         |
| 4 Clerks                                     | 2                | 6            | 18          | 34          |
| 5 Service and sales workers                  | 2                | 8            | 17          | 36          |
| 6 Agriculture and fishery workers            | 1                | 4            | 14          | 35          |
| 7 Trades workers                             | 4                | 14           | 31          | 64          |
| 8 Plant and machine operators and assemblers | 4                | 20           | 58          | 127         |
| 9 Elementary occupations                     | 3                | 8            | 8           | 17          |
| <b>Total</b>                                 | <b>25</b>        | <b>99</b>    | <b>260</b>  | <b>565</b>  |

The example in Appendix table 2 below shows the five-level hierarchical structure for 'primary school teacher'.

**Appendix table 2: Five-level hierarchical structure for 'primary school teacher'**

| Group           | Level | Code  | Description  |
|-----------------|-------|-------|--|
| Major group     | 1     | 2     | Professional                                       |
| Sub-major group | 2     | 23    | Teaching professionals                             |
| Minor group     | 3     | 232   | Primary and early childhood teaching professionals |
| Unit group      | 4     | 2331  | Primary teaching professionals                     |
| Occupation      | 5     | 23311 | Primary school teacher                             |

## Appendix B: Methodology for the SERA

The Survey of Employers who have Recently Advertised (SERA) is a short telephone survey of employers who have recently advertised job vacancies. The purpose of the survey is to identify occupations in which employers are having difficulty filling vacancies.

Research New Zealand was contracted by the Department of Labour to carry out SERA 2007. A total of 4,175 interviews were completed with employers (or recruitment agencies). These employers were attempting to fill a total of 6,930 vacancies<sup>7</sup>. The response rate for the survey was 63%.

Earlier large sample SERA were conducted in-house by the Department in 2003 (February to December), 2005 (May to August) and 2006 (May to October), with no equivalent survey being conducted in 2004.

The survey sample was drawn primarily from the Department's Job Vacancy Monitor<sup>8</sup> (JVM) but was also supplemented from various internet job boards and specialist websites when there was difficulty reaching sample quotas for particular occupations from the JVM. The SERA 2007 sample was stratified on the following basis:

- A total of 2,500 completed interviews covering three major occupation groups: professionals, technicians and associate professionals, and trades workers. A cap of 40 interviews was placed on large occupations, and a minimum of 10 interviews was sought for some small occupations that were thought to be of particular interest.
- A total of 1,700 completed interviews covering all six other major occupation groups. The sample size for each was based on the group's share of total employment.

Employers were approached 6 to 10 weeks after advertising and were asked whether they had filled their vacancy, and the number of suitable applicants (including whether they had the right to work in New Zealand at the time they were interviewed). Employers were phoned back if they had not yet filled the position on offer, but they expected to do so within 10 weeks of advertising.

Vacancies that were not filled with a suitable candidate within 10 weeks of advertising were deemed to not be filled (even if there was some chance of the vacancy being filled after the 10 week cut-off point). It is possible that this business rule may impact on some occupations more than others (e.g. highly paid positions, which are typically advertised through recruitment agencies, may take longer to finalise appointments).

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<sup>7</sup> Short-term vacancies (i.e. for periods of less than 3 months) were excluded from the survey.

<sup>8</sup> The JVM programme began in November 2002 to gather and analyse detailed information on job vacancy advertisements. The JVM involves the monthly analysis of advertised job vacancies in 25 daily newspapers and two internet IT job boards.

If the appointee to any position did not have the qualifications and experience to be regarded by the employer as a member of the occupation being advertised (e.g. a book-keeper being appointed to an accountant vacancy), then the vacancy was deemed to not be filled.

## **Weighting**

Fill rates presented at the NZSCO 1-digit, 2-digit and 3-digit level were weighted to compensate for any under or over sampling of individual occupations in the survey. Weights were calculated for each occupation<sup>9</sup> with a view to make the vacancy counts from the SERA sample reflective of the total newspaper vacancy counts from the JVM. Data from the 2007 and 2006 SERA were each weighted separately based on vacancy levels in the JVM at a similar time to the survey being carried out. As the JVM does not currently include web-based vacancies or vacancies published in community papers, the weighted fill rates are only reflective of newspaper vacancy counts rather than total vacancy counts.

The SERA carried out in 2003 and 2005 both excluded a few 5-digit occupations from the technician and associate professional occupational group (e.g. sales representatives and technical representatives). As these occupations account for a reasonable proportion of advertised newspaper vacancies within this NZSCO group, the weighted fill rates for the major group from 2003 and 2005 are not comparable with that for 2006 and 2007 (which did include these occupations). For this reason, fill rates are not shown in the report for 2003 or for 2005 for the NZSCO groups 3, 33, and 331.

## **Outliers**

Individual employers who were advertising 15 or more vacancies for an individual occupation were excluded from calculations so as to not unduly bias fill rates. It can be noted that 67% of employers were advertising only 1 vacancy and 18% were advertising 2 vacancies, with only 1% of employers advertising 15 or more vacancies.

## **Sample error**

The fill rates presented in this report are subject to sampling error, which must be considered when interpreting the results. The larger the sample size that a fill rate is calculated from (in this case, the number of vacancies included in the SERA), the smaller the sample error will be. For example, the maximum margin of error at a confidence level of 95% for various sample sizes is as follows:

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<sup>9</sup> For the NZSCO major groups 2, 3 and 7 (which had the largest sample sizes in SERA 2007), weights were calculated at the 5-digit level, while for the other major occupational groups, weights were calculated at the 3-digit level.

| Population Size | Sample Size | Fill rate | 95% Confidence Interval (+/-) |
|-----------------|-------------|-----------|-------------------------------|
| 1000            | 40          | 50%       | 15%                           |
| 600             | 40          | 50%       | 15%                           |
| 500             | 40          | 50%       | 15%                           |
| 400             | 40          | 50%       | 15%                           |
| 300             | 40          | 50%       | 15%                           |
| 200             | 40          | 50%       | 14%                           |
| 100             | 40          | 50%       | 12%                           |
| 60              | 40          | 50%       | 9%                            |
|                 |             |           |                               |
| 1000            | 20          | 50%       | 22%                           |
| 600             | 20          | 50%       | 22%                           |
| 500             | 20          | 50%       | 22%                           |
| 400             | 20          | 50%       | 22%                           |
| 300             | 20          | 50%       | 22%                           |
| 200             | 20          | 50%       | 21%                           |
| 100             | 20          | 50%       | 20%                           |
| 50              | 20          | 50%       | 17%                           |
| 30              | 20          | 50%       | 13%                           |
|                 |             |           |                               |
| 1000            | 15          | 50%       | 26%                           |
| 100             | 15          | 50%       | 24%                           |
| 50              | 15          | 50%       | 22%                           |
| 25              | 15          | 50%       | 17%                           |

For example, if 40 out of 1,000 advertised job vacancies were sampled and the fill rate in the sample was 50%, the 95% confidence interval (or margin of error) would be 50% ±15% (i.e. 35-65%).

## Questionnaire

The SERA 2007 questionnaire is available upon request.

For further information contact: [info@dol.govt.nz](mailto:info@dol.govt.nz)

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