

**Trends in Workplace Risk Control:  
Detailed analysis of Risk Control Indicator data collected by HSE  
inspectors between April 2002 and September 2005**

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## 0. Summary

Since April 2002 inspectors from HSE's Field Operations Directorate (FOD) have, as part of routine inspections, rated a workplaces' level of risk control against various Risk Control Indicators' (RCIs). This report looks at the movements in these RCI ratings over the 4-year period from 2002/03 to 2005/06.

This summary presents the bottom line conclusions that can be drawn from the RCI data in terms of changes in workplace health and safety compliance in industries where FOD is the enforcing authority. (Broadly speaking this equates to all agriculture, construction and production industries). Local authority enforced industries may show a different picture of compliance.

Over the 4 years 2002/03 to 2005/06 the RCI data supports probable improvements in standards of risk control in 11 areas: 6 in the construction sector, 3 in the agricultural sector and 2 in all other FOD enforced sectors.

**For construction**, the data supports a probable improvement in standards over time in:

- Falls from a height, in particular for:
  - Identification of activities and precautions involving falls from a height;
  - Systems for the procurement and control of contractors.
- Workplace Transport, in particular for:
  - Safe vehicle;
  - Safe driver.
- Handarm vibration, in particular for:
  - Elimination/substitution;
  - Supply information.

**For agriculture**, the data supports a probable improvement in standards over time in:

- MSDs, in particular for:
  - Instruction and training;
  - Management commitment/worker involvement.
- Falls from a height, in particular for:
  - Systems for the procurement and control of contractors.

**For all other FOD enforced sectors**, the data supports a probable improvement in standards over time in:

- Handarm vibration, in particular for:
  - Awareness;
  - Supply information.

Whilst the RCI data provides reasonable evidence that the standards of risk control have improved in these areas, it is unclear by **how much**. However, there are reasons to believe that even a small reduction in the proportion of premises with low standards could have a potentially important impact on numbers of accidents and cases of ill health.

For all other indicators the data is inconclusive as to how standards have changed over time. This is not to say that standards have not changed (in reality they may have improved, worsened or stayed the same) but rather the limitations of the data do not allow a robust judgement to be made on the direction of any likely change.

## **1. Introduction**

Risk Control Indicators are a means for inspectors to rate the extent of risk control in place at a workplace against each of HSE's priority topics, these topics being workplace transport, falls from a height, slips and trips, musculoskeletal disorders, handarm vibration syndrome, noise, stress and asthma. Additionally for construction welfare provision is also rated. For each topic covered during an inspection, inspectors are required to score workplace standards in relation to three (two in the case of stress) specific indicators. The scoring is on a 4-point scale ranging from 'full-compliance' (a score of 1) to 'limited or no compliance' in areas that matter (a score of 4).

This risk control indicator system was designed to capture and provide important operational information – it enables inspectors to record the findings from inspections in a streamlined way and the information can assist in better targeting future inspection resources. In addition, HSE statisticians have been exploring the viability of using this data to track how workplace health and safety compliance is changing over time. This work has revealed a number of limitations to the data for statistical purposes. This report examines the range of known factors that limit the data and gives a more definitive picture of how workplace standards of compliance against the various topics have changed over time.

The period covered by this report is 2002/03 (the year that RCI's were introduced) to 2005/06. Data for 2005/06 is based on reports for the first half of the year (because of issues relating to the transition to a new database in 2005). Whilst basing the 2005/06 data on the first six months will result in estimates based on fewer inspection records, the sample is not thought to be skewed in any other important way.

## **2. Factors that may explain changes in RCI scores over time**

### **2.1 Changes in workplace compliance**

If all other factors remain equal over time (i.e. if RCI data is collected in a strictly scientifically controlled way) then any change in RCI score over time will reflect real changes in workplace health and safety compliance. However, the RCI data is not collected under strictly controlled conditions but in line with operational priorities and practices. Any change in RCI score over time will be influenced not only by changes in workplace compliance but also by changes in operational priorities and practices. Sections 2.2 to 2.4 explore the main operational factors that will be influencing the RCI scores.

### **2.2 Mix of workplaces inspected**

For valid comparisons over time we need to be reasonably confident that the mix of workplaces inspected is consistent from one year to the next. If the mix of workplaces inspected varies markedly from one year to the next then any changes in the RCI scores over time could potentially owe more to the change in the mix of workplaces inspected than to actual changes in standards of workplace compliance.

Sections 2.2.1 to 2.2.3 explore how the workplace mix has varied over the 4 years.

### 2.2.1 Distribution of workplaces by industry

The distribution of workplaces inspected by broad industry groupings is shown in table 1 below. In 2002/03 and 2003/04 ‘agricultural’ workplaces made up a substantially larger part of the annual inspection programme compared to the 2 later years. In 2002/03 about 1 in 5 workplaces inspected were in the agricultural sector. However in 2005/06, agricultural workplaces accounted for only about 1 in 13 workplaces inspected.

It is entirely possible that any change in the RCI scores over time could be at least partially explained by this shift away from agricultural workplaces.

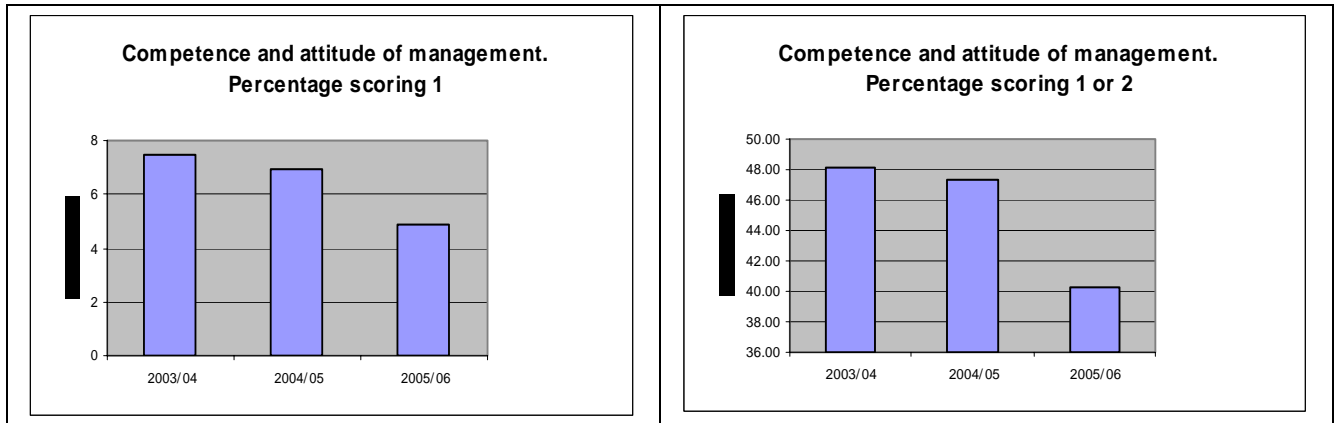
Table 1: Distribution of workplaces inspected by broad industry group 2002/03 – 2005/06

	2002/03 %	2003/04 %	2004/05 %	2005/06 %
Agriculture forestry and fishing	19.2	18.5	14.2	7.5
Manufacturing	35.4	34.3	36.6	40.7
Construction	27.4	27.8	28.4	30.0
Sale,maintenance&repair of motor vehicles etc	7.1	8.1	7.5	8.4
Health & social work	2.4	2.4	3.2	2.7
Mining and quarrying	1.4	0.8	1.4	1.8
Other	7.1	8.0	8.7	8.9

### 2.2.2 Distribution of workplaces by good and poor performers

There is a continued effort for inspection resources to be directed towards poorer performing companies. Whilst this effect cannot be measured directly, there is limited evidence of this happening by looking at the ‘management competence’ element of the overall workplace rating score. This element of the workplace rating score allows inspectors to rate the competence and attitude of management on a six-point scale, with a score of 1 relating to a workplace which displays the highest level of management competence and attitude. Looking over the three years 2003/04 to 2005/06 (no comparable data is available for 2002/03) shows that the proportion of workplaces rated as both a ‘1’ or as either a ‘1’ or ‘2’ fell in each successive year, most notably between 2004/05 and 2005/06 (see chart below). This is suggestive of FOD directing their inspection resources away from those workplaces with the greatest management commitment and by extension the best health and safety standards.

If this effect is true, then any apparent worsening in RCI score may at least in part be due to changes in the sample make-up towards workplaces with poorer health and safety standards.



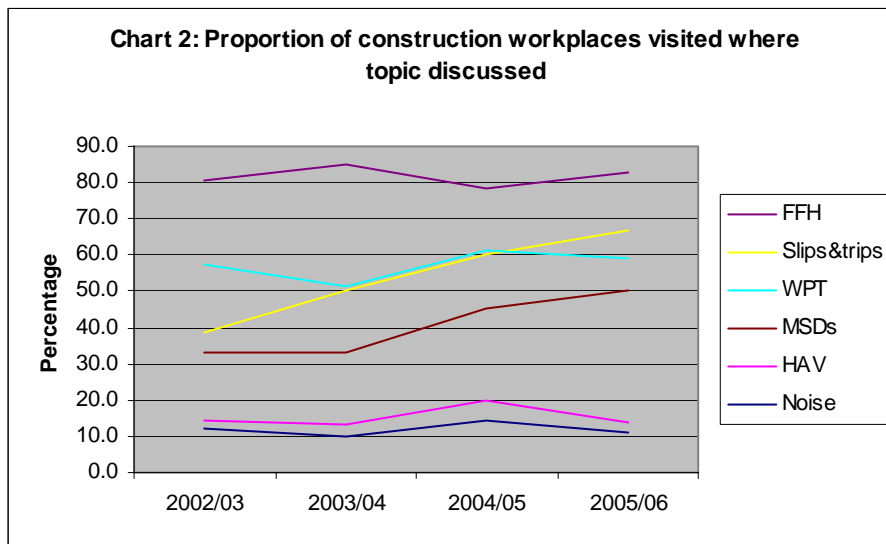
### 2.2.3 Distribution of workplaces by workplace size

Because of the limited information held on ‘workplace size’ it is not directly possible to examine the sizeband distribution of workplaces inspected, but suffice to note that there are thought to be great variations in the management of risks between different sized workplaces. Further, the sizeband mix of workplaces inspected is thought to vary by quarter. Thus this could serve as a further explanatory factor on changes in the RCI scores over time.

[Note: In theory it may be possible to quantify and allow for variations in the sample of workplaces by size by matching our sample of workplaces inspected against the Interdepartmental Business Register to gain the relevant size details for each workplace. However, it remains to be seen how successful such a matching exercise would be].

### 2.3. Changes in the proportion of workplaces visited where a topic is discussed

Inspectors are not required to discuss all 8 priority topics at a workplace, even when all 8 present a 'significant' risk and in practice will usually focus inspections on a small core of topics. For some topics (particularly in construction) the proportion of workplaces where the topic is discussed varies markedly from year to year. Chart 2 below shows how the proportion of construction workplaces where each topic is discussed has varied year-on-year. For example in construction 'Slips and trips' were discussed in 39% of workplaces in 2002/03 rising year-on-year to 67% in 2005/06.



The RCI scores for each topic are therefore based on a sub-set of all the workplaces inspected. It is likely that in those workplaces where a topic is discussed, risk controls for the topic, on balance, will be worse than in those workplaces where the topic was not discussed. This is because inspectors will tend to focus on topics where there is some preliminary reason to suspect that control may be poor. This selection process will give rise to what is known as **non-response bias**. The existence of non-response bias means that we cannot assume that workplace RCI scores will follow the same pattern in workplaces where a topic was not discussed as where it was. Because the level of non-response has varied over time it has the potential to have a big impact on any trends in the scores.

The effect of this non-response bias on the RCI data will be to over-estimate the proportion of workplaces with low levels of risk control in place. In years when the non-response (i.e. the not discussed) for a topic is high, then the overestimation of workplaces with low standards will be greater than in years when the non-response is lower. Thus the presence of non-response is also distorting the RCI data in a way which makes it difficult to draw conclusions about how workplace standards have changed over time.

#### **2.4. Changes in the way the scoring system has been applied in practice**

There is a strong suggestion that as inspectors become more knowledgeable with a topic, so they are marking the RCIs harder. This suggestion is supported by some research conducted for the Musculoskeletal Disorder (MSD) programme in 2004 which looked at what inspectors thought about MSDs and the RCI scores. A clear message that came through from this research was that inspectors think that their own “better understanding has raised the inspection bar”. Thus it is entirely possible that where the RCI data shows a worsening in score over time, at least some of this worsening could be due to changes in the way in which inspectors score.

#### **3. Coverage limitations of the RCI data**

The objective of analysing the RCI data is to gain a perspective on how the overall levels of risk compliance in place in British workplaces are changing over time, as judged by independent health and safety professionals. Clearly, the information collected by HSE’s Field Operations Directorate (FOD) inspectors is limited to industries where FOD is the enforcing authority, thus any insight that the RCI data gives is limited in its coverage to these industries (predominately agriculture, manufacture, construction, motor vehicle repair and health). Local authority enforced industries may show a different picture of compliance.

#### **4. Using the RCI data to make a judgement about changes in workplace standards**

In understanding what the HSE collected RCI data is showing in terms of how health and safety compliance has changed over time we need to take account as far as possible of the factors outlined in section 2. To ignore these confounding factors and base an assessment on the raw data could potentially result in flawed judgements. In the results that follow in section 5, our best efforts have been made in allowing for these factors. Some factors have been explicitly allowed for (such as the variation in industry mix over time) whilst others an implicit judgement has been made about the way the factor will impact on the data.

##### **4.1 Factors explicitly allowed for**

*Industry mix* – The most striking variation in the industry mix of workplaces inspected is the shift in emphasis from agricultural workplaces towards workplaces in other sectors (see table 1). The RCI data for selected indicators also shows that RCI scores are significantly different in agriculture compared to other sectors. For these reasons, RCI data is considered separately for agriculture. Construction is also considered separately since the operational guidance for recording RCIs in construction is customised to reflect the issues relevant in construction.

*Non-response bias* - The RCI data presented in this report has been adjusted to make an allowance for the effect of non-response bias. This involves estimating the way the data would look if non-response occurred at a constant level over time. In order to make the adjustment it has been necessary to make a crude judgement as to how much better workplace standards will be for an indicator in those workplaces where the topic was not discussed compared to those workplaces where the topic was discussed. The method used assumes that in the workplaces where an indicator is not discussed the proportion of premises with low standards of risk control will be half of the proportion with low standards in those workplaces where the topic is discussed.

*Sample error* – All estimates based on sample surveys (which RCI data essentially is) are subject to error. Where there is a change in the estimate of the proportion of workplaces with low standards between two years, we need to assess whether the change is likely to result from sample error, or rather reflect a real change. The main factor that determines the width of the margin of error around a given estimate is the number of sample cases it is based on. Hence estimates become less reliable when based on a smaller number of cases. This happens for example when we are considering sub-groups of the population such as the agricultural sector. An allowance for sample error has been made on the adjusted estimate of the change in the proportion of workplaces scoring 3 or 4 between 2002/03 and 2005/06 by considering its 95% confidence interval. This allowance has had to necessarily assume that the sample composition is consistent in the two years, and further that the adjusted data is all 'real'. Because these assumptions are clearly not true, the 95% confidence intervals have not been presented, rather used as a guide to help form a qualitative judgement on whether there has been a real change in the proportion of workplaces with low standards of risk control.

#### **4.2 Other Factors implicitly considered**

As detailed in section 2.1 there is a strong suggestion that FOD have increasingly directed their inspection resources towards workplaces with poor health and safety standards over the 4 years. If this is true, then any worsening in RCI score over time will at least in part be explained by the increased prominence of poor workplaces in the annual sample of workplaces inspected. Similarly if inspectors have marked RCIs harder as their knowledge of a topic has increased, then any worsening in RCI score over time will at least in part be explained by this practice.

Thus any RCI score which shows a **worsening** (i.e. an increase in the proportion of workplaces with low standards of risk control) over time having allowed for the industry mix, non-response and sample error as outlined above, could be explained by changes in the mix of good and poor workplaces and changes in the way inspectors mark. It is not possible to quantify how much of the worsening is due to these factors and so **it is not possible to reach a judgement as to how workplace standards have changed over time.**

Conversely any RCI score which shows an **improvement** (i.e. a fall in the proportion of workplaces with low standards of risk control) having allowed for the industry mix, non-response and sample error as outlined above is likely to be the result of a **genuine** improvement. This is because if it was possible to allow for the mix of good and poor workplaces and changes in the way inspectors mark then the improvements in RCI scores would almost certainly be greater.

### 4.3 Factors not allowed for

It has not been possible to assess and if necessary make an allowance for variations in the *mix of large, medium and small enterprises* in the sample of workplaces inspected over time, for the reasons set out in para 2.2.3. Thus it is possible that some of the movements in RCI score over time can be due to changes in the size mix of workplaces.

It should also be noted that the allowance for the industry mix above is simplistic and does not fully allow for industry variation over time. Thus in the 'all industry excluding agriculture and construction' group some of the movements in RCI score could still partly be explained by industry variation. However, we think this will have only a small potential impact on the data and so doesn't warrant the effort necessary to fully control for industry mix.

## 5. Results of the judgement about change in standards of risk control between 2002/03 and 2005/06 based on RCI data

Allowing for the factors outlined in the previous section, the RCI data supports probable improvements in standards of risk control in 11 areas: 6 in the construction sector, 3 in the agricultural sector and 2 in all other FOD enforced sectors. With the remaining indicators it is not possible to make a judgement as to the probable direction of any change – improving worsening or staying the same. That is not to say that genuine improvements are not occurring in other areas, but the limitations of the existing data gathering process means that the available data does not support them.

The results are set out in detail in a series of tables at the end of the report, one for each topic. The tables present both the raw (unadjusted) data, and data adjusted to take account of non-response bias. For each indicator, a qualitative assessment is made, which considers the further confounding factors, as to the probable direction of change in workplace standards.

The indicators for which the RCI data supports a probable improvement in standards of risk control are:

Construction	Falls from a height <ul style="list-style-type: none"><li>• Identification of activities and precautions involving falls from a height;</li><li>• Systems for the procurement and control of contractors.</li></ul> Workplace Transport <ul style="list-style-type: none"><li>• Safe vehicle</li><li>• Safe driver</li></ul> Handarm vibration <ul style="list-style-type: none"><li>• Elimination/substitution</li><li>• Supply information</li></ul>
Agriculture	MSDs <ul style="list-style-type: none"><li>• Instruction and training</li></ul>

	<ul style="list-style-type: none"> <li>• Management commitment/worker involvement</li> </ul> Falls from a height <ul style="list-style-type: none"> <li>• Systems for the procurement and control of contractors.</li> </ul>
All other FOD enforced sectors	Handarm vibration <ul style="list-style-type: none"> <li>• Awareness</li> <li>• Supply information</li> </ul>

Whilst we are reasonably certain from the RCI data that the standards of risk control have improved in these areas, it is unclear by **how much**. Not only are we unable to quantify the size of the effect of some of the confounding factors, we are unable to accurately assess the margin of error around our estimate of change. However, there are reasons to believe that even a small reduction in the proportion of premises with low standards could have a potentially important impact on numbers of accidents and cases of ill health.

## 6. Discussion

RCI data offers a potentially rich source of information. Uniquely, the judgement of workplace standards is based on the perspective of independent Health and Safety professionals. However the potential of this data source is greatly diminished by limitations of the existing data gathering process.

The impact of non-response bias can have a major effect on the conclusions that can be drawn from the data, and ignoring it can actually result in incorrect judgements being made. For example, the raw (unadjusted) data for the indicator for ‘Prevention of trips’ in the construction sector shows a fall in the proportion of workplaces with low standards of risk control (see table 4). Ignoring the effect of non-response, this fall could be said to be indicative of an improvement in standards. However, our allowance for non-response does not maintain this improving picture and actually suggests a worsening. Whilst we have made an allowance for non-response in making these assessments of change in workplace standards, the assumptions have been necessarily crude. This is because we have little in the way of hard evidence to quantify the extent that non-response should be allowed for. Moreover, non-response can never be fully allowed for, and to ensure the reliability of the data we must aim to reduce its presence as much as possible.

Other confounding factors also compromise the RCI data, particularly year-on-year variations in the sample make-up. Had the sample of workplaces inspected in each year been consistent, then this would have removed a large element of uncertainty and enabled a fuller assessment of change in workplace standards over time.

There may be some scope for refining the analysis of the existing data to allow even stronger conclusions to be drawn. To this end some further analytical possibilities are being reviewed. However, the priority should be to find ways of improving data quality at source.

# TABLES



**Table 1: Musculoskeletal Disorders**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Avoidance/control</b>						
Agricultural sector	13.5%	20.0%	6.4	Small annual increases in each year	4.9	<b>Inconclusive.</b> Our allowance for non-response has dampened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the magnitude of these other confounding factors.
Construction sector	31.4%	30.3%	-1.1	Small fall between 2002/03 and 2003/04, followed by smaller annual increases each year thereafter	4.5	<b>Inconclusive.</b> Our allowance for non-response does not maintain the reduction (improvement) in the proportion of workplaces with low standards of risk control over the time period and actually suggests an increase. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the magnitude of these other confounding factors.
All other FOD enforced sectors	22.1%	26.2%	4.1	Broadly level between 2002/03 and 2004/05, step change between 2004/05 and 2005/06	3.5	<b>Inconclusive</b> – see above for ‘Avoidance/control’ in the agricultural sector.
<b>...Instruction and training</b>						
Agricultural sector	23.4%	20.2%	-3.2	Broadly level between 2002/03 and 2004/05, step change between 2004/05 and 2005/06	-4.1	<b>Data supports a probable improvement in standards over time</b> – see below for ‘Management commitment/worker involvement’ for the agricultural sector. <b>[But note:</b> the adjusted data shows almost all the improvement to have occurred in the latest year, so another years data is ideally needed to firm up this

Construction sector	34.6%	36.5%	1.9	Small annual falls between 2002/03 and 2004/05, with an increase in the latest year (2005/06).	7.9	assessment]. <b>Inconclusive.</b> Our allowance for non-response has strengthened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the size of the effect of these factors.
All other FOD enforced sectors	30.2%	32.5%	2.2	Small fall between 2002/03 and 2003/04, level between 2003/04 and 2004/05, increase between 2004/05 and 2005/06.	1.6	<b>Inconclusive</b> – see above for ‘Avoidance/control’ in the agricultural sector.
<b>...management commitment/worker involvement</b>						
Agricultural sector	25.6%	19.0%	-6.7	Proportion fell in each successive year from 2002/03.	-7.4	<b>Data supports a probable improvement in standards over time.</b> Our allowance for non-response has strengthened the apparent fall in the proportion of workplaces with low standards of risk control. The magnitude of the adjusted change is sufficient to conclude a real change. Allowing for changes in the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may increase the magnitude of the reduction further, but it is not possible to quantify the size of the effect these other confounding factors may have.
Construction sector	38.8%	38.4%	-0.4	Broadly level over the 4 years with the exception of 2004/05 where proportion dipped.	6.3	<b>Inconclusive</b> – see above for ‘Avoidance/control’ in the construction sector.
All other FOD enforced sectors	32.1%	38.0%	5.9	Fall between 2002/03 and 2003/04, increasing each year thereafter (particularly in 2005/06).	5.0	<b>Inconclusive</b> – see above for ‘Avoidance/control’ in the agricultural sector.

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

**Table 2: Falls from a height**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Identification of activities and precautions involving FFH</b>						
Agricultural sector	21.9%	27.8%	5.9	Increased annually between 2002/03 and 2004/05 with a fall in the latest year (2005/06)	5.3	<b>Inconclusive.</b> Our allowance for non-response has dampened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the impact of these other confounding factors.
Construction sector	44.3%	40.4%	-3.9	Step change between 2002/03 and 2003/04, broadly level thereafter	-3.3	<b>Data supports a probable improvement in standards over time.</b> Whilst our allowance for non-response has dampened the apparent fall in the proportion of workplaces with low standards of risk control, the magnitude is still sufficient to conclude a real change. Allowing for changes in the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may increase the magnitude of the reduction further, but it is not possible to quantify the size of the effect these other confounding factors may have.
All other FOD enforced sectors	27.9%	32.1%	4.2	Broadly level between 2002/03 and 2004/05, increasing between 2004/05 and 2005/06	3.9	<b>Inconclusive</b> – see above for ‘Identification of activities and precautions involving FFH’ in the agricultural sector.
<b>...Selection, use and maintenance of equipment</b>						
Agricultural sector	25.5%	26.7%	1.2	Small annual increases in each year	0.9	<b>Inconclusive</b> – see above for ‘Identification of activities and precautions involving FFH’ in the agricultural sector.
Construction sector	46.7%	48.4%	1.7	Small fluctuations each year	2.1	<b>Inconclusive.</b> Our allowance for non-response has

						strengthened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the impact of these other confounding factors.
All other FOD enforced sectors	24.8%	33.3%	8.5	Broadly level between 2002/03 and 2003/04, increasing each year thereafter.	8.0	<b>Inconclusive</b> – see above for ‘Identification of activities and precautions involving FFH’ in the agricultural sector.
<b>...Systems for procurement and control of contractors</b>						
Agricultural sector	27.8%	19.4%	-8.4	Increased between 2002/03 and 2003/04, falling each year thereafter	-8.2	<b>Data supports a probable improvement in standards over time</b> – see above for ‘Identification of activities and precautions involving FFH’ for the construction sector.
Construction sector	40.5%	36%	-4.5	Step change between 2002/03 and 2003/04, broadly level thereafter	-3.9	<b>Data supports a probable improvement in standards over time</b> – see above for ‘Identification of activities and precautions involving FFH’ for the construction sector.
All other FOD enforced sectors	27.1%	33.5%	6.3	Broadly level between 2002/03 and 2004/05, increasing between 2004/05 and 2005/06	6.0	<b>Inconclusive</b> – see above for ‘Identification of activities and precautions involving FFH’ in the agricultural sector.

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

**Table 3: Workplace transport**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Safe site</b>						
Agricultural sector	18.0%	16.5%	-1.5	Small annual increases each year between 2002/03 and 2004/05, with a fall in the latest year (2005/06).	-1.4	<b>Inconclusive.</b> Our allowance for non-response has dampened the apparent fall in the proportion of workplaces with low standards of risk control. The magnitude of the fall in the adjusted data is too small to conclude a real reduction in the proportion of workplaces with low standards. Such a small change could equally well be the result of sample error which all estimates based on sample surveys are subject to. This uncertainty remains even though other factors such as the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may strengthen the apparent fall. This is because it is not possible to quantify the magnitude of their effect.
Construction sector	40.2%	37.3%	-2.9	Step change between 2002/03 and 2003/04, broadly level thereafter	-2.1	<b>Inconclusive</b> – see above for ‘Safe site’ for the agricultural sector.
All other FOD enforced sectors	32.9%	36.1%	3.3	Broadly level between 2002/03 and 2003/04, increasing each year thereafter	3.5	<b>Inconclusive.</b> Our allowance for non-response has maintained the apparent increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the impact of these other confounding factors.
<b>...Safe vehicle</b>						
Agricultural sector	18.3%	18.3%	0.0	Small annual increases each year between	0.1	<b>Inconclusive</b> – Our allowance for non-response has

				2002/03 and 2004/05, with a fall in the latest year (2005/06).		maintained the static picture seen in the raw data. If it was possible to make allowance for changes in the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, this could possibly change this picture to show a reduction in the proportion of workplaces with low standards of risk control. However it is not possible to quantify the impact of these other confounding factors.
Construction sector	25.9%	16.3%	-9.5	Proportion fell in each successive year, particularly between 2003/04 and 2004/05.	-8.7	<b>Data supports a probable improvement in standards over time.</b> Whilst our allowance for non-response has dampened the apparent fall in the proportion of workplaces with low standards of risk control, the magnitude is still sufficient to conclude a real change. Allowing for changes in the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may increase the magnitude of the reduction further, but it is not possible to quantify the size of the effect these other confounding factors may have.
All other FOD enforced sectors	12.6%	14.9%	2.2	Small successive annual increases	2.3	<b>Inconclusive</b> – see above for ‘Safe site’ for all other FOD enforced sectors.
<b>...Safe driver</b>						
Agricultural sector	21.7%	18.3%	-3.4	Increase between 2002/03 and 2003/04, falling each year thereafter.	-3.2	<b>Inconclusive</b> – see above for ‘Safe site’ for agricultural sector.
Construction sector	22.4%	15.0%	-7.4	Step change between 2002/03 and 2003/04, followed by a smaller annual fall and a small annual increase.	-6.7	<b>Data supports a probable improvement in standards over time</b> – see above for ‘Safe vehicle’ for the construction sector.
All other FOD enforced sectors	13.3%	16.3%	3.0	Continual and gradual increase over the 4 years	3.1	<b>Inconclusive</b> – see above for ‘Safe site’ for all other FOD enforced sectors.

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

**Table 4: Slips and trips**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Floor contamination</b>						
Agricultural sector	13.0%	19.5%	6.5	Continual and gradual increase over the 4 years	4.9	<b>Inconclusive.</b> Our allowance for non-response has dampened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the impact of these other confounding factors.
All other FOD enforced sectors	17.1%	20.6%	3.5	Continual and gradual increase over the 4 years	3.0	<b>Inconclusive.</b> As above.
<b>...Suitable floors and footwear</b>						
Agricultural sector	9.2%	13.3%	4.1	Small increase between 2002/03 and 2003/04, level between 2003/04 and 2004/05, further small increase between 2004/05 and 2005/06.	3.1	<b>Inconclusive</b> - as above.
All other FOD enforced sectors	10.2%	14.3%	4.1	Continual and gradual increase over the 4 years	3.7	<b>Inconclusive</b> - as above.
<b>...Prevention of trips</b>						
Agricultural sector	19.4%	25.2%	5.9	Broadly level 2002/03 to 2004/05, step change between 2004/05 and 2005/06	4.2	<b>Inconclusive</b> – as above.
All other FOD enforced sectors	23.1%	28.2%	5.1	Continual and gradual increase over the 4 years	4.3	<b>Inconclusive</b> – as above.
Construction sector	39.6%	33.9%	-5.7	Step change between 2002/03 and 2003/04, broadly level thereafter	3.6	<b>Inconclusive.</b> Our allowance for non-response does not maintain the reduction (improvement) in the proportion of workplaces with low standards of risk control over the time period and actually suggests an increase. Some

						or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the impact of these other confounding factors.
<b>...Planning for storage</b>						
Construction sector	24.0% <sup>2</sup>	22.7%	-1.3	Proportion of workplaces scoring 3 or 4 has fluctuated over the three years from 2003/04	1.8	<b>Inconclusive</b> – as above (for ‘Prevention of trips’ in construction).
<b>...Storage of materials and equipment</b>						
Construction sector	27.7% <sup>2</sup>	26.5%	-1.2	Proportion of workplaces scoring 3 or 4 has fluctuated over the three years from 2003/04	2.4	<b>Inconclusive</b> – as above (for ‘Prevention of trips’ in construction).

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

<sup>2</sup> Data relates to 2003/04. Data not collected for this indicator in 2002/03

**Table 5: Handarm Vibration Syndrome**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Elimination/substitution</b>						
Agricultural sector	12.2%	15.4%	3.2	Proportion fell between 2002/03 and 2003/04, increasing each year thereafter	5.9	<b>Inconclusive.</b> Our allowance for non-response has strengthened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the impact of these other confounding factors.
Construction sector	40.8%	28.0%	-12.8	Proportion fell in each successive year from 2002/03	-9.5	<b>Data supports a probable improvement in standards over time.</b> Whilst our allowance for non-response has dampened the apparent fall in the proportion of workplaces with low standards of risk control, the magnitude is still sufficient to conclude a real change. Allowing for changes in the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may increase the magnitude of the reduction further, but it is not possible to quantify the size of the effect these other confounding factors may have.
All other FOD enforced sectors	25.6%	22.8%	-2.7	Increase between 2002/03 and 2003/04, falling each year thereafter.	-1.9	<b>Inconclusive.</b> Our allowance for non-response has dampened the apparent fall in the proportion of workplaces with low standards of risk control. The magnitude of the fall in the adjusted data is too small to conclude a real reduction in the proportion of workplaces with low standards. Such a small change could equally well be the result of sample error which all estimates based on sample surveys are subject to. This uncertainty remains even though other factors such

						as the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may strengthen the apparent fall. This is because it is not possible to quantify the magnitude of their effect.
<b>...Awareness</b>						
Agricultural sector	17.8%	11.5%	-6.2	Broadly level between 2002/03 and 2004/05, falling in the latest year (2005/06)	-2.0	<b>Inconclusive</b> – see above for ‘Elimination/substitution’ for all other FOD enforced sectors.
Construction sector	39.2%	34.9%	-4.3	Broadly level between 2002/03 and 2003/04, step change between 2003/04 and 2004/05, broadly lever thereafter.	-3.6	<b>Inconclusive</b> – see above for ‘Elimination/substitution’ for all other FOD enforced sectors.
All other FOD enforced sectors	37.5%	29.2%	-8.3	Broadly level between 2002/03 and 2003/04, step change between 2003/04 and 2004/05, broadly lever thereafter.	-7.0	<b>Data supports a probable improvement in standards over time</b> – see above for ‘Elimination/substitution’ for the construction sector.
<b>...Supply information</b>						
Agricultural sector	28.1%	23.1%	-5.1	Falling each year between 2002/03 and 2004/05, with an increase in the latest year.	2.7	<b>Inconclusive.</b> Our allowance for non-response does not maintain the reduction (improvement) in the proportion of workplaces with low standards of risk control over the time period and actually suggests an increase. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the impact of these other confounding factors.
Construction sector	47.7%	35.2%	-12.5	Broadly level between 2002/03 and 2003/04, falling each year thereafter.	-9.4	<b>Data supports a probable improvement in standards over time</b> – see above for ‘Elimination/substitution’ for the construction sector. [ <b>But note:</b> the adjusted data shows all the improvement to have occurred in the latest year, so another years data is ideally needed to firm up this assessment].
All other FOD enforced sectors	44.5%	35.6%	-8.9	Proportion fell in each successive year from 2002/03	-7.2	<b>Data supports a probable improvement in standards over time</b> – see above for ‘Elimination/substitution’ for the construction sector.

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

**Table 6: Noise related hearing loss**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Noise management system</b>						
Agricultural sector	23.9%	15.0%	-8.9	The proportion has fluctuated year on year.	-8.9	<b>Inconclusive.</b> Our allowance for non-response has maintained the apparent fall in the proportion of workplaces with low standards of risk control. However the adjusted data still exhibits large year-on-year fluctuations in the proportion of workplaces with low standards of risk control. This pattern is not consistent with a genuine improvement having occurred.
Construction sector	42.3%	39.9%	-2.3	The proportion has fluctuated year on year.	-3.0	<b>Inconclusive.</b> Our allowance for non-response has strengthened the apparent fall in the proportion of workplaces with low standards of risk control. However the magnitude of the fall in the adjusted data is too small to conclude a real reduction in the proportion of workplaces with low standards. Such a small change could equally well be the result of sample error which all estimates based on sample surveys are subject to. This uncertainty remains even though other factors such as the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may strengthen the apparent fall. This is because it is not possible to quantify the magnitude of their effect.
All other FOD enforced sectors	34.5%	39.7%	5.2	Continual and gradual increase over the 4 years	3.3	<b>Inconclusive.</b> Our allowance for non-response has dampened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the size of the effect of these factors.

...Control of noise at source						
Agricultural sector	13.8%	16.9%	3.1	Broadly level between 2002/03 and 2004/05, increase in the latest year (2005/06).	2.2	<b>Inconclusive</b> – see above for ‘Noise management system’ for all other FOD enforced sectors.
Construction sector	33.2%	33.5%	0.3	Broadly level over the 4 years with the exception of 2004/05 where proportion dipped.	-0.7	<b>Inconclusive</b> – Our allowance for non-response has maintained the static picture seen in the raw data. If it was possible to make allowance for changes in the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, this could possibly change the picture to show a reduction in the proportion of workplaces with low standards of risk control. However it is not possible to quantify the impact of these other confounding factors.
All other FOD enforced sectors	29.7%	31.2%	1.5	Broadly level over the 4 years.	0.1	<b>Inconclusive</b> – see above for ‘Control of noise at source’ for the construction sector.
...Ear protection programme						
Agricultural sector	21.6%	20.0%	-1.6	Proportion fell between 2002/03 and 2003/04, was level between 2003/04 and 2004/05, and increased between 2004/05 and 2005/06.	-2.3	<b>Inconclusive</b> – see above for ‘Noise management system’ for the construction sector.
Construction sector	40.6%	45.0%	4.4	The proportion has fluctuated year on year.	2.4	<b>Inconclusive</b> – see above for ‘Noise management system’ for all other FOD enforced sectors.
All other FOD enforced sectors	28.1%	30.6%	2.5	Small annual fluctuations	1.1	<b>Inconclusive</b> – see above for ‘Noise management system’ for all other FOD enforced sectors.

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

**Table 7: Occupational asthma**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Asthma management system</b>						
Agricultural sector	21.7%	29.5%	7.8	Small fall between 2002/03 and 2003/04, annual increases thereafter (particularly between 2004/05 and 2005/06)	2.1	<b>Inconclusive.</b> Our allowance for non-response has dampened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the size of the effect of these factors.
All other FOD enforced sectors excluding construction and agriculture	39.3%	47.1%	7.8	Increased annually between 2002/03 and 2005/06	10.3	<b>Inconclusive.</b> Our allowance for non-response has strengthened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the size of the effect of these factors.
<b>...Control strategy</b>						
Agricultural sector	18.5%	21.1%	2.5	Small annual fluctuations.	-0.8	<b>Inconclusive.</b> Our allowance for non-response does not maintain the increase (worsening) in the proportion of workplaces with low standards of risk control over the time period and actually suggests a small decrease (improvement). However the magnitude of the fall in the adjusted data is too small to conclude a real reduction in the proportion of workplaces with low standards. Such a small change could equally well be the result of sample error which all estimates based on sample surveys are subject to. This uncertainty remains

						even though other factors such as the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may strengthen the apparent fall. This is because it is not possible to quantify the magnitude of their effect.
All other FOD enforced sectors excluding construction and agriculture	35.0%	34.6%	-0.4	Small annual increases each year between 2002/03 and 2004/05, with a fall in the latest year (2005/06).	2.0	<b>Inconclusive.</b> Our allowance for non-response suggests a small increase (worsening) in the proportion of workplaces with low standards of risk control over the time period. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the size of the effect of these factors.
<b>...Health surveillance</b>						
Agricultural sector	32.4%	33.0%	0.6	Falling each year between 2002/03 and 2004/05, with an increase in the latest year.	-4.8	<b>Inconclusive</b> – see above for ‘Control strategy’ for the agricultural sector.
All other FOD enforced sectors excluding construction and agriculture	46.6%	44.5%	-2.1	Broadly level between 2002/03 and 2004/05 with a small fall in the latest year (2005/06).	1.1	<b>Inconclusive.</b> Our allowance for non-response does not maintain the reduction (improvement) in the proportion of workplaces with low standards of risk control over the time period and actually suggests an increase. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the size of the effect of these factors.

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

**Table 8: Work-related stress <sup>1</sup>**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>2</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2002/03	2005/06				
<b>...Awareness and hazard identification</b>						
All other FOD enforced sectors excluding construction and agriculture	42.3%	57.6%	15.3	Broadly level between 2002/03 and 2003/04, increased annually thereafter.	6.9	<b>Inconclusive.</b> Our allowance for non-response has dampened the increase in the proportion of workplaces with low standards of risk control seen in the raw data. Some or all of this apparent increase could be due to changes in either the mix of good or poor workplaces in the inspection programme or in the way inspectors mark, but it is not possible to quantify the size of the effect of these factors.
<b>...Implementation</b>						
All other FOD enforced sectors excluding construction and agriculture	49.6%	64.3%	14.7	Broadly level between 2002/03 and 2003/04, increased annually thereafter.	5.7	<b>Inconclusive</b> – see above for ‘Awareness and hazard identification’ for all other FOD enforced sectors excluding construction and agriculture

<sup>1</sup> Figures are not presented for the agriculture sector since they are based on such a small number of recorded RCI scores.

<sup>2</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

**Table 9: Welfare <sup>2</sup>**

	<i>Raw (unadjusted) data</i>				<i>Adjusted data</i>	
	Proportion of workplaces with low standards <sup>1</sup> of risk control for ...		Percentage point change	Has this change been gradual over the 4 years	Illustrative change taking account of non-response bias	Qualitative assessment of change in workplace standards, allowing for confounding factors as outlined in section 4
	2003/04	2005/06				
<b>...Toilets</b>						
Construction sector	24.0%	20.8%	-3.1	Proportion fell in each successive year from 2003/04.	-1.2	<b>Inconclusive.</b> Our allowance for non-response has dampened the apparent fall in the proportion of workplaces with low standards of risk control. However the magnitude of the fall in the adjusted data is too small to conclude a real reduction in the proportion of workplaces with low standards. Such a small change could equally well be the result of sample error which all estimates based on sample surveys are subject to. This uncertainty remains even though other factors such as the mix of good or poor workplaces in the inspection programme or in the way inspectors mark may strengthen the apparent fall. This is because it is not possible to quantify the magnitude of their effect.
<b>... Washing facilities etc</b>						
Construction sector	29.2%	24.7%	-4.5	Proportion fell in each successive year from 2003/04.	-2.1	<b>Inconclusive</b> – see above for ‘Toilets’.
<b>...Cement dermatitis</b>						
Construction sector	28.3%	23.4%	-4.9	Proportion fell in each successive year from 2003/04.	-2.6	<b>Inconclusive</b> – see above for ‘Toilets’.

<sup>1</sup> Those workplaces that scored either 3 or 4 (which equates to ‘some’ or ‘limited or no’ compliance in areas that matter) on the respective risk control indicators

<sup>2</sup> Welfare has only been included as a topic on the IRF since 2003/04, thus no data is available for 2002/03

