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| Amey Strategic Consulting |
| RESEARCH TASKS |
| Please send all final versions to Lynda.amrani@amey.co.uk |

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**Strategic Consulting**

**RESEARCH TASKS**

As part of your application for the position within Amey’s Strategic Consulting team, we would like you to produce two written briefs of no more than 2 pages each.

* The first brief should answer one of the two written tasks below.
* The second brief should answer the quantitative task, also below. Feel free to include graphs as an appendix. Please also provide us with the excel spread sheet, scripts or other workings which include your analysis.

Amey staff are often required to undertake research and summarise their findings and make recommendations. These short reports are intended to communicate targeted research in a manner which is clear, succinct and accurate. It is therefore important that for this exercise you select only key information and communicate it in an appropriate manner.

The deadline and restricted format will severally limit the information you decide to submit – this is deliberate! These are big subject areas and we are interested to see what areas you focus on, and how you present your findings.

**WRITTEN TASK**

**(Choose one of the two questions below)**

1. **Currencies and the crisis**

Throughout the financial crisis, foreign exchange markets have demonstrated unusual volatility. Describe the recent history of UK sterling, including a consideration of how the nominal exchange rate of the pound has changed relative to the IMF’s own internal currency known as the Special Drawing Right (SDR).

See link below to learn more about SDRs: <http://www.imf.org/external/np/exr/facts/sdr.htm>.

And propose some reasons for why this may have occurred.

1. **UK Infrastructure**

Provide some insight into the UK’s spending on major national infrastructure projects since 2000, and explain what the implications of this may be?

**QUANTITATIVE TASK**

The Department for Big Lorries (DfBL) is responsible for ensuring that the goods vehicles used on the nation’s roads do not pose a danger to their passengers, and to other road users. Every year since 2000 the DfBL has conducted inspections on a sample of road-going vehicles.

The DfBL does not inspect the same vehicles every year, but instead chooses a sample of the vehicles on the road. As a rule, the DfBL aim to inspect each vehicle on the road at least once every 12 years, and inspect most once every 6 years. The DfBL inspects vehicles previously found to be in poor condition more often, and inspects those previously found to be in good condition less often.

The inspection categorises the vehicles into three types (heavy goods vehicles, light goods vehicles, and personnel), into the ten most common manufacturers, and then grades the vehicles on a 100-point scale, where 100 is perfect and 0 represents a vehicle in hazardous condition.

The attached spreadsheet (VehicleData.xls) contains the results of the inspections from 2000 onwards. The fields in the data are as follows:

1. The unique ID of the vehicle;
2. The type of vehicle;
3. The manufacturer;
4. The inspection score;

The client hands you this data and asks you to investigate the following questions:

1. How does the sample size vary from year-to-year? Are there any years that the DfBL should exclude from this analysis?
2. Assuming that the data is a representative sample of the population; does the condition of road-going vehicles appear to be changing over time? If so, is it deteriorating or improving?
3. Are there any particular vehicle types or manufacturers that the DfBL should pay special attention to? Would you suggest any changes to the sampling methodology to obtain better information for these types?
4. Since 2000 the vehicle inspectors have slowly improved the algorithm that they use to determine which vehicles to inspect more frequently, so that they are getting better at inspecting vehicles in poor condition more often. What effect could this have on the results?
5. Is DfBL conducting a sufficient number of inspections a year? Explain and justify your answer.