In-Class Exercise 6

This is a preview of the published version of the quiz

Started: Jul 21 at 3:51p.m.

Quiz Instructions

As long as you are online, your answers will be automatically saved while you complete the exercise. While you have unlimited attempts to complete this in-class-exercise before the due date, only the grade of the *last* submitted attempt will be recorded.

Note: While you may find the in-class exercise challenging, the effort you put in here, and the skills you develop, will greatly help you as you prepare for the exam.

Question 1 — 1.66 pts

For ALL Questions in this exercise, please use the North American Stock Market 1994-2018 dataset, loaded as *companies*.

You will also want to load the tidyverse library.

Suppose you want to screen and then sort the companies dataset as follows:

For each year (in order) from 1994 to 2018, you want to list US-headquartered firms from the highest assets to the lowest assets. If two firms have the same amount of assets in the same year (e.g., they each have 0), then you want to list the firms in alphabetical order as the tiebreaker.

Therefore, you want the first row of the dataset to be the US firm with the largest value of assets in 1994, and the last row to be the firm with the smallest value of assets in 2018 (and if it is a tie at 0, the firm with the name closest to the end of the alphabet).

Note that *fyear* is fiscal year, *conm* is the firm's name, *at* is assets (in millions) and *loc* is the country of headquarters (where USA is used for US-headquartered firms).

The code to do this is:

- ◯ q1 <- companies %>%
  filter(!is.na(fyear), !is.na(conm), !is.na(at), loc=="USA") %>%

```
arrange(fyear, desc(at), conm) %>%
select(fyear, conm, at)
```

○ q1 <- companies %>%
filter(is.na(fyear), !s.na(conm), is.na(at), loc=="USA") %>%
arrange(fyear, desc(at), conm) %>%
select(fyear, conm, at)

○ q1 <- companies %>%
filter(!is.na(fyear), !is.na(conm), !is.na(at) | loc=="USA") %>%
arrange(fyear, desc(at), conm) %>%
select(fyear, conm, at)

○ q1 <- companies %>%
filter(!is.na(fyear), !is.na(conm), !is.na(at), loc=="USA") %>%
arrange(fyear, at, conm) %>%
select(fyear, conm, at)

○ None of the above.

Question 2

1.66 pts

Now, start with the whole North American Stock market dataset again. You are interested in studying firms that changed their primary industry (as indicated by the *naicsh* variable in the dataset).

First, drop observations that do not have a six-digit *naicsh* code. Save this dataset as q2.

How many observations are left in the dataset?

Remember in this question that we are looking for the total number of observations (rows), **not** firms (as identified by their *gvkey*).

Question 3

1.67 pts

Continuing the previous question, with dataset q2. **How many firms (as denoted by *gvkey)* that were in q2 ever changed *naicsh* codes at *any* time in the**

dataset? Recall that *naicsh* represents the primary industry code that the firm operates in.

For example, AAR Corporation *(gvkey* 001004) changed its primary *naicsh* code from 421860 to 423860 in 2002. That counts as one firm. Now all you have to do is find the rest. =)

To clarify, if a firm ever changed its *naicsh* code, it counts just once. Thus, no matter how many times a firm ever changed its *naicsh* code back and forth, such a firm would count only once in this calculation.

Question 4

1.67 pts

Shifting gears, we are going to examine firms that continually outperform their industry year after year. We define this as firms whose ROA (return on assets) are greater than their industry **median**.

So first, let's do some screening. Start with the whole North American 1994-2018 dataset, and keep all observations with $100 million or more in sales *(sale),* $100 million or more in assets *(at),* a six-digit naicsh code *(naicsh),* nonmissing employment *(emp),* and nonmissing net income *(ni).* Finally, keep observations headquartered in the United States *(loc* == "USA").

To make industry comparisons meaningful, we only keep observations in industries with at least three firms in that six-digit *naicsh* industry in that year.

Save this dataset as q4. **How many observations are in q4?** (*Remember we are asking for observations here, not firms..at least yet..*)

Question 5

1.67 pts

Now, we continue exactly where we left off with q4 (i.e., we want all the same screening procedures as before).

We now are going to calculate firm-specific profits (fsp). FSP is defined as the firm's return on assets *(ni/at)* minus the **median** return on assets for that industry (as defined by the six-digit *naicsh*) in that year.

How many observations in the dataset q4 had a firm-specific profit (FSP) of greater than 0?

Question 6

1.67 pts

Finally, based on the dataset q4 you created above, **how many firms outperformed their industry (as defined by a firm-specific profit of greater than 0) for seven consecutive years during the period 2012-2018?**

Not saved

Submit Quiz