# Week 4 solutions

## What was the task?

Let's remind ourselves of the task:

> Please draw a ridgeline plot of the prices of a Big Mac in each country in the world, expressed as price in dollars as a fraction of GDP per head in dollars in each of those countries, sorted highest-to-lowest.

In order to do that, let's get set up, by loading some packages and some data.

```
library(tidyverse)
library(ggridges)
library(lubridate)

maccas <- read.csv("https://bit.ly/bigmac-data-csv")
```

# Making some variables

This question requires you to generate two variables from the maccas dataset:

1. The price of a Big Mac in dollars – we showed you this in the lab. Divide the price of a Big Mac in local currency (local_price) by the exchange rate (dollar_ex); in my example I've called this variable **price_dollars**
2. The price in dollars as a percentage of GDP. So we have to divide the first variable we've generated (price_dollars) by GDP_dollar; in my example I've called this second variable **GDP_percent**

If you're making *two* new variables, you can either run two separate mutate commands, or you can run a single mutate command where you make two new variables, separated by commas.

To run two separate mutate commands, you could do this:

```
maccas %>%
  mutate(price_dollars = local_price / dollar_ex) %>%
  mutate(GDP_percent = price_dollars/GDP_dollar) %>%
  na.omit
```

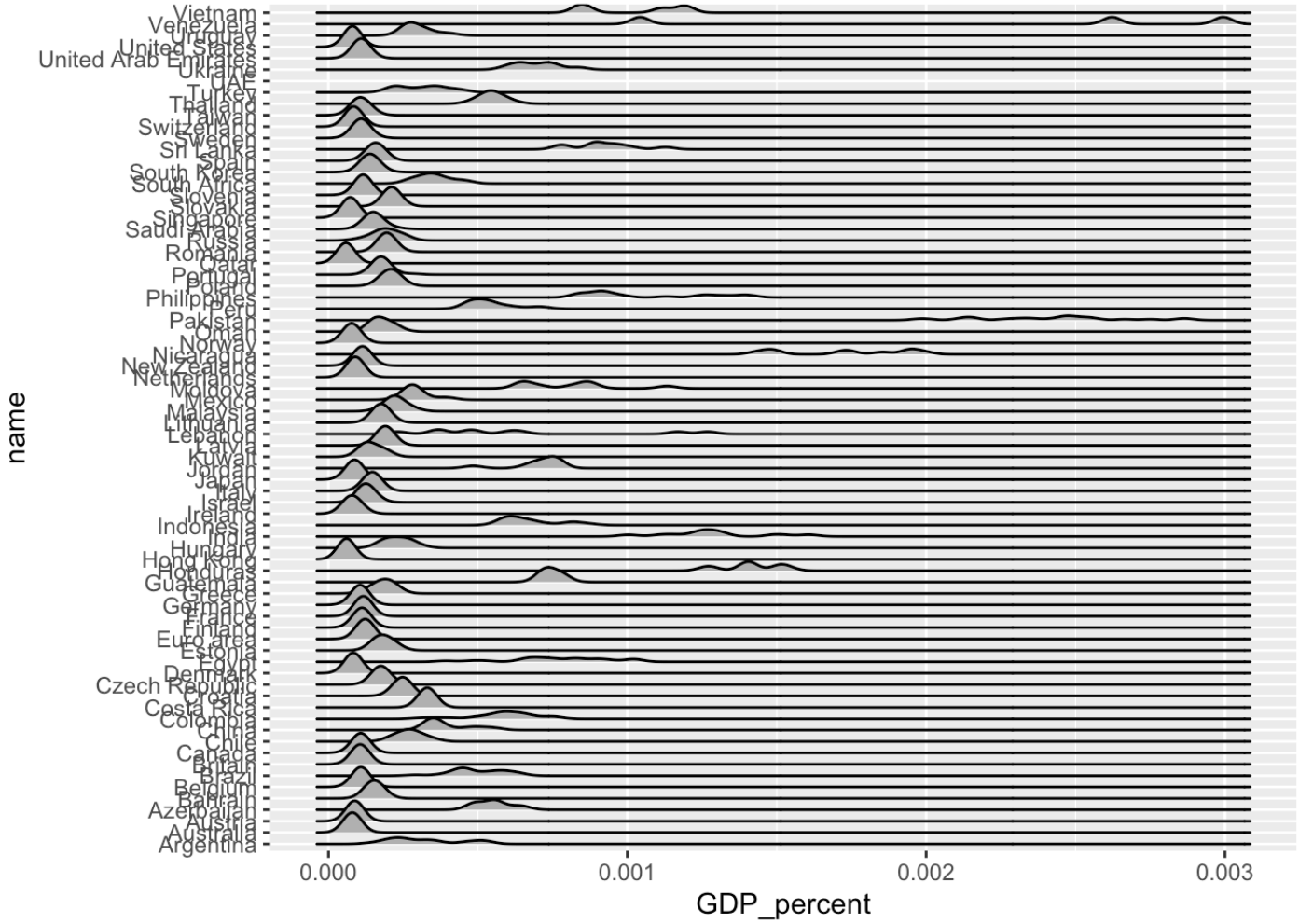
To run a single mutate command where you make two new variables, you could do this:

```
maccas %>%
  mutate(price_dollars = local_price / dollar_ex,
         GDP_percent = price_dollars/GDP_dollar) %>%
  na.omit
```

OK, so our data now has the key variable we need. Let's use it to make a first graph:

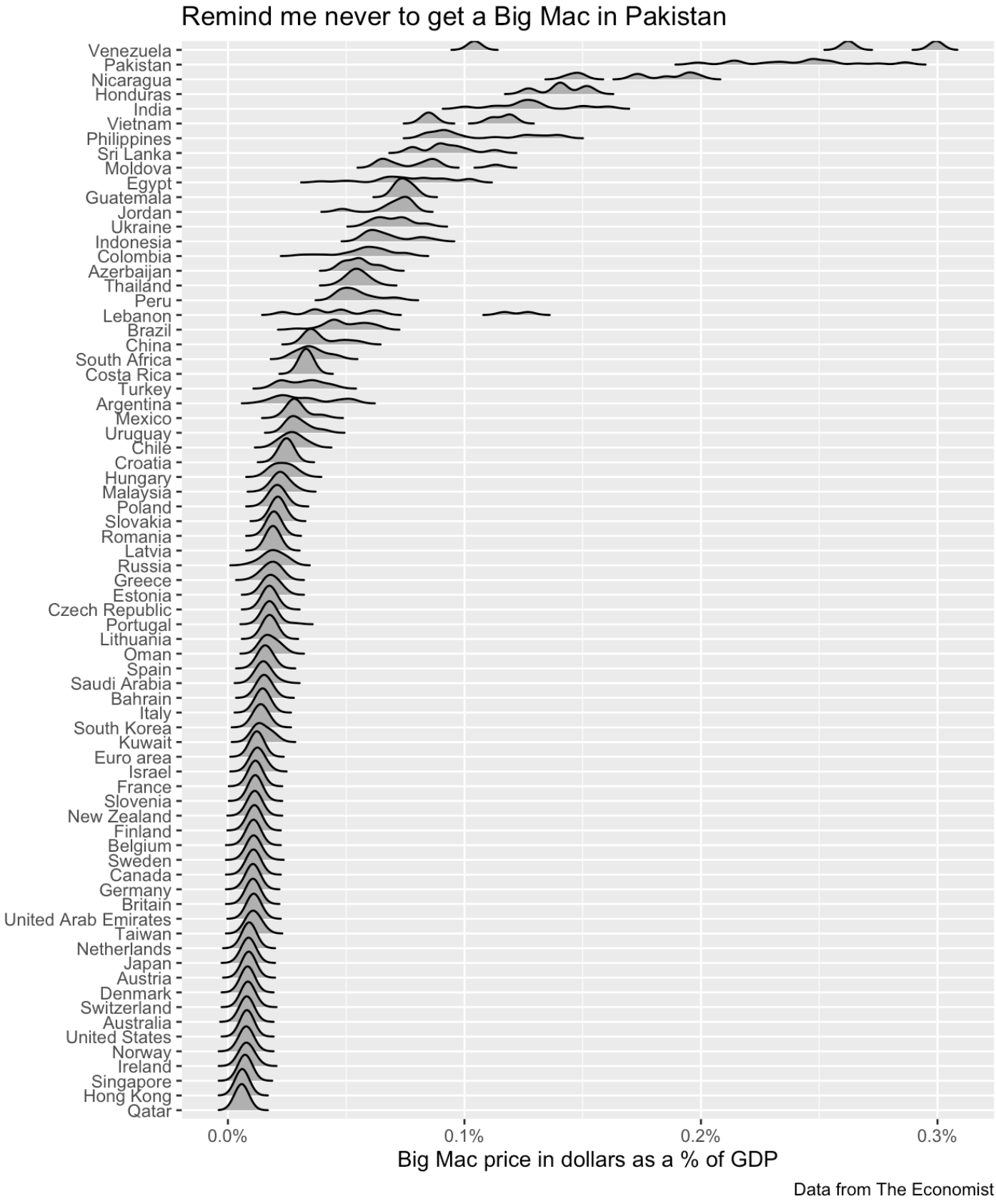
# Making an initial graph

```
maccas %>%
  mutate(price_dollars = local_price / dollar_ex,
         GDP_percent = price_dollars/GDP_dollar) %>%
  ggplot() +
  aes(x = GDP_percent,
      y = name) +
  geom_density_ridges()
```




This looks OK. But the x-axis is hard to interpret, and the countries aren't ranked highest-to-lowest. Let's change that; let's also add a title, subtitle, and caption, and get rid of any missing values.

```
maccas %>%
  mutate(price_dollars = local_price / dollar_ex,
         GDP_percent = price_dollars/GDP_dollar) %>%
  na.omit %>%
  ggplot() +
  aes(x = GDP_percent,
      y = fct_reorder(name, GDP_percent)) +
  geom_density_ridges(rel_min_height = 0.001) +
  scale_x_continuous(labels = scales::percent) +
  labs(x = "Big Mac price in dollars as a % of GDP", y = NULL,
       title = "Remind me never to get a Big Mac in Pakistan",
       caption = "Data from The Economist")
```




There's one new thing here: I've specified that I want the scale on the x-axis to be percent, rather than scientific notation. I don't expect you to have done this, don't worry!