

Dan Schumacher HW2

AUTHOR

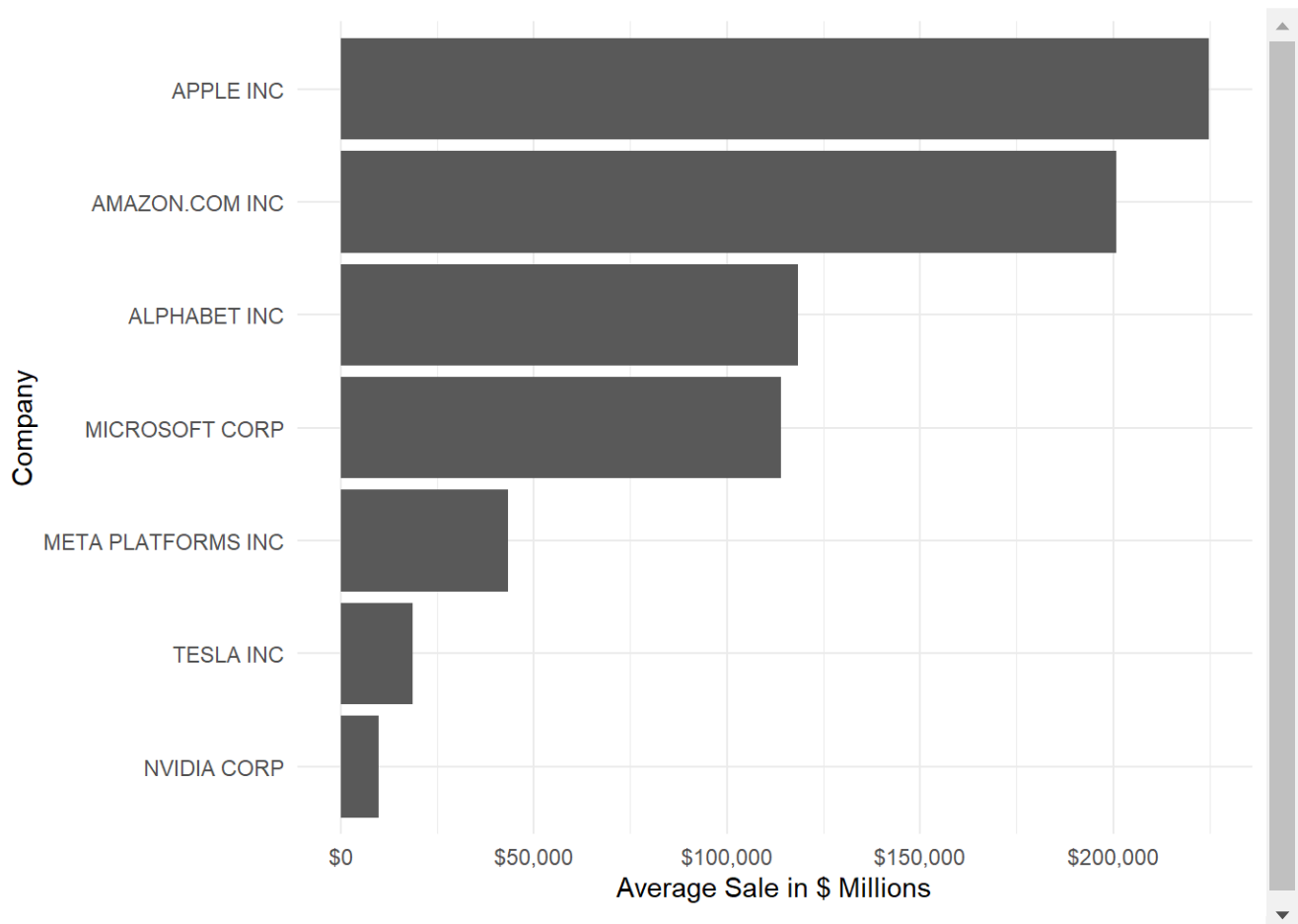
Dan Schumacher HDD249

Homework 2

Set up

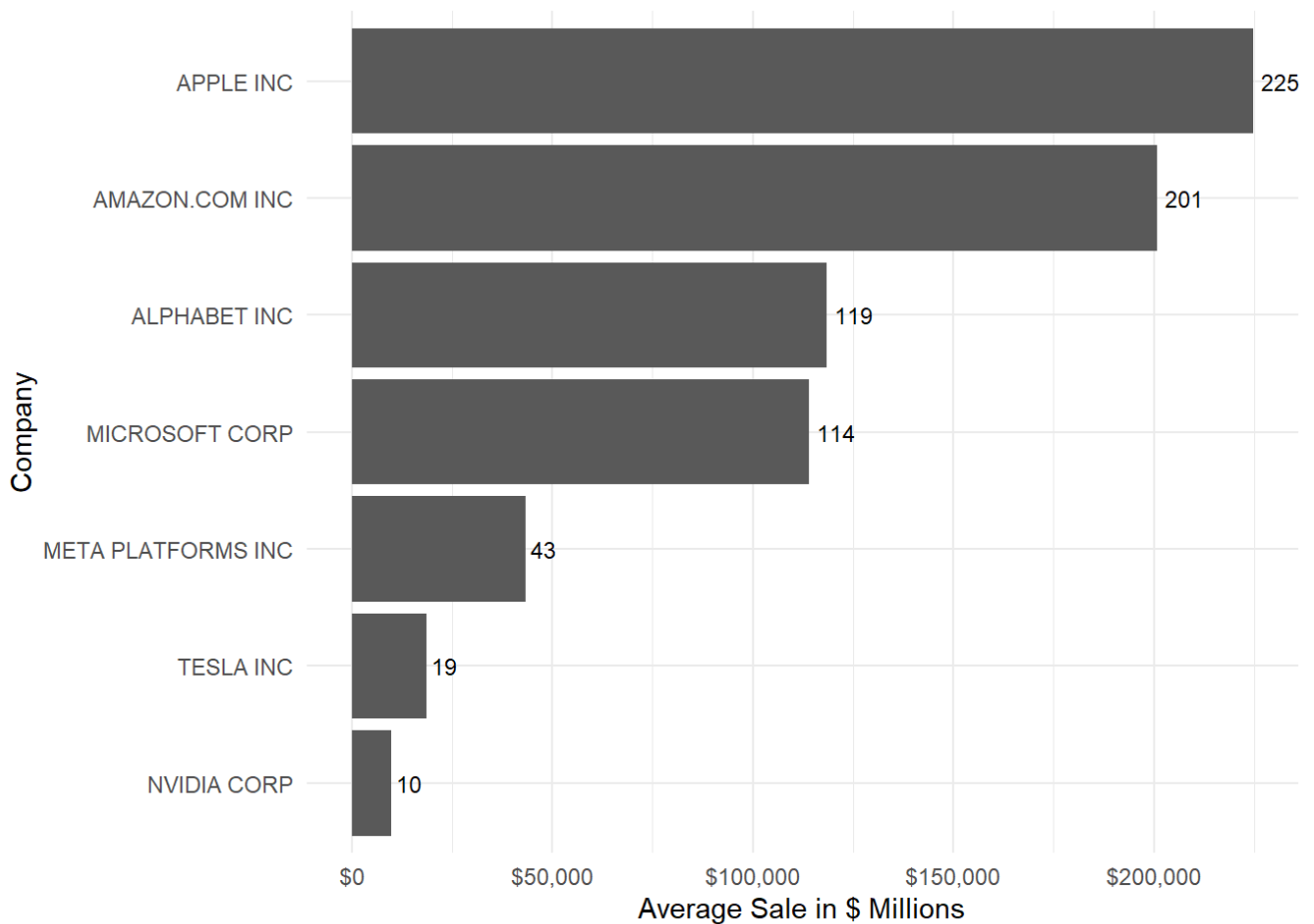
Question 1

```
dQ1 <- d1_1 %>%  
  mutate(conm = factor(conm),  
         conm = fct_reorder(conm, avg_sale))  
  
dQ1 %>%  
  ggplot() +  
    geom_col(aes(avg_sale, conm)) +  
    scale_y_discrete('Company') +  
    scale_x_continuous('Average Sale in $ Millions', labels = scales::dollar_format())
```



Question 2

```
dQ1 %>%
  ggplot() +
    geom_col(aes(avg_sale, com)) +
    scale_y_discrete('Company') +
    scale_x_continuous('Average Sale in $ Millions'
                      , labels = scales::dollar_format()) +
    geom_text(
      mapping = aes(x = avg_sale, y = com, label = round(avg_sale/1000)),
      hjust = -0.2,
      size = 3
    )
```



Question 3

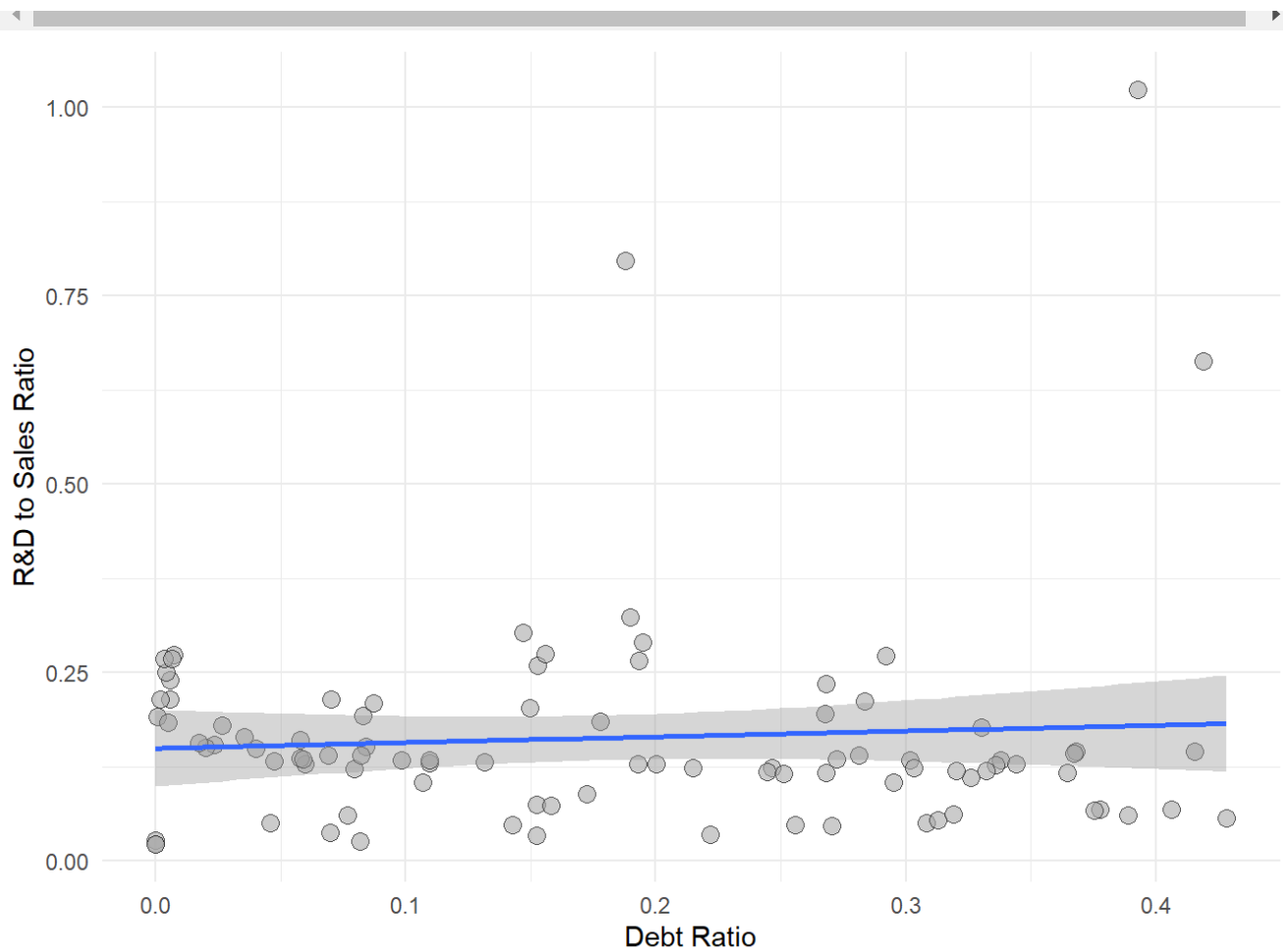
```
dQ3 <- d1 %>%
  mutate(
    debt_ratio = (dlc + replace_na(dltt, 0)) / at,
```

```

    rnd_int = xrd / sale
  )
dQ3 %>%
  ggplot(
    aes(x = debt_ratio, y = rnd_int)
  ) +
    geom_point(size = 3, shape = 21, fill = 'darkgrey', alpha = .6) +
    geom_smooth(method = 'lm') +
    scale_x_continuous('Debt Ratio') +
    scale_y_continuous('R&D to Sales Ratio')

```

`geom_smooth()` using formula = 'y ~ x'



Question 4

```

dQ4 <- d1 %>%
  filter(tic %in% c("AAPL", "TSLA", "META", "MSFT", "AMZN", "NVDA")) %>%
  mutate(pr_margin = oibdp / sale,
         fyear = as.Date(paste(fyear, "12", "31", sep = "-")))

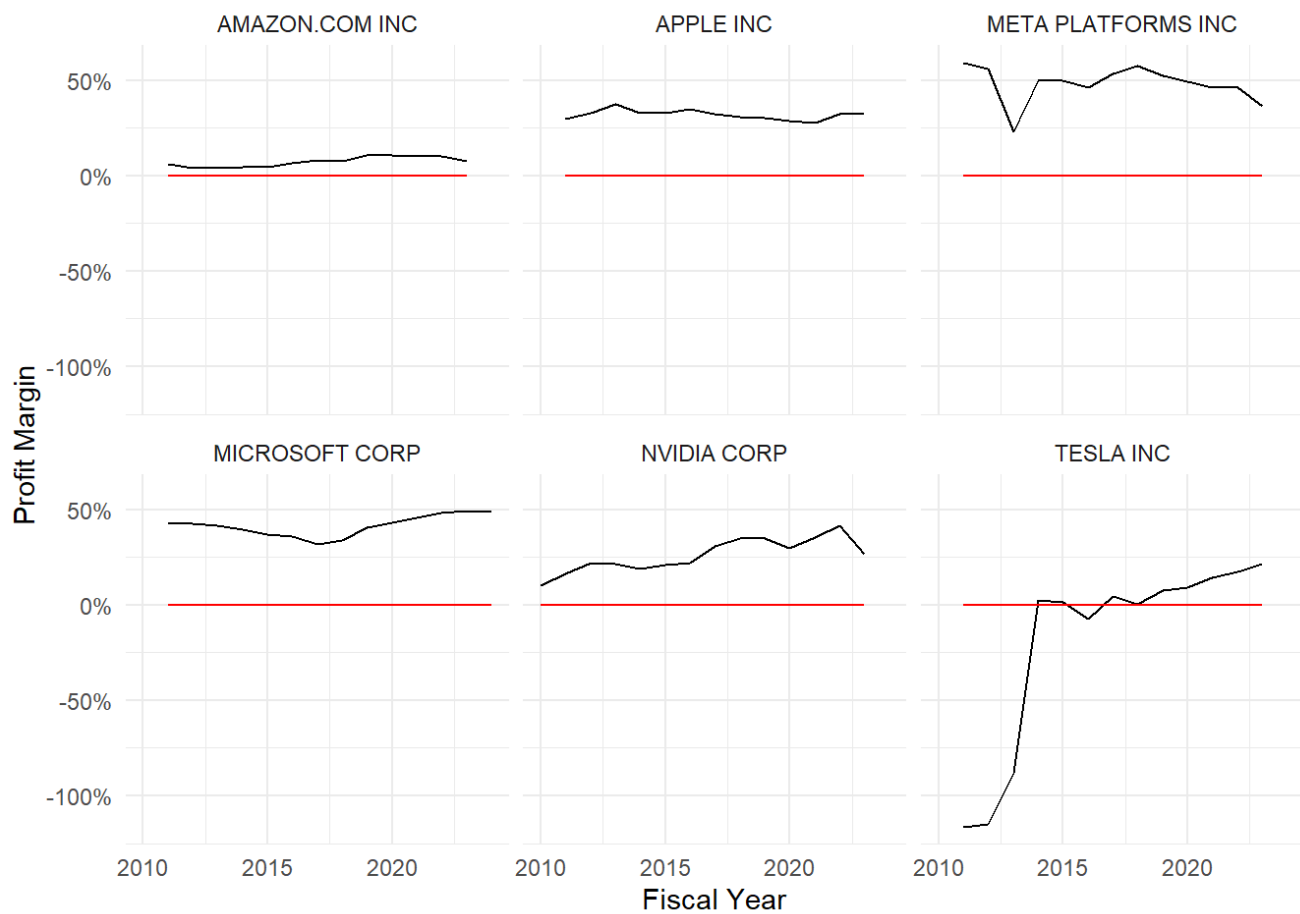
#year.labels = c(-1.0, '-100%', 0.0 = '0%', -0.5 = '-50%', 0.5 = '-50%')

```

```
year.labels = c('-100%', '-50%', '0%', '50%')
```

```
dQ4 %>%
  ggplot(
    aes(x=fyear , y = pr_margin)
  ) +
  geom_line() +

  facet_wrap(~conm, ncol = 3) +
  geom_line(aes(y=0), color='red') +
  scale_y_continuous(
    labels = year.labels
  ) +
  ylab('Profit Margin') +
  xlab('Fiscal Year')
```



Question 5

```
d1_5 <- d1 %>%
  filter(conm == "TESLA INC") %>%
  mutate(mkt_val = prcc_f * cshpri) %>% # Create market value
  select(conm, datadate, mkt_val, sale) %>%
  pivot_longer(cols = c(mkt_val, sale),
    names_to = "fin_var",
```

```

values_to = "fin_value")

#-----#

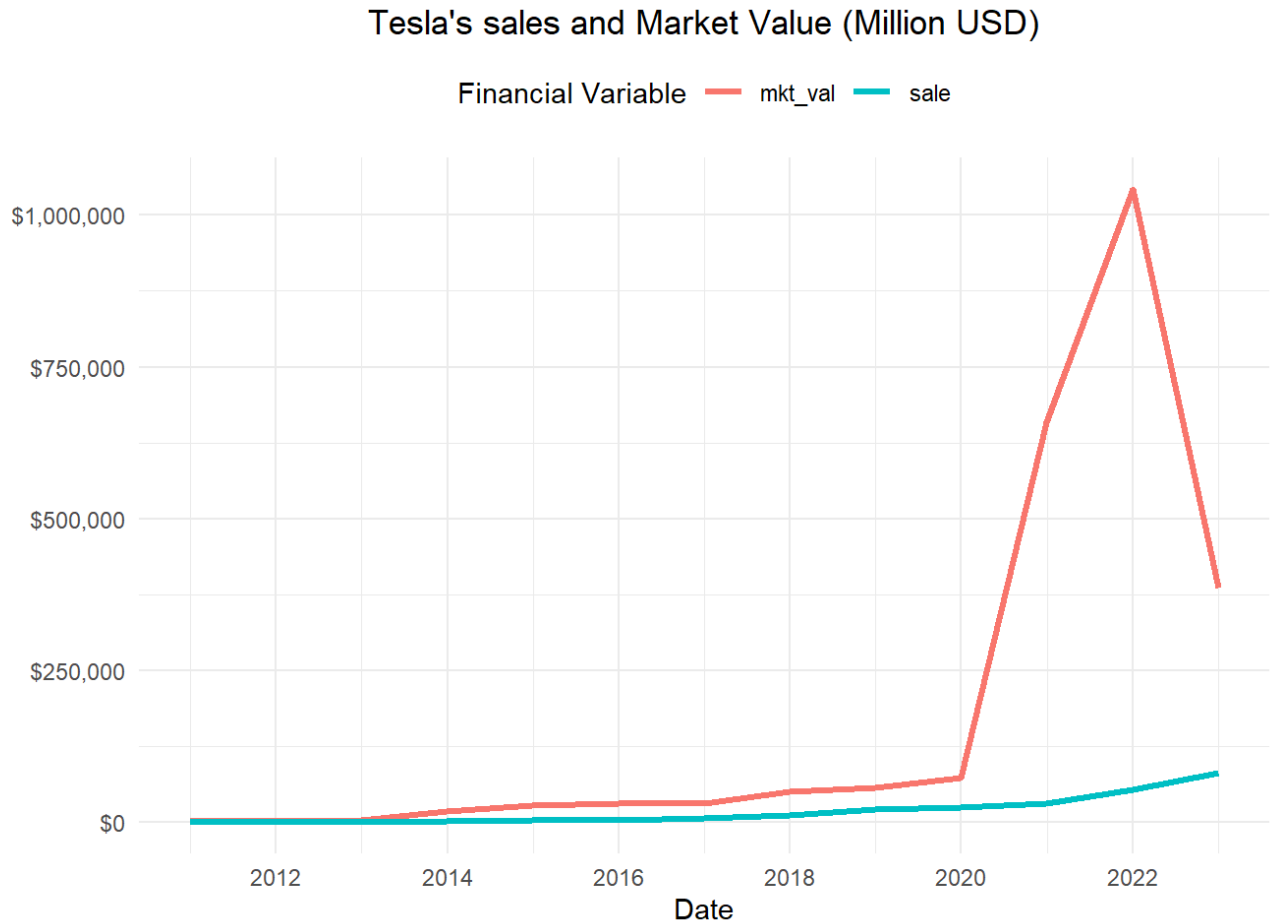
d1_5 %>%
  ggplot(
    aes(x = as.Date(datadate),
        y = fin_value,
        color = fin_var)
  ) +

  geom_line(linewidth = 1.2) +

  xlab('Date') +
  labs(title = "Tesla's sales and Market Value (Million USD)",
       color = 'Financial Variable') +
  scale_y_continuous('', labels = scales::dollar_format()) +

  theme(legend.position = 'top', plot.title = element_text(hjust = .5))

```



Question 6

```

dQ6 <-
dQ4 %>%

```

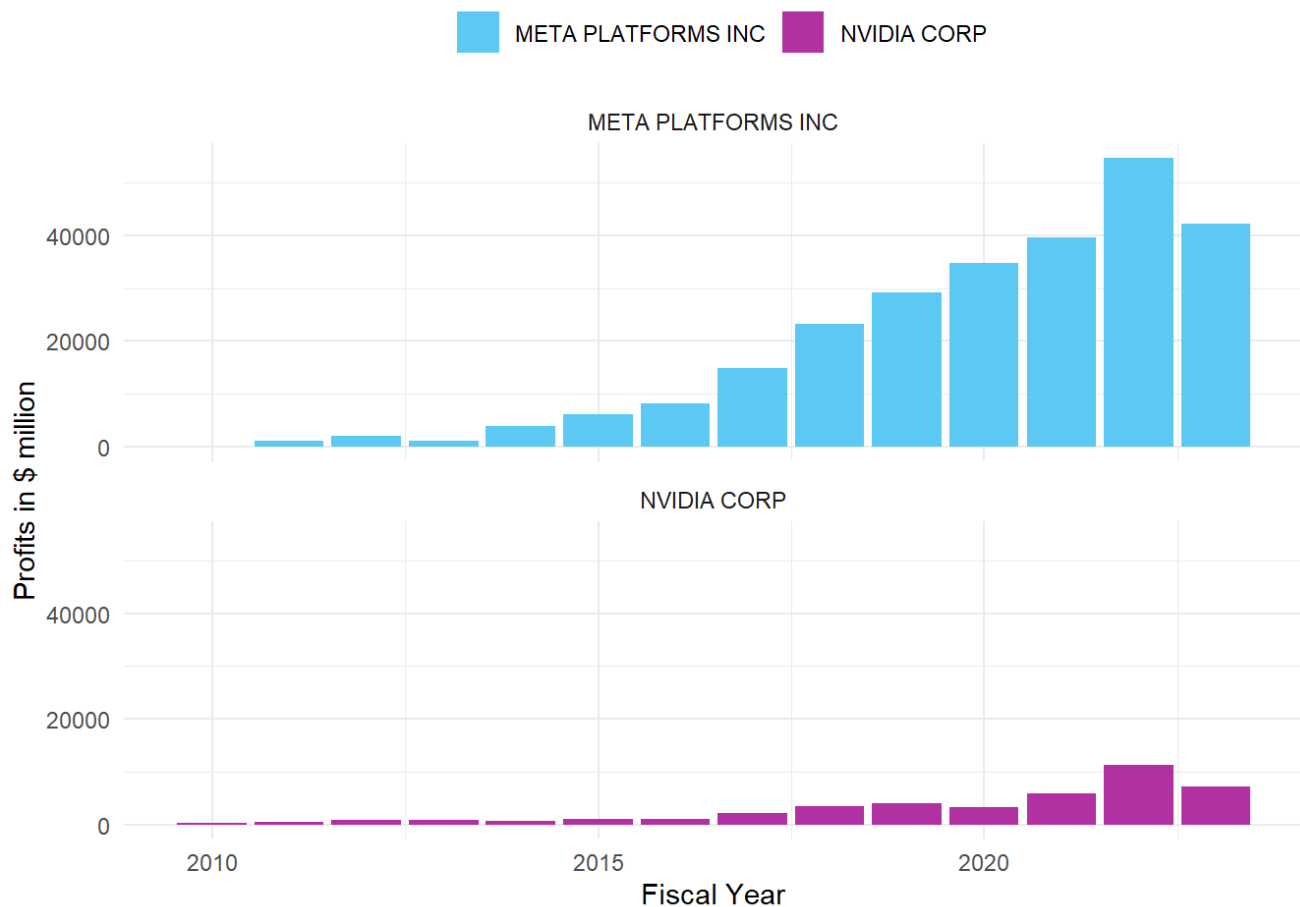
```

filter( conm %in% c('NVIDIA CORP','META PLATFORMS INC'))

dQ6 %>%
  ggplot(
    aes(
      x = fyear,
      y = oibdp,
      fill = conm
    )
  ) +
  facet_wrap(~conm, ncol = 1) +
  geom_col() +

  xlab('Fiscal Year') +
  ylab('Profits in $ million') +
  scale_fill_manual(values = c('#5cc9f5','#b131a2')) +
  theme(legend.position = 'top') +
  labs(fill = '')

```



Question 7

```

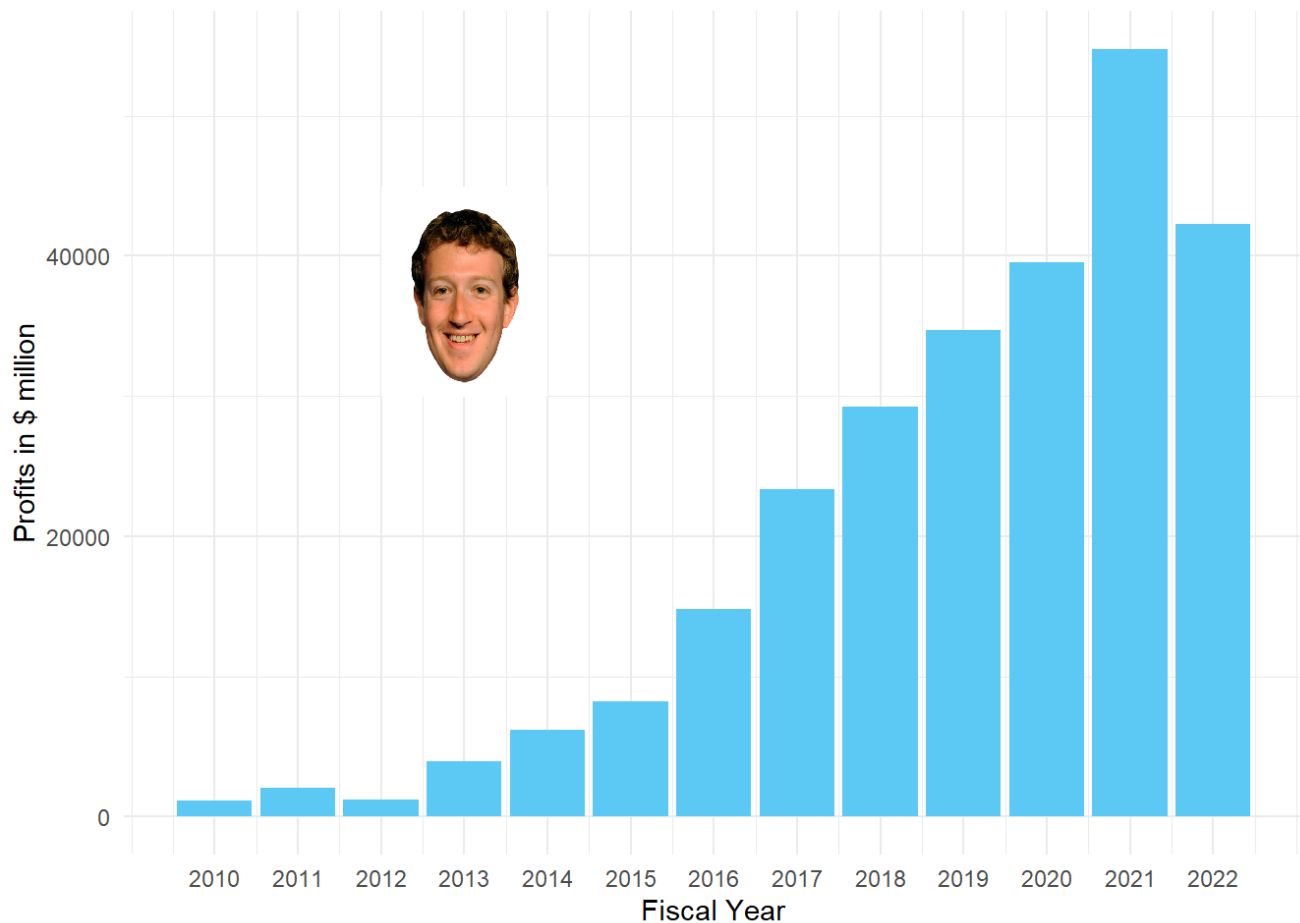
dQ7 <- d1 %>%
  filter(conm == 'META PLATFORMS INC')

```

```
dQ7 %>%
  ggplot(
    aes(x = fyear,
        y = oibdp)) +

  annotation_raster(readPNG('CopyOfmark-zuckerberg-celebrity-mask.png'),
                    xmin = 2012, xmax = 2014, ymin = 30000, ymax = 45000, interpolate = F) +

  geom_col(fill = '#5cc9f5') +
  xlab('Fiscal Year') +
  ylab('Profits in $ million') +
  scale_x_continuous(breaks = c(2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022))
```



Extra Question

```
dQLAST <-
d1 %>%
  mutate(
    mkt_val = prcc_f * cshpri,
    fyear = as.Date(paste(fyear, "12", "31", sep = "-"))
  ) %>%
  filter(
    conm %in% c('META PLATFORMS INC', 'APPLE INC', 'TESLA INC')
```

```

    )

dQLAST %>%
  ggplot(
    aes(x = fyear,
        y = mkt_val,
        color = conm)
  ) +
  geom_line(linewidth = 1.5) +
  ylab('Market Value in $ Million') +
  xlab('') +

  scale_color_manual(values = c('#F1BB7B', '#FD6467', '#5B1A18')) +
  theme(legend.position = 'none') +

  annotation_raster(readJPEG('CopyOfjim_cook_headshot_glasses.jpg'),
                    xmin = as.Date('2022-06-01'), as.Date('2023-06-01'), ymin = 2000000, ymax = 2500000) +

  annotation_raster(readPNG('CopyOfelon-musk-smile-celebrity-mask.png'),
                    as.Date('2022-10-01'), as.Date('2023-10-01'), ymin = 600000, ymax = 809000) +

  annotation_raster(readPNG('CopyOfmark-zuckerberg-celebrity-mask.png'),
                    xmin = as.Date('2022-02-01'), as.Date('2023-02-01'), ymin = 200000, ymax = 400000)

```

Warning: Removed 2 rows containing missing values (`geom_line()`).



