Machine Tools Analysis

Datasets Used

Merged ADI Revenue dataset with Taiwan's Machine Tools export and aligned time to ADI's Fiscal Month/Qtr

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.0 --
```

```
## v ggplot2 3.3.2     v purrr   0.3.4
## v tibble  3.0.4     v dplyr   1.0.2
## v tidyr   1.1.2     v stringr 1.4.0
## v readr   1.4.0     v forcats 0.5.0
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(readr)
library(rvest)
```

```
## Loading required package: xml2
```

```
##
## Attaching package: 'rvest'
```

```
## The following object is masked from 'package:purrr':
##
##     pluck
```

```
## The following object is masked from 'package:readr':
##
##     guess_encoding
```

```
library(ggplot2)

DAR <- read_csv("DAR_Historic.csv")
```

```
##
## -- Column specification --------------------------------------------------------
## cols(
##   DAR_Territory = col_character(),
##   End_Mkt_Segment = col_character(),
##   BU = col_character(),
##   Channel_Type = col_character(),
##   Fiscal_Mth = col_double(),
##   Revenue = col_character(),
##   `POS Resale Value` = col_number()
## )
```

```
DAR$Revenue <- gsub("[],\\)]", "",DAR$Revenue)
DAR$Revenue <- gsub("^\\(", "-",DAR$Revenue)
DAR$Revenue <- gsub("\\$", "",DAR$Revenue) %>% as.numeric()
DAR <-  DAR %>%
  group_by(Fiscal_Mth) %>%
  summarise(Revenue = sum(Revenue))
```

```
## `summarise()` ungrouping output (override with `.groups` argument)
```

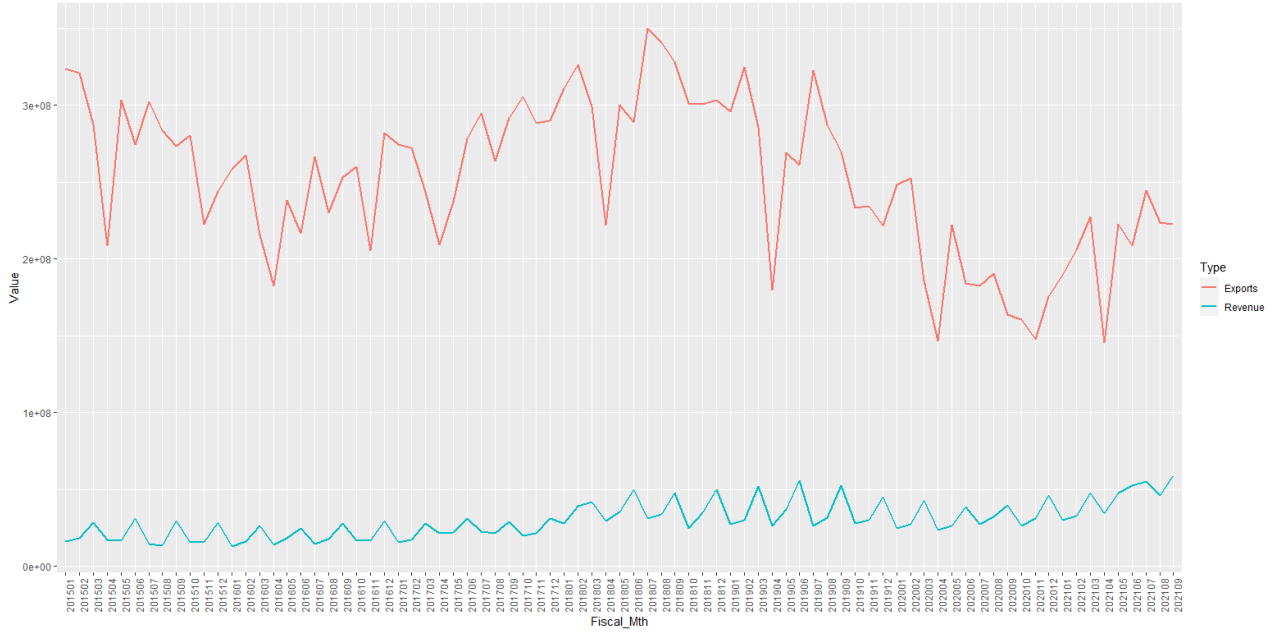
```
url <- "https://web02.mof.gov.tw/njswww/webMain.aspx?sys=220&ym=9001&ymt=11007&kind=21&type=1&funid=i9161&cycle=1&outmode=0&
compmode=00&outkind=1&fld0=1&cod018=1&rdm=R159145"
data <- read_html(url) %>%
  html_nodes("table") %>% .[[2]]

table <- data %>% html_table()
table <- table[-1,]
colnames(table) <- c("Date", "Exports")
table <- table %>%
  separate(Date, c("CY", "CM"), "年 ") %>%
  mutate(CY = as.numeric(CY) + 1911)
table$CM <- gsub("月", "", table$CM) %>% as.numeric()
table$Exports <- gsub(",", "", table$Exports) %>% as.numeric()

#get fiscal month and quarter
table <- table %>%
  mutate(Calendar_Mth = CY*100+CM,
         Fiscal_Mth = ifelse(CM < 11, CY*100+CM+2,
         (CY+1)*100+CM-10),
         Exports = Exports*1000)
table <- table %>%
  mutate(FQ = Fiscal_Mth%/%100*10+(Fiscal_Mth%%100-1)%/%3+1)

summ <- DAR %>%
  left_join(table) %>%
  group_by(Fiscal_Mth, FQ) %>%
  summarise(Exports = sum(Exports), Revenue = sum(Revenue)) %>%
  gather("Type", "Value", Exports:Revenue) %>%
  na.omit()%>%
  ungroup()
```

```
## Joining, by = "Fiscal_Mth"
```

```
## `summarise()` regrouping output by 'Fiscal_Mth' (override with `.groups` argument)
```

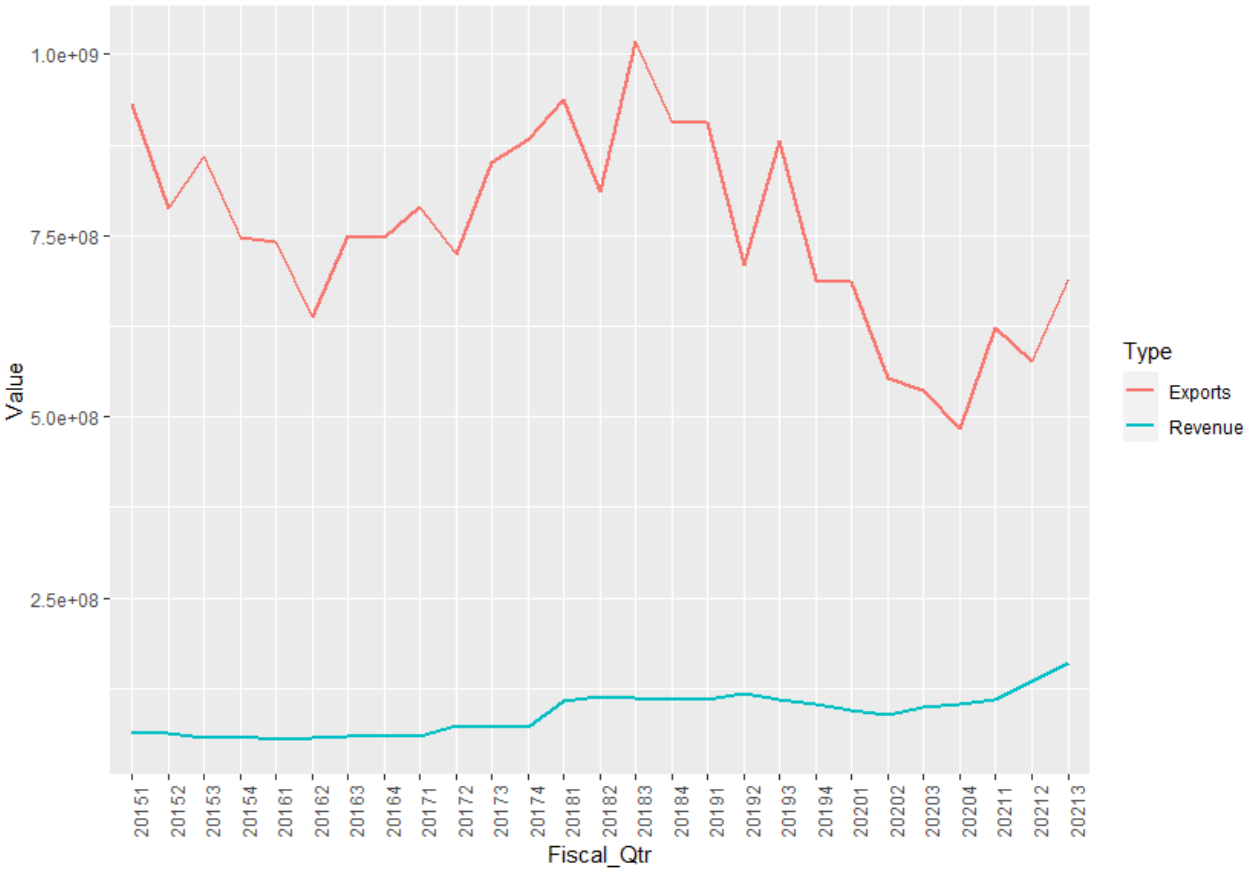
Machine Tools Export vs. ADI DAR Revenue Plot

1. By Fiscal Month



2. By Fiscal Quarter

```
## `summarise()` regrouping output by 'FQ' (override with `.groups` argument)
```


1.0e+09
7.5e+08
5.0e+08
2.5e+08
Value
20151
20152
20153
20154
20161
20162
20163
20164
20171
20172
20173
20174
20181
20182
20183
20184
20191
20192
20193
20194
20201
20202
20203
20204
20211
20212
20213
Fiscal_Qtr
Type
Exports
Revenue