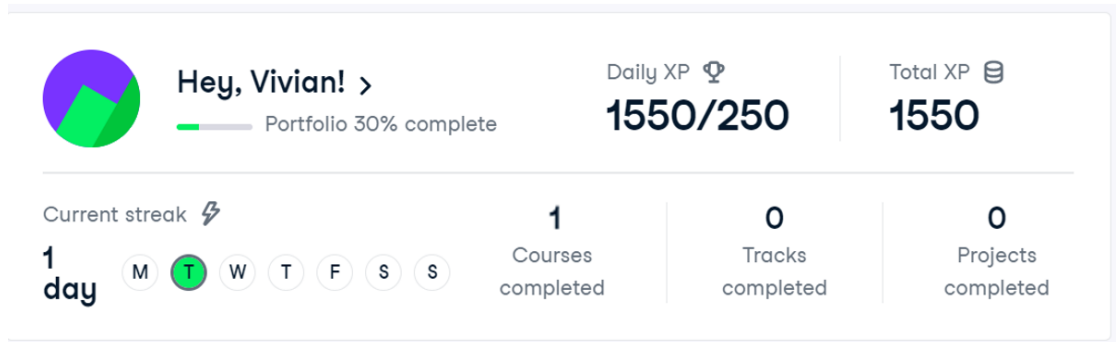


1. Setup

i. Log in & Finish Arbitrary Courses

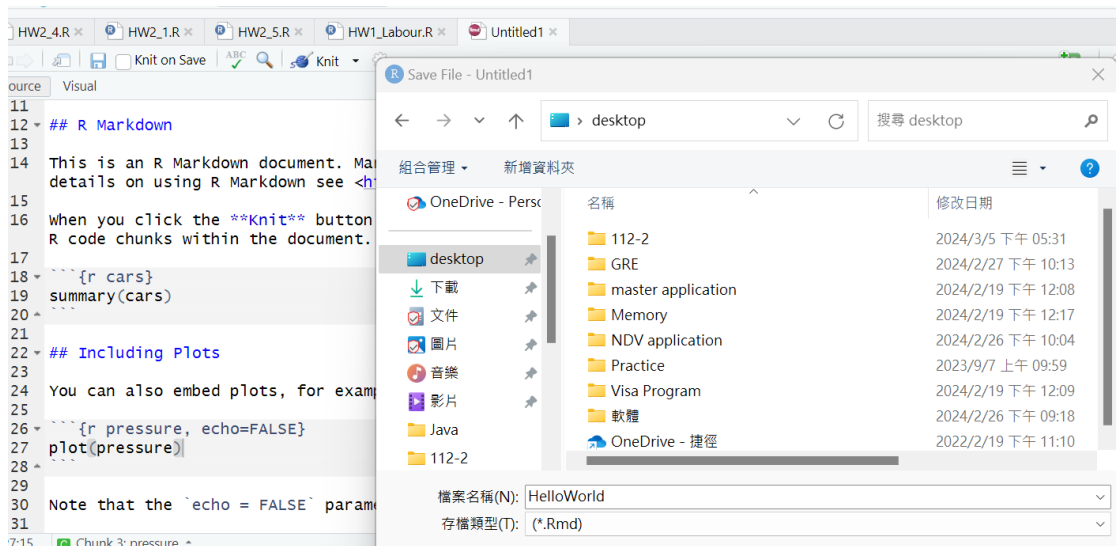


Hey, Vivian! >
 Portfolio 30% complete

Daily XP 1550/250
 Total XP 1550

Current streak 1 day
 M T W T F S S
 1 Courses completed
 0 Tracks completed
 0 Projects completed

ii. Generate RMarkdown files and knit



HW2_4.R x HW2_1.R x HW2_5.R x HW1_Labour.R x Untitled1 x

Visual

```
11  
12 ## R Markdown  
13  
14 This is an R Markdown document. Markdown details on using R Markdown see <https://rmarkdown.rstudio.com>  
15  
16 When you click the Knit button, R code chunks within the document will be executed.  
17  
18 {r cars}  
19 summary(cars)  
20  
21 ## Including Plots  
22  
23 You can also embed plots, for example:  
24  
25 {r pressure, echo=FALSE}  
26 plot(pressure)  
27  
28 Note that the `echo = FALSE` parameter was added to the chunk header  
29  
30  
31
```

Save File - Untitled1

desktop

名稱	修改日期
112-2	2024/3/5 下午 05:31
GRE	2024/2/27 下午 10:13
master application	2024/2/19 下午 12:08
Memory	2024/2/19 下午 12:17
NDV application	2024/2/26 下午 10:04
Practice	2023/9/7 上午 09:59
Visa Program	2024/2/19 下午 12:09
軟體	2024/2/26 下午 09:18
OneDrive - 捷徑	2022/2/19 下午 11:10

檔案名稱(N): HelloWorld
存檔類型(T): (*.Rmd)

2. Sign up NBER working paper series

War Bonds, Postwar Inflation, and Voter Sentiment

ARTICLE

During World War II, the US government, under Democratic Party leadership, encouraged citizens to invest in savings bonds, and over 85 million Americans subscribed. But high post-war inflation diminished the value of these bonds. The Republican Party criticized Democrats for the poor returns earned by bondholders. Running on a platform that promised to control inflation, the Republicans won the presidency in 1952, ending two decades of Democratic dominance. In [Inflation, War Bonds, and the Rise of Republicans in the 1950s](#) (NBER Working Paper 31969), researchers [Gillian Brunet](#), [Eric Hilt](#), and [Matthew S. Jaremski](#) examine how ownership of war bonds affected the presidential elections of the 1950s.

In May 1941, the federal government began selling “E bonds” to finance WWII. Bond drives supported by celebrities, government officials, and civil society organizations boosted sales, as did major events like the bombing of Pearl Harbor ...

i.

3. Sign up SRDA

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查詢說明

首頁 > 詳目顯示

家庭動態資料庫的建立：第十一年計畫(RR2009)

下載/申請

登錄號	C00284_1
英文計畫名稱	Panel Study of Family Dynamics: RR2009
計畫主持人/服務單位	簡錦漢 / 中央研究院經濟研究所
叢集名稱	家庭動態調查
學門別	社會科學領域：社會學：人口、家庭與社區
DOI	https://doi.org/10.6141/TW-SRDA-C00284_1-1

摘要

家庭動態調查：2020追蹤問卷 (RR2020)

下載/申請

登錄號	C00377_1
英文計畫名稱	Panel Study of Family Dynamics: RR2020
計畫主持人/服務單位	于若蓁 / 中央研究院人文社會科學研究中心調查研究專題中心
叢集名稱	家庭動態調查
學門別	社會科學領域：社會學：人口、家庭與社區
DOI	https://doi.org/10.6141/TW-SRDA-C00377_1-1

ii.

4. Roy Model

i.

```
library(data.table)

N <- 10000000
miu0 <- 20
miu1 <- 25

# 4.2.2 simulate N = 10m e0, e1
sim_data <- data.table(
  epsilon0 = rnorm(N),
  epsilon1 = rnorm(N),
  Immigrant = sample(c(0, 1), N, replace = TRUE) # Adding a binary Immigrant variable
)
```

ii.

```
# 4.2.3 create w0 w1
sim_data[, w0 := miu0 + epsilon0]
sim_data[, w1 := miu1 + epsilon1]
```

iii.

```
# 4.2.4 generate column I
sim_data[, I := as.integer(w0 > w1)]
```

```

# 4.2.5 calculate with no formula
E_w0_Immigrant <- mean(sim_data[Immigrant == 1, w0])
E_w1_Immigrant <- mean(sim_data[Immigrant == 1, w1])
E_e0_Immigrant <- mean(sim_data[Immigrant == 1, epsilon0])
E_e1_Immigrant <- mean(sim_data[Immigrant == 1, epsilon1])

print("E[w0|I]: ")
print(E_w0_Immigrant)
print("E[w1|I]: ")
print(E_w1_Immigrant)
print("E[e0|I]: ")
print(E_e0_Immigrant)
print("E[e1|I]: ")
print(E_e1_Immigrant)

iv.
> print("E[w0|I]: ")
[1] "E[w0|I]: "
> print(E_w0_Immigrant)
[1] 20.00067
> print("E[w1|I]: ")
[1] "E[w1|I]: "
> print(E_w1_Immigrant)
[1] 25.00016
> print("E[e0|I]: ")
[1] "E[e0|I]: "
> print(E_e0_Immigrant)
[1] 0.0006712976
> print("E[e1|I]: ")
[1] "E[e1|I]: "
> print(E_e1_Immigrant)
[1] 0.0001643597

v.
# 4.2.6 calculate with formula
rho <- cor(sim_data$epsilon0, sim_data$epsilon1)
sigma_nu <- sqrt(var(sim_data$epsilon0) * var(sim_data$epsilon1))
z <- qnorm(mean(sim_data$Immigrant))
calculated_E_w0 <- miu0 +
  (sqrt(var(sim_data$w0)) * sqrt(var(sim_data$w1)) *
   (rho - sqrt(var(sim_data$epsilon0)) / sqrt(var(sim_data$epsilon1))) / sigma_nu *
   (dnorm(z) / (1 - pnorm(z))))

calculated_E_w1 <- miu1 +
  (sqrt(var(sim_data$w1)) * sqrt(var(sim_data$w0)) *
   (rho - sqrt(var(sim_data$epsilon1)) / sqrt(var(sim_data$epsilon0))) / sigma_nu *
   (dnorm(z) / (1 - pnorm(z))))

vi.
> # 4.2.6 compare
> print("E[w0|I]_cal: ")
[1] "E[w0|I]_cal: "
> print(calculated_E_w0)
[1] 19.20139
> print("E[w0|I]_no_cal: ")
[1] "E[w0|I]_no_cal: "
> print(E_w0_Immigrant)
[1] 20.00067
>
> print("E[w1|I]_cal: ")
[1] "E[w1|I]_cal: "
> print(calculated_E_w1)
[1] 25.79766
> print("E[w1|I]_no_cal: ")
[1] "E[w1|I]_no_cal: "
> print(E_w1_Immigrant)
[1] 25.00016
>
> print("E[e0|I]_cal: ")
[1] "E[e0|I]_cal: "
> print(calculated_E_w0 - mean(sim_data[Immigrant == 1, w0]) )
[1] -0.7992783
> print("E[e0|I]_no_cal: ")
[1] "E[e0|I]_no_cal: "
> print(E_e0_Immigrant)
[1] 0.0006712976

vii.

```

viii.

```
> print("E[e1|I]_cal: ")
[1] "E[e1|I]_cal: "
> print(calculated_E_w1 - mean(sim_data[Immigrant == 1, w1]) )
[1] 0.7974987
> print("E[e1|I]_no_cal: ")
[1] "E[e1|I]_no_cal: "
> print(E_e1_Immigrant)
[1] 0.0001643597
```

ix.

```
# 4.2.7
## the "individual income if that person stay" for they stay
## the "individual income if that person immigrate" for they immigrate
## we don't know what would the "immigrate income" for those stay and otherwise
```

5. Roy Model Example

6. Individuals decide whether to start their own businesses or work for established firms based on factors such as risk tolerance, skillsets, and market opportunities.

For example, starting a businesses has a lower average income and larger variance, work for established firms enjoys a higher average income but smaller variance, a person who is on the lower scale would work for established firms, like most of the people, but there are also people starting their own business and be successful. Also the fact that we could not simply decided our career choices merely by the average income, because our talent in which kind of jobs could also matter.

In this case, we can assume that w_0 represents the income where people works for established firms, and w_1 represents the income where people starting their own business. In today's world where people working for established firms is a norm, people would have to have incentives to start up business. And the conditions for it is that the increased earnings by changing career would have to at least cover the cost C of starting business.