Untitled

```r
ff_final <- readRDS("C:/Users/mexic/Documents/R/Fast-Fashion-Welfare/data/tidy/ff_final.RData")

ff_final <- ff_final %>%
  select(year, trade_value_usd, total_trade, ff, country, gdp_c)

names(ff_final) <- c("Year", "Apparel_Exports", "Total_Exports", "Apparel_Export_Share", "Country", "GDI

ff_plm <- pdata.frame(ff_final, index = c("Country", "Year"),
                      drop.index = FALSE)

ff_bal <- make.pbalanced(ff_plm)

ff_bal <- ff_bal %>%
  mutate(Apparel_Exports = Apparel_Exports/1000,
         Total_Exports = Total_Exports/1000)
```

```r
linear_model <- lm(log(GDP_C) ~ log(Apparel_Exports) + Country, data = ff_final)

linear_model <- plm(log(GDP_C) ~
                      log(Apparel_Exports) + Country, data = ff_bal,
                    index = c("Country", "Year"), model = "pooling")

fixed_model <- plm(log(GDP_C) ~
                      log(Apparel_Exports), data = ff_bal,
                    index = c("Country", "Year"), model = "within")

tbl2 <- ff_bal %>%
  group_by(Year) %>%
  summarize('Average GDP_C, thousands 2010 USD' = mean(GDP_C, na.rm = TRUE),
            'Average Apparel Exports, thousands 2010 USD' = mean(Apparel_Exports, na.rm = TRUE),
            'Average Total Exports, thousands 2010 USD' = mean(Total_Exports, na.rm = TRUE),
            'Average % Apparel Export Share' = mean(Apparel_Export_Share, na.rm = TRUE))
```

```r
sum_tbl2 <- ff_bal %>%
  group_by(Year) %>%
  summarize('Average GDP_C, 2010 USD' = mean(GDP_C, na.rm = TRUE),
            'Average Apparel Exports, thousands 2010 USD' = mean(Apparel_Exports, na.rm = TRUE),
            'Average Total Exports, thousands 2010 USD' = mean(Total_Exports, na.rm = TRUE),
            'Average % Apparel Export Share' = mean(Apparel_Export_Share, na.rm = TRUE))

xt <- xtable(print(sum_tbl2), caption = c("test"))
```

```
## # A tibble: 25 x 5
##    Year  `Average GDP_C,~ `Average Appare~ `Average Total ~
##    <fct>            <dbl>            <dbl>            <dbl>
##  1 1990            16386.          359455.        33815767.
##  2 1991            16464.          364719.        41789262.
##  3 1992            15304.          513231.        43197753.
##  4 1993            15171.          450871.        39622588.
##  5 1994            14205.          477334.        41081877.
##  6 1995            13174.          475885.        42620251.
```

```
## 7 1996            12296.           451496.        39160926.
## 8 1997            11964.           518448.        37451131.
## 9 1998            12650.           489562.        36984778.
## 10 1999           13791.           489541.        38005873.
## # ... with 15 more rows, and 1 more variable: `Average % Apparel Export
## #   Share` <dbl>
```

```
print(xt, caption.placement = "top", type = "latex", comment = FALSE, scalebox = 0.6)
```

Table 1: test

	Year	Average GDP_C, 2010 USD	Average Apparel Exports, thousands 2010 USD	Average Total Exports, thousands 2010 USD	Average % Apparel Export Share
1	1990	16385.99	359455.13	33815767.14	2.69
2	1991	16464.03	364719.14	41789261.90	2.41
3	1992	15303.85	513230.97	43197753.41	2.85
4	1993	15171.25	450871.45	39622588.25	3.19
5	1994	14205.39	477333.87	41081876.62	2.34
6	1995	13174.18	475885.38	42620250.61	2.02
7	1996	12295.71	451496.48	39160925.59	2.29
8	1997	11963.97	518447.63	37451130.77	2.33
9	1998	12650.04	489562.19	36984778.18	2.28
10	1999	13790.60	489541.30	38005872.74	2.33
11	2000	14032.27	470279.91	38990083.92	3.04
12	2001	14438.35	478943.11	38288447.90	3.26
13	2002	14752.35	527867.88	40995511.84	3.20
14	2003	14705.33	630005.64	47527091.41	3.35
15	2004	15214.11	732824.31	57838956.62	3.50
16	2005	15236.62	816933.09	66388500.98	3.23
17	2006	16111.50	965674.27	76637404.30	2.94
18	2007	16530.06	1165212.78	87811895.58	2.97
19	2008	16723.79	1242917.89	103965026.14	2.84
20	2009	15881.59	1108643.00	78846389.77	2.94
21	2010	15783.45	1201903.30	93014532.47	2.55
22	2011	16140.90	1453846.46	114000302.99	2.62
23	2012	16358.24	1448970.87	112231631.03	2.72
24	2013	17147.61	1646756.95	119482211.16	2.61
25	2014	16956.84	1595487.61	120555097.81	2.39

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Table 2: Summary Statistics by Year

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)
Apparel_Exports	2,597	877,501.900	4,600,512.000	0.001	1,259.931	545,374.000
Total_Exports	2,597	68,530,240.000	171,267,411.000	2,588.695	1,220,602.000	55,632,228.000
Apparel_Export_Share	2,597	2.789	7.265	0.00000	0.054	1.935
GDP_C	2,597	15,125.980	19,060.320	170.582	2,190.766	22,489.320

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```
random <- plm(log(GDP_C) ~ log(Apparel_Exports), data = ff_bal, index=c("Country", "Year"), model="rand

phtest(fixed_model, random)
```

```
##
## 	Hausman Test
##
## data:  log(GDP_C) ~ log(Apparel_Exports)
```

Table 3: Model 1: One Way Individual Effects Model

	Dependent variable:
	log(GDP_C)
log(Apparel_Exports)	0.038***
	(0.003)
	p = 0.000
Observations	2,597
R^2	0.063
Adjusted R^2	0.008
F Statistic	166.109*** (df = 1; 2450)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 4: Augmented Dickey Fuller Test for Stationarity

	Dependent variable:
	log(GDP_C)
log(Apparel_Exports)	0.038***
	(0.003)
Observations	2,597
R^2	0.063
Adjusted R^2	0.008
F Statistic	166.109*** (df = 1; 2450)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 5: Hausman Test

	Dependent variable:
	log(GDP_C)
log(Apparel_Exports)	0.038***
	(0.003)
Observations	2,597
R^2	0.063
Adjusted R^2	0.008
F Statistic	166.109*** (df = 1; 2450)
Note:	*p<0.1; **p<0.05; ***p<0.01

```
## chisq = 25.116, df = 1, p-value = 5.398e-07
## alternative hypothesis: one model is inconsistent
```

```r
ff_bal2 <- ff_plm %>%
  mutate(log_GDP_C = log(GDP_C))

adf.test(ff_bal2$GDP_C, k = 2)
```

```
## Warning in adf.test(ff_bal2$GDP_C, k = 2): p-value smaller than printed p-
## value
```

```
##
##  Augmented Dickey-Fuller Test
##
## data:  ff_bal2$GDP_C
## Dickey-Fuller = -8.1909, Lag order = 2, p-value = 0.01
## alternative hypothesis: stationary
```

```r
fixed_model2 <- plm((GDP_C) ~
                      Apparel_Export_Share, data = ff_bal,
                    index = c("Country", "Year"), model = "within")

linear_model2 <- plm((GDP_C) ~
                      (Apparel_Export_Share) + Country, data = ff_bal,
                    index = c("Country", "Year"), model = "pooling")
```

... ...

```r
random2 <- plm((GDP_C) ~ (Apparel_Export_Share), data = ff_bal, index=c("Country", "Year"), model="rand

phtest(fixed_model2, random2)
```

```
##
##  Hausman Test
##
## data:  (GDP_C) ~ Apparel_Export_Share
## chisq = 4.2084, df = 1, p-value = 0.04022
## alternative hypothesis: one model is inconsistent
```

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Table 6: Model 2: One Way Individual Effects Model for Apparel Export Share

	Dependent variable:
	(GDP_C)
Apparel_Export_Share	-57.774^{***}
	(21.297)
Observations	2,597
R^2	0.003
Adjusted R^2	-0.056
F Statistic	7.359^{***} (df = 1; 2450)
Note:	*p<0.1; **p<0.05; ***p<0.01

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Table 7: Hausman Test for Model 2

	Dependent variable:
	(GDP_C)
Apparel_Export_Share	-57.774^{***}
	(21.297)
Observations	2,597
R^2	0.003
Adjusted R^2	-0.056
F Statistic	7.359^{***} (df = 1; 2450)
Note:	*p<0.1; **p<0.05; ***p<0.01

```r
ff_final2 <- ff_final %>%
  mutate(Apparel_Exports = Apparel_Exports/1000,
         Total_Exports = Total_Exports/1000)

sum_2 <- ff_final2 %>%
  select(GDP_C, Apparel_Exports, Total_Exports, Apparel_Export_Share)

summ_2 <- summary(sum_2)
```

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Table 8:

Statistic	Mean	St. Dev.	Min	Max
GDP_C	15,126.0	19,060.3	170.6	111,968.3
Apparel_Exports	877,501.9	4,600,513.0	0.001	96,792,727.0
Total_Exports	68,530,240.0	171,267,411.0	2,588.7	2,342,292,696.0
Apparel_Export_Share	2.8	7.3	0.0000	74.2

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Table 9:

0.6

```r
fixed_model3 <- plm(log(GDP_C) ~
                      Apparel_Export_Share + log(Apparel_Exports), data = ff_bal,
                    index = c("Country", "Year"), model = "within")
summary(fixed_model3)
```

```
## Oneway (individual) effect Within Model
##
## Call:
```

```
## plm(formula = log(GDP_C) ~ Apparel_Export_Share + log(Apparel_Exports),
##     data = ff_bal, model = "within", index = c("Country", "Year"))
##
## Unbalanced Panel: n = 146, T = 1-25, N = 2597
##
## Residuals:
##       Min.    1st Qu.     Median    3rd Qu.       Max.
## -1.3605902 -0.1068590  0.0026963  0.1039957  0.8723673
##
## Coefficients:
##                        Estimate Std. Error t-value  Pr(>|t|)
## Apparel_Export_Share -0.0083768  0.0015151 -5.5289 3.563e-08 ***
## log(Apparel_Exports)  0.0451323  0.0032022 14.0942 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Total Sum of Squares:    103.12
## Residual Sum of Squares: 95.383
## R-Squared:      0.07504
## Adj. R-Squared: 0.01952
## F-statistic: 99.3415 on 2 and 2449 DF, p-value: < 2.22e-16
```

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Table 10: Hausman Test for Model 2

	Dependent variable:
	log(GDP_C)
Apparel_Export_Share	-0.008^{***}
	(0.002)
log(Apparel_Exports)	0.045^{***}
	(0.003)
Observations	2,597
R^2	0.075
Adjusted R^2	0.020
F Statistic	99.341^{***} (df = 2; 2449)
Note:	*p<0.1; **p<0.05; ***p<0.01

“‘

```r
cor.test(ff_final$Apparel_Exports, ff_final$Apparel_Export_Share)
```

```
##
##  Pearson's product-moment correlation
##
## data:  ff_final$Apparel_Exports and ff_final$Apparel_Export_Share
## t = 4.7157, df = 2595, p-value = 2.536e-06
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.05390596 0.13018028
```

```
## sample estimates:
##        cor
## 0.09217833
```