



# ETC5513 Project

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## Introduction

## Motivation

## Labour Force Analysis

This section of the report will focus on analysing various aspects of the Israeli labour force. The Israeli labour force has come a long way from being male dominated to being almost equally divided between men and women. The transition of the Israeli labour force shall be explored through the years 1991-2019 in this section of the report.

```
israel_labour <- data_long %>% dplyr::filter(Series %in% c("Labor force, female (% of total labo  
"Ratio of female to male labor force part  
"Labor force participation rate, female (l  
Year %in% c(1991:2019))
```

```
israel_display <- israel_labour %>% pivot_wider(names_from = Series, values_from = value)  
  
kable(head(israel_display), caption = "Variables Summary") %>%  
kable_styling(bootstrap_options = c("striped", "hover", full_width = F)) %>%  
row_spec(0, angle = -90)
```

Table 1 exhibits the variables that have been used in this section of the report and displays the first 5 rows. The ratio of self-employed females is the explanatory variable and the ratio of female to male participation rate is the response variable. The table gives a brief overview of how the variables change from the period 1991-1996.

```
israel_labour$Year <- as.numeric(as.character(israel_labour$Year))
```

**Table 1:** *Variables Summary*

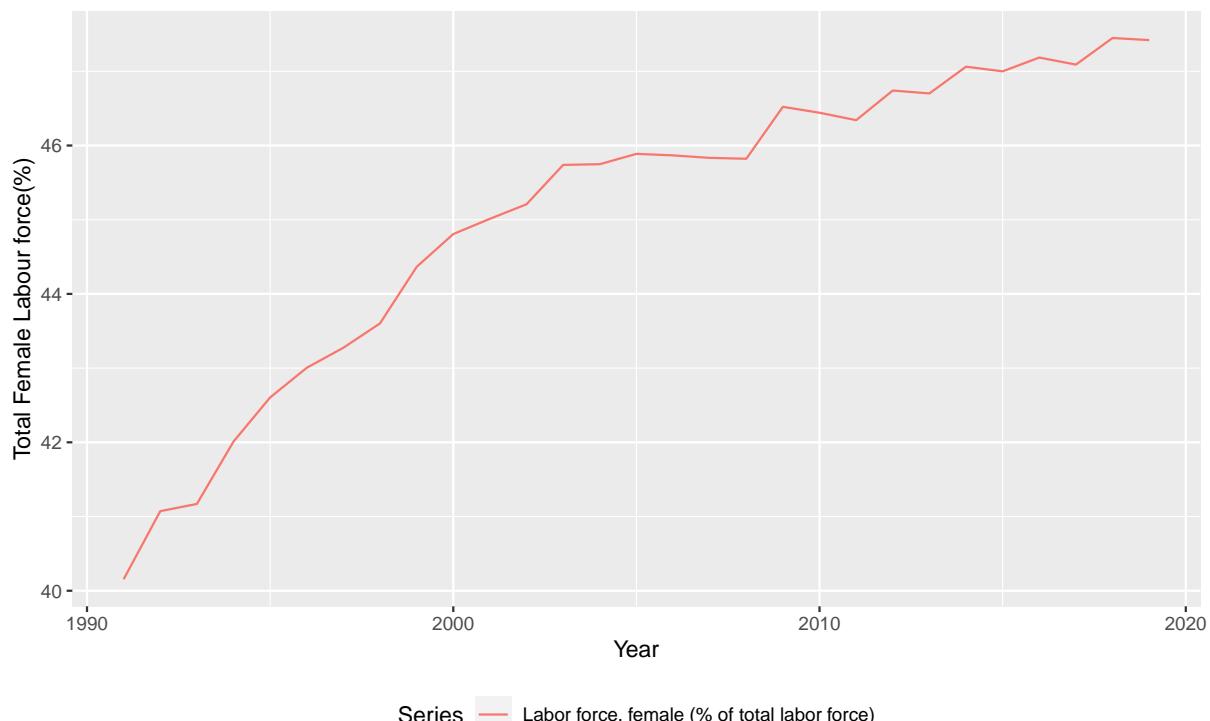
	Labor force participation rate, female (% of female population ages 15-64) (modeled ILO estimate)	Labor force participation rate, male (% of male population ages 15-64) (modeled ILO estimate)	Wage and salaried workers, female (% of female employment) (modeled ILO estimate)	Self-employed, female (% of female employment) (modeled ILO estimate)	Ratio of female to male labor force participation rate (%) (national estimate)	Labor force, female (% of total labor force)	Year
1991	40.15476	64.92514	5.907	94.093	78.995	53.404	
1992	41.07230	67.01756	5.932	94.068	78.643	55.041	
1993	41.16972	66.97746	5.900	94.100	80.463	56.408	
1994	42.01045	69.15992	5.895	94.105	80.645	58.274	
1995	42.60488	70.61269	5.909	94.091	80.267	59.313	
1996	43.00450	71.47999	6.159	93.841	79.046	59.308	

## 1 Overview

```
plot_1 <- israel_labour %>% dplyr::filter(Series == "Labor force, female (% of total labor force)")

ggplot(aes(x = Year, y = value, color = Series)) +
  geom_line() +
  xlab("Year") +
  ylab("Total Female Labour force(%)") +
  theme(legend.position="bottom")

plot_1
```



**Figure 1:** % Female labour force out of total labour force

Figure 1 depicts the gentle rise in the female labour force which was around 40% of the total labour force in 1990 to around 47% around 2020. One of the main reasons behind the surge in female participation is due to the educational attainment of women in Israel. Also, in 2006 and 2007 numerous amendments were made to women employment law to protect the rights of women at

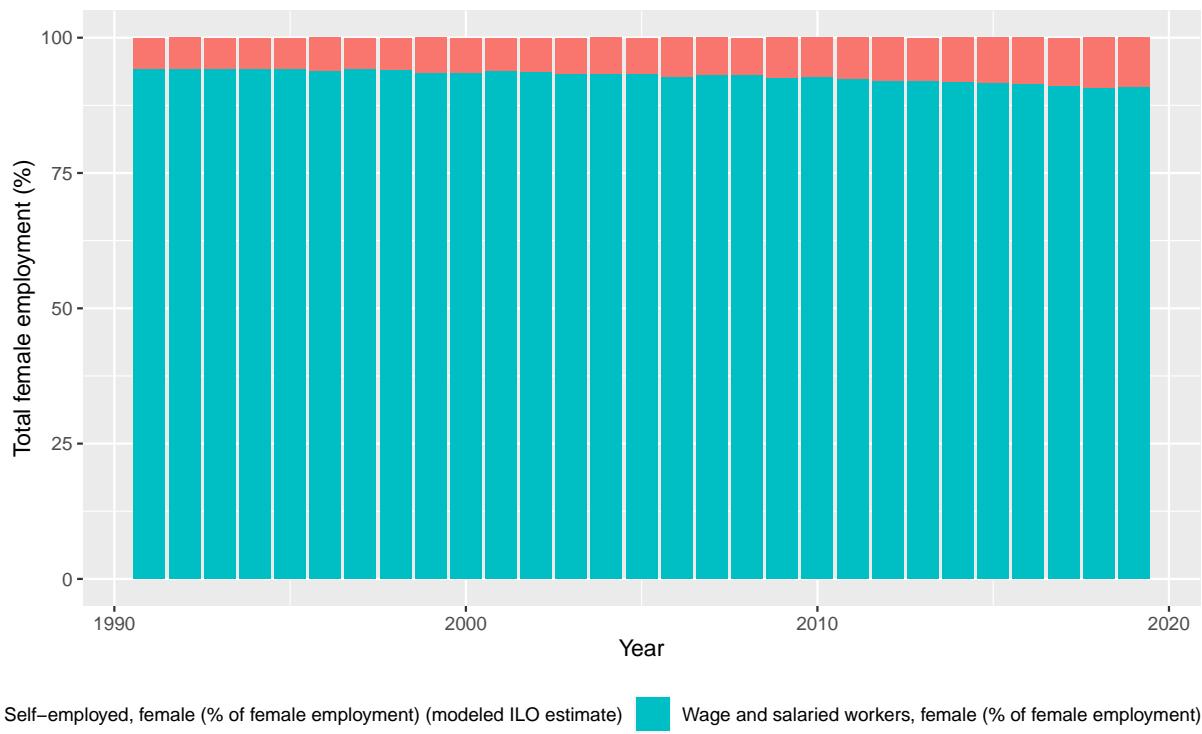
workplace and provide equal employment opportunities which has proved to be pivotal in increasing female participation in the labour force. [Source](#)

## 2 Self-employed v/s wage & salaried women

```
plot_2 <- israel_labour %>% dplyr::filter(Series %in% c("Self-employed, female (% of female emp)", "Wage and salaried workers, female (% of female emp)"))

ggplot(aes(x = Year, y = value, fill = Series)) +
  geom_col() +
  xlab("Year") +
  ylab("Total female employment (%)") +
  theme(legend.position="bottom")

plot_2
```



**Figure 2: Self-employed v/s Wage & salaried female workers**

Figure 2 shows the slow but gradual increase in the percentage of self-employed females in the female labour workforce. The female labour workforce comprises of self-employed women and wage and

salaried women. The percentage of self-employed women in Israel has increased from 5.9 to 9.2 in 3 decades. The gradual change can be attributed to strong family orientation present in the Israeli culture and the fact that a working mother has to always give priorities to family responsibilities. But the main contributing factor to the increase was achievement motivations and economic necessities more than educational attainment or previous entrepreneurial experience.

## **Model**

## **Conclusion**