

# The effect of income distribution, gender equality and public spending on growth and employment

Evrydiki Fotopoulou, Özlem Onaran, Cem Oyvut

University of Greenwich  
Greenwich Political Economy Research Centre



# Presentation Outline

- ❖ Background
- ❖ Theoretical model
- ❖ Extensions of the model
- ❖ Questions



# Background

- ❖ Under what conditions would the economy have a gender equality-led growth regime?
- ❖ What are the effects of government spending on the employment of men and women?
- ❖ **Fact:** public investment in social infrastructure reduces women's care burden, enabling them to spend more time in paid work (Folbre 2005; Seguino 2012; Antonopoulos et al. 2010)

## The model

- ❖ Building on post-Keynesian **demand-led models**: Bhaduri and Marglin 1990; Onaran and Galanis 2012; Storm and Naastepad 2012; Hein and Tarassow 2010; Stockhammer, Onaran and Ederer 2009
- ❖ Using insights from the **feminist literature**: Folbre 1995; Elson 2015; Onaran 2014; DeHenau and Himmelweit 2012; Braunstein 2012; Seguino 2012

## The model

❖ 2 sector: social sector vs non- social sector  
2 workers (male-female) & 1 capitalist

❖ Equilibrium condition:  $Y = C_T + I_P + I_G + NX$

❖ The wage share is defined as:  $W_s = \frac{W}{Y}$

❖ From the total wage bill we have:  $W = Wm + Wf$  and  
 $F_s = \frac{Wf}{W}$

# Consumption

The consumption function with different wages for men & women:

$$C_T = c'_0 + c'_1 W_f + c'_2 W_m + c'_3 R$$

In **the social sector (H)** we have:

$$\begin{aligned} C_H &= c'_{0H} + c'_{1H} W_f + c'_{2H} W_m + c'_{3H} R \\ &= c'_{0H} + [c'_{1H} - c'_{2H}] F_s * W_s * Y + c'_{2H} W_s * Y + c'_{3H} [1 - W_s] * Y \\ &\rightarrow C_H = c_{0H} + c_{1H} F_s * W_s * Y + c_{2H} W_s * Y + c_{3H} Y \end{aligned}$$

Where:  $c_{1H} = c'_{1H} - c'_{2H} > 0$ ,  $c_{2H} = c'_{2H} - c'_{3H} > 0$  and  $c_{3H} = c'_{3H}$

Gettingby.org.uk 2014; Capellini 2014;

# Consumption

In the **non- social (N) sector** we have:

$$\begin{aligned}
 C_N &= c'_{oN} + c'_{1N} W_f + c'_{2N} W_m + c'_{3N} R \\
 &= c'_{oN} + [c'_{1N} - c'_{2N}] F_s * W_s * Y + c'_{2N} W_s * Y + c'_{3N} [1 - W_s] * Y \\
 &\rightarrow C_N = c_{oN} + c_{1N} F_s * W_s * Y + c_{2N} W_s * Y + c_{3N} Y
 \end{aligned}$$

Where:  $c_{1N} = c'_{1N} - c'_{2N}$  ambiguous,  $c_{2N} = c'_{2N} - c'_{3N} > 0$  and  $c_{3N} = c'_{3N}$

# Investment

Total investment accounts for private and public investment; public investment is exogenous at this stage.

For **private investment** we have:

$$\begin{aligned} \diamond I_P &= i_0 + i_1 Y + i_2 [1 - WS] + i_3 I_G + i_4 \tau \\ &= i'_0 + i'_1 Y + i'_2 WS + i'_3 I_G + i'_4 \tau \end{aligned} \quad (1)$$

$$\diamond \tau = \tau_0 + \tau_1 I_P + \tau_2 I_G + \tau_3 Y + \tau_4 [1 - WS] \quad (2)$$

By substituting T from equation (2) into equation (1) we get:

$$\rightarrow I_P = k_0 + k_1 Y + k_2 WS + k_3 I_G$$

## Investment

$k_2$  is the outcome of *technological progress*. It is defined as:

$$k_2 = - [i'_2 - \tau_4^* i'_4] / [1 - \tau_1^* i'_4]$$

The sign of the denominator is positive.

As for the numerator, if:

- ❖  $i'_2 < |\tau_4^* i'_4|$  then  $k_2 < 0$ , which is expected
- ❖  $i'_2 > |\tau_4^* i'_4|$  then  $k_2 > 0$ , where the induced technology impact of higher wage share offsets the negative partial profitability effect, which is unlikely

$$k_3 = i'_3 + \tau_2^* i'_4$$

## Net Exports

❖  $NX = n_0 + n_1 Y + n_2 Ws + n_3 Y_{RW}$

❖ Where  $n_2 < 0$ , both  $n_1$  and  $n_3 > 0$

## Theoretical Solution

By replacing the consumption, investment and net export equations in the equilibrium condition, and by using the implicit function property we get:

$$F = 0$$

$$\begin{aligned}
 0 = & c_{0H} + c_{1H}Fs*Ws*Y + c_{2H}Ws*Y + c_{3H}Y + c_{0N} + \\
 & c_{1N}Fs*Ws*Y + c_{2N}Ws*Y + c_{3N}Y + k_0 + k_1Y + k_2Ws + k_3I_G \\
 & + I_G + n_0 + n_1Y + n_2Ws + n_3Y_{RW}
 \end{aligned}$$

## Theoretical Solution

- ❖  $-\frac{[\Delta F/\Delta F_s]}{[\Delta F/\Delta Y]} = - \frac{[c_{1H} W_s * Y + c_{1N} W_s * Y]}{[c_{1H} F_s * W_s + c_{2H} W_s + c_{3H} + c_{1N} F_s * W_s + c_{2N} W_s + c_{3N} + k_1 + n_1 - 1]}$
- ❖  $\frac{\Delta Y}{\Delta F_s} = \frac{W_s * Y (c_{1H} + c_{1N})}{[1 - (c_{1H} + c_{1N}) F_s * W_s - (c_{2H} + c_{2N}) W_s - k_1 - n_1 - (c_{3H} + c_{3N})]}$
- ❖  $\frac{\Delta Y}{\Delta W_s} = \frac{[\Delta F/\Delta W_s]}{[\Delta F/\Delta Y]} =$   

$$= \frac{[(F_s * (c_{1H} + c_{1N}) + (c_{2H} + c_{2N})) * Y + k_2 + n_2]}{[1 - (c_{1H} + c_{1N}) F_s * W_s - (c_{2H} + c_{2N}) W_s - (c_{3H} + c_{3N}) - k_1 - n_1]}$$

Where the multiplier is:

$$1 / [(1 - (c_{1H} + c_{1N}) F_s * W_s - (c_{2H} + c_{2N}) W_s - (c_{3H} + c_{3N}) - k_1 - n_1] > 0$$

## Theoretical Solution

Regarding the **gender distribution of wages**:

1) If  $c_{1H} > 0$  and  $c_{1N} > 0$  then  $\Delta Y / \Delta F_s > 0$  (*expected hypothesis*)

If the marginal propensity to consume out of female wage income is **higher** than that out of male wage income, then

higher  $F_s \rightarrow$  higher output: **gender-equality led regime**

If the regime is gender-equality led ( $c_{1H} + c_{1N} > 0$ ), then higher gender equality makes the regime **more wage-led** or **less profit-led**

## Theoretical Solution

2) If  $c_{1H} > 0$  and  $c_{1N} < 0$ , but  $|c_{1N}| < |c_{1H}|$  then  $\Delta Y / \Delta F_s > 0$

3) If  $c_{1H} > 0$  and  $c_{1N} < 0$ , but  $|c_{1N}| > |c_{1H}|$  then  $\Delta Y / \Delta F_s < 0$

Higher gender equality  $\rightarrow$  lower output: **gender-inequality led regime**

Regarding the **class distribution of income**:

If  $[(F_s^* (c_{1H} + c_{1N}) + (c_{2H} + c_{2N}))Y + k_2 + n_2] > 0$  demand is wage led, otherwise it is profit led

## Model Extensions

- ❖ Split private investment by sectors
- ❖ Split public investment by sectors
- ❖ Examine effects of higher  $C_H$  on private investment
- ❖ Examine employment effect of F and M in H and N  
(*endogeneising the wage share*)
- ❖ Integrate taxes (after tax  $W$ ,  $R$ ,  $W_s$ )
  
- ❖ Empirical estimation for the UK

## Conclusion

- ❖ Is more gender equality better for wage-led economies?
- ❖ Relevance to stagnation in Europe?
  - A mechanism to regenerate demand;
  - Transgenerational effects for human development;
  - Reducing time poverty

Questions?

Thank you