Growth and Distribution in Switzerland: a Structural Approach

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Introduction

> The wage share and ISSSSSOUUU

Consumption function

$$C = f(W, R)$$

With C the real private final consumption expenditures, W the real compensation of employees and R real gross profits (gross operating surplus).

I first estimate an ardl model, selecting the number of lags using the Schwarz information criteria (BIC). In R, one can use the function auto_ardl from the package ARDL. Once the best model is selected, the bounds t test and f tests are conducted to test for cointegration and assess whether an ecm model can be estimated.

Both the bounds t and f tests do not reject the null hypothesis of no integration. Hence, the consumption function was estimated using first differences:

$$d[log(C_t)] = \alpha + \beta_1 d[log(R_t)] + \beta_2 d[log(W_t)]$$

To compute the partial effect of the profit share on the share of consumption in aggregate demand, the coefficients are weighted by the sample average of the ratio of consumption to profits and the share of consumption to wages:

$$\frac{\partial C/Y}{\partial h} = \beta_1 \frac{C}{R} - \beta_2 \frac{C}{W}$$

Table 1: Estimation results for the consumption function

Table 2: Consumption Function (dlog[C])

	1961-2022	1961-1991	1992-2022
(Intercept)	0.006**	0.007**	0.007*
	(0.002)	(0.003)	(0.003)
dlogR	0.112**	0.168**	0.075
	(0.036)	(0.053)	(0.053)
dlogW	0.471***	0.427***	0.384**
	(0.052)	(0.071)	(0.126)
Adj.R2	0.731	0.832	0.258
Durbin.Watson.statistics	1.603	1.767	1.430
RESET.test	0.205	0.062	3.875
BG.tests	0.212	0.536	0.383
BP.tests	0.615	0.161	0.306

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table 3: Partial effects of profit share on consumption

C/R	C/W	beta_1*(C/R)	beta_2*(C/W)	effect
1.25537	1.041212	0.140521	0.4908233	-0.3503023

Investment function

$$I_t = f(Y, h, i)$$

We cannot conclude anything regarding the effect of profit share on investment, the effect will thus be condsidered to be equal to zero.

Net exports function

$$NX_t/Y_t = f(h, Y^f, Y)$$

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Time series regression with "ts" data:
Start = 2, End = 63

Call:
dynlm::dynlm(formula = full_formula, data = data, start = start,
    end = end)

Residuals:
       Min         1Q     Median         3Q        Max
-0.0217458 -0.0077811 -0.0006277  0.0097969  0.0205758

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)   -0.98455    0.23689  -4.156 0.000116 ***
L(NX, 1)       0.54307    0.08412   6.456 3.14e-08 ***
logOECD        0.61432    0.13489   4.554 3.04e-05 ***
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Table 4: Estimation results for the investment function

Table 5: Investment function

	1961-2022	1961-1982	1983-2022
(Intercept)	−0.014*	−0.016+	−0.009
	(0.005)	(0.009)	(0.008)
dlogY	1.784***	1.835***	1.538**
	(0.295)	(0.450)	(0.517)
dlogR	−0.022	−0.014	0.023
	(0.172)	(0.299)	(0.222)
Adj.R2	0.731	0.832	0.258
Durbin.Watson.statistics	1.603	1.767	1.430
RESET.test	0.205	0.062	3.875
BG.tests	0.212	0.536	0.383
BP.tests	0.615	0.161	0.306

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

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Residual standard error: 0.01227 on 54 degrees of freedom
Multiple R-squared:  0.9156,    Adjusted R-squared:  0.9047
F-statistic: 83.71 on 7 and 54 DF,  p-value: < 2.2e-16
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    Wald Chi-square test of a restriction on model parameters

data:  nx_uecm
Chisq = 11.718, df = 1, p-value = 0.0006188
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Productivity

Table 6: Estimation results for the net export function

	d[NX/Y]
(Intercept)	−0.985***
	(0.237)
L(NX, 1)	−0.457***
	(0.084)
L(logOECD, 1)	0.031
	(0.035)
L(logY, 1)	0.075+
	(0.040)
L(h, 1)	0.510**
	(0.149)
d(logOECD)	0.614***
	(0.135)
d(logY)	−0.554***
	(0.108)
d(h)	1.041***
	(0.252)
Num.Obs.	62
R2	0.638
R2 Adj.	0.591
AIC	−360.3
BIC	−341.1
Log.Lik.	189.129
RMSE	0.01

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table 7: d[NX/Y]

	1961-2022	1960-1982	1983-2022
dlogOECD	0.723***	0.474***	0.234
	(0.107)	(0.088)	(0.201)
lag(dlogOECD)	−0.433***		
	(0.119)		
dlogY	−0.658***	−0.970***	0.084
	(0.141)	(0.127)	(0.249)
lag(dlogY)	0.438***	0.477***	
	(0.123)	(0.103)	
dh	1.043***	1.413***	0.888**
	(0.294)	(0.298)	(0.295)
Adj.R2	0.469	0.639	0.462
Durbin.Watson.statistics	2.264	2.203	2.245
RESET.test	4.303	0.414	4.376
BG.tests	0.221	0.345	0.460
BP.tests	0.367	0.961	0.303

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001