

Output from Matlab

August 7, 2018

1 Tables with Results

	No tax	Optimal policy	Optimal SS tax	Optimal Flat tax
τ_0	0.00000	0.02222	0.14737	0.17778
$\bar{\tau}$	0.00000	0.23333	0.14737	0.17778
Half life	-	8.00000	-	-
Welfare (weighted)	-5.86691	-5.54536	-5.59139	-5.58115
Welfare workers	-5.86691	-5.54536	-5.59139	-5.58115
Welfare entrepreneurs	-19.13709	-19.99676	-19.97533	-20.16530

	Constant τ_0	Constant $\bar{\tau}$
τ_0	0.02222	0.23333
$\bar{\tau}$	0.02222	0.23333
Half life	-	-
Welfare (weighted)	-5.80398	-5.61163
Welfare workers	-5.80398	-5.61163
Welfare entrepreneurs	-19.25567	-20.53022

Experiment	Total welfare	Worker welfare	Entrepreneur welfare
Optimal policy	0.01119	0.00969	-0.04207
Optimal flat tax	0.00994	0.00861	-0.05011
Constant τ_0	0.00218	0.00189	-0.00591
Constant $\bar{\tau}$	0.00888	0.00769	-0.06729

2 Parameters and functional forms

2.1 Functional forms etc.

- Occupational choice: No
- Workers save: No
- Decreasing returns to scale: Yes
- Productivity process: Ornstein-Uhlenbeck, $d \log(z) = -\nu \log(z)dt + \sigma dW$
- Period utility function:

$$u(c, l) = (1 - \gamma)^{-1} c^{1-\gamma} - \nu(l), \quad \nu(l) = (1 + 1/\chi)^{-1} l^{1+1/\chi}$$

- Production function: $y = F(z, k, n) = zA((k - f_k)^+)^{\alpha}((n - f_n)^+)^{\beta}$
- Tax schedule: $\tau_l(t) = \bar{\tau}_l + e^{-\gamma t}(\tau_{l,0} - \bar{\tau}_l)$

2.2 Parameter values

Pareto weight workers		1.000
Population share of workers	$popshare$	0.667
Total population	$popmass$	1.000
Discount rate entrepreneurs	ρ_e	0.050
Discount rate workers	ρ_w	0.030
Relative risk aversion	γ	1.000
Labor disutility parameter	χ	1.000
Depreciation rate	δ	0.000
Death rate	θ	0.000
Fixed cost capital	f_k	0.000
Fixed cost labor	f_n	0.000
Financial constraint parameter	λ	2.000
Common TFP parameter	A	1.000
Capital share	α	0.297
Labor share	β	0.603
Returns to scale	$\alpha + \beta$	0.900
Interest rate	r^*	0.030
Effect of productivity on effective labor supply	η	0.000
Productivity drift parameter	ν	0.163
Productivity yearly autocorrelation	$e^{-\nu}$	0.850
Productivity standard deviation parameter	σ	0.300
Productivity mean	\bar{z}	1.148
Poisson arrival rate		0.100
Parameter of Pareto distribution of Poisson shocks		1.100

2.3 Iteration parameters

Number of grid points assets	I	200.000
Number of grid points productivity	J	30.000
Number of grid points time	N	150.000
Number of time periods	T	150.000
Max assets	a_{max}	350.000
Mean wealth relative to steady state		0.100
Range of initial tax rate tested	τ_0	[0.000,0.100]
Range of final tax rate tested	$\bar{\tau}$	[0.200,0.300]
Contraction of initial distribution	$factor$	0.100

3 Figures

Optimal steady state tax rate = 0.147

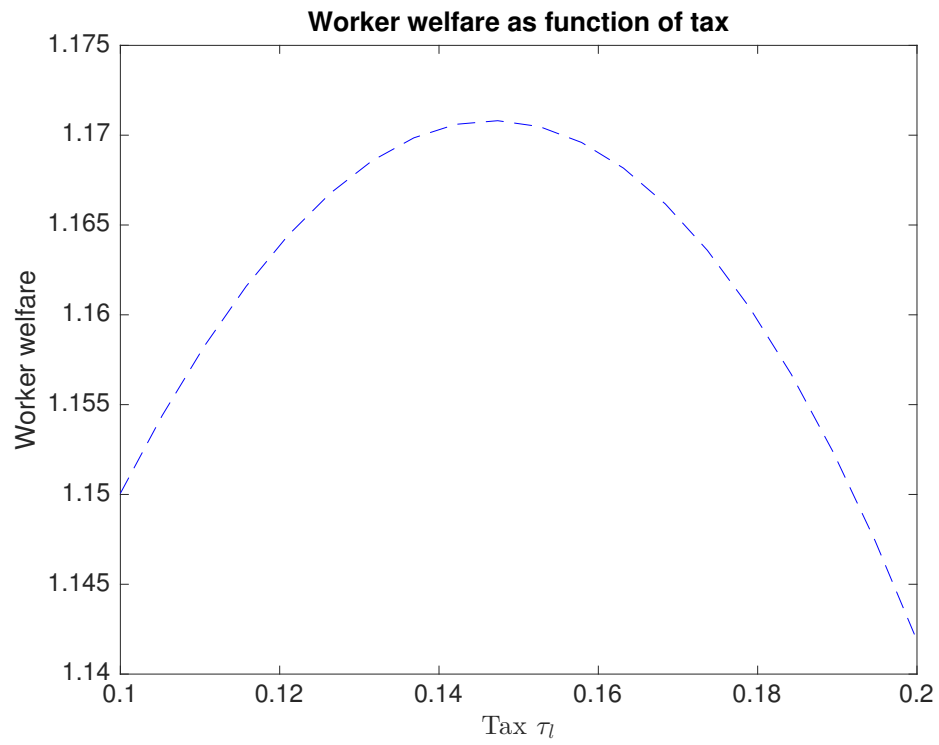


Figure 1

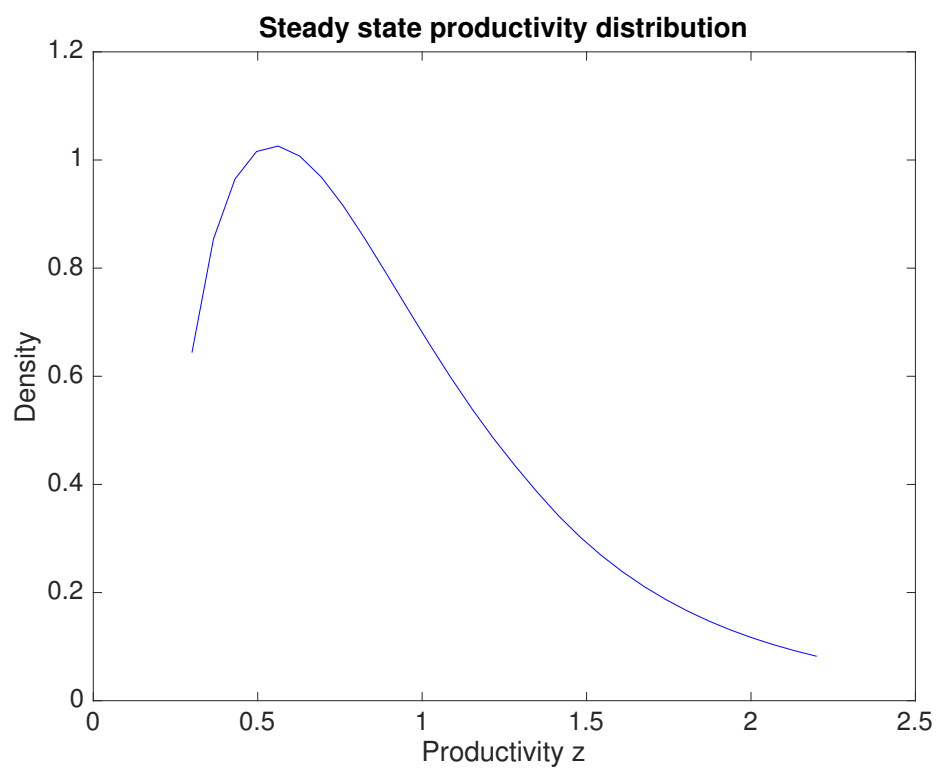


Figure 2

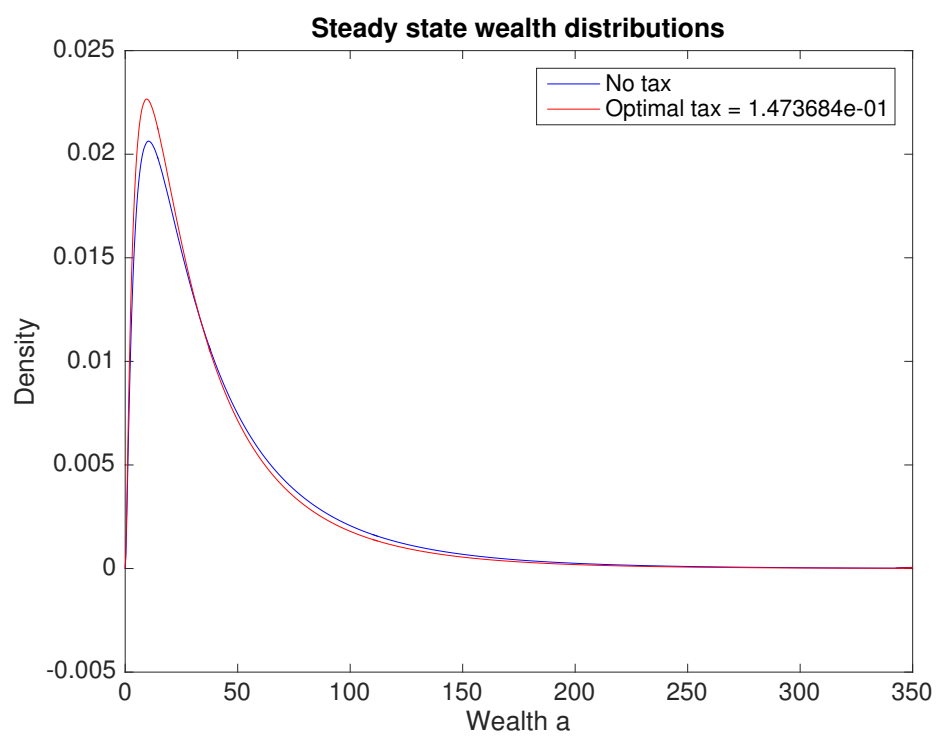


Figure 3

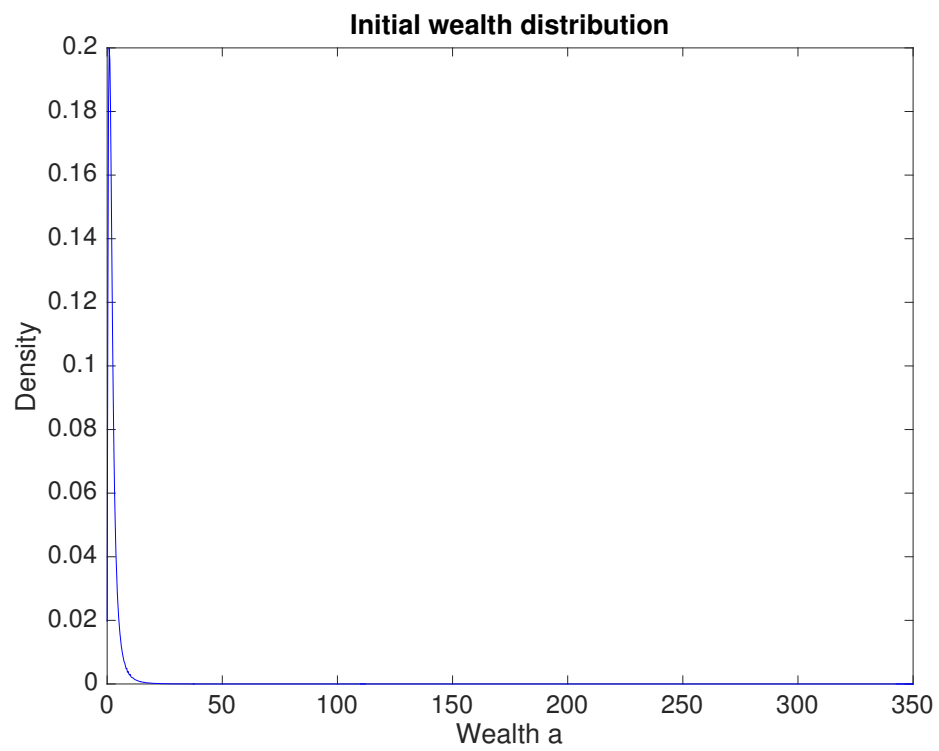


Figure 4

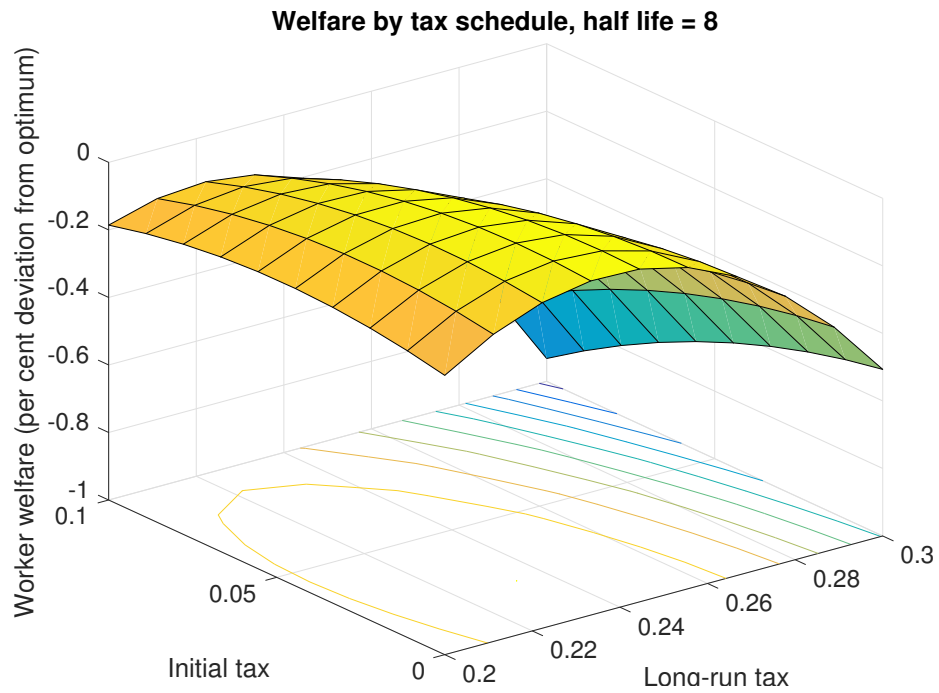


Figure 5

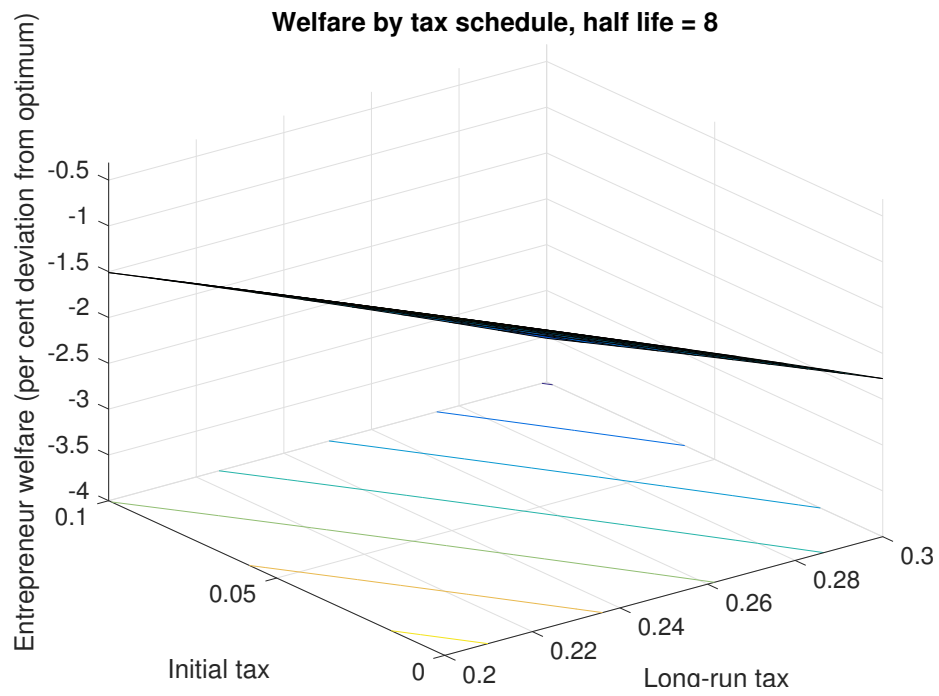
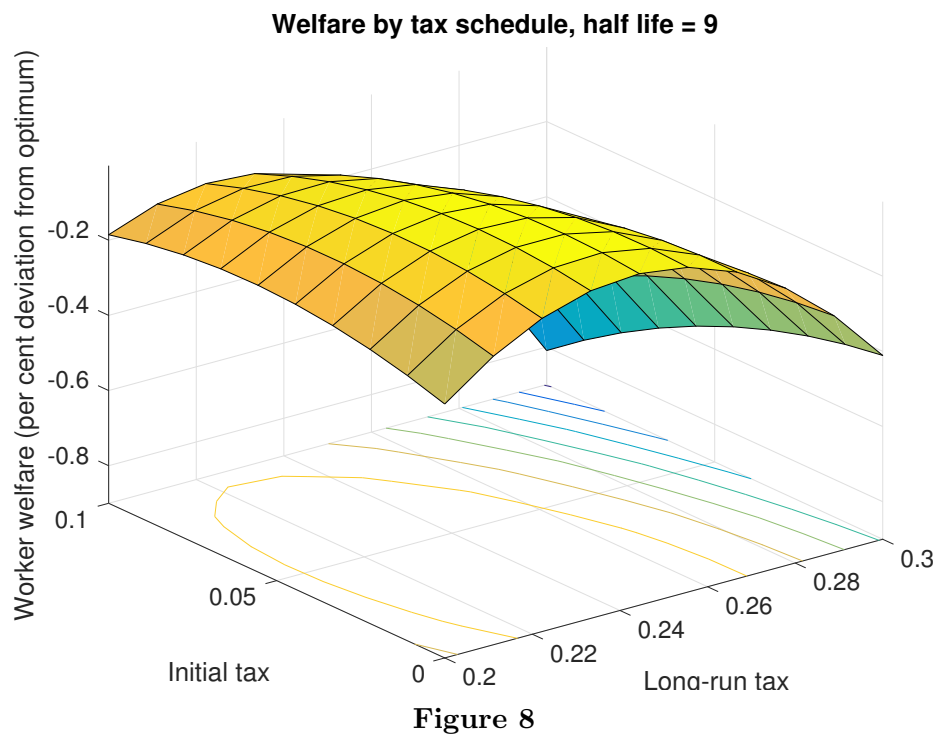
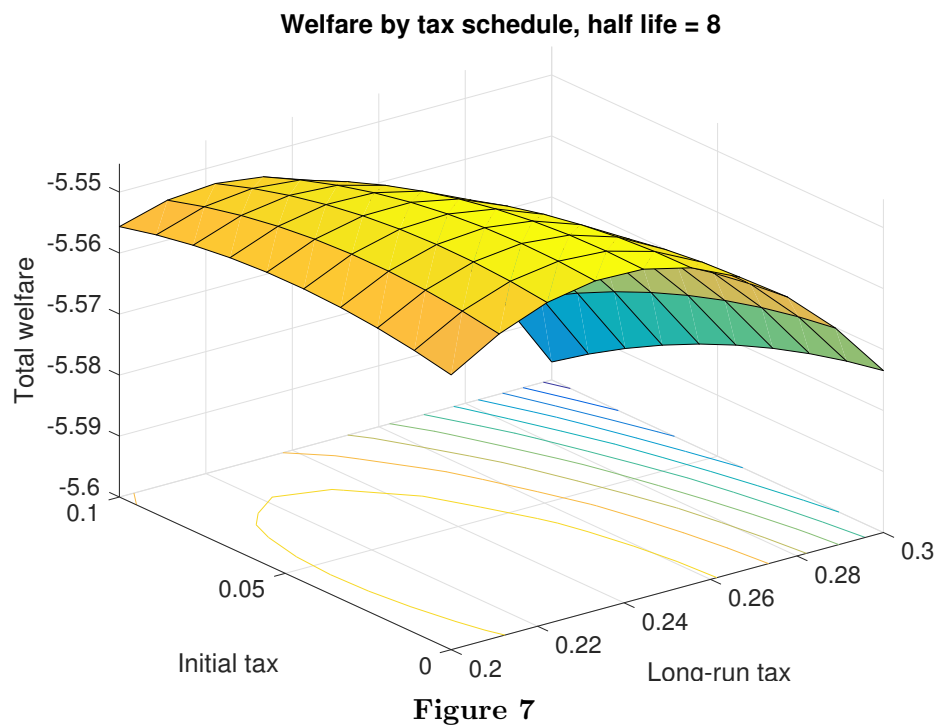


Figure 6



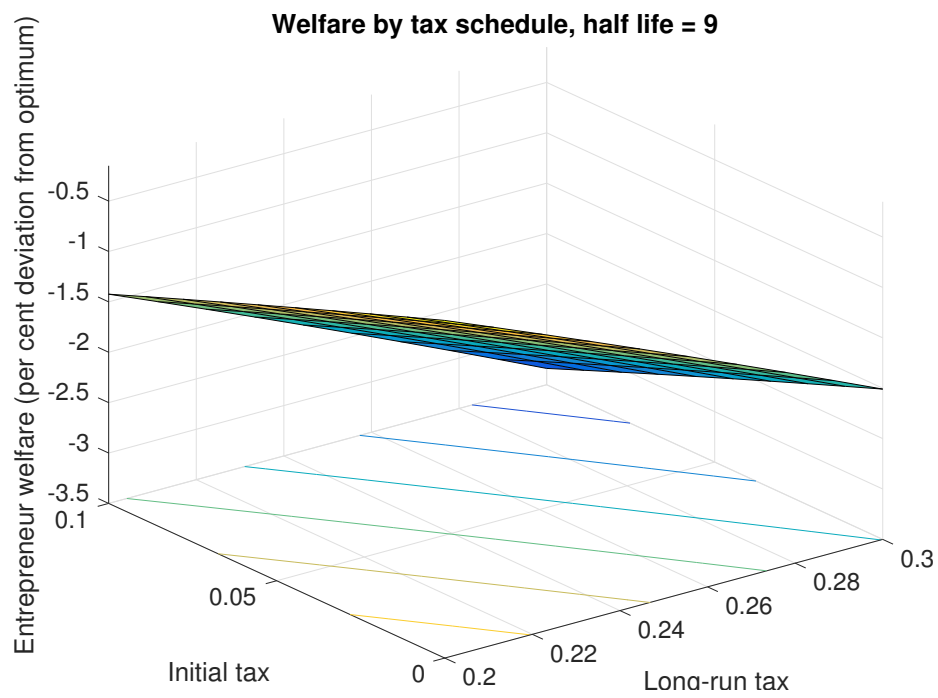


Figure 9

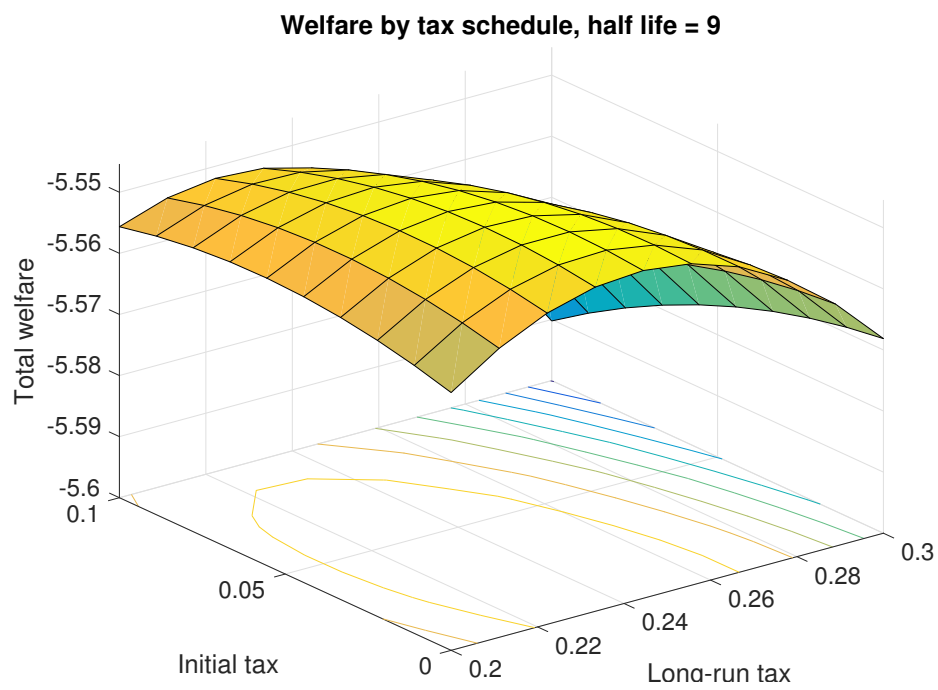


Figure 10

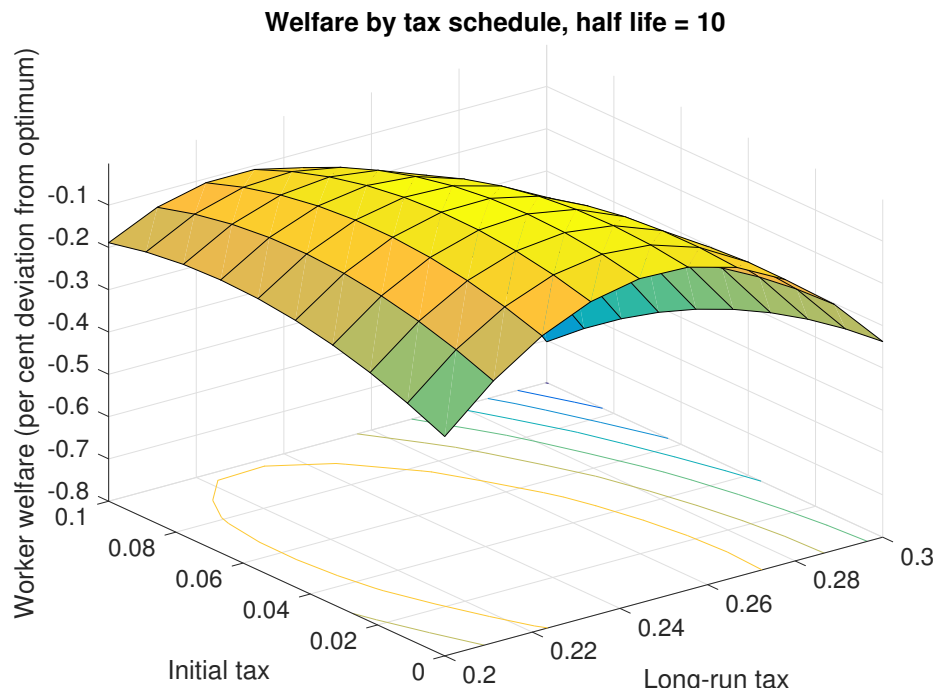


Figure 11

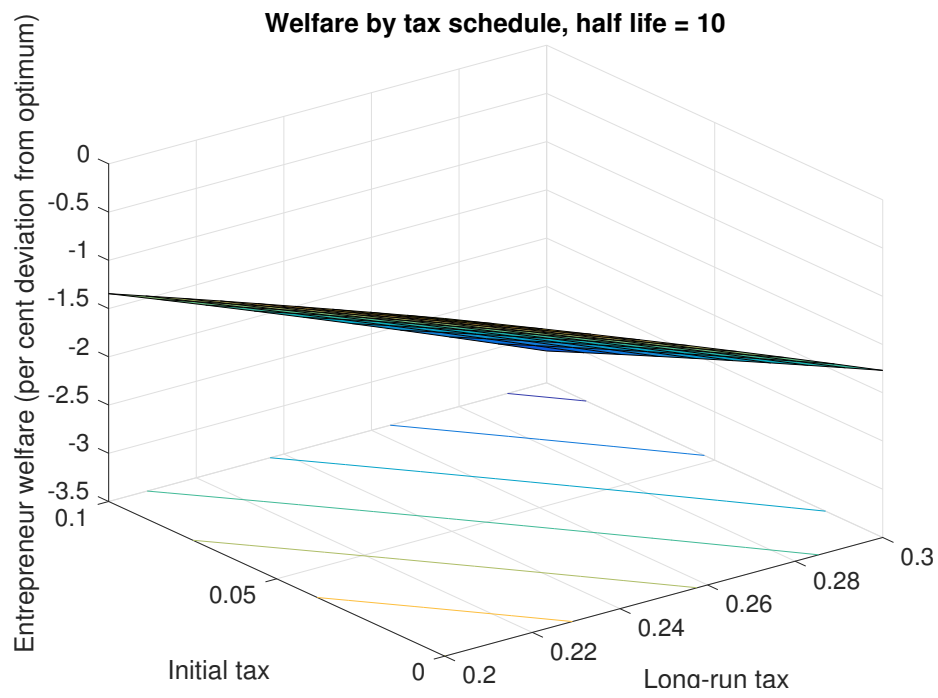
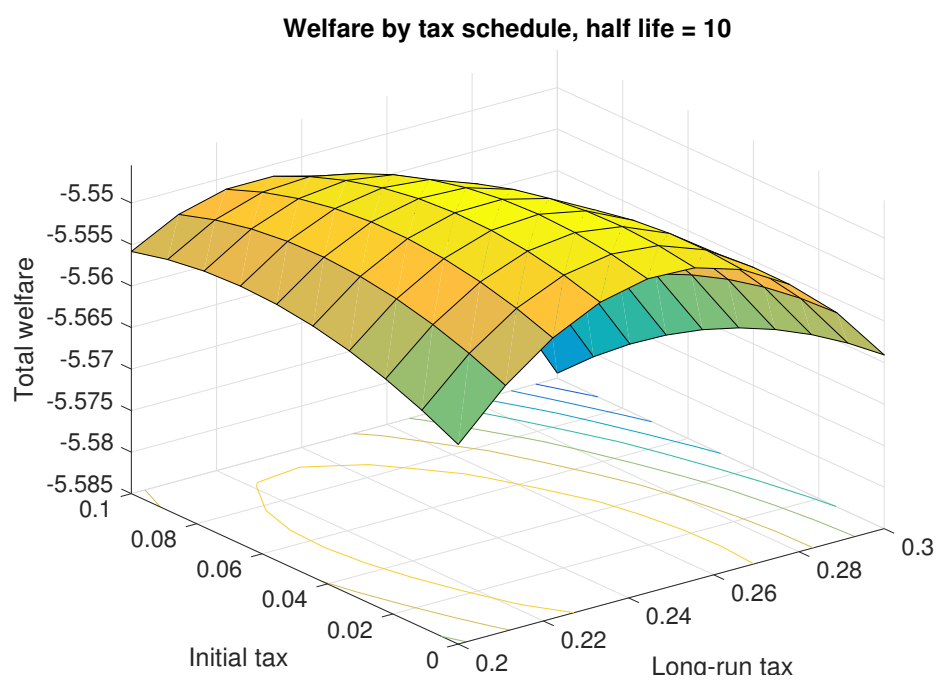


Figure 12



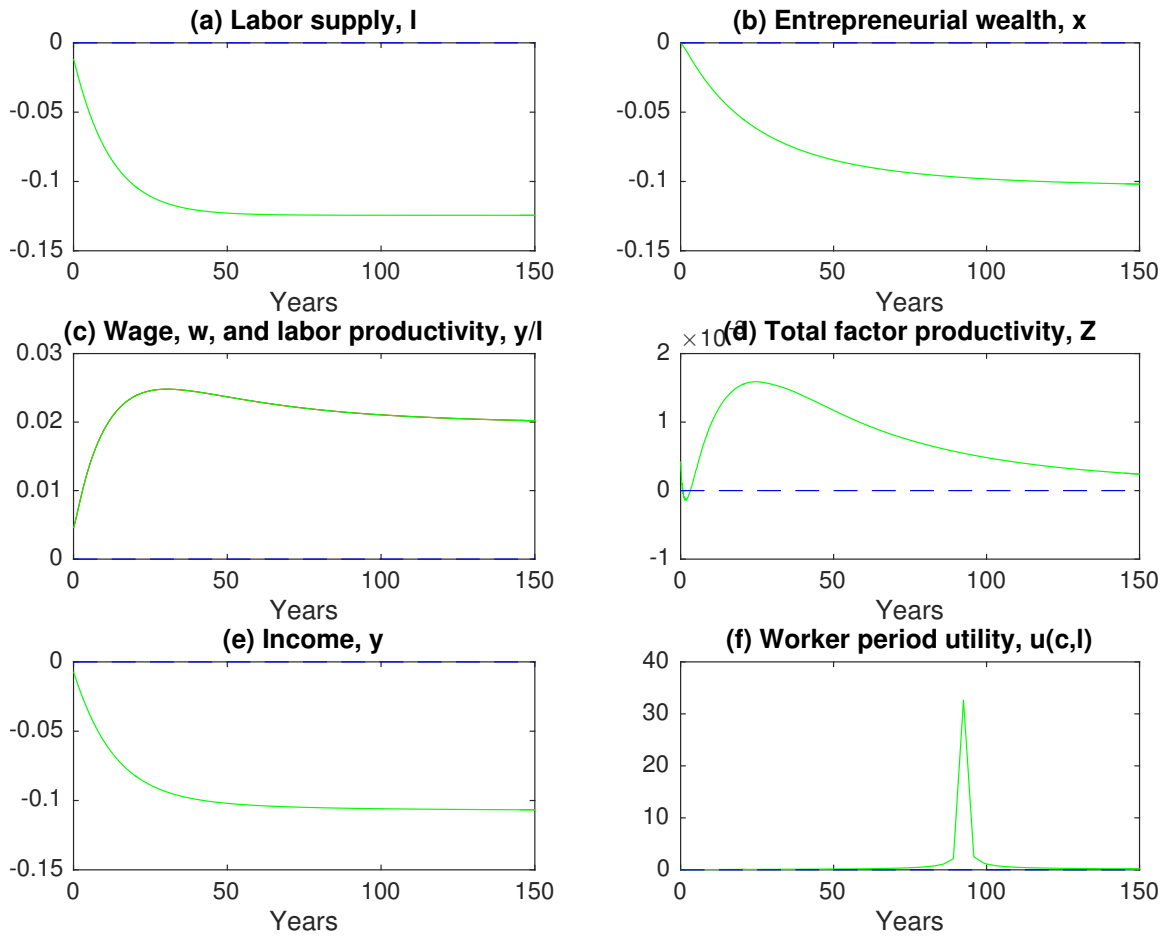


Figure 14 – Proportional deviations of optimal tax equilibrium from the laissez-faire equilibrium

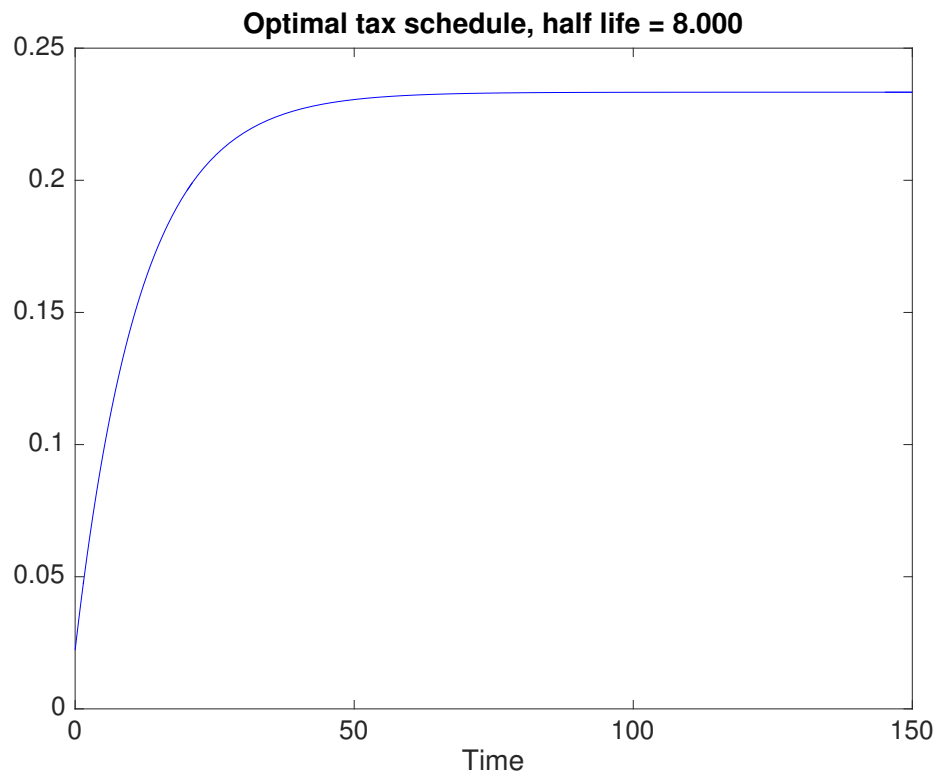


Figure 15

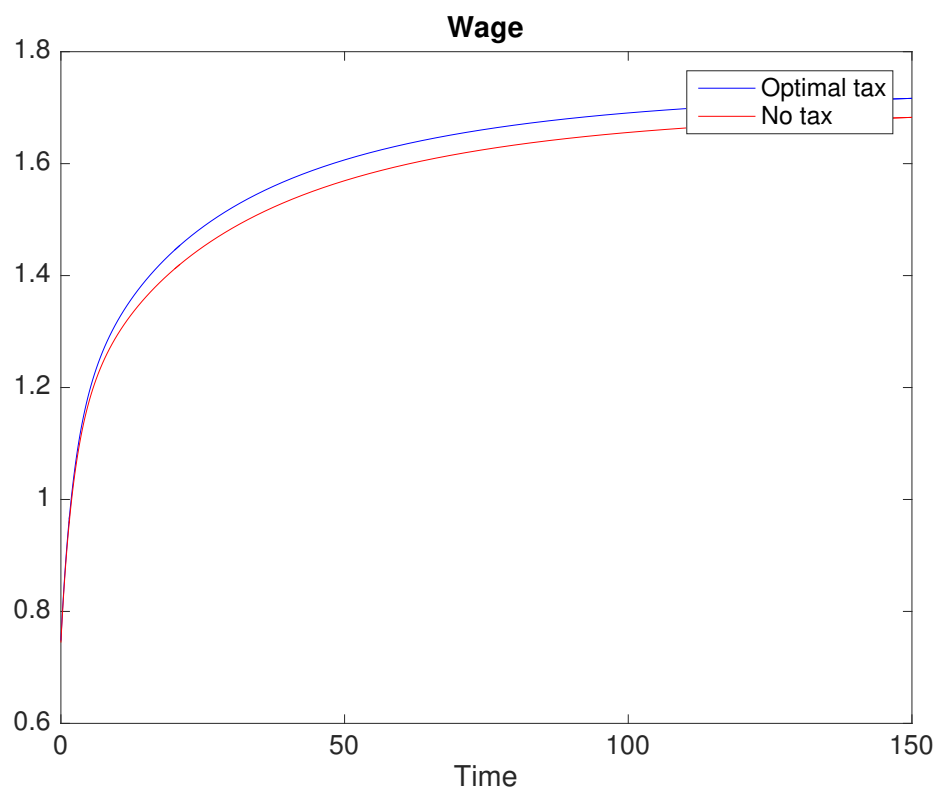


Figure 16

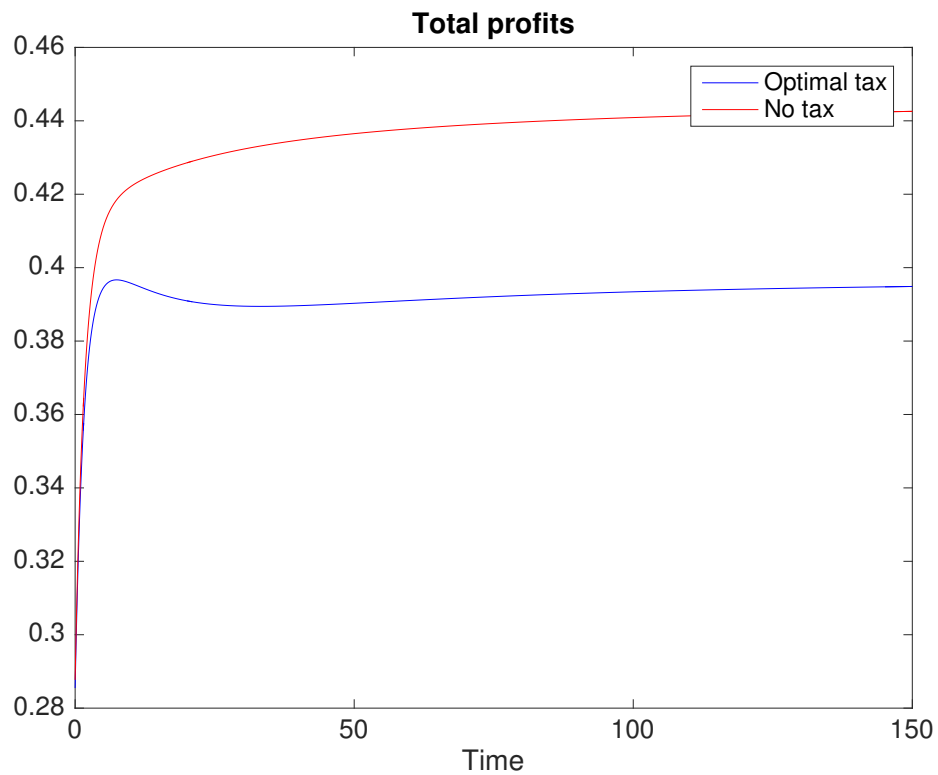


Figure 17

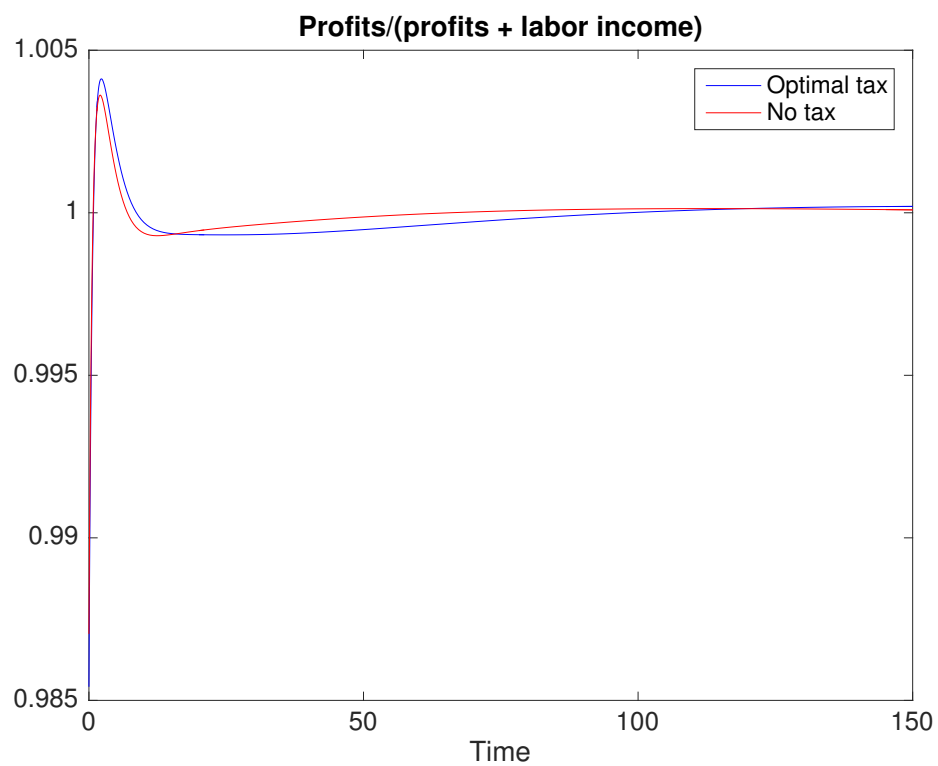


Figure 18

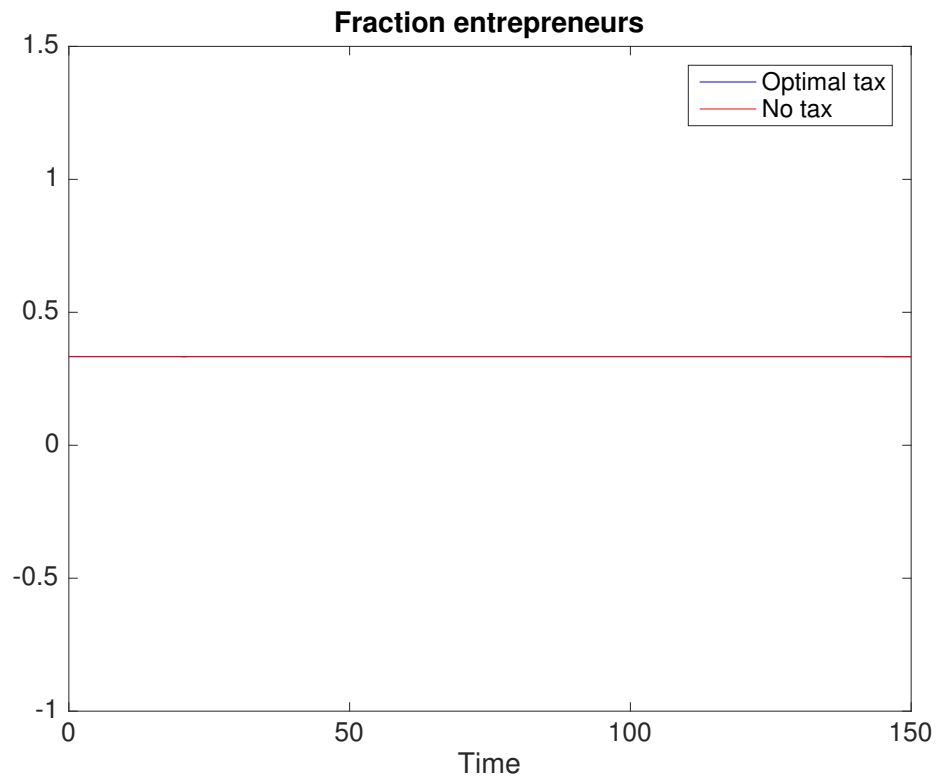


Figure 19

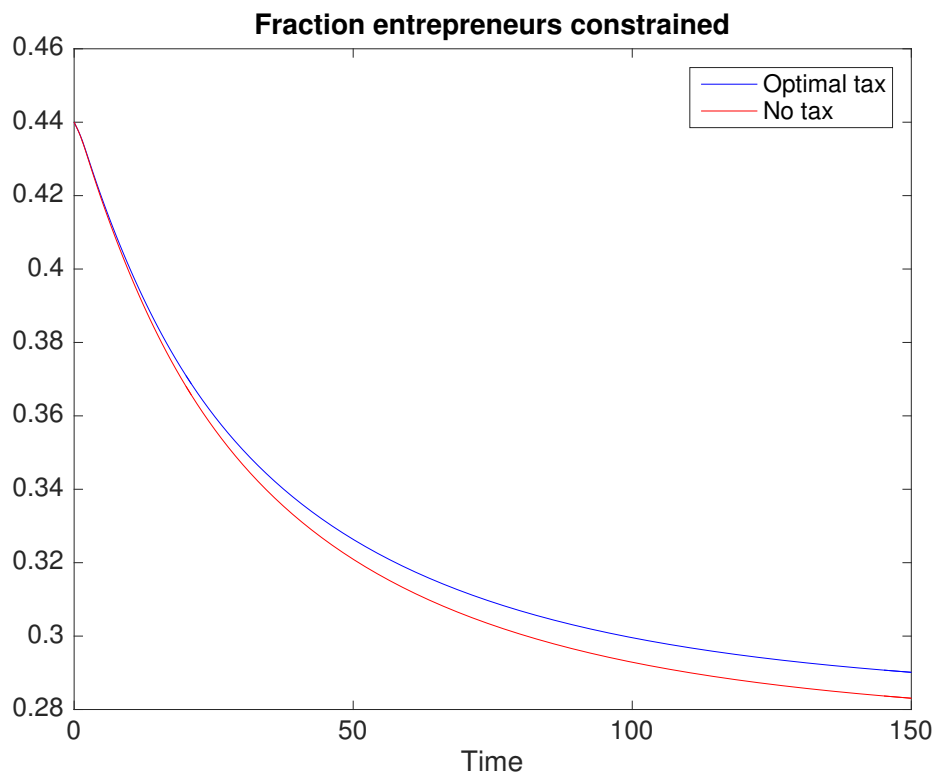


Figure 20

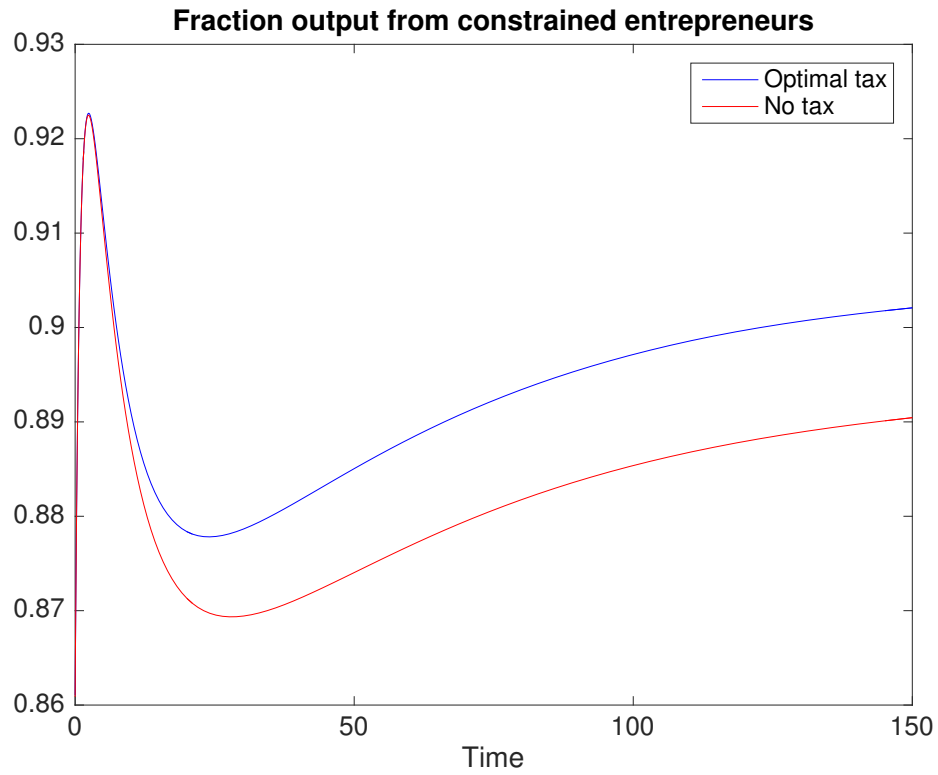


Figure 21

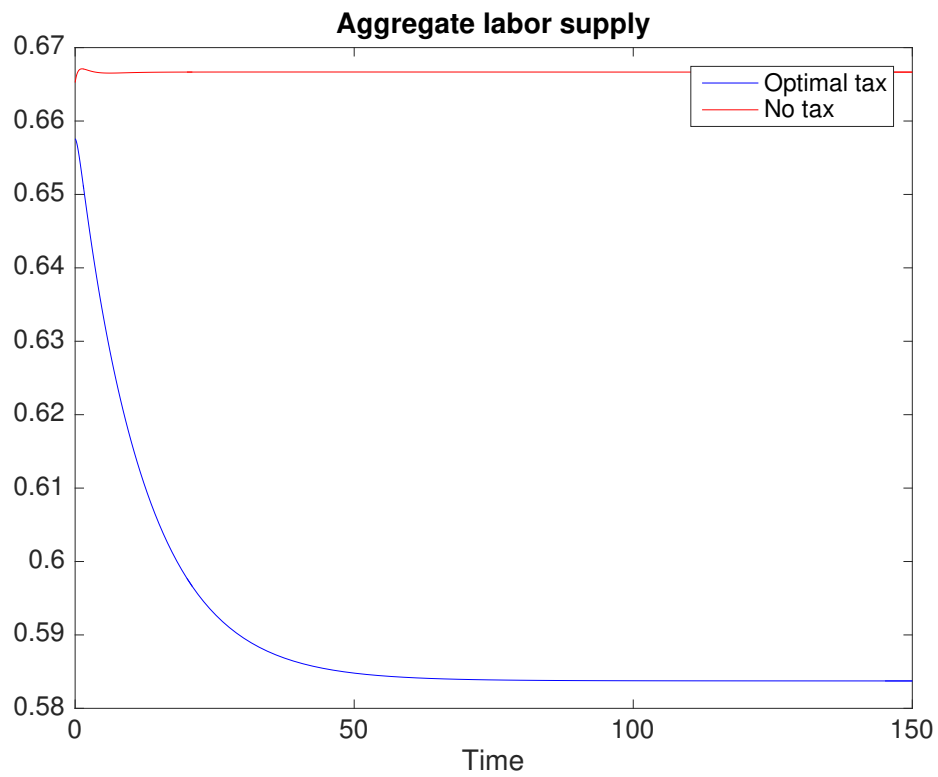


Figure 22

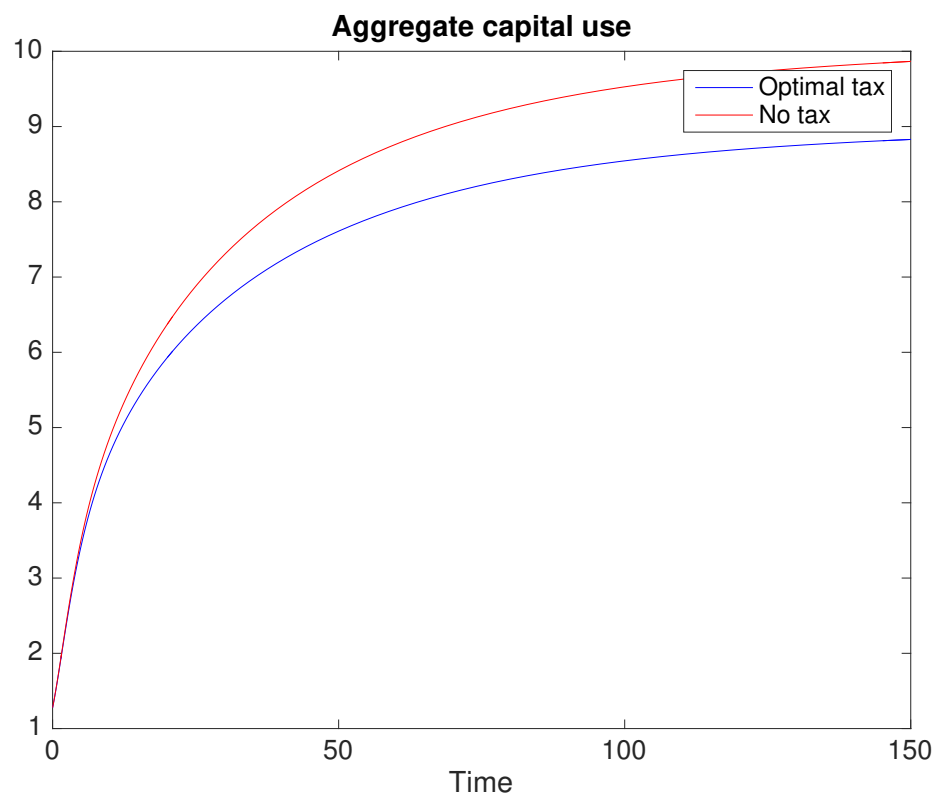


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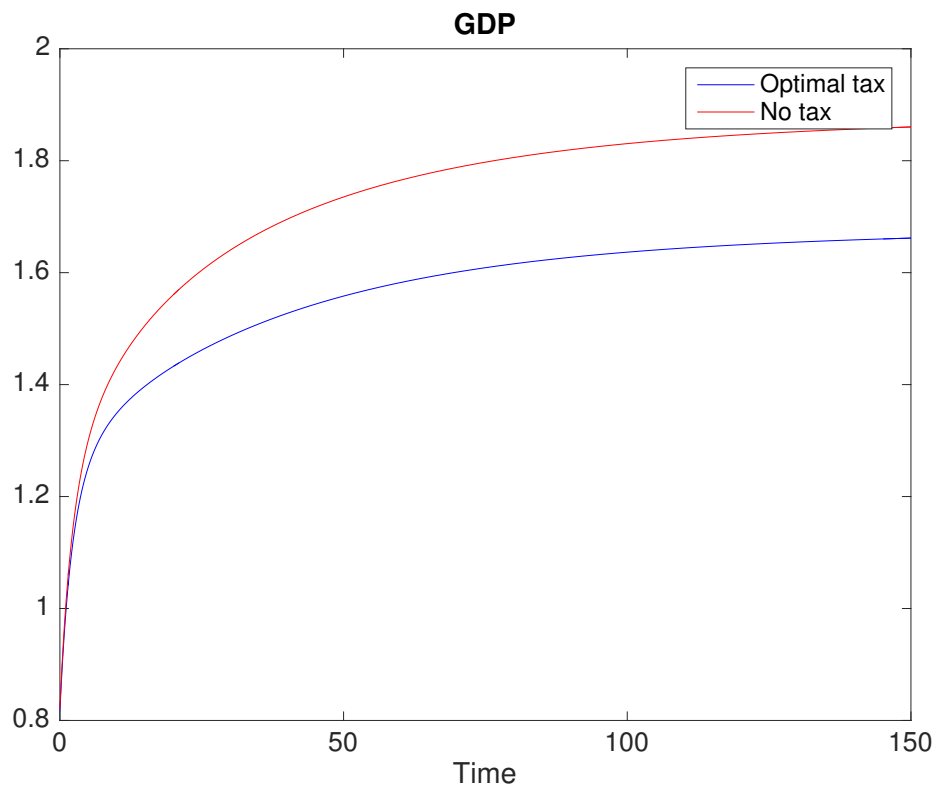


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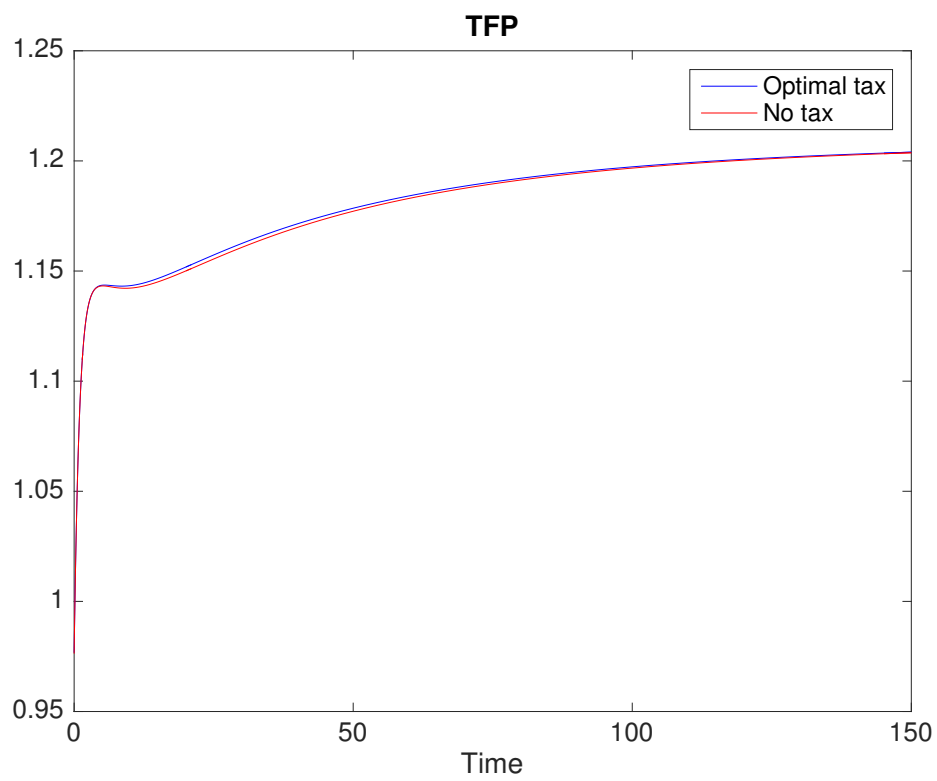


Figure 25

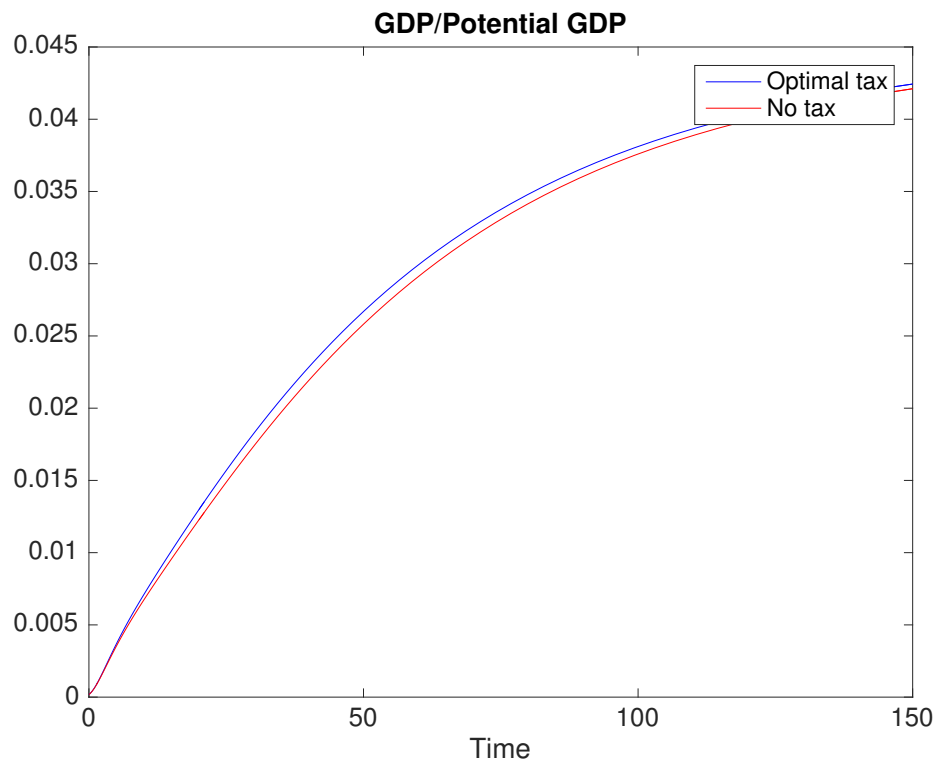


Figure 26

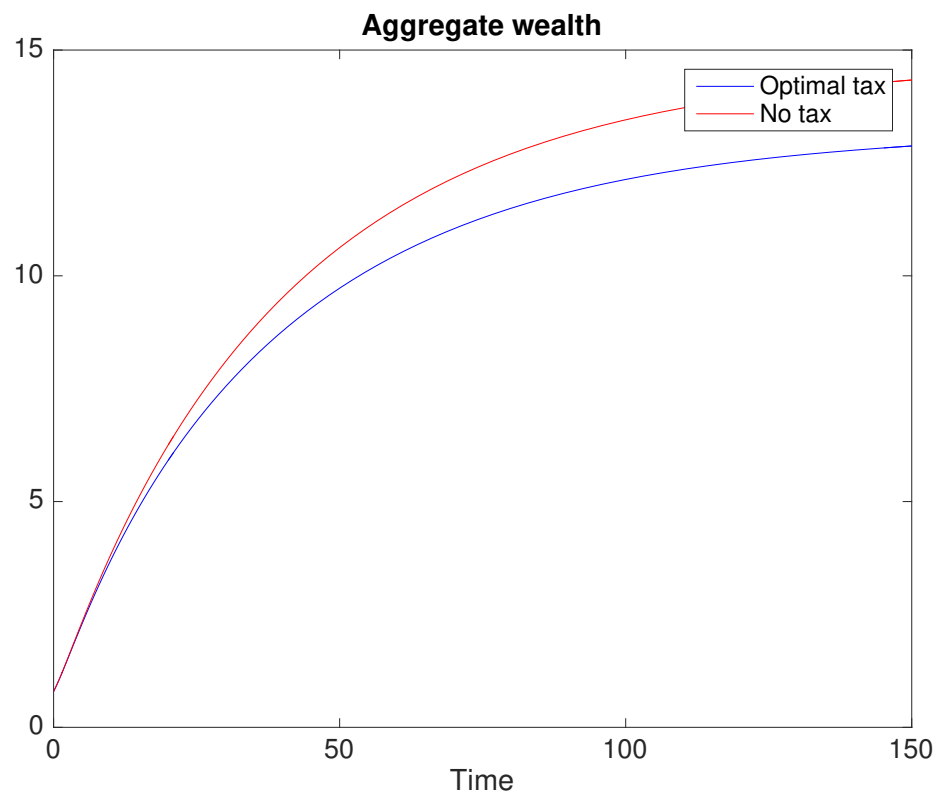


Figure 27

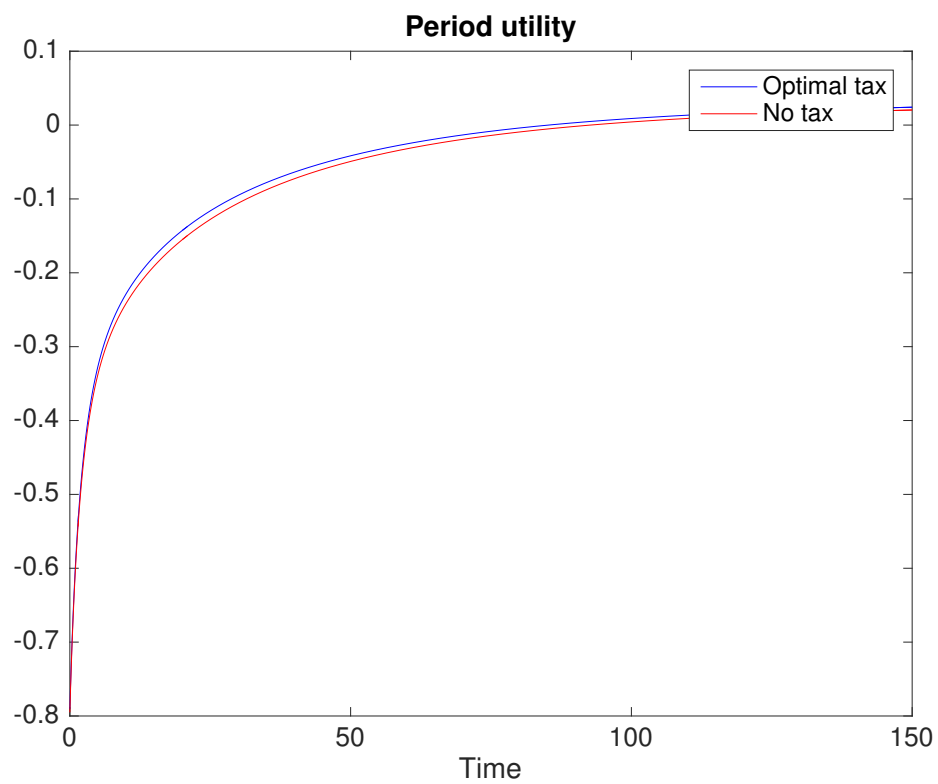


Figure 28



Figure 29