



Optimal taxation

Homework 1 ^{*}

Thor Donsby Noe ^{† a}

^aUniversitat de Barcelona, Spain

December 16, 2018

CONTENTS

1	Optimal linear income taxation	2
2	Optimal non-linear income taxation: top marginal tax rate	2
2.1	Benchmark	2
2.2	Trickle up	2
2.3	Trickle down	3
3	Optimal consumption taxation	3

^{*}Course: Public Economics II: Theory of Taxation w. Alejandro Esteller-Moré.

[†]E-mail adress: thornoe@gmail.com (T. D. Noe).

1 OPTIMAL LINEAR INCOME TAXATION

2 OPTIMAL NON-LINEAR INCOME TAXATION: TOP MARGINAL TAX RATE

find the optimal tax rate to be

$$\tau^g = \frac{1 - g}{1 - g + a \cdot e} \quad (2.1)$$

Assuming that the government is utilitarian and the marginal utility of consumption declines in income z^* , then in the limit the social preferences of the government would be $g \rightarrow 0$ for $z^* \rightarrow 0$. That is, for the very top income earners the government does not care about their marginal consumption but only wants to optimize the tax rate in order to maximize tax revenue collected from the top bracket subject to their real responses e , giving us the simpler tax function

$$\tau = \frac{1}{1 + a \cdot e} \quad (2.2)$$

Relaxing the assumption that all responses are real (due to either a change in productive or working hours) the optimal tax rate with rent seeking is

$$\tau = \frac{1}{1 + a \cdot e} \quad (2.3)$$

2.1 Benchmark

In the benchmark case where the wage equals marginal productivity, i.e. top income owners are not overpaid nor underpaid relative to their productivity

$$s = 0 \Rightarrow e_b = 0 \Rightarrow \tau^* = \tau$$

Which should be expected as the difference between is only rooted in the correction for bargaining effects.

2.2 Trickle up

Assuming that top earners are overpaid relative to their productivity then the optimal taxation of the higher income bracket would be higher than without rent-seeking as $s > 0 \Rightarrow e_b > 0 \Rightarrow \tau^* > \tau$. In the extreme presence of labour market frictions or where the utility cost of increasing productivity or hours tend to infinity while bargaining costs are modest, then the bargaining share s of the total behavioral response e would tend to 1, thus, $e_b \rightarrow e \Rightarrow \tau^* \rightarrow 1$.

Thus, the tax τ^* is increased in order to minimize the source of bottom-up redis-

tribution that is due to the bargaining component. The reasoning being nested in the fundamental assumption that the government is utilitarian.

2.3 Trickle down

3 OPTIMAL CONSUMPTION TAXATION