Tax Misperceptions and Labor Supply: A Two-Wave Survey Experiment in the Netherlands

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Abstract: In countries with a complex tax system, it can be difficult for people to correctly assess their effective marginal tax rate. Misperceptions of the marginal tax rates can, in turn, lead to inefficient labor supply decisions. We conduct a two-wave survey experiment among a representative sample of the Dutch population (N~2,500) to assess what misperceptions people have and whether information provision can influence their misperception and, in turn, their labor supply. In one information treatment, we provide information on the modal effective marginal tax rates in three different income brackets. In another treatment, we encourage respondents to visit a website that allows them to calculate their effective marginal tax rate. In the third treatment, we combine the two. Our data show that people with relatively low gross income tend to overestimate their effective marginal tax rate, while higher incomes tend to underestimate it. We find that providing information increases the accuracy of respondents' estimate of their effective marginal tax rate two months later. There are also important consequences for labor supply. Among those who initially overestimate their effective marginal tax rate, work hours increase by about 1,5 hours per week. The implied compensated wage elasticity of labor supply is close to one.

Motivation

Marginal tax rates are considered as an important determinant of labor supply. While in labor supply models, people are often assumed to be perfectly informed, in practice, people may misperceive their marginal tax rate. This holds particularly in countries with a complicated tax system, such as The Netherlands. In this study, we measure people's misperceptions about their effective marginal tax rate and study the effects of information interventions on labor supply. The Netherlands is an interesting setting for such a study, because a) the tax system is complicated; b) many people work parttime and all employees have the legal right to adjust their hours; c) there are serious labor shortages, presumably making it more easy for people to change their hours. Our key predictions are that a) providing information corrects misperceptions, and b) that those who initially underestimate the marginal tax rate will decrease their labor supply, while those who overestimate it will increase their hours.

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Measuring misperceptions and treatments

We conducted a two-wave survey experiment among respondents of the LISS panel, a representative panel of Dutch households, with two months time between the first wave and the second wave. We first ask respondents about their perception of their effective marginal tax rate: "Suppose you had an extra €100 gross income per month in 2023, how much would you have gained on net?" We added the following explanatory note: "If you think you would have been worse off, you can enter a negative amount. In that case, use the minus sign."

In the first wave of the survey experiment, respondents are randomly assigned to one of three treatments. In the **general information treatment**, they see the following information:

> *"How much do people gain when their gross income increases? That depends on how much tax they have to pay and how much allowance they can receive (rent allowance, healthcare allowance, childcare allowance, child budget). Suppose someone starts working more hours and his/her gross monthly income increases by €100. How much does he/she gain? Recent figures from the Dutch government show the following effects per income group:*
>
> *- Let's look first at people with gross monthly incomes up to €2,000. Almost all of these people gain €80 - €90 with €100 additional gross monthly income.*
>
> *- Then let's look at people with gross monthly incomes of €2,000 - €3,000. Almost all of these people gain €45 - €80 with €100 additional gross monthly income.*
>
> *- Finally, let's look at people with gross monthly incomes over €3,000. Almost all of these people gain €35 - €45 with €100 additional gross monthly income.*
>
> *- With "almost all of these people" we mean 90% of the people in this group*
>
> *- Estimations are based on the past year (2023)"*

In the **personalized information treatment**, respondents receive the following message at the end of the survey (and also one time via email afterwards):

> "Via the NIBUD website you can easily and for free get an idea how much it will pay if you work and earn more or less. Are you curious? Go to the working hours calculator of NIBUD: https://werkurenberekenaar.nibud.nl/introductie "

Finally, in the **combined treatment**, respondents receive both the general information and the personalized information treatment

Implementation

We implement the interventions in a randomized fashion within the LISS panel of Tilburg University, a large representative sample of the Dutch population. In the first wave, we collect baseline data on beliefs about the marginal tax rate and labor supply (work hours per week). We

also implement the information intervention in the first wave. In the second wave, we collect again data on beliefs about the marginal tax rate and labor supply (work hours per week). Wave 1 took place in August 2024 and resulted in N=3,075 complete responses (63% response rate). Wave 2 took place in October 2024. Our final sample consists of the N=2,538 individuals who responded in both waves.

Findings: misperceptions

Table 1 shows the initial misperception by gross monthly income. Clearly, individuals with low gross income overestimate their marginal tax rate, while higher incomes tend to underestimate it a bit. Table 1 also shows the average overestimation for three groups: those who initially overestimate, those who initially underestimate, and those who have approximately correct beliefs. We classify beliefs as correct when they fall into the range we communicated for their gross income level, plus 5 percentage points. The group overestimators are disproportionally low incomes: 68% of them has a gross monthly income <2000 euro. Underestimators are disproportionally high incomes (75%).

Table 1

Gross monthly income (€)	Marginal tax rate overestimation (pp)	%	N
<2.000	28%	28%	711
2.000-3.000	-3%	19%	470
>3.000	-4%	53%	1.357

Initial estimate	Marginal tax rate overestimation (pp)	%	N
Overestimator	41%	27%	683
About Right	-3%	44%	1.125
Underestimator	-17%	29%	730

Effects of the information interventions

Figure 1 shows the change in absolute misperception for three groups: overestimators, underestimators, and those whose perception was about right initially. As a result of the treatments, both underestimaters and overestimators experience a reduction in absolute misperception, with the overestimators showing the largest effects.

Figure 2 shows the change in labor supply for the three groups. Overestimators increase their labor supply by about 1,5 hours per week. As their baseline is 19 hours per week, the effect is an increase of almost 8%. This increase is based on a reduction in misperceptions of about 7 percentage points. Extrapolating this finding and assuming that all effects work via changes in

beliefs, this implies a compensated wage elasticity of labor supply of close to one. Further analysis shows that this effect is even larger for those who have little or no constraints to working more hours (as reported in the first wave), while we find zero effect for those who report in the first wave having constraints to work more hours.

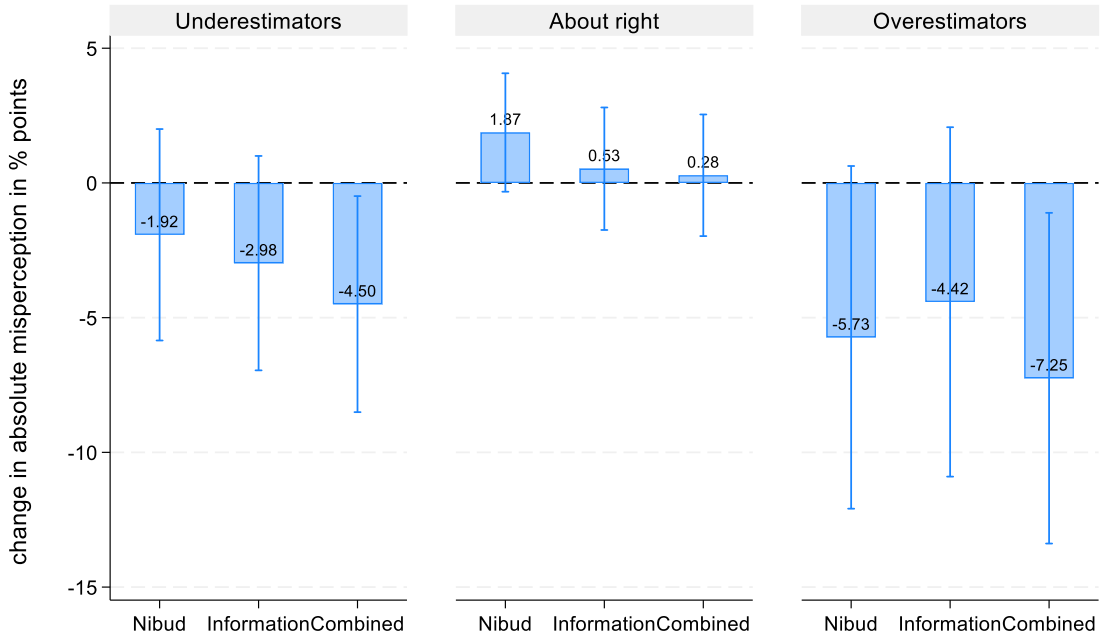


Figure 1

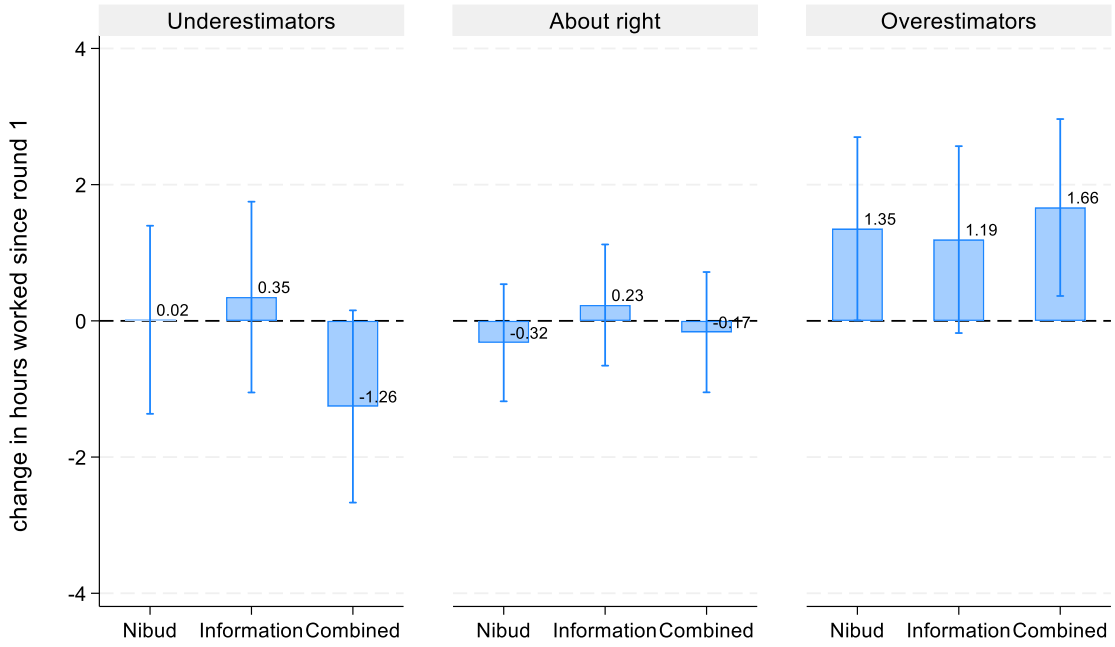


Figure 2