

# Effects of Predictable Tax Liability Variation on Household Labor Income

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## Non-Technical Summary

This paper challenges a standard economic theory assumption that taxpayers use their true marginal tax rate (MTR) to guide their economic decisions. The argument is based on the complexity of the income tax system which may result in taxpayers incorrectly perceiving their MTR. Such misperception then has important implications for incentives.

The paper starts by formalizing the outlined intuition using a Bayesian updating model. This model predicts that an unexpected increase in the previous year's tax liability pushes up the perception of the MTR in the current year, even though the MTR is not in fact changing.

The paper then turns to examining whether household labor supply responds to *lump-sum* variation in the previous year's tax liability. Because such increase (decrease) is lump-sum, it should not affect beliefs about the MTR among households who are fully rational. On the other hand, among households who are not fully rational, it will lead to an increase (decrease) in their beliefs about the MTR. In order to rule out income effects in the former group, we employ a *predictable* (but not necessarily predicted) change due to loss of eligibility for the Child Tax Credit (CTC) when the eligible child turns 17. In the latter group, surprise may still be present, so such increase in the tax liability may have a positive income effect alongside a negative substitution effect on labor supply. Parental labor income is employed as a proxy for (extensive and intensive aspects of) labor supply. Eligibility discontinuity for the CTC based on the exact month of birth is used to generate an exogenous variation in the tax liability change across households.

The results reveal that losing the credit *reduces* the growth rate of parental labor income in the year following the loss of the CTC. This result is robust to a variety of tests and different data sources. This finding is inconsistent with taxpayers being fully rational and suggests that among the ones who are not, there must be a significant substitution effect at work. This substitution effect is being interpreted as stemming from taxpayers incorrectly increasing their beliefs about the MTR due to imperfect understanding of the tax system.

These results have an important policy implication: if policymakers are concerned about deadweight loss from income taxation, they should design income tax system and its changes in a way that avoids taxpayers overestimating their MTR, and, potentially, makes them underestimate it.

**Keywords:** tax salience, tax complexity, labor income, permanent income hypothesis