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Taxation and labour supply: Evidence from a representative population survey

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ABSTRACT

We study how taxation influences labour supply using a specifically designed representative survey of the German population. First, we investigate whether taxes generally matter for the labour supply decisions of our respondents. Around 41 per cent report taking taxes into consideration, implying that the majority of the German population is unresponsive to taxation. Second, we look at self-reported labour supply adjustments following a recently enacted payroll tax change. Only around 12 per cent of our respondents report an actual labour supply response, but we find evidence of an income, as well as a substitution, effect of the tax change. Our conclusion is that the effects of taxes on labour supply in Germany are likely small. We analyse the correlation with economic and socio-demographic variables and find that the self-employed are relatively more sensitive to taxation and that low interest rates reduce incentives for expanding the labour supply.

1. Introduction

The link between taxation and labour supply is of considerable interest to both academics and policymakers. For instance, labour supply responses to taxation are important for assessing the efficiency loss associated with distortive income taxation. Currently, there is a heightened interest in the impact of fiscal policy changes on economic activity, and tax changes may affect output through alterations in the labour supply. These issues are usually analysed with macroeconomic or microeconomic approaches that attempt to estimate the reaction of labour supply indirectly based on observable economic variables.[1]

In this paper, we research self-reported labour supply responses to taxation using two items from a specifically designed, representative population survey. First, we ask our respondents whether taxation matters for their labour supply decisions. We then use a 2013 payroll tax change to investigate specific labour supply responses to a real-world tax policy change.

Theoretically, income taxation affects labour supply by inducing changes in net wages, which implies that the wage elasticity of hours supplied is of particular importance in standard models of the labour market. Borjas (2005) and Saez et al. (2012) claim that the wage elasticity of hours supplied is small, whereas Keane (2011) reports a small subset of studies that estimate large wage elasticities (Hausman, 1981; Imai and Keane, 2004; MaCurdy, 1983; see also Keane and Rogerson, 2012).

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[1] Keane and Rogerson (2012), Keane (2011), Meghir and Phillips (2010), and Saez et al. (2012) review the literature on taxes and labour supply; Fontana (2009), Parker (2011), and Perotti (2008) survey the literature on the macroeconomic consequences of fiscal policy.

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Hours of work supplied, however, is a narrow concept of labour supply, and labour market participation and effort per hour are likely important facets of real-world labour supply decisions. For example, female labour market participation is often found to be relatively responsive to taxation (Arrufat and Zabalza, 1986; Eissa et al., 2008; Keane, 2011). Feldstein (1995) reports large elasticities of taxable income, roughly between 1 and 3.1, whereas Gruber and Saez (2002) estimate a considerably smaller effect of around 0.4. In summary, the majority of studies find that labour supply is only moderately responsive to tax changes, but some research discovers large effects, especially for certain subgroups of the population and when broader concepts than hours worked are used to measure labour supply.

We contribute to this discussion by providing evidence based on a nonstandard methodological approach. Rather than relying on indirect estimates of labour supply based on observable economic data, we use novel data from a specifically designed, representative survey of the German population. In the survey, we directly ask our respondents whether taxation matters for their labour supply decisions and, if so, how they adjusted their labour supply in response to a recent payroll tax change in Germany. Our results indicate that taxation matters for around 41 per cent of our respondents, implying that the majority is unresponsive to taxation. Moreover, only around 12 per cent of our respondents adjusted their labour supply in response to a small real-world payroll tax change. However, further analysis shows that some individuals report having reduced, and others having increased, their labour supply. Thus, the overall net labour supply effect of tax changes appears to be small. We find no evidence of significant variation across employment status, income, and gender, but taxation generally seems to be more relevant for the self-employed. We also find that low interest rates reduce incentives for labour supply expansion.

Directly asking respondents about the consequences of economic policy for their behaviour is nonstandard in economics, but has been successfully employed in other fields. For instance, Shapiro and Slemrod (1995, 2003, 2009) use survey methodology to study self-reported consumption responses to various US tax changes. Using self-reported labour supply responses to taxation allows us to make several contributions to the literature on labour supply and taxation as well as to the literature on the economic consequences of tax policy changes. First, providing estimates of the relative importance of different transmission channels of tax changes—such as labour supply, consumption, and investment—is relevant for the design of structural models of tax policy transmission. Second, aggregate time series approaches to the consequences of tax policy changes for economic activity, as well as conventional approaches to the estimation of labour supply elasticities, are based on untestable identification assumptions. Here, we circumvent this identification problem by using self-reported responses. A potential problem with our approach is that self-reported responses may be unreliable if respondents do not answer the questions accurately. However, in our view, economic research should diversify the risk that underlying untestable assumptions are false, and we regard our survey as a useful alternative approach to the extant literature. Third, policymakers are interested in the effects of tax policy shocks on labour markets and our approach provides estimates of the size of these effects. Fourth, our survey estimates labour supply responses to one specific form of taxation, namely, payroll taxation, which is in contrast to the usual approach of averaging across tax types and measures. Fifth, we use cross-sectional variation in our survey sample to identify respondents who appear particularly sensitive to taxation. Such knowledge may permit targeting tax policy changes to specific social groups, which could make stabilisation policy more effective and would also be relevant for assessing the deadweight loss associated with different forms of taxation.

2. Survey design and instrument

2.1. General information on the survey

The two questions on individual labour supply that we utilise here are from a larger research project designed to measure the German population's perceptions, attitudes, and reactions to fiscal policy. Hayo et al. (2014) contains a full description of the survey, which took place between 15 February and 1 March 2013. The survey, which was in the form of face-to-face interviews using pen pads, was conducted on our behalf by Gfk. GfK is one of the largest private research companies in Germany working in the fields of market research and public opinion. The interviewers followed specific instructions described in the survey instrument. Our sample contains 2042 representatively selected individuals from the German population aged 14 or above. Gfk uses quota sampling, where the sample distributions in terms of sex, age, household size, city size, employment status of head of household, and state of residence are comparable to those of the population at large.[2] While this is a common sampling method, the resulting sample is not representative in the strict sense of being a completely random sample of the population. The correspondence between sample and population distributions is generally high (Hayo et al., 2014).

One part of our survey instrument explicitly refers to a recently enacted payroll tax change. Specifically, contribution rates to the statutory pension insurance were reduced from 19.6 per cent to 18.9 per cent at the beginning of 2013, and we use this real-world event to study specific labour supply responses to a tax change. The German pension insurance system is a pay-as-you-go system, in which current contributions are used to finance current pension obligations. The

[2] Household income is absent from this list of characteristics. However, reassuringly, the income distribution in our sample is comparable to the one found in the large-scale German socio-economic panel (SOEP, 2012). Still, we cannot exclude the possibility that top-income earners are inadequately represented in both surveys.