Summary

As in many OECD countries, the tax system in the Netherlands is complex and tax policy has several objectives. On the one hand, the government implements policies to promote employment: for example, through in-work tax credits and subsidies for childcare. On the other hand, income protection is also an important policy aim of the tax system. This concerns, for example, social welfare as a safety net, insurances against unemployment or disability and various means-tested benefits providing income support. In designing the tax system, policy makers face a trade-off between income equality and economic efficiency. A lower degree of inequality is usually achieved by a decrease in efficiency (Okun, 1975). Income taxes lower the return from work relative to leisure. Consequently, taxes distort people’s decision to supply labour when they decide on the number of hours to allocate to leisure and work. Consequently, total labour supply is smaller than it would be in the absence of the income tax.

Many countries want to stimulate labour force participation to improve the sustainability of public finances. For an optimal design of the tax system, it is crucial to have a thorough understanding of how different subgroups respond to changes in financial incentives. Tax reforms often target certain groups and consequently different groups face different (effective) tax rates. The effectiveness of a tax reform is then determined by (1) the size of the group, and (2) the sensitivity of this group to financial incentives. To what extent groups respond to policy changes depends on their level of participation, preferences and opportunities. It is more difficult to stimulate labour force participation in groups, for which the social convention is not to participate, such as lower educated immigrant mothers with young children. Furthermore, it is also difficult to increase labour force participation if the participation rate is already on a high level. It is important to realise here that the Law of the Handicap of a Head Start applies to the Netherlands. The participation rate of women in particular has increased substantially over recent decades, see Euwals et al. (2011) and OECD (2016). This makes it more difficult to further stimulate labour force participation. Indeed, Blau and Kahn (2007) show that the labour supply elasticity of US women has dropped from 0.8 in 1980 to 0.4 in 2000.

This thesis is about the impact of tax reforms on labour supply. The ultimate goal is the development of discrete choice labour supply models to perform ex-ante policy evaluations. The main advantage of discrete choice models is their ability to cope with

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1 Whether a tax system is optimal depends, among other things, on the preferences for redistribution. To determine the optimal tax scheme, we need a social welfare function in which the welfare of all people in society would be weighted and added together: see Piketty and Saez (2013) for an overview.
budget constraints that are highly nonlinear and non-convex due to the tax and benefit system (Bargain et al., 2014). For that reason, discrete choice models are often used to evaluate ex-ante labour supply effects of policy reforms. These models can be used to study how the labour supply for different subgroups responds to financial incentives and to study the relative effectiveness of policies in stimulating labour supply. Are reforms targeted at working parents more effective in stimulating labour supply than for instance an across-the-board reduction in marginal tax rates? Gaining more insight into the effectiveness of policies is crucial for policy makers when deciding on changes within the tax system. It helps them to make more evidence-based decisions.

Chapter 2 considers a basic labour supply model for the Dutch labour market. Using data from a cross-section of the Dutch Housing Survey 2005\textsuperscript{2}, we uncover large differences in labour supply elasticities between subgroups. Labour supply elasticities are relatively low for men but relatively high for women. Furthermore, individuals with a lower education and/or non-Western background have a relatively high labour supply elasticity. This is mostly due to differences in participation rate among these subgroups. The response at the extensive margin (i.e. participation) is more important than the response at the intensive margin (i.e. hours worked per employed person).

In Chapter 3, we consider a labour supply model that explicitly considers the use of formal childcare. In the model, households simultaneously choose the number of working hours, their leisure hours and the hours of childcare. We use data for 2006–2009 from the Labour Market Panel of Statistics Netherlands (Statistics Netherlands, 2012), which has been enriched with information on childcare from the Dutch Tax Office. The data set includes information on labour supply, use of formal childcare, as well as personal and household characteristics. We estimate preferences separately for couples with a youngest child 0–3 years of age and for couples with a youngest child of 4-11 years of age. By explicitly modelling the choice of formal childcare, we can accurately estimate the price elasticity of childcare and labour supply effects of changes in childcare subsidies. Furthermore, this model allows us to compare the effectiveness of different policies targeted at parents with young children. Indeed, government authorities employ various tax instruments to stimulate labour force participation of parents with young children. However, which instrument is most effective in stimulating the labour supply of working parents is largely unknown. We compare the effectiveness of three policy instruments: (1) childcare subsidies, (2) tax credits for secondary earners with young children and (3) tax credits for primary and secondary earners. Our main findings are as follows. First, our model predicts labour supply responses for fiscal reforms over the

\textsuperscript{2}In Dutch: Woononderzoek Nederland.
period 2005–2009 very much in line with the results from a difference-in-differences analysis on the same reform. Second, we find that the most effective fiscal stimulus for working parents is a tax credit targeted at secondary earners that rises with income. This provides incentives both on the extensive (participation) and the intensive (hours per week) margin to a group of workers that is relatively responsive on both margins. Third, we find that childcare subsidies are less effective than tax credits for secondary earners, as substitution of other types of care for formal care drives up public expenditures, though childcare subsidies are still much more effective than tax credits that target both primary and secondary earners, because primary earners are rather unresponsive to financial incentives.

Next, Chapter 4 describes a structural model of labour supply that allows for involuntary unemployment. Again, we use data for 2006–2009 from the Labour Market Panel. We use information on job search behaviour to distinguish between voluntary and involuntary unemployment. Next, we compare the results with a model that does not allow for involuntary unemployment. Chapter 4 shows that accounting for involuntary unemployment makes little difference to the results, at least for the 2006–2009 period. Estimation results show that the average labour supply elasticities are only slightly lower in the model with involuntary unemployment than in the model without. An important explanation for this result is the low share of involuntary unemployment in the 2006–2009 period. Policy simulations confirm that the differences in average labour supply responses are small between the models. Only for subgroups with a relatively high risk at being involuntarily unemployed, such as lower educated people or immigrants, we find a relatively large upward bias in the model without involuntary unemployment. Hence, it is our conclusion that the standard labour supply model, without involuntary unemployment, gives a good prediction of the effects of tax reforms as long as the share of involuntary unemployment is low.

Chapter 5 presents the CPB’s MICSIM model, which distinguishes a large number of household types covering most groups on the Dutch labour market. MICSIM is the official CPB model to evaluate long-term employment effects of labour market proposals by political parties, ministries and the Dutch Government. Our exceptionally large and rich administrative data set enables us to estimate preferences for 15 subgroups separately. We distinguish between singles and couples and also between households without children, with a youngest child of 0–3 years of age, 4–11 years of age, 12–17

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years of age and adult children living at home. We find that men in couples have a much lower labour supply elasticity than women, especially when they have young children. Moreover, the cross elasticity of women is non-negligible. The working of the model is illustrated with a large number of policy simulations. Because intensive margin responses are small, and cross-effects of the income of husbands on the labour supply of their wives are non-negligible, the impact of marginal tax rates on total hours worked of couples is limited. Changes in participation tax rates, for example via changes in welfare benefits and income-dependent subsidies for families with children, have larger effects on total hours worked, because people are more responsive at the extensive margin. However, both reforms lead to a relatively strong increase in income inequality. An in-work tax credit targeted more at lower incomes appears more effective in increasing labour supply than an across-the-board in-work tax credit. For mothers with young children, fiscal incentives to work are found to be relatively effective. Childcare subsidies also provide an implicit incentive subsidy for mothers with young children to work outside home, but these are expensive, from the government perspective, because they encourage the use of formal childcare as a substitution for informal childcare. Finally, we simulate major tax reforms, such as the transition towards a flat tax system, joint taxation or a basic income system. Only the introduction of a flat tax slightly increases labour supply, whereas a system of joint taxation or basic income strongly discourages labour supply.

MICSIM was recently applied to evaluate the governments new Tax Plan for 2016 (Ministry of Finance, 2015). More specifically, we used MICSIM to evaluate the labour supply effects of the Tax Plan 2016. The aim of the Tax Plan was to create more employment by reducing the tax burden on labour with 5 billion euros. Important policy measures in the tax plan concerned a higher tax credit for all workers, a higher tax credit for working parents and a higher child care subsidy. Our estimate with MICSIM is that labour supply increases with 35,000 full-time equivalents (FTEs).

References


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4See De Boer (2015a), De Boer (2015b), and De Boer (2015c).


