

# Introduction and Summary

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In many European OECD countries unemployment remains high, and many commentators worry that wages are too rigid. Widespread concern exists that mobility between jobs and between regions is too low, and that a compressed distribution of net-of-tax pay discourages education and skill formation. At the low end of the labor market, it is feared that the interaction of high taxes and generous social benefits discourages labor supply and labor force participation. In many countries, there is also a concern that an increasing share of the workforce responds to high tax wedges by working in the underground economy, or by engaging in do-it-yourself work in the household sector.

The studies in this book are devoted to the analysis of how tax policy, and welfare state incentives more broadly, affects the performance of the labor market. The eight chapters cover both theoretical and empirical approaches, include broad overviews as well as in-depth analysis of specific policies, address normative as well as positive issues, and offer examples of both aggregate and microeconomic analysis. It is our hope that both the policy analyst and the academic theorist will find it worthwhile to read the book.

In the following, we offer a brief overview of the contributions included in this volume.

## **I Taxation and Labor Markets—The Broader Perspective**

In chapter 1, A. Lans Bovenberg provides a survey of the effects of taxation on labor supply, employment, and unemployment in the conventional model of a competitive labor market as well as in more realistic models with imperfect labor markets. In particular, he focuses on distortions stemming from trade union wage setting and externalities arising from the search behavior of workers and firms. Bovenberg's

analysis includes the effects of taxes on hours of work, on labor force participation and job search, and on structural unemployment. One key finding is that the effects of taxation on unemployment depend crucially on the rules for indexation of unemployment benefits. To a first approximation, a change in tax policy can reduce unemployment only if it succeeds in reducing the net (after-tax) replacement ratio offered by the benefit system. Another finding is that while an increase in tax progressivity harms economic efficiency in a competitive labor market, it may play an efficiency-enhancing role in labor markets with job search. By increasing the job loss associated with any given increase in the after-tax wage rate, a higher marginal tax rate may induce wage moderation. This makes it profitable for employers to post more vacancies, thereby helping to reduce unemployment. At the same time, higher tax progressivity may involve costs by reducing hours of work, work effort, human capital investment, and labor mobility, while stimulating tax avoidance and evasion.

To illustrate the points made in the theoretical analysis, Bovenberg performs simulation experiments with an elaborate applied general equilibrium model for the Netherlands. The model incorporates a disaggregated household sector, human capital accumulation, efficiency wage setting, job search behavior and costly job matching, and an underground economy. The simulations highlight a number of difficult trade-offs for tax policy. According to the model, the most effective way to reduce unemployment (in particular, low-skilled unemployment) and to stimulate labor force participation via changes in tax policy is to introduce a targeted Earned Income Tax Credit (EITC) that is phased out as income goes up. However, since such a policy increases the progressivity of the tax system, it also reduces hours of work and discourages investment in human capital by many of those who are already employed. To boost human capital formation and work hours, cuts in the marginal tax rates of higher-income workers are most effective, but such a policy also increases income inequality. Bovenberg's chapter ends with a discussion of some ways for the government to alleviate the inevitable equity-efficiency trade-off—for example, by compulsory savings schemes and workfare programs.

The starting point for chapter 2 by Stephen Nickell is the observation that people in some countries appear to work harder than people in other countries. For example, the average person of working age works almost 50 percent more in the United States than in Belgium. As noted by Nickell, such differences in labor supply go a long way toward

explaining the variation in GDP per capita among the advanced countries of the OECD. Nickell's chapter discusses to what extent differences in taxes can explain why Americans devote so much more time to market work than do Europeans. He presents calculations on how the overall tax wedge on labor income has evolved over time in OECD countries, reviews aggregate econometric evidence on how tax wedges affect the real labor cost per employee, and discusses studies that have tried to directly estimate the effect of taxes on aggregate employment. Based on "average" results reported in the literature, Nickell concludes that the 16-percentage-point difference in the tax wedge between the three big countries of continental Europe (France, Germany, and Italy) and the United States may explain around one quarter of the overall difference in the employment rate. Thus, the conclusion seems to be that though taxes are an important determinant of employment, most of the observed market work differentials between Europe and the United States must be explained by other factors. Nickell conjectures that more generous European social insurance programs might account for the major part of the work differential.

In chapter 3, Frederick van der Ploeg discusses a similar theme by raising the question "Do social policies harm employment and growth?" The chapter reviews a large literature dealing with the potential for progressive taxes and redistributive categorical benefits to counteract some of the nontax distortions found in imperfect labor markets. Van der Ploeg shows that tax progressivity may boost employment by moderating wage claims not only in unionized labor markets, but also in labor markets where employers pay efficiency wages and in markets with search frictions. He proceeds to study the effects of conditional and unconditional unemployment benefits in an extended version of the shirking model of efficiency wages originally introduced by Shapiro and Stiglitz. The model is used to demonstrate that whereas a higher unconditional benefit drives up equilibrium unemployment, a conditional benefit that is granted only to workers who have lost their jobs through no fault of their own (workers who have not been fired because of misconduct or shirking) will actually reduce unemployment. Intuitively, if the conditional unemployment benefit is high relative to the unconditional welfare benefit, workers are more eager to avoid being fired for shirking, and hence employers need to pay less to induce workers not to shirk. The resulting drop in wage pressure lowers equilibrium unemployment. Van der Ploeg also uses a well-known political economy model of redistributive taxation

attributed to Meltzer and Richard to show that a more equal skill distribution—and hence a more equal distribution of pretax incomes—results in a voting equilibrium with less distortionary taxation. This may be an argument for public investment in education to improve the distribution of skills. Van der Ploeg also discusses the consequences of assuming that people care about their relative levels of consumption and income. He finds that in this case the majority of the electorate will prefer a more progressive tax system that deliberately discourages work and material consumption because of the negative external effect of an individual's consumption on the utility of others.

## II Taxation, Labor Supply, and Wage Formation

Most studies of how tax incentives and tax reform affect labor supply and welfare have concentrated on the behavioral response along the intensive (hours-of-work decision) margin. At the same time, recent empirical work on labor supply behavior indicates that the response along the extensive margin (participation decision) is a stronger one. In chapter 4, Nada Eissa, Henrik Jacobsen Kleven, and Claus Thustrup Kreiner shed theoretical and empirical light on the issues. They develop a model incorporating both the intensive and the extensive labor supply decisions, and they show how nonlinearities in the tax system make it necessary to distinguish explicitly between the intensive and extensive margins in welfare analysis of tax reform. While the intensive margin will depend on the marginal tax rate, the extensive margin will depend on the average tax wedge on labor income.

As an illustration of the quantitative importance of the theoretical results, Eissa, Kleven, and Kreiner compute the welfare effects for female household heads of the United States Tax Reform Act of 1986 (TRA86). Their simulations show that TRA86 created substantial welfare gains, which were primarily associated with adjustments along the extensive labor supply margin; that is, labor force participation increased. More generally, the simulation experiments of Eissa, Kleven, and Kreiner strongly suggest that tax policy simulations that do not account for labor force participation decisions may underestimate the welfare effect by a significant amount.

An important element in the various tax reforms carried out in the United States since the mid-1980s was the expansion of the EITC granted to individuals and families with low labor incomes. In recent years several other OECD countries, in particular the United Kingdom,

have also experimented with various forms of EITCs. In line with the analysis of Eissa, Kleven, and Kreiner, proponents of the EITC have emphasized its likely positive effects on the extensive margin of labor supply. However, since the EITC increases the effective marginal tax rate in the income range where the credit is phased out, and since it has a positive income effect on the demand for leisure, skeptics have pointed out that the EITC is likely to reduce the hours worked by many of those who are already employed, leaving an ambiguous net effect on total labor supply. In the light of this ambiguity, it is obviously important to study the effects of the EITC on the intensive as well as the extensive labor supply margin.

While several empirical studies of the EITC have considered its effects on the labor supply of single women, very few have examined its impact on hours worked by married couples in the United States. In chapter 5, Nada Eissa and Hilary Hoynes set out to fill this important gap in the literature on the EITC. As a starting point, they note that most secondary earners among married couples may be expected to reduce their work hours in response to the EITC, since most eligible couples with two earners are likely to be in the income range where phasing out the credit raises the effective marginal tax rate. Using Current Population Survey data from 1984 to 1996, Eissa and Hoynes proceed to estimate hours of work equations for married couples. To account for the fact that the after-tax wage rate depends endogenously on labor supply, they use an instrumental variable technique that allows them to trace the budget sets of individual households, taking advantage of time variation as well as cross-sectional variation in tax schedules. The estimates confirm the existing evidence that the labor supply of married men is not responsive to taxes. By contrast, Eissa and Hoynes estimate the net wage elasticity of hours worked by married women to be between 0.1 and 0.4. On this basis, they perform simulations to show that EITC expansions between 1984 and 1996 induced married women to decrease their work hours by 1–4 percent.

What are the effects of progressive income taxes on wages? The traditional view maintains that progressive income taxes can be expected to push up wages, the reason being that progressive taxes reduce labor supply, which in a competitive labor market can be expected to increase the equilibrium wage. The alternative view—exemplified by Frederick van der Ploeg's contribution to this volume (chapter 4)—maintains that in imperfectly competitive labor markets, where there is bargaining over wages, progressive taxes can actually be expected

to lead to wage moderation, with positive employment effects as a consequence. The reason is that tax progression changes the trade-off between workers' real take-home pay and employment—when the tax system is steeply progressive, a given increase in the real wage after tax will be more costly in terms of employment. In recent years, empirical studies have presented results for some European countries that are compatible with the alternative view.

In chapter 6, Torben Tranæs, Søren Arnberg, and Anders Holm take a fresh look at the issues. Using unique microdata from the highly unionized labor market in Copenhagen, and using a first-difference estimator that factors out unobserved individual effects, they report evidence suggesting that tax progression actually increases wages at all levels of the occupational hierarchy. Thus, the results are in line with the traditional view, and in contradiction to the alternative view. For unionized workers, Tranaes, Arnberg, and Holm find that an increase in tax progression tends to generate a noncompetitive wage moderating effect, as predicted by the alternative view. However, even among unionized workers the net effect of increased tax progression is a wage-increasing one.

### III Taxation and the Underground Economy

Rather than inducing people to work less and take more leisure, high taxes on labor income may motivate workers to go “underground” to work in the informal economy where taxes are evaded. Measuring the size of the underground economy is obviously difficult, but existing empirical studies suggest that it accounts for a significant share of total economic activity even in the most developed OECD countries. Most of the literature seeks to explain the size of the underground economy by focusing on the incentives to avoid high taxes, or to avoid government “red tape” and corruption. However, in chapter 7, Dan Anderberg uses data for fifteen OECD countries to document a high correlation between the standard OECD index of employment protection and the estimated size of the underground economy. Indeed, this correlation seems to be much higher than the partial correlation between the level of taxation and the magnitude of the underground economy.

Anderberg develops a theoretical labor market model that offers an explanation for the correlation between labor market rigidity and underground activity. In his model, unemployed workers divide their

time between job search in the formal labor market and work in the underground economy to supplement their income from unemployment benefits. In this setting, stricter employment protection slows down the flows of firing and hiring in the formal labor market. This has two offsetting effects on the incentives to engage in underground activities. On the one hand, when formal jobs are expected to last longer they become more attractive, and this increases the incentives for job search. On the other hand, employment protection also makes it less attractive for employers to create jobs, thereby increasing the length of the average unemployment spell and strengthening the incentive for the unemployed to go underground rather than searching for a regular job. In Anderberg's model the latter effect dominates, so institutions that prolong job tenure also tend to increase the incentives for unemployed "outsiders" to seek alternative sources of income on the fringe of the economy.

Anderberg's analysis suggests that labor market reforms that increase the flexibility of the formal labor market would also help reduce the size of the underground economy. In practice, governments often rely on policy instruments such as penalties and auditing in their efforts to discourage underground economic activity. In the literature, the effects of such policies have typically been studied in partial equilibrium models where wages are exogenous or in general equilibrium models with competitive labor markets.

In chapter 8, Ann-Sofie Kolm and Birthe Larsen analyze the labor market effects of tighter controls of the underground economy in a more realistic general equilibrium model of an imperfect labor market with matching frictions and wage bargaining between workers and firms. Empirical studies indicate that underground activities are often highly concentrated in particular sectors of the economy such as construction and certain personal services. Kolm and Larsen therefore set up a two-sector model where one sector represents the formal economy and the other sector—producing a different good—represents the underground economy. The government influences the size of the underground economy by imposing a penalty for tax evasion discovered through auditing. Kolm and Larsen show that a higher penalty rate causes the formal sector to expand at the expense of the informal sector, while at the same time reducing unemployment. The reason is that higher penalties reduce the value of the "outside option" (the option of working in the underground economy) for workers bargaining over the wages for formal jobs. Hence it reduces wage pressure in the

formal sector, thereby inducing more employers to enter that sector. While this result is hardly surprising, a more surprising feature of the model developed by Kolm and Larsen is that a higher audit rate has an ambiguous impact on unemployment and the size of the underground economy. Indeed, it may even cause the underground economy to expand. Other things being equal, more intensive auditing reduces the profitability of entering the informal sector, but in general equilibrium it may also drive up the relative price of goods supplied by the underground economy to such an extent that it actually becomes more attractive to enter the sector.