The relationship between product market competition and unemployment with profit sharing ☆

Erkki Koskela [a,b,c], Rune Stenbacka [d,*]

[a] Department of Economics, P.O. Box 17 (Arkadiankatu 7), University of Helsinki, 00014 Helsinki, Finland
[b] CESifo, Munchen, Germany
[c] IZA, Bonn, Germany
[d] Hanken School of Economics, P.O. Box 479, 00101 Helsinki, Finland

ARTICLE INFO

ABSTRACT

We investigate the implications of product market imperfections on negotiated wages and equilibrium unemployment under profit sharing. We show that intensified product market competition reduces equilibrium unemployment in a strictly monotonic way when the trade union's bargaining power exceeds the profit share. If the profit share exceeds the trade union's bargaining power, the effect of product market competition is ambiguous: there is a threshold for the benefit–replacement ratio above (below) which intensified product market competition increases (decreases) equilibrium unemployment. The profit share and the union's bargaining power affect the wage mark-up, and thereby equilibrium unemployment, in different directions.

1. Introduction

According to standard wisdom intensified product market competition promotes employment. However, with labour market imperfections the effects of intensified product market competition on unemployment are far from self-evident. In the present study we explore the effects of intensified product market competition on wage formation and equilibrium unemployment. We show that profit sharing[1] plays a significant role for the theoretical relationship between the imperfections in product markets and equilibrium unemployment with imperfectly competitive labour markets. In particular, we establish that the relative magnitudes of the profit share and the bargaining power of the trade union are of decisive importance for whether there is a strictly monotonic relationship between the intensity of product market competition and equilibrium unemployment. Intensified product market competition reduces equilibrium unemployment in a strictly monotonic way when the trade union's bargaining power exceeds the profit share. When the profit share exceeds the trade union's bargaining power the relationship between equilibrium unemployment and the intensity of product market competition is determined by the benefit–replacement ratio. When the benefit–replacement ratio is sufficiently high (low), intensified product market competition increases (decreases) equilibrium unemployment.

Blanchard and Giavazzi (2003) and Spector (2004) design theoretical models with monopolistic competition in the product markets and with collective wage bargaining, but contrary to our analysis, these studies incorporate no profit sharing when characterizing the effects of product market competition under imperfectly competitive labour markets. Within such a framework they argue that higher product market competition will stimulate employment. Furthermore, Blanchard and Giavazzi (2003) pay particular attention to an evaluation of product market deregulation, meaning lower entry thresholds, and for that purpose, they distinguish the short-run effects from long-run effects. Ebell and Haefke (2003) study the relationship between the product market structure and labour market

outcomes by focusing on Mortensen–Pissarides-type search and matching frictions in the labour markets and monopolistic competition in the product markets when there is individual wage bargaining. Their qualitative findings are roughly similar to those of Blanchard and Giavazzi (2003) and Spector (2004). Amable and Gatti (2004) develop a different type of framework. They use a model of monopolistic competition with an endogenous determination of worker flows in and out of employment where wages are determined according to an efficiency wage mechanism and they show that higher product market competition may generate employment losses rather than gains. Ebell and Haefke (2006) theoretically demonstrate that the choice of wage bargaining regime is crucial for the effects of product market competition on unemployment, being substantial under collective bargaining and more modest under individual bargaining. Finally, based on a more general perspective, Gersbach (2000) summarizes three mechanisms, through which reductions in product market imperfections might promote employment. These mechanisms are based on lower mark-ups, higher total productivity and expanded sets of product varieties (see also Gersbach and Schniewind (2001)).

Conway et al. (2005) have delineated in great detail recent trends of product market deregulation and intensified competition in OECD countries by using indicators of product market regulation. Regulatory impediments to product market competition have declined significantly in all OECD countries in recent years. Furthermore, active competition policy in combination with improvements in the implementation of competition law has promoted product market competition by making it more difficult for firms to abuse dominant market positions.

Some important employment consequences of intensified competition and deregulation in product markets have been analyzed in the empirical literature. Nickell (1999) has surveyed how market power in the product markets impacts on the performance of the labour market by reviewing both collective bargaining models and efficiency wage models. According to Nickell (1999), there is some evidence that sharing of monopoly rents leads to higher wages in the presence of market power in product markets, but it is not clear whether this is essentially a union effect or whether it applies also in the non-union sector. Schiantarelli (2008) reviews the evidence and reaches the conclusion that intensified product market competition may not promote employment. Bayoumi et al. (2004) estimate the macroeconomic benefits and international spillovers of intensified competition in the product and labour markets and conclude that greater competition significantly stimulates macroeconomic performance and that it may improve macroeconomic management by increasing the responsiveness of wages and prices to market conditions. But they do not model labour markets explicitly. Nickell et al. (1994) and Konings and Walsh (2000) also empirically explore some aspects of the employment effects of product market imperfections with imperfectly competitive labour markets. Using British firm level data Nickell et al. (1994) argue that product market power raises wages, while Konings and Walsh (2000) indicate that the impact of stronger product market competition on employment loss is lower in unionized firms compared with non-unionized firms. Griffith et al. (2007) and Fiori et al. (2007) exploit observations from OECD countries to conclude that intensified product market competition reduces unemployment and they find that this effect is more pronounced in countries with higher levels of collective bargaining coverage and/or union density. Berger and Danninger (2007) reach a different empirical conclusion regarding the effects of intensified product market competition on employment and they emphasize that product market liberalization promotes employment growth more efficiently in the presence of weaker labour market imperfections.

As the review of the empirical literature indicates, there seems to be no conclusive evidence regarding the nature of the relationship between the intensity of product market competition and equilibrium unemployment. The literature mentioned above, whether theoretical or empirical, has abstracted from profit sharing as a part of the

compensation scheme in the labour market. As we will argue in this study, profit sharing may be an important factor affecting this relationship. Furthermore, profit sharing is an empirically important phenomenon in many OECD countries and our model predicts that it plays a significant role for the theoretical relationship between the imperfections in product markets and equilibrium unemployment with imperfectly competitive labour markets. For example, Pendleton et al. (2001) presents detailed data on the significant proportion of workplaces with financial employee participation in the form of profit sharing schemes in 14 EU countries. Among western EU countries in 1999/2000 a double-digit percentage of the workplaces applied profit sharing in Austria, Finland, France, Germany Ireland, Netherlands, Portugal, Spain, Sweden and United Kingdom. For further evidence regarding the incidence of profit sharing we refer to the DICE database collected by CESifo (http://www.CESifo.de).

An important collection of studies has generally explored the effects of profit sharing on equilibrium unemployment. For example, Weitzman (1985, 1987) conjectures that profit sharing would both dampen the business cycle fluctuations of employment and reduce equilibrium unemployment. Also Holmlund (1991) explores the relationship between profit sharing and equilibrium unemployment. He argues that profit sharing will reduce (increase) equilibrium unemployment if and only if the elasticity of substitution between labour and capital exceeds (falls short of) one, while it will have no effect on equilibrium unemployment when the elasticity of substitution between labour and capital is equal to one. We contribute to the analysis of the relationship between profit sharing and equilibrium unemployment by emphasizing that profit sharing may importantly affect the way in which the economy benefits from product market competition.

Our study proceeds as follows: Section 2 presents the model with simultaneous price setting and labour demand with monopolistic product market competition. In section 3 we analyze the determination of negotiated base wages under profit sharing. In section 4 we characterize the effects of intensified product market competition on the equilibrium unemployment under profit sharing. Finally, section 5 presents concluding comments.

2. Simultaneous price setting with monopolistic competition and labour demand

In this section we characterize the simultaneous determination of employment and prices within a framework, where a representative firm i takes the negotiated wages (w_i) and profit shares (τ_i) as given. We focus on a Cobb–Doulas production function with labour as the only production factor according to

$$R_i(L_i) = \frac{L_i^\alpha}{\alpha}, \tag{1}$$

where L_i denotes employment and $0 < \alpha < 1$. Thus, (1) is a production function exhibiting decreasing returns to scale.

The product market is modelled to operate with monopolistic competition in line with Dixit and Stiglitz (1977). The firms face consumers endowed with the CES–utility function

$$V = \left[n^{-\frac{1}{s}} \sum_{i=1}^{n} D_i^{\frac{s-1}{s}} \right]^{\frac{s}{s-1}}, \tag{2}$$

where $s > 1$ denotes the elasticity of substitution between products, n is the number of products (and firms) and D_i captures the consumption of good i. We view the elasticity of substitution s as a general reduced form to capture the degree of product market competition. A higher elasticity of substitution means intensified product market competition. In particular, the limiting case of perfect competition is associated with the elasticity of substitution s approaching infinity. An increased number of firms could be one natural mechanism leading